THE ENGINEERING AND MINING JOURNAL
AND
COAL

Entered at the Post-Office of New York, N. Y., as Second-Class Mail Matter.

VOL. LVII. JUNE 23. No. 25.

RICHARD P. ROTHWELL, C. E., M. E., Editor.
ROSSITER W. RAYMOND Ph. D. M. E., Special Contributor.
SOPHIA BRAEUNLICH, Business Manager.
THE SCIENTIFIC PUBLISHING CO., Publishers.

SUBSCRIPTIONS to THE ENGINEERING AND MINING JOURNAL are PAYABLE IN ADVANCE. Price: For the United States, Mexico and Canada, $5 per annum; $2.50 for six months; all other countries in the Postal Union, $7.

The address slip on the paper will show date of expiration of subscription. Subscribers wishing their address changed will please give the name of the old post-office as well as the new one.

NOTICE OF DISCONTINUANCE.—The JOURNAL is not discontinued at expiration and is sent to subscribers until an explicit order is received by us, and all payment of arrearages is made, as required by law. The courts invariably hold a subscriber responsible to the publisher for the subscription price of all papers received until the paper is paid for in full up to date and ordered discontinued. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

ADVERTISING RATES furnished on application.

REMITTANCES should always be made by Bank Drafts, Post-Office Orders or Express Money Orders on New York, payable to THE SCIENTIFIC PUBLISHING CO.

THE SCIENTIFIC PUBLISHING COMPANY.

OFFICERS:
R. P. ROTHWELL, Pres. & Gen'l Mang.
SOPHIA BRAEUNLICH, Sec'y & Treas.

P. O. BOX 1833.
253 Broadway, New York.

Cable Address: "Rothwell, New York." Use A B C Code, Fourth Edition.

LONDON OFFICE:
20 Bucklersbury (Room 366), London, E. C., England.
Edward Walker, Manager.

CHICAGO OFFICE: "The Rookery," Room 531.

CONTENTS.

	Page.
Gold Sales in India	577
The Montana Mining Company	577
The Strike on the Gogebic Range	577
South African Gold Production	578
German Iron Production	578
The Southern Immigration, Land and Title Company	578, 582
New Publications	578
Books Received	579
Failure of the Harveyized Plate — J. Garnier	579
The Spelling of the "Mesaba" Range — H. N. Winchell	579
The "Mineral Industry"	579
The Ammonia Motor for Street Cars	579
Recent Decisions Affecting the Mining Industry	580
Abstracts of Official Reports	580
*Improvements in Making Sodium	580
Distribution of Electric Power	581
The Gold Mining Industry in Canada	582
The New Steamer "Priscilla"	582
*The Muller Boiler and Furnace	583
*The Iron Ores of the Mesaba Range — J. E. Spurr	583
*A Large Pumping Plant	585
Development of Chemical Industries in Great Britain	585
Patents Issued	586
Personal, Obituary, Societies, Technical Schools, Industrial	587
Notes: Steam Boilers in Prussia, 579—A Heavy Blast, 580—Pit Props in France, 580—Gas Consumption in Paris, 580—Greek Manganese Mines, 581—British Iron and Steel Exports, 582—New Trans-Atlantic Cable, 582—Coal Trade of Southern India, 584—Mining Machinery in Honduras, 584—Contracts for Elban Ore, 586—Adherence of Cement and Iron, 586—A Double Drawbridge, 586—Roman Find Near Matlock, England, 586—Passage of Hydrogen through Palladium, 586—Destruction of Blast-Furnace Linings, 586.	

*Illustrated.

MINING NEWS.
Alaska 588
Arizona 588
California 588
Colorado 588
Idaho 589
Indian Ter. 589
Iowa 589
Kansas 590
Maine 590
Michigan 590
Minnesota 590
Missouri 590
Montana 590
Nevada 591
New Jersey 591
New Mexico 591
Oregon 592
South Dakota 592
Texas 592
Utah 592
Washington 592
Wyoming 592

FOREIGN NEWS.
New Brunswick 592
India 592
Nova Scotia 592
Ontario 592
Quebec 592
Sweden 592
South Africa 592
Venezuela 592
West Australia 592

LATEST MINING NEWS 593

MARKETS:
COAL:
New York 593
Buffalo 593
Chicago 593
Pittsburg 594
IRON:
New York 594
Buffalo 594
Chicago 594
Pittsburg 595
Philadelphia 595

METALS 595

CHEMICALS AND MINERALS 596

MINING STOCKS:
New York 597
Boston 597
San Francisco 597
Paris 597
Meetings 597
Dividends 597
Assessments 600

STOCK QUOTATION:
New York 598
Boston 598
San Francisco 598
Baltimore 598
Denver 598
Salt Lake City 598
London 598
Philadelphia 598
Aspen 600
Colo. Springs 600
Duluth 600
Helena 600
Pittsburg 600
St. Louis 600
Shanghai 600
Paris 600
Coal Stocks 598
Ind. and Trust 598

MINING Co's 599

CURRENT PRICES:
Chemicals 600
Minerals 600
Rarer Metals 600

ADVT. INDEX 15

ADVT. RATES 33

The Cleveland district in England reports, at the opening of June, 93 furnaces in blast, against 86 active in January and 87 in June of last year. The make reported for the five months ending May 31st is 562,037 tons forge and foundry iron, and 624,958 tons Bessemer pig, a total of 1,186,995 tons, which compares with 1,139,151 tons last year, showing but slight changes. The sales for shipment and home consumption for the five months were 1,168,610 tons, against 1,031,937 tons last year, showing an increase of 13 per cent. Prices have been fairly maintained, showing a decrease of only six cents per ton for ordinary iron since January, while Bessemer pig has fallen a little more, 27 to 30 cents. In spite of the increased demand there is no prospect of better prices.

The reports from India show continued sales of gold drawn from the native hoards by the continued high price of gold in rupees. These sales have been so large as to materially affect the price of exchange and send up the demand for Council bills in London. Their exact amount cannot be determined, and the whole subject is clouded in such uncertainty that any definite predictions are impossible. No one knows how much gold is hoarded in India, and there is so little understanding or business confidence between the natives and their British masters that no one can safely say just what train of circumstances will act upon the native mind. At present, however, the gold sales and shipments are increasing, and may attain considerable importance, with reference to the European gold market as well as to India itself.

The unusually heavy snows of last winter in the Northwest, while they have had unpleasant consequences in the floods which have recently caused so much damage to property, have also some beneficial results. The numerous placer miners who are now, or soon will be, at work throughout the northern Rockies—in Montana, Idaho and Washington—are sure of an abundant supply of water for the season. The streams are all full, and have abundant reserves to draw upon in the canyons and on the mountain slopes. For milling purposes and for water power also for the mines there will be a full supply this year, and operations can be carried on without interruption. The actual damage done to mining works directly by the spring floods has not been very great, the injuries received having been more of an indirect kind, owing to stoppage of communications, loss of timbers and fuel, and other similar matters. While these have been troublesome in many cases, the actual money losses have not been great, and, except in a few instances, they will be easily repaired.

The report of the Montana Mining Company for the half-year ending with December last shows a very narrow margin of profits. From a total of 32,553 tons of ore treated the yield was 9,728 oz. gold and 95,855 oz. silver, and the amount actually realized (not the coinage value) gave an average of $6.03 in gold and $1.86 in silver, or $7.89 in all, per ton. On the other hand the working expenses were $5.74 per ton, to which must be added $1.50 per ton for prospecting and development work and $0.31 for legal and general expenses, making a total of $7.55, and leaving an apparent profit of only $0.34 per ton. The small surplus was not sufficient to meet the office and other expenses in London. This showing is better than that made in the first half of the year, when there was a loss of $75,500; much of this, however, was due to the cost of litigation in which the company was engaged.

It is, of course, very difficult to determine the actual cost of producing silver in a case like this, where so large a part of the value of the ore is in gold. If, however, we divide the expenses in the proportion of the values of the two metals, we find that the actual cost of the silver was 61·8 cents per ounce, while the report gives the average selling price at 71·5 cents an ounce. Even on this basis, a very small reduction in the proportion of gold would bring the cost of silver above the selling price; and the division is certainly a favorable one.

With regard to the future, the development work of the half-year showed that the company has a large body of low-grade ore which will keep its mill employed at the present rate of work for some time to come, but no considerable amount of profit can be expected unless some richer ore deposits should be struck.

The strike of the miners on the Gogebic iron range in Michigan and Wisconsin, which, it was at first supposed, would be limited to a single mine, threatens to become a serious matter, and there is some fear of disorders such as have accompanied the coal miners' strike in many places. The miners of the Lake Superior region have, up to the present time, submitted much more quietly to losses and privations than their brethren elsewhere, though times have been very hard with them for nearly a year past. If the dispatches are correct the turbulent outbreak which has accompanied the opening of the strike at the Norrie and the neighboring mines is due chiefly to the foreign miners who are found in large numbers there, as among the coal miners, and who are not accustomed to recognize any restraint except force, and who have no respect for property or the rights of others.

The season had opened much better for the Gogebic range than had been expected, and many of the mines have been busy, orders and con-

tracts having been taken for large quantities of iron ore. They have been taken, however, at very low prices, and the mining companies have been paying low wages. On the Marquette and the Menominee ranges, and to some extent on the Mesaba, these have been accepted as inevitable and as better than the alternative of no wages at all; but the Gogebic men do not seem to appreciate the situation. Under the present conditions of the iron trade the margin on iron ores is very narrow; an increase in prices would mean an instant loss of business to competitors, and without such an increase higher wages hardly seem to be possible. The present strike is much to be regretted; it has been started at a most unfavorable time and must surely result in the defeat of the men, with losses which they are in no position to meet. It does not at present seem likely to spread beyond the Gogebic mines, especially as the Pewabic and other prominent companies have promised an increase in pay.

The Witwatersrand mines in the Transvaal continue to maintain their gold production at a high point. The May output, as reported by cable from Johannesberg, was 169,773 oz., the largest yet made in any one month, and 52,862 oz. above the product in May of last year. How large a proportion of this was from the re-working of tailings the dispatch does not state; in previous months of this year cyanide workings have furnished about 30 per cent.

This brings the total output for the five months ending with May up to 805,574 oz., equivalent to about 650,000 fine ounces of gold, and seems to indicate a production of about 1,600.000 fine ounces for the present year. It is possible that as the accumulations of tailings are worked off, which is now being done at a pretty rapid rate, the yield from that source will fall off; but this will probably be more than made up by an increase in the quantity of ore raised, and in the additional number of stamps brought into operation on the Witwatersrand.

The other districts of the Transvaal are all doing well, and nearly all show an increase over last year. Before the close of the year some returns may be expected from Mashonaland and Matabeleland, where some active prospecting is now being done.

Upon the whole, there is no doubt that South Africa will easily hold her second place among the world's gold producers this year, even should nothing of importance come from the new districts. Their development will necessarily take some time, since from all accounts they present the same peculiarity as the older fields, and the amount of gold from alluvial or placer workings is likely to be insignificant. South Africa is the only gold producing country in the world in which this is the case; but her output has been almost entirely from vein mining from the very beginning.

At the close of April there were 132 furnaces in blast reported in Germany, the number being the same as in March, but 11 less than in April, 1893. The total output of pig iron for the month of April was 438,056 metric tons, showing an increase of 32,818 tons, or 8·1 per cent., over April, 1893. This would seem to show that in Germany, as in this country, there is a tendency to keep the newer and larger furnaces in blast, and that it is the smaller and more poorly appointed ones which are idle. The average output per furnace was 3,319 tons in April this year, against 2,834 tons last year. For the four months ending April 30th the production of pig iron was 1,708,168 metric tons, against 1,576,485 tons for the corresponding period last year, showing an increase for this year of 131,683 tons, or 8·4 per cent. The production has been very steady since the opening of the year. The German demand for home consumption has been somewhat light, but the steel-works have made an increased demand for pig, owing to their present and prospective orders for export since the conclusion of the commercial treaty with Russia.

Of the pig iron produced in April 67,508 tons were classed as foundry iron; 134,514 tons as forge and mill iron; 32,690 tons as Bessemer pig, and 203,344 tons as Thomas pig. This shows once more how strong a position the Thomas-Gilchrist steel process has in Germany. While 54 per cent. of the pig iron produced was intended for conversion into steel, only 14 per cent. of it was Bessemer iron, the remaining 86 per cent. being made for use in the Thomas converter. This Thomas iron is made all over Germany, although Luxemburg, the Saar and the Rhenish districts are the chief producers. The furnaces of Saxony and Hanover make chiefly forge and mill irons, and those of Wurtemburg and Bavaria foundry iron.

There is still much complaint of low prices, but the German iron-makers seem to be doing quite as well as, if not better than, any of their European brethren.

THE SOUTHERN IMMIGRATION, LAND AND TITLE COMPANY.

In a recent issue we noted the organization of the Southern Immigration, Land and Title Company, incorporated under the laws of Virginia, its officers being: President, Hon. Chauncey F. Black; first vice-president, Julian S. Carr; second vice-president, M. Erskine Miller; third vice-president and general manager, A. A. Arthur; secretary and treasurer, John B. Cary; and general counsel, Richard H. Spencer. The directorate is made up of men of unquestioned ability, integrity and means. The purpose of the company is to follow on a broad scale the work which is now being tried by various small local organizations—that is, the development of the South in both its agricultural and mineral resources, not in the light of "booming," but of ascertaining the exact facts concerning various sections, tracts of land, or industries, and placing them before people who will locate upon them or supply capital to operate. The efforts of the company will be directed toward bringing prominently before working people of all classes the advantages which the South has to offer, and to induce them to move there and locate upon some of its rich lands. Another and very important branch of the business will be to examine into the title of mineral, timber and other lands, and to examine and report on their resources; to buy, sell, and procure purchasers, and generally to act as broker or agent.

Such a company if managed properly can do a vast amount of good both in developing the South and correcting the difficulties so often found in effecting a perfect title to its lands. It is not necessary at the present moment to enter into the possibilities which such a company can accomplish. Its manager, Mr. Arthur, will be recognized as a gentleman through whose influence and remarkable ability Middlesborough, Kentucky, and some of the adjacent small towns were started and carried on. In a recent issue of a Southern publication there is a reference to this company and to Mr. Arthur, which is we believe altogether unjust.

If Mr. Arthur were a dishonorable man he would certainly not receive the confidence and support of the men who constitute the board of directors of the Southern Immigration, Land and Title Company. That Mr. Arthur is a man af remarkable energy and of sanguine temperament is well known, but we have never heard it intimated that any of his acts were dishonorable, and recognizing Mr. Arthur's eminent fitness, great experience and unusual ability for preparing and executing the work which this company proposes doing he has been made its general manager and will carry out under the direction of the executive committee, such plans as have been approved by the executive committee or the board of directors of the company. These are not in the least inclined to promote "booms," but are careful, conservative and yet progressive business men and under this combination the business of the company should and we believe will be conducted in a manner that will be a thoroughly safe and profitable investment for its clients, protecting them from the very familiar pitfalls of the "boom towns" and will prove of the greatest benefit to the South in promoting legitimate development of its industries.

The editor of the "Engineering and Mining Journal" has accepted a place on the Executive Committee of the board of directors of this company, and as the readers of the "Journal" well know, he is and always has been utterly opposed to "booming" practices, should unsafe methods or acts prevail in the new company his resignation as well as that of others of the officers of the company will be promptly made, and the reasons therefor be made public.

Prudently managed this company may become an extremely useful intermediary between those who have capital to invest and those who can offer it good inducements in safely and legitmate profits.

NEW PUBLICATIONS.

THE COOLGARDIE GOLDFIELD, WESTERN AUSTRALIA. By Albert F. Calvert. London, England; Simpkin, Marshall, Hamilton, Kent & Co. Pages 114; with map. Price (in London) 1 shilling.

This little book is chiefly a compilation of newspaper and other accessible accounts in relation to the new Coolgardie goldfield, of which so many wonderful stories have been told, and about which so little is accurately known. The compiler evidentty believes in the new field, not from personal examination, but because the balance of testimony seems to him to be in favor of its value. He has given us nothing new or of any scientific or positive value, probably because no such material was to be had. The best that can be said of his book is that it is convenient and will serve a certain purpose for a time; but its value is slight, and it will be superseded before long.

DIRECTORY OF THE IRON AND STEEL WORKS OF THE UNITED STATES; TO WHICH IS ADDED A COMPLETE LIST OF THE IRON AND STEEL WORKS OF CANADA AND MEXICO. Compiled and Published by the American Iron and Steel Association. Twelfth Edition. Corrected to March 1st, 1894. Philadelphia; The American Iron and Steel Association. Pages 292. Price, $5.

The new edition of the biennial directory bears witness again to the care and industry of the compiler. It is the most nearly complete which the American Iron and Steel Association has yet published. There can be no criticism on its contents, since it is not only the most nearly complete—it is the only directory of the kind; but some notes upon the changes shown in its pages since the edition for 1892 was published will be of interest. Taking first the blast furnaces, we find that in the 1892 directory 569 active furnaces were reported; in the new directory 519. In the two years 16 new furnaces have been erected and 66 furnaces abandoned. Notwithstanding this decrease of 50 in number, the annual capacity has increased from 14,550,708 gross tons to 16,271,027 gross tons, an average capacity of 31,351 gross tons, against 25,574 in 1892. The number of charcoal furnaces in 1892 was 138, this year 118, a decrease of 15%, against a decrease of 7½% in the number of furnaces using mineral fuel. Of the 66 abandoned furnaces, 20 are in Pennsylvania, 11 in New York, 7 in Ohio and 16 in the South; the others scattering.

There are 487 completed rolling mills and steel works described in the directory: in 1892 there were 440. In the interval, 57 new mills have been built, 1 revived and 31 abandoned. Counting each double furnace as two, there were 4,715 puddling furnaces attached to rolling mills, in January of this year, a decrease of 405, or 8%, from the same month in 1892. This is the first edition of the directory that has noted a drop in the number of puddling furnaces; the reason is found in the steel statistics which follow. While the number of Bessemer steel plants is now 43, or three less than in 1892, four new plants having been built and 7 burned or abandoned, the converting capacity has been increased from 5,857,143 gross tons of ingots and direct castings to 7,740,900 tons, or over 32%. There are now 81 open hearth steel plants in the country and 1 building. Fifteen new plants were built in the two years and 5 burned or abandoned. The present capacity in ingots and direct castings, of these plants, is 1,740,000 gross tons against 1,383,929 tons, in 1892. The manufacture of basic steel is still practically confined to four plants in Pennsylvania. No progress has been made in the South. In crucible steel some advance has been made, there being now 48 completed plants and 1 building, against 45 completed and 1 building two year ago.

Among the miscellaneous statistics we find that 79 rolling mills and steel works use natural gas as fuel, 57 of them being in Pennsylvania, 5 in Ohio and 17 in Indiana. Two plants are also under construction in Indiana and 1 in West Virginia which will use gas when completed.

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 on another page of the Journal.

Bulletin of the United States Geological Survey, No. 86. Correlation papers. Archaean & Algonkian. Washington; Government Printing Office. Pages 549; maps,

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.

Failure of the Harveyized Plate.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Regarding the failure of the Harveyized nickel-steel plates, which was recorded in your issue of May 26th, I have always thought that such a process, which requires a very strong heat during a long time, modifies the molecular structure of the steel, especially when the plate is thick, and can change a tough steel into a brittle one. In following out that idea I looked for a process to shorten the time necessary for carburizing, and after some research found that electricity would answer my purpose, the process being that described in your issue of January 20th. I demonstrated in that the possibility of using a very light electric current of two volts of bringing carbon from a carbon anode into a heated cathode steel plate surface. This might settle the question of time in the Harvey process, but unfortunately the carbon does not get a chance to penetrate into the interior of the plate, and accumulates in a thin layer along the surface, which frequently becomes so carburized that it will melt. This practical difficulty I was unable to overcome, but I think that in the future my principle may be worked out. At all events the Harvey process cannot be regarded as a complete success for thick plates, and armor-plate makers are now looking for other new processes, of which it is to early too speak. JULES GARNIER.

14 RUE DE BERLIN. PARIS, June 5, 1894.

The Spelling of the "Mesaba" Range.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: It is with pleasure that I notice an inquiring turn of mind on the part of the "Engineering and Mining Journal" (June 2d, 1894) respecting the spelling of the word "Mesabi." There never was any difference of practice in the spelling of the word until the organization of the mining companies and railroads began, when a sort of haphazard practice was instituted, due to the ignorance of the clerks or lawyers who were called upon to write the charters that suddenly sprang into demand. Charles Whittlesey and J. N. Nicollet established the spelling which ought to have been followed generally, and which was adopted in the reports of the Minnesota Survey, and has been followed unvaryingly since we began to examine the region. Recently the United States Board of Geographical Names have had the question before them, the various spellings being nearly or quite a dozen, and have decided that the spelling "Mesabi" is the correct method. I trust that this action, with the aid of such journals as yours, will be widely published, and that very soon there will be a unanimous reform in respect to this much abused word.

You say: "The prominent elevation which gave the range its name is frequently called 'Missabe' Mountain." But in that you are wrong. The "mountain" on which the "Missabe" Mountain Mining Company is located is no mountain at all. Indeed it rises but little above the surrounding country, except toward a drainage course which lies alongside and brings the region in general into relief, and it had nothing to do with the naming of the Mesabi range. The "Mesabi" range proper is one of gabbro rock, carrying much titanic ore, but not developed. The late ore discoveries are along the northern part of this range, in its eastern part, and early in the history of iron ore in Minnesota the term was transferred to them. As the gabbro range separates from the range of the iron ore deposits, westwardly, the term ought not, strictly, to have been continued in its application to the iron range. But since it is well established it will have to be accepted, but with the understanding that it means only a belt of iron deposits—not a range of hills.

MINNEAPOLIS, Minn., June 5, 1894. H. N. WINCHELL.

The Mineral Industry, Vol. II, 1893.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Second annual volume of "The Mineral Industry" received. We are much pleased with it. WM. B. POLLOCK & CO.,

YOUNGSTOWN, O., June 6, 1894. Manufacturers of Steam Boilers.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Allow me to compliment you on the fine appearance of Vol. II. of "The Mineral Industry," and I have no doubt that it is as valuble as was Vol. I. JOHN C. F. RANDOLPH.

NEW YORK, June 6, 1894. Consulting Mining Engineer.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We beg to acknowledge receipt of "The Mineral Industry," for which accept our thanks. We consider it a valuable book of reference.

HENRY HEIL CHEMICAL COMPANY,
Importers and Manufacturers

ST. LOUIS, Mo., June 6, 1894. Chemical Apparatus.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Volume II. of "The Mineral Industry" series has come to hand. . . . The brief examination of the volume that I have been able to make satisfies me as to the timeliness and value of the work that you have in hand. Its merit exceeds my expectations.

EDWARD ORTON,
Department of Geology, Ohio State University.

COLUMBUS, O., June 14, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: This work is so comprehensive that I can only wonder at the enterprise that conceived such an undertaking, and the skill and perseverance manifested in carrying it into effect. It must take its place as a "text-book" of statistics and general information regarding all departments of mineral industry, and will be indispensable to every person engaged in conducting such industries, or the branches of business depending upon mineral products. JOHN STANTON,
Treasurer Atlantic, Central, Wolverine and Allouez Mining Companies.

NEW YORK.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The second volume of "The Mineral Industry" came yesterday. It is truly a wonderful volume, with a wealth of information. Allow me to congratulate you upon it. I do not see how you have managed to gather in so short a time so many new and valuable facts. The work is certainly a monument to the industry of yourself and staff. I have examined only the chapters on lead and zinc critically, and even these not exhaustively; but I find they contain much which is of direct use and interest to me in connection with our report on lead and zinc.

ARTHUR WINSLOW.

ST. LOUIS, Mo., June 13, 1894. Geologist and Mining Expert.

THE AMMONIA MOTOR FOR STREET CARS.

The Railway Ammonia Motor Company has recently had built at the works of the De La Vergne Refrigerating Machine Company in New York a motor car upon its system, and a trial of this car was had at the De La Vergne works on the afternoon of June 19th. The car is about the size of an ordinary horse or trolley car, and about one-half of its space is occupied by the motor. The general principle of the motor is well known. Anhydrous ammonia in this car is charged in a reservoir, which is surrounded by a tank filled with hot water. From the reservoir it passes into the cylinder, where it acts on the piston expansively, precisely as steam does. The exhaust from the cylinder is conveyed into the water-tank, where the ammonia is condensed and can afterward be recovered, the inventors claim, with very small loss. In the trial made this week, the reservoir was charged until the pressure was about 150 lbs., and the car was run about a mile backward and forward before the pressure ran down to 100 lbs.

As before stated the use of ammonia in place of steam or gas has been frequently discussed and the principles are well understood. The main question after all is one of relative economy, and where the circumstances are such that the ammonia can be cheaply made and supplied, the system could be well applied. It can be used in cities where a steam motor would not be permitted and it presents the advantage which any separate motor does over an electric or cable system where a failure at the central power house will stop the entire system. In the present case it is to be regretted that the ammonia motor had hardly a fair trial. The cylinders are apparently too small to work the motor and a trailer or tow-car, while the mechanical arrangement of the engine is not good, and the power is transmitted to the axle through an intermediate shaft and gearing, the latter always objectionable in a street car. With a better design of engine, and with cheap ammonia the motor may be able in many places to compete successfully with the electric road.

Steam Boilers in Prussia.—A recent report published in the "Zeitschrift" of the Upper Silesian Mining Union contrasts the number of boilers in use in Prussia in 1893 with a similar return for the year 1879, showing the changes made in 24 years. According to this statement there were in use in 1893 a total number of 68,531 boilers, having a total heating surface of 2,775,957 sq. m., as compared with 37,654 boilers, with a total of 1,357,047 sq. m. in 1879. Thus, while the number of boilers have not quite doubled in 24 years, the heating surface and capacity have somewhat more than doubled. The average heating surface per boiler increased from 36·04 sq. m. to 40·51 sq. m. The statement includes stationary boilers only, and not those of locomotives or steam vessels.

Of the boilers reported in 1893 there were in use in mines and salt works 13,748; in stone and clay industries, 3,533; in metal workings, 2,406; in machine and tool works, 2,363; in the chemical industry, 1,818; in woodworking, 3,549. The largest class of boilers seems to be those used in mining, which show an average of 63·62 sq. m. heating surface; the smallest those used for agricultural purposes, which have an average of 13·01 sq. m. only.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

SUPREME COURT OF THE UNITED STATES.

When Vendor's Lien is not Waived.

Here one holding an option to purchase certain mines, on which partial payments had been made, procured the organization of a company to purchase them, with power to increase its capital. Afterwards he and the vendors agreed that he should at once pay an additional portion of the purchase money, when they would register the titles of the mines in the name of the company, "free from all charges and incumbrances"; that they should retain control of the property until all the payments should be completed; and is was agreed that stock of the company should be transferred to a trustee, as security for the remaining payments. According to this agreement the vendors delivered a deed containing a covenant against incumbrances. It was held that the lien for the unpaid purchase money was not waived, not being included in the agreement to convey free of charges and incumbrances, and there being nothing to show that the vendors relied alone for their security on the deposit of stock.—Slide & Spur Gold Mines vs. Seymour, Supreme Court Report, 842.

Liability for Breach of Contract.

A contract by which parties agreed to mine ore from a mine by the caving system gave the owner the right of terminating the contract whenever he should decide that such system of mining was "prejudicial to the future welfare and development of said mine." This gave the owner no right to arbitrarily terminate the contract, and, having stopped the parties from continuing the work, without even pretending to have determined that the system would be prejudicial, he was liable in damage for breach of the contract.—Anvil Mining Company vs. Humble, Supreme Court Report, 876.

Construction of Mining Contract.

A contract provided that the contractors should mine for the owners, at so much per ton, the iron ore contained in the first level of its mine, such ore to contain at least 56% metallic iron. Subsequently the parties stipulated that the contract should extend to the ore contained in the second and third levels, "with the exception that the merchantable iron ore under this contract shall contain at least 58% or upward of metallic iron." It was held that the 58% applied only to the ore in the second and third levels.—Anvil Mining Company vs. Humble, Supreme Court Report, 876.

When Prospective Profits in Mining Are Not Speculative.

Prospective profits in mining ore from a certain level at so much per ton are not conjectural and speculative, so as to prevent recovery, when the evidence shows the cost of past mining, the condition in which the mine was left, and, while not showing with certainty the amount of ore remaining in the level, is yet sufficient to enable the jury to make a fair and reasonable finding in regard to it.—Anvil Mining Company vs. Humble, Supreme Court Report, 876.

ABSTRACTS OF OFFICIAL REPORTS.

MONTANA MINING COMPANY, LIMITED.

The report of this company for the six months ending December 31st, 1893, shows that during the half year there 32,553 tons of ore worked which yielded 9,728 oz. gold and 95,855 oz. silver. The coinage value of the bullion was $324,726, but the amount actually realized was $256,845. The difference realized from coinage value was 2·38% on the gold and 51·02% on the silver. The highest price obtained for silver was 75¼c. per oz., the lowest 68c., and the average 71½c., against 82¾c. for the first half of 1893. Of the amount realized for the bullion, the gold supplied 76·42% and the silver 23·58%.

The ore crushed showed an average yield of 0·299 oz. gold and 2·345 oz. silver per ton. There were 60 stamps at work in July, 90 in August, 110 in September and 90 for the remaining three months. The total yield and the expenses were as follows:

	Total.	Av. per ton.
Bullion produced, coinage value	$324,726	$9.98
" " realized value	256,845	7.89
Working expenses	$187,032	$5.74
Retimbering No. 1 shaft	2,430	0.08
Prospecting work	46,354	1.42
Other charges	9,939	0.31
Total expenses	$245,755	$7.55
Balances	$11,090	$0.34

As stated above the realized value of the bullion was $256,845, and the mine expenses were $245,755, leaving a balance of $11,090. From this must be deducted $5,597 for interest, cost of law-suit, etc., leaving a balance of $5,493 for the half year. Adding transfer fees, etc., and deducting charges of London office, the final result was a loss of $3,637 for the year.

The report of Managing Director R. T. Bayliss refers to the discovery of the new Castletown ore-body, which all the explorations so far made point out as a vein independent of any yet worked.

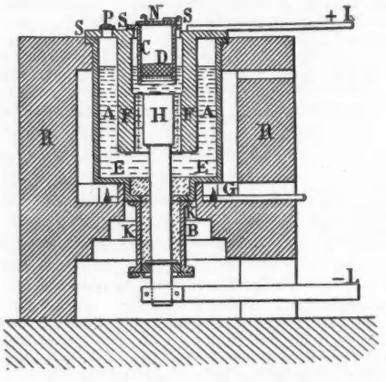
With regard to litigation and general affairs Mr. Baylis says: "There has not been any important change in the aspects of the suits pending, with the exception that we have instituted a suit in equity against the St. Louis Mining and Milling Company and Charles Mayger to enforce the conveyance of title to the 30 ft. strip of the Nine Hour Claim known as the 'Compromise Ground.' This protracted litigation is undoubtedly a great source of annoyance and interference with our legitimate operations, as we are precluded, pending the determination of the points at issue, from working in our own ground within the area covered by the pretended rights of our own opponents.

"With regard to the immediate future, after a careful examination of the mine, and having due regard to the importance of the new Castletown and other developments of the past six months, I do not feel justified in making any considerable increase in the monthly output during the current half-year. It would be possible, unquestionably, to make a considerable profit during this period, but such a result could only be obtained now by an excessive extraction of ore from the new discoveries, and at the expense of development work, which, at this juncture, would be a most injudicious policy to pursue. On the other hand, the present appearance of the mine, and particularly the encouragement for further exploration on the new Castletown vein, warrants the belief that if the surplus earnings during the current half-year are devoted to a liberal scheme of development, our position will be strengthened to such a material degree, that the utilization of a portion of the profits thereafter made, for other purposes, may become a matter for your consideration."

RECENT IMPROVEMENTS IN MAKING SODIUM AND POTASSIUM.*

Caustic soda or potash melted at a temperature as low as possible is decomposed in the Castner process by an electric current. When the temperature is too high the power of the bath to absorb the metal and oxygen increases, and practically no decomposition is produced. In consequence the mass ought not to be heated to a temperature greater than 20° beyond its melting point; at the same time it is necessary to use prompt means to separate the metal rapidly from the molten bath.

The apparatus shown in the illustration consists of an iron pot or crucible A, placed in a masonry frame R. In this the caustic soda is melted by the heat obtained from a gas burner G. The crucible is provided with one or more openings B, arranged to receive the negative electrode H, of metal, the space K being filled with the caustic soda which holds H in position. A tubular reservoir of iron C, provided with a cover N and a cylindrical piece of metal M attached to the lower ex-



THE CASTNER ELECTROLYTIC FURNACE.

tremity, is suspended above the electrode. This metallic tube which surrounds H remains in position between the negative electrode H and the positive electrode F. The opening P is arranged for the escape of gas and for the introduction of a thermometer, while S is an insulator of proper material. The current is carried by I and L. The dimensions of the electrodes and their distance must be proportioned according to the force of the current. If the electrodes are larger than is strictly necessary, the elements may be absorbed by the melted bath and recombine, with a waste of the electric energy. On the other hand, if they are too small the resistance will increase and the bath will become too much heated just at the time when a high temperature will be injurious to the action desired.

When decomposition is produced the free metal rises and floats on the surface of the caustic bath C, from which it is taken out by the aid of an apparatus somewhat similar to a skimmer, finely perforated in such a fashion as to permit the caustic soda to flow back while the metal remains in the ladle. The caustic soda is added from time to time to the bath in such a way that the operation goes on continuously and without interruption.

A Heavy Blast.—A blast of 1,100 lbs. of dynamite in 27 holes was made recently at a quarry near Providence, R. I., blowing off the face of a cliff and dislodging about 10,000 tons of stone, some of the blocks weighing nearly 25 tons. The holes were 20 ft. deep, and the work of drilling is said to have cost $1,000 with $250 more for the explosive.

Pit Props in France.—The use of iron or steel pit props instead of wood is becoming very general in French coal-mines. The initiators of the movement were the Societe de Lievin in the north and the Societe de Rochebelle in the center of France. Since 1879 the first-named company has used props of double T iron weighing 15½ kilogs. per meter. Many comparative tests have been made between these iron pit props and those of wood, which show that the latter have to be renewed twice as often as the former.

Gas Consumption in Paris.—At the general meeting of the Compagnie Parisienne d'Eclairage et de Chauffage par le Gaz the report stated that the volume of gas consumed in Paris and neighborhood during 1893 was 303,496,850 cubic meters—70,979,625 thousand cubic feet—less by 5,404,088 cubic meters—190,818 thousand cubic feet—than the quantity consumed in 1892, which had one day more, being leap year. Allowing for this fact, the diminution in the consumption is not nearly so great as that noticed in London, and bore chiefly on the second half of the year, when there were so many fine and hot evenings. While the use of Auer incandescent burners increased the number of subscribers, it brought about a diminution in consumption. The use of gas for cooking, heating and motive power is greatly extending, the ratio of day consumption to the total consumption having increased from 27·35% in 1892 to 28·71% in 1893.

* Abstract of article in "Le Genie Civil."

DISTRIBUTION OF ELECTRICAL POWER.

Specially written for the Engineering and Mining Journal by W. H. Adams.

The general dissemination of practical knowledge relative to installation of power plants at Niagara Falls and other locations within the year past has awakened great interest among business people, and definite information as regards the transmission and utilization of power from cheap sources of supply, and for results or details which come only from full discussion by professionals and laymen have been eagerly looked for.

It is not too much to say that electrical distribution of power will very soon occupy the attention of capitalists generally, the men who are usually first to perceive values as practically demonstrated.

There is no field which promises so large returns for capital judiciously invested, and that such a fact is already grasped by the promoters of enterprises, foreign and domestic, has been brought plainly to my notice of late by a compilation of the industries which may be classed as purely electrical power plants, and which have been so uniformly successful as to direct close attention to methods of installation made use of by independent engineers upon varying conditions and differing problems.

It is the study of these practical examples which enable us to choose successes for our own individual work, and illustrative of the most prominent working plants. (The Niagara Falls plant has been so fully discussed within a month that I do not deem it necessary to mention it here.) The presentation of the following data, it is thought, will be appreciated:

COMPAGNIE DE L'INDUSTRIE ELECTRIQUE GENEVE, SWITZERLAND.

Four hundred H. P. transmitted 20 miles by continuous currents, potential between 6,000 and 7,000 volts.

One 400 H. P. turbine under fall of 14 meters revolves on vertical shaft at 120 revolutions per minute and drives, by means of bevel wheels and pinions, two dynamos, placed one on each side. Commercial efficiency of the dynamos reaches 93%, with a weight less than 7½ tons.

Commercial efficiency of the installation from shaft of the turbine to the motor shafts exceeds 75% at full load.

Bare copper conductors are used in line construction, seven millimeters in diameter, the line being entirely aerial through mountainous country between Frinvilliers and Bieberist.

A plant at Oynuax, France, has been working satisfactorily for some time with two turbines of 150 H. P. each. A generator of 105,000 watts capacity at 2,000 volts is directly connected to each turbine.

Distance between generating and receiving station about eight kilometers, and 76% efficiency is obtained in the transmission.

At Chambery 2,000 H. P. is about being installed with waterfall 2,040 ft. high. There are to be seven alternators, each of 120 kilowatts at 5,000 volts.

The two waterfalls, about 23 miles from Christiania, Norway, are about to be utilized for power transmission, at a total cost of $1,500,000. The voltage will not exceed 20,000 to be carried on bare wire on poles carefully guarded over the entire distance.

The Portland General Electric power plant, at Oregon City, Ore., 12 miles from the city of Portland, on the Willamette River, will install 12,000 H. P., using 20 Victor 42-in. and 20 Victor 60-in. turbines under 30 and 48 ft. head. Many new features in three-phased transmission are promised for this plant, one-half of which is now being installed for service during the coming year.

In the Baltic mill, on the Shetuckut River about five miles above Taftville, Conn., the General Electric Company has lately installed a three-phase power transmission plant of 1,500 H. P., using three double 42-in. horizontal turbines, developing 800 effective horse power each at 157 revolutions per minute, and one double 27-in. turbine developing 300 H. P. at 244 revolutions per minute.

The efficiency is just 80% from power applied to dynamo pulley to delivery at motor pulley at Columbia, S. C. The Columbia Cotton Mills Company is about starting a plant of 1,400 H. P., using two pairs of 48-in. Victor turbines on a horizontal shaft and a single 24-in. turbine for fire pump.

The 48-in. turbines are connected together, and at each end are direct connected to a generator of 700 H. P. capacity. This is the second instance in this country where an entire cotton mill is driven by electricity.

The generators, made by the General Electric Company, weigh about 100,000 lbs. each; the armature is 10 ft. in diameter, 500 kw. capacity, and operates at a speed of 108 revolutions per minute.

Concord Land and Water Power Company, Concord, N. H., has utilized 2,000 H. P. of the 5,000 H. P. furnished by the new dam located at Sewall's Falls. Horizontal turbines are used, with draught tubes, thus avoiding gears, the power being transmitted from each pair of wheels to the shafting in the generator room by belts. The shafting is arranged with quills and clutches, in order that any wheel or section of shaft may be run independently of any other. The pulleys used on shafting are extra heavy, and flywheels are being tried for the first time at this location for inertia regulation. Six tri-phased generators are to be installed, two being now in operation, of 250 kw. capacity and separately excited, and run at a speed of 600 revolutions per minute.

The current is generated at 2,500 volts; the line runs to the center of the city, about three miles, where triphased current of a frequency of 50 is delivered to the mains at 2,200 volts pressure. It is then transformed to 110 volts for delivery to consumers, being sold by meter at 20c. per kw.-hour for lighting and 10c. per kw.-hour for power, heating and cooking.

COLORADO.

The Roaring Fork Electric Light and Power Company, Aspen. Pipe line, 500 ft. 16-in., 3,500 ft. 14-in., power plant, 8 24 in. Pelton wheles, 1,000 revolutions under a head of 820 ft., equal to 175 H. P. each; total 1,400 H. P.

The light plant supplies the entire town of Aspen as well as many mills, mines and sampling works.

The power plant supplies 120,000 watts and is used for operating mills, hoists, pumps and tramways within a radius of three to four miles from the generating station. The plant has been in continuous operation for five years with practically no expense in the way of repairs or interruption of the service.

Aspen Mining and Smelting Company's plant: Flume, 1,300 ft. long, head 80 ft.; two 50-H. P. Thomson-Houston dynamos, equal to 100 electric horse power; generating station 6,000 ft. from tunnel entrance. The underground motors are located 1,000, 1,200 and 1,800 ft. from the entrance. Power used for hoisting.

New works of the Roaring Fork Company. Two pipe lines. 2.500 ft. 26-in. pipe, head 312 ft.; 4,300 ft. 24-in. pipe, head 330 ft. Power plant, five 60-in. Pelton wheels, 30 revolutions, 250 H. P. each; total 1,250 H. P. Distributes power five miles distant.

People's Electric Light and Power Company. On Castle Creek, one mile from Aspen. Power plant. Two 5 ft. double nozzle Pelton wheels 300 H. P. each, 240 revolutions, 180 ft. head, also two 3-ft. double nozzle Pelton wheels, 75 H. P. each, 345 revolutions; power and light furnished to mills and mines within a radius of three miles.

Virginius Mine Plant. Pipe line 4,000 ft., head 485 ft. Power plant. Two Pelton wheels, one 5 ft. and the other 6 ft. in diameter, 500 and 700 H. P. respectively; total 1,200 H. P. Electric generating plant 293 H. P. Line 4 miles long. Machinery operated at the mines. Two pumps, one 60 H. P. and the other 25 H. P., one 15 H P. blower, two 60 H. P. motors for running concentrators and stamp mills. Previous to installation of the electric plant the outlay for coal alone was $40,000 at $18 per ton.

Telluride.—San Miguel Consolidated Gold Mining Company's Plant. Power plant: 6 ft. Pelton wheel, 24 in. pipe line 3,900 ft., 320 ft. of head; 1,100 H. P. dynamos, supplying power to three stamp mills, two, three and ten miles distant, and also lights for the town of Telluride eight miles distant. The pole line is 8,800 to 12,000 ft. above sea level. The cost of maintenance, including wages at power plant, was given at $3,060 for the first year. The repair account was $21, occasioned by lightning. Since the introduction of lightning arresters there has been no damage from this cause.

Sheridan & Belmont Company.—Water head, 235 ft.; Pelton wheel, 28 in.; electric circuit, 12,300 ft., furnishing 250 to 300 lights, and two motors of 10 H. P. and 5 H. P.

Belmont Consolidated Mining Company.—Head of water, 670 ft., capable of developing 210 H. P. with a 36-in. Pelton wheel. In the mine are two 30-H. P. motors. Length of line, two miles. Loss between generators and motors, 8%.

CALIFORNIA.

Amador County:

The Gover Plant.—Three-foot Pelton wheel; 340 ft. head, speed 470 revolutions. Works two Dow pumps of 15 H. P. and 20 H. P., handles 200,000 gallons of water per day.

El Dorado County:

Dalmatia Mine.—Eight-foot Pelton wheel. Water head 110 ft.; 100 H. P. generators. Four mile circuit. Actuates three Huntington mills, a 10 stamp battery and a rock breaker; 4,000 tons of ore treated monthly, saving of 60% over steam power. Cost of maintenance 6 to 1 in favor electricity. The line has been extended to the St. Lawrence Mill, three miles from the power station.

Bodie:

Standard Consolidated Mining Company.—Pipe line, 3,000 ft. 15-in., 4 21-in. Pelton wheels, 250 H. P. Line 13 miles to stamp mill and mine. Saving $25,000 a year.

NEVADA.

Virginia City:

Chollar Plant.—Underground plant; water head 1,680 ft.

IDAHO.

Burke County:

Coeur d'Alene Silver Mining Company.—Pipe line, 3,000 ft.; head, 850 ft.; two 3-ft. double-nozzle Pelton wheels. Has replaced all steam machinery at the mine with a saving of $40,000 per year.

WASHINGTON.

Walla Walla Electric Power Plant.—Pipe line, 5,800 ft. 48-in. pipe; two 80-in. Pelton wheels; two A-100 Edison 2,000-volt machines.

The "Electrical World" gives in its issue of May 19th, 1894, an interesting statement made up from a paper recently read in England, relative to costs of electrical energy. We may sum up the values for our present requirements by quoting:

"It will thus be seen that, under the conditions given and assuming the basis of this estimate to be correct, the very lowest figure we may hope to attain for the cost of generating electricity in central stations, and distributing it, is 3·48c. per electrical horse power; that if one station in England should unite all of the minimum conditions of the stations quoted, the cost would be 4·30 cents per electrical horse power, while the average is 5·70 even with an ideal basis for the estimate of maintenance and management. . . . In the line of these figures it seems more reasonable to accept six cents per electrical horsepower (exclusive of capital charges) as the cost of developing electrical energy in the average American station, instead of four cents, the figure most often quoted. This higher figure might apply to even large stations, while for the smaller ones it is probably considerably too small."

One of the most interesting applications of electricity to smelting has been that carried out by Dr. Edward Haussig, of Bahrenfeld, Germany, a full description of which was given in the "Engineering and Mining Journal" on June 9th.

Greek Manganese Mines.—In a recent consular report to the British Foreign Office on the Laurium district of Greece, Mr. James Boyle says that the production of manganese ore in that district amounted in 1893 to 178,098 tons. He adds: "New discoveries of manganese ore are making it very abundant. While the phosphorous quality of the ore seems to prevail, pure ore is also easily obtained in many mines. Attention should also be called to the fact that the best of these ores is often slightly impregnated with arsenic, owing to their natural contact with carbonate of lead, which is quite as objectionable as phosphorus."

THE GOLD MINING INDUSTRY IN CANADA IN 1893.

(*Continued from page 558.*)

Work on a stamp mill was begun in July under a contract with Fraser & Chalmers, of Chicago, and on October 14th it was in complete running order. There are four batteries of five stamps each, eight Frue vanners and a large Blake crusher, driven by a 75-h p. Corliss engine of Toronto make. The capacity of the mill is 48 tons per 24 hours, but in practice it does not treat more than 40 tons. No shipments of concentrates have yet been made, as the nearest railway station is 16 miles, and it is understood that the company will put in chlorination plant to treat them on the ground. It is claimed that the run of the mine is about $8 per ton, and that the ore is mined and milled at $2.58 per ton. A plentiful supply of pure water is obtained from a small lake on the location, which being lifted 46 ft. over the bank of the lake, falls 164 ft. to the tank at the mill.

About 25 miles west of Sudbury, in the township of Creighton, gold was discovered four years ago on lot 11 of the fourth and fifth concessions. A syndicate of Ottawa men was formed to develop it two years ago, under the management of J. R. Gordon, M. E., and after several pits had been sunk it was decided to put down a shaft on the vein which gave the best promise. This shaft has now reached a depth of 180 ft. and is in solid ore. Borings made at 160 ft. show it to have a width of 17 ft. The vein matter is a bluish quartz, with flesh-colored felspar, more or less mixed with slate. The vein itself lies in Huronian schist, with a north and south course, and a dip of 45° toward the east. On the footwall the quartz is mixed with iron pyrites, and numerous assays of samples are claimed to go $5 to $15 in gold. A mill was built last year close to the shaft, and fitted up with steam engine, hoisting apparatus, pulsometer pump, etc. An improved Crawford mill was set up toward the close of the year, but its use was discontinued after a short run, pending some changes to be made by the inventor. Several other veins have been discovered in the adjoining township of Fairbank, on the west side of the Vermillion River, and some work has been done upon them.

In the vicinity of Lake Wahnapitae, northeast of Sudbury, several gold locations have been taken up during the past two years, and very rich specimens are shown as having been taken from them. They are distant, however, about 25 miles from the nearest station of the Canadian Pacific Railway, and no regular mining work has yet been attempted. There is a prospect that at least one of the properties will be opened up this year.

In the county of Hastings some activity has been displayed during the past year.

The Belmont mine, in the township of that name, has been explored by sinking a shaft on one vein to a depth of 130 ft., and by openings and cross-cuttings on two or three others. The formation here is diorite, but quite near to the line of contact with the Silurian limestones. The lot is crossed by two veins having an east and west course, and by two others having a northeast and southwest course. One of the latter, composed of banded quartz and slate, has a width of 35 ft. The quartz carries much iron and copper pyrites, and many specimens showing free gold have been taken out. The location was worked for some time last year by Middleton Crawford, inventor of the Crawford mill, and one run of 210 tons realized $9.53 per ton, which, with $295 extracted from the concentrates, made an average yield of $10.93 per ton. The owners were not satisfied with the results obtained from the Crawford mill, and they determined to make other arrangements, the negotiations for which are still in progress. Very encouraging reports on the Belmont mine have been made by Professor Chapman, of Toronto, and Professor Ricketts, of New York. Mr. Carscallen, M. P., holds a principal interest in the property.

On an adjoining lot in the same township, T. D. Ledyard, of Toronto, has sunk a shaft and opened several pits on a vein which has yielded very showy ore The vein is composed of white cellular quartz, with iron and copper pyrites in the cavities, and is about 4 ft. wide. It is in diorite, and dips southward at an angle of 45°. Mr. Ledyard is organizing a company to work the property, and it is expected that a mill to treat the ore will be built this year.

A company of Toronto and Philadelphia capitalists was formed in 1892 to build a mill and test the Walker-Carter process for treating refractory ores. A site was found on the Crow river in the village of Marmora, where cheap water power was available, and by midsummer of last year the mill and plant were completed. The process is specially intended for mispickel ore (large quantities of which are found in that district), and is so contrived that the bye-products of arsenic and oxide of iron may be saved as well as the gold. This is the first mill built to test the Walker-Carter process on a commercial scale. Its capacity is five tons per day. A subliming furnace has recently been added to treat the gray arsenic taken from the cooling chambers, and a very pure article is now produced.

THE NEW STEAMER "PRISCILLA."

The Fall River Line has just added to its fleet a new five-deck steamer named the "Priscilla," which was given a trial trip on June 21, designed by Mr. George Peirce, supervisor of steamers of the Old Colony Steamboat Company.

The dimensions and proportions of the new vessel are as follows:

Length over all	440 ft. 6 in.
Length on water line	423 " 6 "
Breadth over guards	93 "
Breadth of hull	52 " 6 "
Depth of hull molded	20 " 6 "
Drift of water, light	12 " 6 "
Registered tonnage	5,398

The contract for the boat complete, at the figure of $1,500,000, was given to the W. & A. Fletcher Company, of Hoboken, N. J., who, however, sublet contracts to other companies for most of the construction other than that of the machinery. The double hull of mild steel was built by the Delaware River Iron Ship Building and Engine Company, Chester, Penn., who used for this purpose over 3,910,000 pounds of steel plates, angles, beams and rivets.

The double inclined compound engine of 8,500 H. P., built by the W. & A. Fletcher Company, has practically no centers, thus greatly lessening the vibrations and giving the steamers a remarkably steady motion. There are two high pressure cylinders, each 51 in. in diameter, and two low-pressure cylinders, each 85 in. in diameter, all having a piston stroke of 11 ft. The wheels are of the feathering type, 35 ft. in diameter and 14 ft. face.

There are 10 return tubular boilers of the Scotch type, each having three corrugated furnaces, giving a total grate surface of 850 sq. ft. The boilers are 14 ft. in diameter and 41½ ft. long, constructed for a working pressure of 150 lbs. per square inch, and are arranged for natural or forced draught.

Blowers, furnished by R. F. Sturtevant, of Boston, are used for producing the forced draught and also for ventilating the forward hold and engine room. With the exception of one bilge pump, built by the A. S. Cameron Steam Pump Works, of New York, the pumps used throughout the steamer were made by the George F. Blake Manufacturing Company, New York City.

Nineteen hundred 16 C. P. Edison electric lamps constitute lighting equipment, for which 45 miles of wiring was required. Besides this, 16 miles of wire was used for the 384 electric call bells, and the 610 automatic fire alarms. The General Electric Company has furnished the three large Edison dynamos and have put in all the electric lighting plant.

The new boat is provided with 361 passenger staterooms, 219 cabin berths, and 89 berths for second-class passengers, making it possible to furnish comfortable sleeping accommodations for 1,500 people.

The dining room, situated on the main deck instead of on the lower deck, has the advantage of ease of access and good light. As ordinarily arranged it has seating capacity for 210 persons at one time, but 325 persons can be seated by using the full capacity of the room.

The run of 181 miles between New York and Fall River and Fall River is made in about 10 hours, though, if the service demanded higher speed, the Priscilla could easily cover the distance in 8 hours.

CONVENTION OF SOUTHERN AND NEW YORK BUSINESS MEN.

Through the instrumentality of the Southern Immigration, Land and Title Company, to which reference is made in our editorial column, and a number of prominent business men in New York, among them the following gentlemen: R. T. Wilson & Co., Hon. W. L. Trenholm, J. H. Parker, Abram S. Hewitt, Inman, Swann & Co., Coffin, Altemus & Co., Hubbard, Price & Co., Hopkins, Dwight & Co., Murchison & Co., E. M. Lehman, of Lehman Bros., H. B. Claflin Company, C. P. Huntington, G. M. Sorrel, G. H. Mallory & Co., E. H. Allen, Coates Thread Company, Henry B. Plant, Willis J. Best, W. L. Gullaudear, Samuel M. Jarvis, Roland R. Conklin, Hugh R. Garden, C. C. Baldwin, George Gordon Battle, E. K. Martin, Charles A. Deshon, John Allen Wyeth, John C. Calhoun, Woodward, Baldwin & Co., W. L. Strong & Co., Tefft, Weller & Co., Francis H. Leggett & Co., E. H. Sampson, Col. William P. Thompson, Mills & Gibb, William Steinway, Walter Stanton, Wheelwright, Eldridge & Co., M. B. Fielding, T. M. Ives, Nauburg, Kraus & Co., Bernheim, Bauer & Co., Hauthal, Weissman & Co., Bierman, Heidelberg & Co., Hammerslough, Saks & Co., Banner Bro., George F. Basset & Co., Hall & Ruckel and Peter Mallett —a conference with Southern business men was called in New York City, and met on the morning of June 21st.

The purpose of the convention was to devise means of facilitating business between the two sections and to further interest Northern capital in Southern investments. The early part of the meeting was largely devoted to discussion of what plan should be followed, and upon a resolution the following committee was appointed as to plan and scope: Hugh R. Garden, John Claflin, Stuyvesant Fish, James Swann, Charles A. Deshon, Theodore Frelinghuysen, William L. Strong, Walter Stanton and Samuel M. Jarvis, of New York; Col. D. B. Dyer, Augusta, Ga.; W. H. Edmonds, Baltimore; John H. Hemphill, South Carolina; Dr. H. M. Caldwell, Alabama; Hamilton Disston, Florida; Judge C. E. Fenners, Louisiana, and Bolton Myers, of Virginia. The name of F. B. Gordon, Georgia, was subsequently added. The convention indorsed the proposed permanent exposition at Washington, D. C., a bill concerning which is now before the Senate The proposed Cotton Exposition in Atlanta and the exposition in Baltimore were also indorsed.

During the evening session several addresses were delivered and a permanent committee on organivation appointed as follows: A. B. Fleming, West Virginia; Hamilton Disston, Pennsylvania; Russell A. Alger, Michigan; T. Jefferson Coolidge, Massachusetts; R. H. Edmonds, Maryland; John S. Williams, Virginia; Julian C. Carr, North Carolina; A. C. Haskell, South Carolina; D. B. Dyer, Georgia; D. H. Elliott, Florida; H. M. Caldwell, Alabama; William G. Yerger, Mississippi; Harry Allen, Louisiana; Mr. Gresham, Texas; C. R. Breckenridge, Arkansas; W. R. Nelson, Missouri; H. R. Courtney, Kentucky; I. F. Peters, Tennessee; and the following gentlemen from New York: John H. Inman, John Claflin, Stuyvesant Fish, Charles A. Deshon, Theodore Frelinghuysen, S. M. Jarvis, Hugh R. Garden, and Samuel Spencer, the last representing the Southern railroads. Boyd Smith, of the District of Columbia, also was added to the list.

The committee last named has decided to meet in New York, July 11th, to devise plans for carrying out the work intrusted to it by the convention.

British Iron and Steel Exports.—The total value, by the Board of Trade returns, of iron, steel and manufactures of the same exported from Great Britain for the five months ending May 31st was £7,420,417, a decrease of £1,289,248, or 15·7%, as compared with the corresponding period last year. The quantity was 1,011,239 tons, a decrease of 136,025 tons, or 11·9%, showing a greater falling off in value than in bulk. The tin plate exports were 136,437 tons this year, valued at £1,695,960, a decrease in quantity of 43,712 tons, or 24·3%, and in value of £673,958, or 28·50%. Of the tin plates 83,117 tons, or 46·2% of the whole, went to the United States.

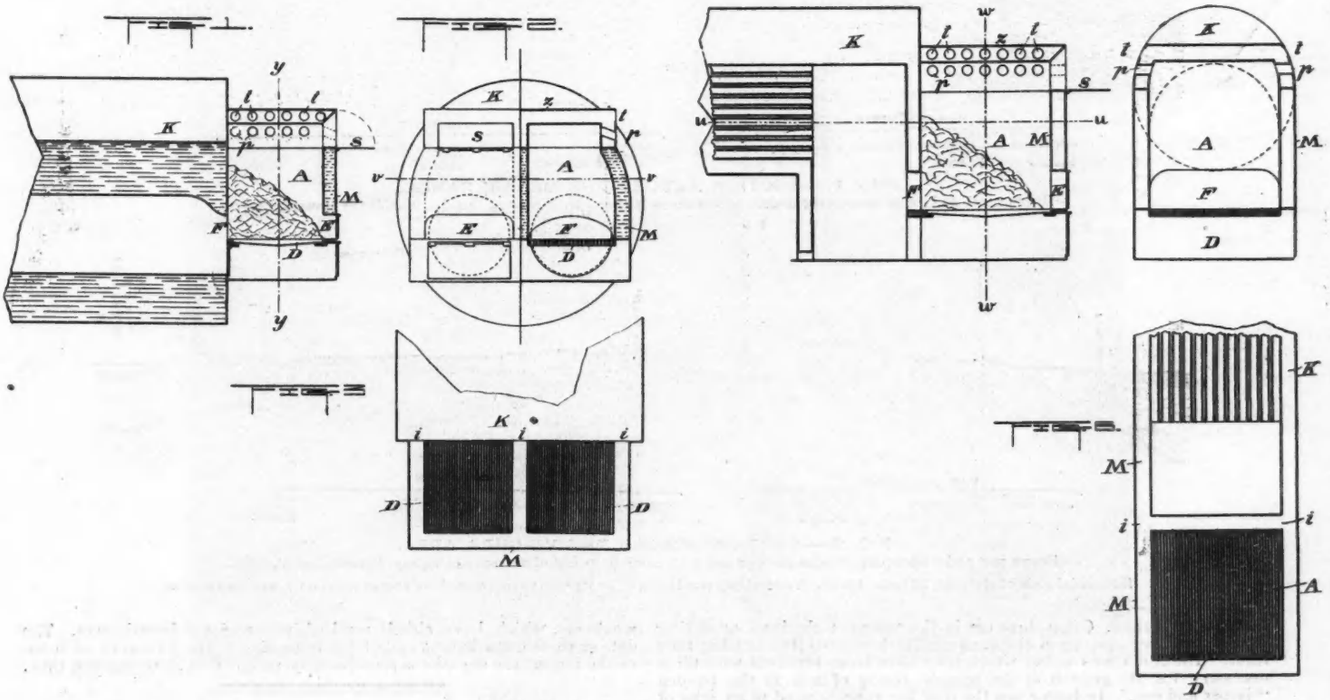
A New Trans-Atlantic Cable.—The steamship "Faraday" sailed from Messrs. Siemens Brothers Works at Woolwich, June 12th, having on board 1,600 miles of the Commercial Cable Company's new cable. She proceeded to a point 150 miles off the Irish coast, where she spliced onto the shore end already laid. She then started for Nova Scotia, where the final splice will be made. The cable, everything going favorably, is expected to be laid by June 30th. This cable is the largest and has a greater carrying capacity than any other ever laid. The tests during its manufacture have been most satisfactory, and the cable has been completed without a single flaw or hitch.

THE MULLER BOILER AND FURNACE.

The accompanying illustrations show a form of boiler recently patented by Mr. Rudolph Muller, of Hamburg, in Germany and England. The application of this plan of construction to a marine boiler has recently been made on the steamer "Grimm," of the Hamburg-American Line; and though it has not been possible to obtain exact figures, the officers of that vessel state that they showed some saving of fuel, as compared with the old boilers, and that there was a notable decrease in the amount of smoke, or unconsumed carbon, given out from the funnels. In the drawings, which are from the patent specification, Figs. 1, 2 and 3 show a marine boiler, and Figs. 4, 5 and 6 one of the locomotive type.

The distinguishing feature of the boiler is the outside furnace or firebox, connected with the boiler proper in the manner shown in the drawings. This furnace consists of a double wall or jacket surrounding a fire-chamber, the latter being closed below by a grate on which the fuel rests and provided above with a cooling cap or cover, the latter serving to prevent the radiation of the heat developed. The interval between the double walls directly communicates with the interior of the boiler, and the outlet opening through which the flames and gases pass to the flues of flame tube or tubes of the boiler is immediately above the grate. The combustion takes place in such a way that the air entering above passes down through the fuel, which latter is also supplied from above, into the combustion zone, which lies directly in front of the outlet opening. The grate only serves as a fuel-bed, and air is not supplied through it, or at least only in a very insignificant degree.

Kin all the figures represents the main boiler, and A a fire-chamber



MULLER'S IMPROVED BOILER AND FURNACE.

which laterally and in front is surrounded by a double mantle or jacket M. The interval between the walls of the jacket M directly communicates with the interior of the main boiler K, so that the water in the boiler through diaphragms i communicates with and fills both. The fire chamber A is closed below by a grate D, beneath which is the ash-pit inclosed on all sides by walls. On the front side below the double jacket an open space is left provided with a cleaning door E, and the double jacketed fire chamber A is closed above with a double-walled cover z in which there are air inlet openings p and t. This cover serves at the same time to prevent the radiation of heat. Through the openings p air enters the fuel lying upon the grate, and through the openings t air circulates in the cover. The latter serves for keeping the cover sufficiently cool. At s is an orifice in the cover serving for introducing the fuel. At the rear end of the fire chamber A, close above the grate D, the outlet opening F for the fire gases is arranged, the fuel being intended to be heaped in such a manner upon the grating that it covers completely this opening F, so that no cold air is allowed to pass to the flues of the boiler, but such air must first pass through the fuel before it arrives at the gas-developing zone, the latter lying at the opening F. In Figs. 1 to 3 where a furnace arrangement for a boiler with two tubes is shown, the fire chamber A is divided in the middle by a cross-wall, being a part of the double jacket M communicating through orifices i with the boiler K.

While the arrangement of the downward draught is peculiar to Mr. Muller, the general form of the furnace in the locomotive boiler is similar to that introduced some years ago by Chief Engineer Verderber, on the Hungarian State railroads, and later by Herr Bork on the Thuringian railroad in Germany. Mr. Muller, however, has substituted a double shell and water-spaces for the single shell lined with firebrick of the Verderber boiler. Whether the advantage gained by the additional direct heating surface will counterbalance the extra cost of the double shell and the difficulties of maintaining circulation, is an open question. The outside firebox, with its opportunites for free introduction of air, and more nearly complete regulation of combustion, certainly presents many advantages.

THE IRON ORES OF THE MESABA RANGE.*

By J. E. Spurr.

The information on which this paper is based was gathered by the writer while in the employ of the Geological Survey of Minnesota. Only an outline of some of the more important results of this study is given here.

The Mesaba (or Mesabi) range in Minnesota may be for convenience separated into three geographical divisions, characterized by sufficient geographical differences: The Western Mesaba, which extends from the Mississippi River to the Embarras lakes, on the eastern edge of range 16 W.; the Eastern Mesaba, reaching from the Embarras lakes to the region of Gunflint Lake; and the International Boundary division, which stretches from Gunflint Lake east to Pigeon Point. In the Western Mesaba region lie all the mines at present worked, and it is to this section alone that the observations made in this paper are intended to be strictly applicable. The chief ore-bearing district lies between the Mesabi Chief mine on the west and the Hale on the east, a distance of about 40 miles.

The lowest rocks of the region are greenish schists, which belong in the Keewatin formation.† These schists are cut by a great belt of intrusive granite, which runs the entire length of the iron-bearing district and usually forms the summit of the divide between the Mississippi and the Red River basins. Unconformably upon these older rocks lie the gently dipping Animikie strata. There are three chief members of the Animikie in the iron-bearing regions, as definitely known at present. Lowest is a quartzite; upon this lie the iron-bearing rocks; and finally there is a great thickness of black slates. The base of the slates is calcareous, and becomes in places an impure limestone, often dolomitized or sideritized. The iron-bearing rocks occupy a definite and constant horizon between the quartzite and the slates. They are marked by peculiar and characteristic features, and have always been recognized as invariably associated with the ore deposits. They seem to have a nearly uniform thickness, which may be estimated as between 500 and 1,000 ft., with an average of perhaps 800 ft. The relationship of these several formations is shown by the section forming Fig. 1.

The ore bearing region of the Western Mesaba affords a peculiarly valuable field for investigation, for the rocks have suffered only very slight disturbance since the time of their deposition. The general structure is a monocline, which dips slightly east of south, at a gentle angle which averages perhaps 10° to 15°. On the eastern end of the Western Mesaba there has been some slight additional disturbance. There is evidence leading to the belief that a wedge-shaped area eight or ten miles in length, lying mainly in township 58–17, has been faulted up above the surrounding rocks, the amount of vertical displacement being perhaps 500 ft. This may be called the Virginia area, from the town of that name which is in the vicinity. To the east of this upthrust area there is, as far as the

* Published by permission of the State Geologist of Minnesota. Abstract of article in the "American Geologist."

† The terms Keewatin and Animikie are used by the Minnesota Survey to distinguish formations which, in general, correspond to the Huronian of the United States Geological Survey, the Animikie corresponding to the upper, the Keewatin to the lower Huronian.

Embarras lakes at least (a distance if five or six miles), a gentle folding of the strata, which appears to have been contemporaneous with the faulting. These disturbances may be provisionally believed to have occurred in later Keweenawan or post-Keweenawan time, and to have been contemporaneous with the monoclinal tilting. Fig. 2 is a section from west to east across these faulted and folded strata.

The rocks of the iron-bearing member exhibit great diversity. The most common sort is massive and siliceous, and is thickly spotted with small round darker areas, consisting mainly of iron oxide. From this there are many deviations; and often the different varieties cannot be said to resemble one another in any way, either in the field or under the microscope, or on chemical investigation. But specimens are constantly found which show one variety changing into another. Thus it soon became evident to the writer that all the rocks of the iron-bearing member, however different, were closely allied in origin, and were probably derived from a single primitive type. This same principle has already been shown by Irving and Van Hise (in the Tenth Annual Report of the United States Geological Survey) for the Penokee-Gogebic rocks.

It is evident from observation that the bands of iron owe their existence to previously formed zones of weakness. From the narrow band there may be found every gradation upward in size, till the body of iron becomes large enough to merit the name of an ore deposit. These ore deposits are often very large, being occasionally nearly a mile in their longest extent. The ore is usually hematite, loose and granular, and when of best quality is of a blue or brown color. Typically there is a portion, near the surface, which has become hydrated into yellow limonite or göthite. Often these ore bodies rest upon the basal quartzite; often again they rest upon the hard and little-altered iron bearing rock itself. The conditions under which they form seem identical with those necessary for the growth of the narrow bands of iron in the banded "jasper and ore." In both cases the iron has concentrated in an area of especial weakness. In the case of the band the cause of the small area of weakness has already been explained. In considering the cause of the formation of the ore bodies, it is only necessary to find the cause of the development of so great regions of weakness.

The richest ore-producing region thus far developed is that which lies in township 58-17, and surrounds the Virginia area, following the supposed fault lines. Immediately east of these lies another rich group, near Biwabik, in the somewhat disturbed strata adjacent to the upthrust area. At the Mountain Iron mine there is strong microscopic evidence of a disturbance, probably a fault, while at the other important mines there has not been sufficient exploration to enable one to determine their peculiarities. So the conclusion may be reached that the most important of the ore bodies owe their existence to regional disturbances which have produced large areas of weakness. Faults, especially, are accompanied by the development of such areas, and in folded regions the summits of anticlines, and to a less degree the troughs of synclines, are weakened.

The Eastern Mesaba differs in regard to its iron from the Western Mesaba in that it contains a much larger proportion of magnetite, which is associated with somewhat more crystalline silica. As these peculiarities are associated with the presence of the igneous rocks of the Keweenawan, and since they fade out as the distance from the Keweenawan area increases, it appears probable that, as has been suggested by H. V. Winchell (in the 20th Annual Report of the Minnesota Geological Survey), the advent of these rocks was in some way connected with the magnetic condition of the iron. If this be the case, we must conclude that most of the banded magnetite of the Eastern Mesaba had become concentrated prior to Keweenawan time. But the lack of large ore bodies in this region shows that up to this time the concentration had not occurred on a very large scale. It is probable that the same force which produced magnetization put a serious check upon the separation and concentration of the constituents of the rocks, causing the degree of concentration in that region at the present time to be behind that of the Western Mesaba.

There are upon the Mesaba small patches of Cretaceous rocks, lying upon the Animikie strata. In the area examined, they are chiefly conglomeratic, and the fragments are mainly derived from the iron-bearing rocks. A study of these fragments shows two things; first, that at the time of the formation of the conglomerate there existed hard iron ore in the iron-bearing member; and, second, that much of the rock has been decomposed and has had its iron concentrated subsequently to being taken into the Cretaceous beds. We may conclude that the process of concentration has been going forward since early Keweenawan or pre-Keweenawan time, and there is abundant evidence that it is going on at the present day.

The more important points in regard to the ores of the Mesaba which this paper presents are these:

1. The original rock is probably an altered greensand, in which the iron exists in the form of the hydrous silicate glauconite, a mineral which is supposed to be formed at the present day on moderately deep areas of the sea beds adjoining coast lines, by the action of decaying organic matter upon fine mineral particles derived chiefly from subaerial erosion.

2. The decomposition of this mineral, producing chiefly iron oxide and cryptocrystalline silica, and the concentration of these, together with the various phenomena consequent upon these operations, have produced all the various phases of the iron-bearing rock, including the ore bodies.

3. During the process of concentration, in areas of comparatively free oxidation, iron replaces silica; in areas of extremely scant oxidation silica replaces iron.

4. The great ore deposits are believed to have formed in large areas of weakness, which have chiefly resulted from regional disturbances. The date of these disturbances and of the beginning of the formation of some of the largest ore deposits is provisionally assigned to Keweenawan time.

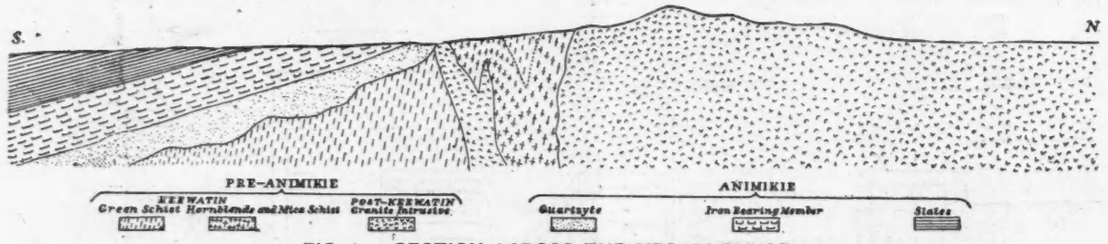


FIG. 1.—SECTION ACROSS THE MESABI RANGE.

Drawn north and south through the middle of townships 58-18 and 59-18, passing through the town of Mountain Iron.

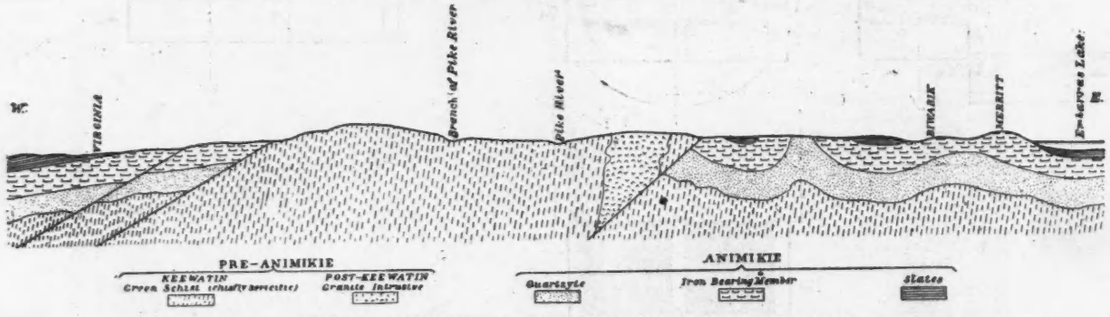


FIG. 2.—SECTION ACROSS THE VIRGINIA AREA.

Drawn east and west through townships 58-16 and 58-17, passing through the towns of Virginia, Biwabik and Merritt.

Horizontal scale of sections, 2-3 inch=1 mile. Vertical representation of strata twice exaggerated; of topography, six times exaggerated.

The Coal Trade of Southern India.—The rail-borne traffic in coal on the Bezwada Extension railway, says "Indian Engineering," shows a large increase in tonnage of coal. On the Madras railways there has been an increase of 13,736 tons carried with an enhancement of Rs. 19,659 in revenue, due almost entirely to the larger consumption of coal at the Kolar gold mines.

Mining Machinery in Honduras.—Writing from Amapala on February 9th to the British Foreign Office, Consul J. Rossner gives the results of his inquiries into the trade relations between Honduras, the United States and Great Britain. He states that, while English products hold their own in most instances, it is in machinery and general ironmongery that the American manufacturers are making the greatest inroads. This is particularly the case with regard to mining machinery, in which the Americans turn out a product better adapted to the work required. In reference to this, Mr. Rossner asks: "Is it possible that our manufacturers cannot make mining machinery that will compete to advantage with like machinery made in the United States? I cannot bring myself to believe such to be the case; but when I see steamer after steamer, month after month, unloading tons upon tons of American machinery at this port, I cannot help believing that there is a business deficiency somewhere on the part of our manufacturers that should be looked into and remedied as quickly as possible. The same is beginning to be the case regarding edged tools. In former years Honduranean artisans were content with almost any kind of an ax, saw, plane, or chisel, providing the price was sufficiently low to please them, but they now begin to demand a better class of tools, and seek quality regardless of price. American edged tools appear to be prominent as regards quality and temper, but Germany is bidding for a share of trade in this line with a stubbornness that bids fair to be successful, while our own manufacturers seem to be content to manufacture what gave them good results in the distant past, forgetting that others, with less facilities, are striving continually to improve."

A LARGE PUMPING PLANT.

The accompanying illustration shows an important pumping plant designed and built by the Stillwell-Bierce & Smith-Vaile Company, of Dayton, O., for the Prosser Falls Irrigation Company, at Prosser, Wash. The plant consists of two 48-in. Victor turbines operating under 12 ft. head, and two duplex power pumps with water cylinders 25 in. diameter and 24 in. stroke. The turbine shafts work through bevel gearing an intermediate shaft, from which again the pump shafts are driven by gearing. The arrangement is shown very completely in the engraving, which is from a photograph. The pumps have a capacity of 6,000 gallons per minute, under a dynamic head of 110 ft., with a piston speed of 60 ft. per minute; but the valve area is large and will admit of increasing the piston speed at least one-third if desired, and there is sufficient power in the turbines for that purpose. The arrangement is such that either one of the pumps can be operated by either one of the turbines, or both together, at the pleasure of the operator.

The plant is now completed and in successful operation. It is located in Yakima County, Wash., and is used for raising water for irrigation purposes.

THE DEVELOPMENT OF CHEMICAL INDUSTRIES IN GREAT BRITAIN.

The development of the chemical industry in Great Britain, a very interesting account of which is given in Volume II. of the "Mineral Industry," is further shown by the annual report for 1893 (just issued) of the chief inspector. Under the Alkali Works Regulation Act, which gives an interesting exposition of the development of old and new processes in the works registered under the act, it is stated that there are now 1,495 processes of manufacture under inspection, as against 1,225 in 1892, and, adding the 208 processes under inspection in Scotland, the total number is 1,703. The total number of registered works is 1,046, of which 101 are alkali and 945 other works, as compared with 100 and 810, respectively, in the previous year. The various processes are classified in the following table:

Processes:	1891.	1892.	1893.
Alkali	69	57	58
Copper (wet process)	17	17	16
Sulphuric acid	211	199	192
Chemical manure	219	214	209
Gas liquor	30	33	35
Nitric acid	93	91	85
Sulphate and muriate of ammonia	348	359	368
Chlorine and bleaching powder	56	48	50
Sulphur recovery	19	22	19
Salt	39	60	51
Cement	94	95	95
Alkali waste	..	..	16
Barium and strontium	..	..	2
Antimony sulphide	..	..	3
Bisulphide of carbon	..	..	5
Venetian red	..	..	15
Lead deposit	..	..	2
Arsenic	..	..	41
Nitrate and chloride of iron	..	..	48
Muriatic acid	25	23	28
Fiber separation	7	7	30
Tar	..	..	118
Zinc smelting	..	..	9
Total	1,247	1,225	1,495

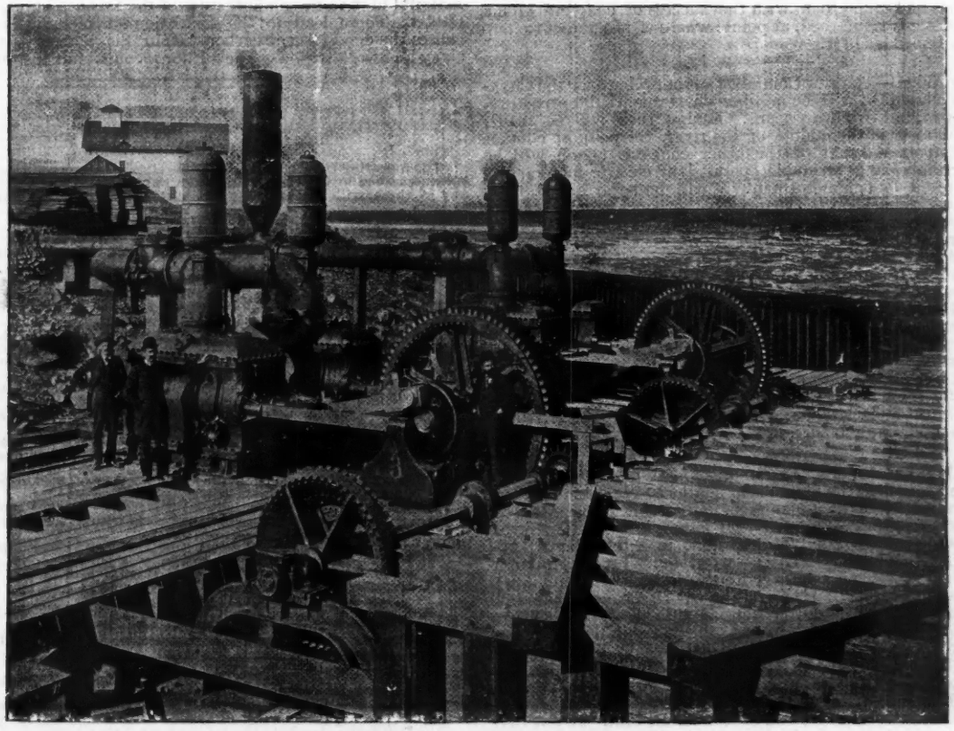
The alkali works proper are gradually diminishing in number, since of the 101 registered under that name in only 58 is the old alkali or soda-making process carried on. "The remaining 43," it is stated, "are so registered because the work done in them comes within the original definition of an alkali work made use of in the Act, though no soda-making process is carried on in them.

"The ammonia process has, however, made steady advance upon that of Leblanc, and, as the adjoining table shows, it has now nearly equaled it in the production of soda. It is, therefore, a matter of surprise to observe that the older process, which has flourished for more than a century, but seemed now to have received its deathblow, has during the last 18 months shown such renewed vitality that during that time five new Leclanc works have been started, all of which are now in operation. The total amount of salt decomposed in the Leblanc and ammonia-soda processes has been, in tons:

	1891. Tons.	1892. Tons.	1893. Tons.
Leblanc process	567,863	519,593	467,562
Ammonia-soda	278,528	304,897	349,609
Total	846,391	824,490	817,171

"It is seen from this statement and from returns given in previous reports, that the total amount of soda made has, since 1890, been steadily declining. In that year the salt employed reached the amount of 855,029 tons. The diminution was last year less than in 1893, and would perhaps have been replaced by an increase if it had not been for the scarcity of coal, occasioned by the long continued strike, which for a time caused the stoppage of many of the works.

"The new alkali process mentioned in the report of last year, proposed by Mr. F. Gossage, of Widnes, as a modification of that of Leblanc, has made some progress, but still waits further development."



PUMPING PLANT FOR IRRIGATION PURPOSES AT PROSSER, WASHINGTON.

In regard to the manufacture of sulphate of ammonia, the chief inspector refers with satisfaction to the improved processes by means of which what was formerly a most offensive manufacture to the neighborhood in which it was carried on, is not only rendered innocuous, but by making possible the further utilization of waste material from gasworks, etc., has greatly increased the production. This amounted in 1893 to 152,762 tons, valued at £2,009,000, a sum, which the inspector states, is the reward for carefully saving that which was formerly wasted or rejected, the mere rejection causing a nuisance. The adoption of new processes for the utilization of by-products is still proceeding, an attempt to manufacture cement from the waste carbonate of lime which remains after the extraction of sulphur from the tank waste of alkali works by the Chance-Claus process being, it is stated, in course of trial. The recovery of sulphur referred to gives employment to a number of works which have come under the operation of the amendment to the Alkali act, that came into force April 1st, 1893. Many improvements in the process have been effected, and about 35,000 tons of sulphur are produced annually when the whole of the apparatus is in operation, but the actual production last year was about 31,350 tons. Something is still required, however, to make the Chance-Claus process completely successful, as about 15% of the sulphur remains in the gases escaping after treatment. Moreover, the whole of the tank waste has not been treated, and there is a danger of a recurrence of nuisances from deposits of the untreated material near some of the works.

In connection with the arsenic works in Cornwall and Devon, some difficulties have been experienced in preventing the escape of considerable quantities of white arsenic into the air or water. A filter of brushwood has been devised which is fairly successful, but a more durable material is required for use in the filtering process. Pollution of

streams has in some districts been caused by the running to waste of galvanizers' dippings, which is the liquor used for the cleansing of sheet iron prior to the process of coating with zinc. This nuisance has now been removed, as it is stated that "recently these liquors have been treated by a process devised by Mr. Thomas Turner, of Birmingham. He allows them to flow gradually upon the hearth of a reverberatory furnace. Here the chloride of iron is decomposed by the heat, the muriatic acid gas is driven off, and is caught in a wash tower similar to those in use in the alkali works."

Some description is given of the various processes for the distillation of tar and pitch, but these differ so widely that no general summary is possible. The inspector refers, in conclusion, to the complaints that have been made of the nuisance arising in the neighborhood of zinc works, which have, in consequence, been brought under the acts. Efforts have been made to prevent the nuisance by collecting and condensing the fumes, and by turning them into high chimneys; both with partial success.

Important Contract for Elban Ore.—The British consul at Leghorn reports that it is believed there that a Middlesbrough firm has entered into a contract for three years for the whole output of iron ore in the island of Elba. The price is believed to be equal to 8s. 6d. to 9s. per ton, delivered at the shipping place. The facts may be as stated, but the figures quoted strike one as being rather high.

Adherence of Cement and Iron.—According to Professor Bauschinger, the adherence between iron and Portland cement is as much as 625 lbs. per square inch. This figure, when taken in conjunction with the fact that cement and iron have about the same rate of expansion per degree of temperature, has had much to do with the success of concrete arches in which the concrete is reinforced, at points where it is subject to tension, by iron rods imbedded in it.

A Double Drawbridge.—The new Columbus street bridge over the Cuyahoga River in Cleveland, O., will be a somewhat remarkable structure, having no fixed span, but two draw-spans. Each of these will be 184 ft. long, and they will meet in the middle of the river, the point of contact of the one being convex and that of the other concave. Each will be supported on a rim-bearing turntable operated by electric motors, and both will be operated by one motorman. It will be so arranged, however, that in moving the bridges the span with the concave edge cannot be moved till after the one with the convex edge has swung and is out of the way. The piers on which the turntables are to rest will be close to the shore, on either side of the river, leaving a wide channel in midstream. The shore edges of the bridges will not rest directly on the abutments, but will be locked into the masonry. The whole structure will have a 20 ft. roadway and a 6-ft. sidewalk on either side. There will be 16 ft. clear headway for teams. Each bridge will be a combination of pin and riveted truss and will be made of steel. Between the piers on which the turntables will rest there will be a clear passageway for vessels of 115 ft. Between the dock line and the south abutment of the bridge on shore room will be left for three tracks of the New York, Pennsylvania & Ohio Railroad, and also for the dock space adjacent to Columbus street, which is at present of no use because inaccessible.

A Roman Find Near Matlock, England.—A very fine pig of Roman lead has lately been found on the moors near Matlock. It weighs about 170 lbs., has an inscription on its upper face, and in all respects agrees with the numerous other pigs of Roman lead found in various parts of Britain. The inscription, divested of ligatures, is P:RVBRI: ABASCANTI· METALLI·LVTVDARES. The last word stands for "Lutudarensis," according to the somewhat arbitrary Roman fashion of abbreviating by omission of final letters or syllables, and the whole means "(the lead of) P. Rubrius Abascantus, of the Lutudarensian mine." Lutudarum, or (as we used to miscall it) Lutudae, is a place somewhere in the lead districts of Derbyshire, near Matlock or Wirksworth, which has produced other pigs of lead labeled MET·LVT, MET·ALL: LVTVD, and the like. Abascantus may be supposed to be the lessee of the mines, which were state property by Roman law. Lead mining appears to have been far the most important of the mineral industries of Roman Britain. It was carried on extensively not only in Derbyshire, but in Flint, Shropshire and on the Mendips, at which latter place the deposits, being on the surface and accessible, were soon worked out, despite a law to restrain production. It is curious that the Derbyshire mines are the only ones in Britain where we can trace private lessees. The pig from all the other mines bear emperors' names; four out of five varieties traceable to Lutudae resemble in general formula that lately found; the fifth bears the name of Hadrian.

Passage of Hydrogen through Palladium.—At the last meeting of the Physical Society of Great Britain, Prof. W. Ramsay, F. R. S., read a paper on "The Passage of Hydrogen through a Palladium Septum, and the Pressure which it Produces." After referring to the analogy between asmotic pressure of solution and the behavior of hydrogen and palladium the author described the apparatus he had used in his experiments, and showed it in operation. A vertical platinum tube provided with a palladium cap is inclosed within a glass vessel, through which hydrogen or other gases may be passed, and outside the glass vessel is a vapor jacket, by means of which a constant temperature can be maintained. The lower end of the platinum tube communicates through a graduated capillary tube with an adjustable manometer, which enables the volume of the inclosed gas to be kept constant. Great precautions were taken for insuring purity and dryness of the gases used. After filling the palladium and platinum tube with dry nitrogen at atmospheric pressure and the desired temperature, hydrogen was passed through the glass vessel. Some of the hydrogen permeated the palladium walls, thus increasing the pressure inside. After some time—usually an hour or so—the pressure attained a steady value, and the total increase was then observed. Experiments were made with air, nitrogen, nitric oxides, nitrous oxide, carbon dioxide, carbon monoxide, and cyanogen in the palladium tubes, and in some cases the hydrogen was diluted with nitrogen. In all cases the maximum pressure of the hydrogen within the tube was less than that of the hydrogen outside the tube.

The Destruction of Blast Furnace Linings.—F. W. Luerman, in "Stahl und Eisen," discusses the question of the lining of blast furnaces. This lining is worn away owing to one or other of the following causes: (1) Actual wear produced by contact with the descending charge; (2) by the action of the constituents of the blast furnace gases, especially of cyanogen or of its salts; (3) by the action of sodium chloride contained in the coke; (4) by flaking owing to the deposition of carbon from carbonic anhydride, caused by the iron particles formed from the iron pyrites existing within the material forming the lining. The first of these only accounts to a slight extent for the wear actually observed, and although the action of the cyanogen of volatile alkaline cyanides is likely to account for a considerable portion of the destruction, yet this still requires experimental proof. The water used for cooling purposes takes up large quantities of cyanides from the walls of blast furnaces, and fused cyanides may even be occasionally observed to drop away from such walls. The third source of wear, the salt present in the coke, is undoubtedly an important cause. Coke ovens are frequently rapidly destroyed by the salt present in the coal coked, the quantity of this salt having in one case, to which the author refers, reached as much as 48½ lbs. in the charge of 6 tons of coal. An examination of the coke recently charged into a blast furnace showed it to contain 0·062% of sodium sulphate and 0·119% of sodium chloride, or for 100 tons of coke nearly 140 lbs. of the former and over 260 lbs. of the latter; and quantities such as these charged daily into a blast furnace would soon exert a marked destructive action on the lining. The fourth cause of wear is a most important one when, as is nearly always the case, the fire-resisting material used in the manufacture of the furnace lining contains iron sulphides. These lead to the formation of metallic iron, which in turn causes the deposition of carbon within the masonry, which then splits away and is destroyed. The author recommends the use of carbon bricks.

PATENTS.

UNITED STATES.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, JUNE 12TH, 1894.

521,147. Breast Wall for Glass Furnaces. William H. Barr, Tiffin, O. A wall having a supporting frame and removable refractory blocks.

521,150. Tubular Boiler. John J. Brown, Baltimore, Md. Combination of steam and water drums with connecting tubes.

521,152. Water Wheel. Charles A. Chase, Houlton, Me. Combination of upper and lower bucket wheels with hollow shafts.

521,164. Tubulous Steam Boiler. Henry A. House and Henry A. House, Jr., Bridgeport, Conn., Assignors of one-half to Robert Rintoul Symon, London, England. Combination of steam and water drums with water-tubes and deflectors.

521,203. Furnace. Thomas E. Caddy, Nottingham, England. Combination of rocking plates and dead plates forming a grate.

521,204. Steam Boiler. John A. Caldwell, Bay Ridge, N. Y. Water-tube boiler with tubes arranged in groups connected by head-plates.

521,283. Coal Cutting Machine. Arthur Greenwood, Leeds, England. Combination of base or carrier, swiveling bed-plate, frame and motor.

521,264. Artificial Stone. Ludwig Grote, Landberg-on-the-Lech, Germany. Composition of chloride of magnesium, acetate of lead, calcined magnesite and a filler, such as sand, gravel, etc.

521,270. Process of Making Resinates of Metals. Franz Pirschl, Brooklyn, N. Y. This process consists in fusing rosin with a metallic oxide in the presence of a flux composed of rosin oil.

521,295. Limekiln. James O'Connell, New York, and George Sniffin, Tuckahoe, N. Y. Combination with a kiln of a boiler in one of the arches, with a chamber and damper for regulating the heat.

521,323. Testing Machine. Louis Schopper, Leipsic, Germany. Combination of tension lever, arm, clamp and graduated scale.

521,329. Steam Generator. David Birdsall, Jersey City, N. J. Combination of water-tubes, headers and steam chamber.

521,345. Explosive and Process of Making Same. Hubert Kolf, Bonn, Germany. An explosive consisting of a nitrate, a carbohydrate, sulphur and an alkaline nitrate.

521,349. Brick Machine. Henry Stuckey, Bucyrus, Ohio. Combination of circular molds, and of plungers operated by rotating cams.

521,365. Regulator for Hydraulic Steam Pumps. Thos. J. Davis, Charlotte, N. C. The regulator consists of a sliding piston valve in the steam inlet, a rotary valve and cross-bar, regulated by a spring.

521,386. Turbine Water Wheel. James M. Parker, McAdensville, N. C. Combination of two concentric wheels and double case.

521,432. Vacuum Pump. Edwin D. Chaplin, Natick, Mass. Pump cylinder with inlet and outlet, closed or opened by a cut-off piston; a main reciprocating piston with valves and passages.

521,442. Tubular Boiler. Jean P. Serve, Lyons, France. Combination of combustion chambers divided into compartments by partitions to distribute the gases.

521,443. Gas Engine. Sylvanus D. Sheppard, Newark, N. J., Assignor to the Backus Water Motor Company, same place. Combination of water-jacketed cylinder, piston and valves, with water passages to cool the cylinders.

521,444. Process of and Apparatus for Analyzing Gases. Edward A. Uehling, Birmingham, Ala., Assignor of one-half to Alfred Steinbart, same place. The method consists in passing the gas to be analyzed through minute apertures, abstracting a constituent during its passage, and using the variation in tension to determine the proportion of the constituent.

GREAT BRITAIN.

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

WEEK ENDING JUNE 9TH, 1894.

10,039 of 1893. Improvements in the Details of the Cars of Aerial Wire Tramways for Mines. J. Pearce Roe, London.

13,708 of 1893. Decomposing Bicarbonate of Soda into Carbonate and Carbonic Acid by Passing Superheated Steam Over it. Sir Lowthian Bell, Middlesbrough.

13,982 of 1893. Hood for the Head and Portable Reservoir for Fresh Air for use in Going into Mines to Rescue the Injured or Sufficated Miners, After an Explosion. C. A. Ash, Newport.

19,530 of 1893. Producing Acid Sulphates of Soda from Residues Left in the Manufacture of Nitric Acid by the Process Patented in No. 16,512 of 1891. R. E. Chatfield, Sewardstone, Kent.

7,412 of 1894. Preparation of Caustic Soda and Nitric Acid by Passing Superheated Steam through a Heated Mixture of Burnt Lime or Magnesia and Nitrate of Soda. W. Garroway, Lanark.

PERSONALS.

Mr. E. T. Lederholm, engineer for Fraser & Chalmers, has been visiting Alaska on business.

Mr. J. F. Hambitzer has been visiting the mines near Rat Portage, Ont., in the interest of parties in Michigan.

Mr. William Barclay Parsons has been chosen chief engineer to the new Rapid Transit Commission in New York City.

Mr. C. D. Lane, of San Francisco, has been visiting mines in Alaska, especially those at Sum Dum and Silver Bow Basin.

Mr. W. E. Stearns has been appointed purchasing agent of the Berlin Iron Bridge Company, in place of the late W. H. Riley.

The Ohio State University has a department of ceramic arts which has been placed under the charge of Edward Orton, Jr.

Mr. A. P. Silliman, recently with the Mahoning Iron Ore Company, has been appointed chemist of the Consolidated Iron Mines at Manitou, Wis.

Mr. S. Allen Richards, recently superintendent of the blast furnace at Duluth, Minn., has removed to Sharon, Pa., to manage a blast furnace at that place.

Mr. D. O'Doherty, a well-known Australian mining engineer, left England recently to act as leader of the first prospecting party of the West Australian Gold Concessions.

Prof. F. W. Denton, who for several years has had charge of the mining engineering department of the Michigan Mining School, has severed his connection with it, and will engage in professfonal work; his address remaining for the time, Houghton, Mich.

Mr. Frank Nicholson, consulting mining engineer and metallurgist, is associated with St. Louis people in developing the Portmanteau gold mine in Maricopa County, Arizona. The work is under the supervision of Mr. Nicholson, and thus far it has fully equaled anticipations.

The members of the Peary Auxiliary Expedition, of which Mr. Henry G. Bryant, of Philadelphia, is leader, have sailed for north Greenland to bring back Lieutenant Peary and his party. The auxiliary expedition was arranged for by Lieutenant Peary before his departure for the far North last year, and the funds necessary for chartering the vessel were, in the main, supplied by him. The expedition, however, goes out under the auspices of the Geographical Club, of Philadelphia, of which Mr. Bryant is secretary. Besides Mr. Bryant, the members of the expedition are as follows: Professor William Libbey, Jr., professor of physical geography and histology at Princeton University, geographer; Professor T. C. Chamberlin, professor of geology at the University of Chicago, geologist; Dr. Axel Oblin, of Sweden, zoologist; Dr. H E. Wetherill, of Philadelphia, surgeon; Mr. H. L. Bridgman, of the Brooklyn "Standard-Union"; Mr. Emil Diebitsch, civil engineer, of Port Royal, S. C.

OBITUARY.

Elias B. Zabriskie, for several years melter and refiner of the Carson Mint, at Carson, Nev., died last week, aged 68 years.

John W. Easby, retired naval constructor, died in Washington, D. C., on June 18th, aged 75 years. He entered the service as an assistant naval constructor May 17th, 1866. He was appointed naval constructor June 17th, 1870, and while serving in that grade was appointed chief of the Bureau of Construction and Repair, with the relative rank of commodore in the Navy. He held that office up to the date of his retirement from active service, December, 1881.

SOCIETIES AND TECHNICAL SCHOOLS.

Nova Scotia Mining Society.—This company and the Mining Association of Quebec will hold a joint meeting at Sydney, Cape Breton, beginning July 10th. The meeting will include visits to the coal mines of Cape Breton.

Australasian Institute of Mining Engineers.—The following officers were elected at the annual meeting in Ballarat, March 27th: President, James Stirling, Melbourne, Victoria; vice-president, H. W. F. Kayser, Waratah, Tasmania; councillors, Professor Krause, Ballarat, Victoria; R. Adams, Broken Hill, N. S. W.; H. R. Hancock, Moonta, S A.; A. J. Hodgkinson, Melbourne, Victoria; treasurer, J. R. McKay, Broken Hill, N. S. W.; secretary, Uriah Dudley, Broken Hill, N. S. W.

Michigan Mining School, Houghton.—The summer field work in practical surveying commenced June 4th and will continue for 11 weeks. It is taken by the students of the first year. The second year students begin their practical work in metal and wood working (including pattern-making) on June 11th, and continue upon this work for 10 weeks. The graduating class have just finished their practical work in assaying, and commence on June 11th taking four weeks' practice in the stamp mill and ore concentrating works belonging to the Mining School. This class will commence their practical work in field geology on July 9th and continue in this work for six weeks. The course comprises the general work of mapping, geological surveying, the explorer's woodcraft, use of dial and dip compasses, observation and interpretation of geological phenomena. The geological work will be conducted principally at Houghton and in the Marquette Iron District, and will be under the charge of director, Mr. Wadsworth, and Mr. Seaman. These courses are part of the regular required work of the school, which all students that graduate are required to take. The entire day is occupied by each class in the special subject, and every effort is made to have the work as thorough and practical as possible. All these summer courses are open free of charge to any properly qualified parties who may desire to take them. The delightful summer climate of the region enables the summer work to be carried on far more advantageously than it can be farther south. The new Engineering Building will be completed about July 1st. This building has been designed expressly to accommodate the work in drafting, surveying and mechanical, electrical and mining engineering.

The professor of mining engineering in this institution having retired, his successor will probably be chosen during the summer or fall. The effort will be made to secure the services of a live, energetic, capable man, who not only has had practical experience in engineering work, but also in teaching, and who proposes to devote his life to educational work in this line.

INDUSTRIAL NOTES.

The General Electric Company has transferred its Washington office to 227 East German street, Baltimore, Md.

The Delaware, Susquehanna & Schuylkill Railroad contemplates an extension of its tracks into Drifton (Pa.) proper.

The Sheridan (Pa.), Lebanon County Iron Company is erecting a concentrator to extract the iron by magnetism from the Cornwall ore.

The H. W. White Company has been organized at Windsor, Conn., with a capital of $20,000 to do a general coal, wood and lumber business.

The Carlisle (Pa.) Manufacturing Company has received a contract for the building of 95 new freight cars and will resume work on or about July 1.

Pickands, Mather & Co., Cleveland, O., have ordered a new blowing engine from William Tod & Co., Youngstown, O., for the furnace at Sharpsville, Pa.

Pine Grove furnace of Means, Kyle & Co., of Hanging Rock, O., has been blown out for want of charcoal. No wood was cut for this year, for the first year since 1828.

The New Era Iron Works, of Dayton, O., has been incorporated with a capital stock of $50,000, to make iron specialties, engines, etc. V. P. Van Horne is president, L. M. Johnston vice-president, and A. M. Sullivan secretary and treasurer.

The Western Union Bridge Company, of Missouri, has been consolidated with the Western Illinois Bridge Company, of Illinois, under the name of the Western Illinois Bridge Company. The offices are at Quincy, Ill., and Palmyra, Mo.

A gun-weighing machine, capable of registering up to 150 tons, has been supplied to the Watervliet Arsenal by the Fairbanks Company of New York. The weighing machine is mounted on eight wheels, and can thus be moved where convenient.

The S. R. Smythe Company, Pittsburg, Pa., has received a contract from the Lukens Iron and Steel Company, Coatesville, Pa., for the construction of two 30-ton acid open-hearth steel melting furnaces, work on which has already been commenced.

The Heath Rail Joint Company, of Minneapolis, Minn., will erect works at Chicago Heights, Ill., which are expected to be completed by July 15. New and improved machinery is being constructed for the company by Messrs. Williams, White & Co., of Moline, Ill.

Mr. Julian Kennedy, mechanical and consulting engineer, of Pittsburg, has received a contract for the erection of a blast furnace for the Salem Iron Company, Salem, O., to be 17-ft. bosh and 74 ft. high. The contract calls for the completion of the furnace in four months.

Three hundred steel workers, members of the Amalgamated Association, employed in Jones & Laughlin's American Iron Works, at Pittsburg, have been notified of a wage reduction amounting to 45%, to take effect July 1st. The men have protested against the reduction and a strike may result.

A press dispatch from Lebanon, Pa., says tha preparations are being made by the Lackawanna Iron and Steel Company to put in blast the Colebrook furnaces, recently purchased from the assignees of Robert H. Coleman. Forty men are at work on the repairs and operations will be resumed as soon as coke and coal can be procured.

At a recent meeting of the directors of the Niles Tool Works, Hamilton, O., Alex. Gordon was elected president, R. C. McKinney general manager and treasurer, and Jas. K. Cullen secretary. Mr. Cullen, who has had charge of the Chicago office for a number of years, has removed to Hamilton, O., and has been succeeded in Chicago by G. F. Mills.

The American Mining and Milling Company, Cleveland, Ohio, is manufacturing the Linn "Common Sense" screen, which is adapted to screening ores under water. The device can be attached to stamp mills and is said to increase their capacity about 2½%, while the amalgamator attached thereto saves much of the metal, which would otherwise be lost in the tailings.

An order has been signed by Judge Wickes in Baltimore dissolving the Ashland Iron Company of Baltimore County, Md., and appointing William Gilmore Hoffman, Jr., receiver, in $25,000, to wind up their affairs and distribute the assets. All claims must be filed before August 15th. The dissolution is an entirely amicable one, having been decided upon at a recent meeting of the stockholders.

The New York Hydraulic Press Brick Company has been organized with office in Rochester, N. Y., to establish works at Canandaigua for the manufacture of bricks, tiles and earthenware. The capital stock is $350,000 and the directors are: Edmund J. Burke, John C. Woodbury, Rochester, N. Y.; Henry E. Mack, Hammonton, N. J.; E. Catlin, W. B. Dean, H. W. Eliot, E. C. Sterling, St. Louis, Mo.

The Link-Belt Machinery Company, Chicago, Ill. has issued a catalogue giving illustrations, prices, etc., of some of the varieties of link belts which it manufactures. There are also shown many of the elevator attachments for use with these belts and a number of illustrations of plants using them to convey materials. The catalogue contains 48 pages and is neat and attractive in appearance.

Negotiations have at last concluded for the location of the Kansas City Steel and Iron Works, at Argentine, Kan. They will occupy a building erected some years ago for the manufacture of radiators, but not used. The new company will fit it up at once, and will put a force of 50 men at work as soon as the plant can be put in operation. Car couplings of a new design and other appliances will be manufactured.

R. W. Carroll, for the past eight years Pittsburg manager for the American Tube and Iron Company, has severed his connection with that concern, and has been succeeded by D. B. McClelland, also connected with the same office for some years. Mr. Carroll has made arrangements to engage in other business lines, and will make his headquarters in New York City, but will retain an office at 129 Fourth avenue, in Pittsburg.

The Illinois Steel Company has seven furnaces in blast, one on foundry iron at Bay View, Wis., one on Bessemer at Joliet and four on Bessemer and one on special at South Chicago. Preparations are being made to put one of the North Chicago furnaces in blast as soon as the coal strike is settled. Furnace No. 7 at the South Chicago plant broke all previous records of output a few days ago, producing 432 gross tons of pig metal in 24 hours.

The Berlin Iron Bridge Company, of East Berlin, Conn., is constructing a new boiler-house for the Coe Brass Manufacturing Company, at Torrington, Conn.; an iron roof and traveling crane for the new power station of the Metropolitan Electric Company, at Reading, Pa.; and the roof for the new electric light station for the Flatbush Gas Company, at Flatbush, N. Y., using for this purpose its patent anti-condensation corrugated iron roof covering.

The New York Belting and Packing Company, Limited, 15 Park Row, New York, is manufacturing the "Vulcan" spiral piston packing, in which the spiral form obviates any binding, as the coil readily adapts itself to any size piston rod. The wear is slight since only the edges of the fabric are brought in contact with the piston rod. The whole packing is thoroughly saturated with a lubricating compound which feeds automatically to the rod as needed.

Improvements will be made at the American Iron and Steel Works, of Jones & Laughlins, Pittsburg. Three traveling cranes are to be installed in the No. 11 mill and hydraulic tackles constructed. One crane will be for charging and drawing the iron into and out of the furnaces and conveying the heated piles to the rolls. The second will be in the straightening shop, employed to move the iron from one part of the shop to another. This will throw about 30 laborers out of work. The third traveling crane will hoist and remove the rolls when changes are made.

The Rand Drill Company has just installed a rock-drilling plant for Gooch, Rienhart & Co., contractors for section 7 of the Chicago Drainage Canal, consisting of three 80 H. P. boilers, one 20 by 30 duplex air compressor and a full complement of rock drills. It has also placed a similar plant for E. D. Smith & Co. on section 10, and one for C. C. Gilman & Co. on section 3. The construction work in these rock sections is well in hand and good progress is being made. E. D. Smith & Co. have a record of 59,400 cu. yds. removed in section 10 last month, and Mason, Hoag & Co. excavated 34,600 yds. of rock from section 8 in 15 days.

The Electrical Zinc Company's plant at Portland, Me., says the Bangor "Industrial News," shut down last week. It will be remembered that at this plant an explosion occurred last January. A New York company has been experimenting there with a process of manufacturing a substitute for white lead out of zinc sulphate. This was the object of Prof. Frank L. Bartlett when he used the same plant. He developed his process so successfully that he removed to Colorado and has engaged in extensive operations there. This company has been using the same plant for the same purpose and has employed an entirely different method from that of Professor Bartlett. The shut-down is probably indefinite, because the experimenting is probably at an end. It involves quite a number of Portland workmen.

The tin plate wage committees of the Amalgamated Association and the manufacturers met at Pittsburg, Pa., on June 20th and adjourned without having been able to agree on a scale. No date was set for another meeting and the prospects are that many of the tin plate mills will run non-union the coming season. The manufacturers asked considerable reductions in line with the cuts demanded by the sheet manufacturers. They also asked that the head men of the various mill gangs pay assistants out of their own pockets. Hitherto the manufacturers have paid such help. A number of tin plate mills have succeeded in running non-union and the remaining tin plate makers demand the same rates of wages that the non-union concerns have secured. The tariff probabilities also entered largely into the demand for reductions.

At the annual meeting of Fraser & Chalmers, Limited (the English company), in London recently, the report stated that the operations of the American company for the year 1893 resulted in a profit of $152,763. From this $56,477 was written off for bad and doubtful accounts, and $75,000 appropriated for interest on the mortgage bonds of $1,250,000, thus leaving $21,286 as the net profits. The directors are of opinion that the gross assets shown on the balance sheet of the American company are placed at figures somewhat too high. It is believed the results thus far obtained at Erith, England, have been as satisfactory as could have been expected. The operations of the year show a profit of £11,648 from all sources; which, with the profit of £6,501 carried over from 1892, gives a total credit of £18,149; from this it has been deemed advisable to set aside the sum of £5,562 as the beginning of a depreciation account, the remainder being shown on the balance-sheet.

The construction of the great Chicago drainage canal is attracting the attention of the entire country and much interest is being manifested in the machinery employed in the work. The steam shovels for excavating have been furnished largely by the Bucyrus SteamShovel and Dredge Company, of South Milwaukee, Wis., which has now 14 shovels of its make on the works and is constructing five more for the same purpose, which will be ready within a few weeks. This will be a total of 19 Bucyrus steam shovels employed. The Bucyrus company also recently secured orders from the McArthur Brothers Company, contractors on the canal, for two other shovels, one of which, it is claimed, will be the largest and most powerful machine of the kind ever built. Four steam shovels of the same size and pattern have also been ordered from the company by Messrs. Griffiths & McDermott. In addition to these there are other large orders on the books for dredges and steam shovels. The company is increasing its force as rapidly as possible, and working overtime.

The firm of Queen & Co., Philadelphia, has recently established a branch in New York. This was rendered necessary by the great increase of business in New York and vicinity. The business is now divided into eight distinct departments: 1. Ophthalmological and optical instruments. 2. Mathematical and surveying instruments. This department has four dividing engines. Two of them are very large and fine, and are used entirely for the graduation of transits and work where extreme precision is necessary. 3. Microscopes and microscopical supplies. It makes the celebrated Acme microscope. 4. Physics and electricity. The exhibit of electrical measuring apparatus at the World's Fair attracted a very great deal of attention. 5. Projection lanterns and accessories. 6. Meteorological instruments, including barometers, aneroid and mercurial, thermometers, recording gauges, etc. It has a complete thermometer shop, with workmen of the highest skill. A large number of State weather bureaus are supplied with their apparatus. 7. Photograph cameras and accessories. 8. Chemical apparatus and chemicals. Much of its business consists of importation for school and college laboratories, and the supply of laboratories in the big iron concerns. Queen & Co., feeling the need of a New York office, have succeeded in purchasing the entire business of Mr. G. S. Woolman and secured his services as their New York manager.

An application has been made by Receiver W. B. Broomall for an order to sell the plant of the Wellman Iron and Steel Works, in South Chester, Pa. Judge Clayton has fixed upon July 5th as the time of considering the application, and made a decree that all the parties interested should be notified by registered letter, and that notice of the hearing be advertised in at least two local papers. The court intimated that unless there was strenuous opposition to the sale the order would be granted. The Wellman works have been valued at about $1,500,000. Samuel A. Croser is one of the largest stockholders. The mills, when in full operation, employ from 1,200 to 1,300 hands. The petition of Receiver Broomall in asking for the order to sell the plant states that he has been operating it since October 18th last, and that in pursuance of the decrees of the court had paid the interest on the mortgage and the taxes due for 1893, which was due and unpaid; that the plant is encumbered with three mortgages aggregating $800,000, upon which have been issued bonds to the amount of $583,000; that the interest on $300,000 of the bonds will mature on July 1st, 1894, and the taxes for 1894 will soon be payable. The receiver is of the opinion that the future operations of the plant and work under the receivership will not warrant the payment of interest and taxes, and that, owing to the present condition of the steel business, further operations of the works cannot be conducted at a profit. The petition asks for an order to sell the real and personal property, and that the real estate may be sold subject to the lien of the mortgages to the amount of the bonds issued thereon, with interest.

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.

ALASKA.

Alaska-Mexican Gold Mining Company.—This company reports the clean up for the month of May as follows: Period since last return, 31 days; bullion shipped, $15,951; ore milled, 6,250 tons; sulphurets treated, 100 tons; of bullion there came from sulphurets, $3,181. The working expenses for the month were $12,472.

Bennett.—This mine, in Silver Bow Basin, says the "Alaska Journal," will we worked steadily this season.

Gould & Curry.—Work has been begun on this mine at Sheep Creek.

Kutznohoo.—A recent examination of the coalfields in this section has drawn out a favorable report, and some development work is to be done.

Yukon River Placers.—Every steamer that has arrived for two months past has been loaded with miners en route to Forty Mile and other points on the Yukon, says the "Alaska News" of Juneau. Some go in well equipped with supplies, but the majority take only what they need for the journey in It is safe to estimate that this year a crowd of at least 1,000 miners will be scattered along the Yukon and its tributaries. A majority of them will remain in over the winter, and, we fear, too many for the amount of supplies that can be taken up the river by the interior traders. We predict a shortage in provisions there before next spring, or before next year's boats can ascend the river and the traders receive their supplies, and therefore would advise all going in who intend to remain over this summer to not go empty handed, but outfit well here, and then be sure not to be caught in a snap. It is no joke being caught in that country without provisions, and he is wise who outfits himself well before starting in.

ARIZONA.

Yavapai County.

(From our Special Correspondent.)

United Verde Copper Company, Jerome.—Preparations are being made to add to the present plant a 150-ton furnace and three converters. The reduction plant at present consists of three water jacketed furnaces and one reverberatory furnace, having an aggregate capacity of 250 tons per day. At the mine the bucket tramway has been made to work effectively for a distance of five miles, with one transfer station. A large electric plant will be put in, and will not only light the mine and offices, but also the town of Jerome, and run a portion of the new machinery.

Yuma County.

Harqua Hala Gold Mining Company, Limited.—The following is the estimated return for the month of May: Crushed during the month, 2,950 tons; estimated gross value of gold produced, $32,500; surplus on bullion shipped for April, $1,050; miscellaneous revenue, $500; total, $34,050. The estimated total expenses were $12,000, leaving the estimated profit for the month $22,050. The statement adds: The directors understand that rumors are being circulated questioning the title under which the company is working the property. The directors desire to say that there is no foundation for these rumors, and that there is no litigation affecting the company's position.

CALIFORNIA.

Calaveras County.

There is a boom in gravel mines in this county, says the Calaveras "Chronicle." Several mines have been purchased by a San Francisco company, notably the Maguire or North Star and the Fairchild or Green Meadow. These properties were fitted up to work by hydraulic process and are said to be paying well. The company being desirous of extending its operations, is now prospecting and developing the water supply and gravel mines in the vicinity of Mountain Ranch.

Leonard.—This mine on Murray Creek has been sold and the new owners have already commenced work on the property. The lead is wide and the rock prospects well from wall to wall, says the St. Andreas "Prospect." The sulphurets taken from the rock that was crushed in the Donnallan mill assayed over $200 per ton.

Kern County.

Parties have left Kernville recently to prospect the gold-bearing quartz lately discovered by the recent wagon-road survey down the Kern River.

Ahern Mill.—The Bakersfield "Californian" says. The new four-stamp mill near the head of Clear Creek, owned by Ahern & Co., which was started recently, runs well. The quartz is rich. There is water for about 16 hours' run every day and about four tons of quartz will be crushed during that time. The shaft at the mine has been sunk only 20 ft. thus far, but as the ledge in places extends to 8 ft. in width there is already a good body of reserve in sight.

Mariposa County.

Ward-Whitlock.—This mine will be operated by electric power furnished from the Merced River, a few miles distant from the works.

Mono County.

J. S. Cain, A. J. McCone and John W. Kelly have completed the purchase of several mines south from the Addenda. The sale includes the Addenda, Oro, Concordia, White Cloud, East Noonday, Queen Bee and Governor Stanford, at Bodie. The mines form a continuous chain to the south. The shaft in the Addenda is down 500 ft., but below the 400 level it is badly caved. Operations for the present will be confined to the Addenda.

Bodie Consolidated Mining Company.—The latest weekly official letter says: During the past week winze No. 1 from north drift from west crosscut No. 1, on the 300 level, was extended 11 ft. The ore in the bottom is about 10 in. wide and of good grade. Upraise No. 1 from the above north drift was extended 9 ft. Upraise No. 2 from the same drift was extended 7 ft. The ore in this upraise is fair grade, but broken up with bowlders of porphyry. We are stoping some good milling ore from Burgess winze, on the 200-ft. level. Crushed during the week 121 tons of ore. Average battery sample, $55 42 per ton; tailings, $6.47.

Bulwer Consolidated Mining Company.—The latest weekly official letter says: We crushed 40 tons of ore. Average battery samples, $20.57; tailings, $6.88 We are getting some good grade ore on stope above south drift from crosscut 2, 200 level, and are also getting some milling ore from stope at top of upraise 7. Have started a drift north from crosscut 4, 2,000 level, and extended it 5 ft.

Nevada County.

Conlon.—Superintendent J. A. Conlon has let a contract for sinking the shaft at this mine, and work will be commenced immediately, says the Grass Valley "Telegraph." The shaft is now down 200 ft., and the companies intend sinking it 300 ft. deeper without stopping.

Fippin, Rough & Ready.—A test run of ore from this mine made at Lochlin's mill in Nevada City, recently yielded $197.70 per ton, says the Nevada City "Herald." There is a ledge 10 in. wide. Considerable prospecting is being done around Rough and Ready.

Mineral Hill Mining Company.—This company, whose mines are located at Mineral, is preparing for its new smelting plant, which is now on the way. The Jackson Mining Company, whose claim adjoins the Mineral Hill, is taking out rich ore; the latter company has contracted to take 100 tons per month from the Jackson for reduction.

Osborne Hill Company.—The Osborne Hill mine is now owned by this company, which has been operating it for the past 18 months under a bond, says the Grass Valley "Union." The balance due on the purchase price, amounting to $30,000, was paid to Messrs. Robert Smith and William Campbell and Mrs. John Smith last week. The Phœnix mine was bought by the company last week for $6,000. It adjoins the Osborne Hill mine.

Riverside County.

Good Hope Consolidated Mining Company.—This company's new 20 stamp mill 4½ miles southwest of Perris has started up and is doing good work.

San Bernardino County.

Dryden & Sons have struck a gold-bearing ledge at Old Woman's Springs. They are now at work upon it.

Ord District.—The San Bernardino "Times-Index" publishes the following mining news: Favorable reports are being received from this new placer district on the desert in this county. The place is between the old Ord mine and Daggett, and is from

10 to 16 miles long and several miles in width, and is said to prospect well throughout. The gold is not as coarse as at Goler, but appears to be very uniformly distributed. The new fields are creating great excitement.

Vanderbilt Mining and Milling Company.—This company has begun the reduction of chloriders' ore, and will devote five stamps for that purpose as long as there is any ore in sight.

San Diego County.

Crescent Valley District.—According to the Escondido "Times" this mining district, on the Bernardo River, bids fair to develop some good mines. State Mineralogist J. J. Crawford says the general character of the ore of this district is different from any heretofore discovered in Southern California.

Escondido Gold Mining Company.—This company has purchased the land containing the old Escondido gold mine at Escondido, says the Riverside "Press," and has commenced work on it.

Siskiyou County.

At Salmon River the miners are all busily engaged, with an abundant supply of water, and expect to take out more gold this season than ever before. The hills and gulches are full of prospectors, and more are coming every day. There is an abundant water supply.

COLORADO.

Denver & Western Railway Company.—Articles of incorporation of this company were filed at Denver last week by Henry Paul, Jacob W. Hawk and Henry P. Lowe, of Denver; William M. Mitchell, of Topeka, Kan., and Edward W. Williams, of Gilpin County. The proposed railroad is to commence at the new town of Alice, on Silver Creek, Clear Creek County, and run easterly to the head of Russell Gulch, down the gulch to connect with the Colorado Central Railroad. It is also proposed to run another branch by the most practical route to Central City and Black Hawk; also to extend the line or branches to Denver, and from Alice westerly and northerly to the lines of the State. The capital stock is placed at $1,000,000. The directors are Messrs. Paul, Mitchell, Williams, Hawk and William O. McFarlane. In speaking of the undertaking Mr. Paul said to the Denver "Republican," the main road would be about 12 miles in length and would connect the Alice placer and the Alice mine, Yankee Hill and Green Fall River with the Gilpin tramway system, which connects with the Colorado Central road. The company at the head of the proposed railroad owns the Alice properties and is building a 100-ton concentrating mill to treat the ores. It has 800 acres of patented ground, and the townsite of Alice has been laid out. The mill will be completed in a short time, and the surveys for the road, Mr. Paul states, are almost completed.

Chaffee County.

Sedalia.—This copper mine, 5 miles north of Salida, is to be reopened. H. L. Van Nostrand is the manager for the present lessees. He will commence shipping at the earliest possible date. The Sedalia is reported to be one of the best developed copper mines in the State. During 1893 it was in operation from April to August 15th, and during that time shipped 400 tons that averaged 14·6% copper, 800 tons from the waste and dumps that averaged 5% copper.

Eagle County.

Ovee, Red Cliff.—This lime property on East Battle Mountain, owned and operated by George Bowland, has made a strike of ore running high in silver. The new strike is 370 ft. from surface, and is mixed ore, carrying spar, sulphurets and galena.

El Paso County.

Calumet Mining Company, Cripple Creek.—A special meeting of the stockholders of this company was held at Colorado Springs on June 15th. The directors were authorized to make the best possible lease of the Burns and Morning Star mines and that they be advised not to bond properties, and also to make the best possible arrangements for the extension of the obligations of the company now outstanding. It was found that the proposition of Mr. J. C. Dickey was the most favorable and the two properties were leased to him for 18 months with the usually royalty.

Holden Lixivation Works.—Advices from Aspen state that the receiver and attorney for the Holden lixiviation works have begun negotiations by which it is hoped that prominent smelting men will take hold of the plant and start it up in the near future. These works have a capacity of about 100 tons per day.

Iron Mountain Mining Company.—A good strike is reported in the Galena property, on Iron Mountain, two miles northwest of Cripple Creek. The claim was located only six months ago and is owned by the company. Five months ago a bond and lease was taken on it by L. D. Proper. At a depth of 50 ft. a strong vein 4 ft. wide is disclosed, the ore from which shows sufficient value to warrant the extensive opening of the mine. A test run of ore taken from all portions of the vein showed a value of $51 per ton.

Rosebud Mining and Milling Company.—The Rosebud mill has all its bins filled with ore and more is being received daily. The mill will be started up in a short time. Since shutting down some months since a complete plant for treating ore by the cyanide process has been added, says the Cripple Creek "Crusher."

Gunnison County.

Champion.—A good strike was made in an extension of the Champion lode, near Spencer, last week.

Lake County.

Yak Milling and Tunnel Company, Leadville.—A certificate of paid-up stock was filed last week by this company. It sets forth that the capital stock of $200,000 has been all paid in.

(From our Special Correspondent.)

C. L. Hill, of the A. Y. & Minnie mine, Mayor S. D. Nicholson and others have begun extensive operations on the Ben Franklin, Reveille and Pilot claims, which are supposed to be on the richest portion of Printer Boy Hill. A new shaft is being sunk and at a depth of 40 ft. is already in contact. It is thought that the main ore body will be caught at a depth of 200 ft., and that this ore body will be the same as that which the Lillian people have.

Chrysolite Mining Company.—There are a few lessees on this property who have been taking out iron and concentrating ore. The latter is low grade ore that can be treated by the ordinary jigging process.

Harvard.—Drifting is being carried forward in this shaft which is down several hundred feet.

Indiana Mining Company, Leadville.—Shipments from this company's properties, including the Wolcott, Esther and other shafts, have fallen off considerably. The old ore bodies that have been worked are decreasing so considerably new and important development and prospecting work in virgin ground has been started.

Seneca, Leadville.—Drifting on the third contact, which shows up such good ore in the Harker shaft, is being carried forward. The Lent shaft of that property is also in good ore.

Union Smelting Company, Leadville.—But little ore is being smelted at the Union, as the management is making extensive improvements. But one furnace out of four will be used until the new work is completed. Messrs. W. J. Chalmers, of Fraser & Chalmers, Chicago, and Horace F. Brown, patentee of the Horseshoe roasting furnace, are in the city, and will supply the new Union with their furnaces.

La Plata County.

(From our Special Correspondent.)

Fredricton.—A streak of high grade ore was encountered in the south drift on this property a few days ago. This property has the largest body of ore in this district, measuring over 100 ft. between walls all of which carries some value, and the average is given as $6 per ton. It is a whole or porphyry dike in which several quartz streaks are imbedded carrying high grade mineral.

Little Kate.—The trial run of some 50 tons of ore from this mine was recently made in the Lewis mill. The ore will be treated by amalgamation and concentration.

Montezuma County.

(From our Special Correspondent.)

Double Standard Mining Company.—This company located at the headwaters of Rio Mancos is pushing development on its property consisting of 13 claims.

Jackson Mining and Exploring Company.—This company operating in the same section where it owns 26 claims both lode and placer, is pushing development as rapidly as possible.

Miner's Dream.—This and adjoining properties were sold last week to Kansas parties and work will be commenced as soon as plans for the work are outlined.

Pitkin County.

St. Joe & Mineral Farm Consolidated Mining Company.—The directors of this company, consisting of William O'Brien, E. K. Buttolph and B. Clark Wheeler, met in Aspen last week and organized the new board by electing J. J. Hagerman, president; William O'Brien, vice-president, and E. K. Buttolph, secretary and treasurer. Mr. Freeland was appointed manager until further orders by the board. The books were turned over to the new secretary, who has his office in Aspen.

The following items of Aspen mining news are taken from the local papers:

The Famous tunnel has reached the shale, where work will progress more rapidly. Caxton & McSkimming have taken a 400-ft. contract on the Little Annie Tunnel.

Mineral Farm.—After spending a deal of hard work in low grade ore that is fit only for a concentrator, the sub-lessees of block 11½ of the Mineral Farm have at last struck a large body of paying ore and began shipping from a five-foot breast this week. Sub-lessee O. C. Hansbrough of block four of the Mineral Farm has made a strike in making a new connection from the Cowenhoven tunnel at the pump station. The ore is rich and is found away back in the footwall. The footwall of other blocks will now be exploited.

Park Regent.—This property is shipping daily a carload of good lead smelting ore in the camp.

FLORIDA.

Palmetto Phosphate Company.—This company has made its final payment of $18,000 to the Alafia River Phosphate Company for 600 acres of land purchased last year. Preparations are being made to erect a plant and begin mining operations.

Duval County.

It is reported that phosphate rock has been found in Jacksonville while drilling an artesian well. The depth at which the rock was struck was about 250 ft.

IDAHO.

Boise County.

A considerable force is now employed by Leary & Brogan at their placers on Granite Creek, near Placerville.

A number of men have taken up small claims near Placerville, and are now at work upon them.

Buffalo.—On this claim, owned by C. and F. H. Cooper, of Idaho City, a quantity of good milling ore has been taken out, and shipments to the South Africa mill will soon be begun. It is a gold proposition.

Edna.—At this mine, in the Beaver district, near Banner, the force has been increased. Ore is now being hauled to the Elmira mill at Banner.

Wells.—On this newly discovered claim the first shaft is now down 18 ft., showing a vein 3 ft. wide carrying gold. The ore so far is good milling ore. Another location has been made on the vein 500 ft. from the first discovery. The claim is owned by Wells Brothers of Idaho City.

Kootenai County.

Kootenai Mining Company.—This company has been incorporated to operate mines near Hope. The capital stock is $1,000,000 divided into shares of the par value of $1 each. The incorporators are: W. G. Gosslin, H. L. Jenkins, J. S. Harding, C. E. Macober, all of Tacoma, Wash., where the main office is located. Charles T. Jenkins, of Hope, is named as agent of the company.

Owyhee County.

De Lamar Mining Company, Limited.—The following is the return for the month of May: Crushed during the month, 2,979 tons; bullion produced in the mill, $80,718; estimated value of ore shipped to smelters, $6,000; miscellaneous revenue, $625; making total revenue, $67,343. The total expenses were $32,960, leaving a profit for the month of $34,383 In consequence of the miners and laborers' strike in the early part of the month, lasting seven days, the mill has only been in operation for 24 days during the month.

Hammer.—Messrs. A. A. Berg and Thilo Nette are working their assessments on this lode (formerly known as the Florida Hill), and have some good ore in sight.

Idaho & Pittsburg Mining Company.—This company is making steady shipments of bullion from the Black Jack mine. The mill was closed down a week recently for repairs, but has now started up again.

Trade Dollar.—About 60 men are employed at the mine and mill. Considerable development work is being done outside of the regular mining operations necessary to keep the mill running steadily. Two drifts are being extended into the Feour ground—the adit or Blaine tunnel and No. 3. The face of the adit is in ore, the pay being from 2 to 3 ft. in width. Most of this ore is stripped and left standing on the footwall. Recently the face of No. 3, which has been full of quartz stringers, has made a nice streak of ore, and is looking very favorable. In the numerous stopes and in the drifts from the upraise work is progressing well.

Shoshone County.

Frisco.—At this mine, near Wallace, work continues steadily, about 140 men being employed.

Morning Mine.—In this mine at Mullan, a contract has been let to Martin Curran for extending No. 4 tunnel 150 ft. This development, says the "Coeur d'Alene Miner," was decided on some time ago and is no indication of general resumption of work on the mine.

Tiger Mine.—In this mine, at Burke, an accident occurred recently, showing marked courage on the part of the miners. Four men were working in the bottom of the shaft. They had put in 14 blasts and lighted the fuse preparatory to ascending out of danger, but owing to some misunderstanding of the signals, the cage was not hoisted. The men acted promptly in their peril. They cut 11 of the 14 fuses. The cage then started and all made a rush for it, but one of them was left behind. Before the cage had risen 50 ft. the others gave the signal to descend to save their companion. The latter was taken on in safety, but the cage had barely started upward when the blasts went off. Lee Ward and a man named Morgan were injured by flying rocks, and it is feared that Morgan may lose an eye. The man returned for escaped uninjured.

INDIAN TERRITORY.

Choctaw Coal and Railway Company.—Francis I. Gervan, of Philadelphia, Pa., one of the receivers of this company, has gone to Indian Territory to ask the United States Court not to remove Receiver Throckmorton pending the work on the new plan of reorganization. The plan calls for $2,500,000 new capital, $1,000,000 of which is to retire receivers' certificates.

IOWA.

Boone County.

The miners have generally returned to work on

the scale in force last year, which is 90c. and $1 per ton according to locality.

Des Moines County.

(From an Occasional Correspondent.)

About two months ago Mr. E. Hedburg, mining expert, of Joplin, Mo., visited Burlington, where he made an examination of the Starr's Cave region as to the possibility of developing lead and zinc mines. Acting on the strength of his report, a local company was organized, and a shaft 6 by 8 ft. has been sunk to a depth of 80 ft. At 66 ft. a 4-ft. vein of silicate of zinc was encountered, which assays 42%. The extent of the vein is not known as yet, but there is every indication that a large body of ore is being developed. The company is pushing operations, and will sink to 120 ft., where they expect to find a large deposit of zinc blende (sphalerite).

Polk County.

The coal miners have not gone back to work. The operators submitted the following and asked its adoption, to be added to the agreement adopted by the Oskaloosa convention, June 9, 1894: That, whereas, an advance in the price of mining in Polk County as contemplated in the Oskaloosa convention would work an absolute loss to coal companies, mining railroad and contract coal, that all coal furnished railroad companies be mined until October 1st, 1894, for 80c. per ton, and thereafter until April 1st, 1895, for 90c. per ton, and that mine run coal be mined for 55c. per ton until October 1st, 1894, and 60c. per ton thereafter until April 1st, 1895; above prices shall apply to all other contracts made prior to this date, or at the option of the miners, we will pay from this date the same rates per ton as is paid in the Oskaloosa district.

This was rejected by the miners' representatives. The result is still in doubt.

Webster County.

The coal miners generally have returned to work, under the agreement.

KANSAS.

A dispatch from Kansas City gives District President McGregor as authority for the statement that 10,000 miners in Kansas will go on a sympathetic strike this week. The strike is to force a settlement in Missouri and Indian Territory.

MAINE.

Penobscot County.

Empire Granite Company.—The Rockland "Star" reports that Garrett Coughlin has sold Orono Island to the Empire Granite Company, of Philadelphia. Mr. Coughlin purchased the property some two years ago, and has since developed a fine granite business.

Washington County.

Mr. Orris M. Vose, of Machias, has recently bought a lot of 65 acres on the eastern side of Great Head Island, and will at once open a red granite quarry. He has closed his quarry in Marshfield, and transferred his machinrry, tools, etc., to the above location.

Cape Ann Granite Company.—This company which was organized in 1869 and does a very large business at the noted Guidet quarries, situated on Cape Ann, Mass., has recently organized under its president, Colonel Jonas H. French, the Cape Ann Granite Company of Maine, whose property is situated on Great Head Island, in Moose-a-bec Reach, near Jonesport. Leander K. Wass, of Indian River, has charge of the interests of the company in Maine. The quarry is on the western side of the island at Great Head Harbor, and is of red granite of fine quality. About $15,000 has already been expended this season in building derrick, tramways, etc., and an extensive business will be done to fill the large contracts the company has in hand.

MICHIGAN.

Copper.

Centennial.—The effort to find the lode has been abandoned for the present. The machinery has been taken from the shaft and the pumps taken out.

Iron—Gogebic Range.

The Gogebic mines are nearly all in operation at a fair capacity. On the Hurley side the Iron Belt and Carey mines are employin a good force of men, and the Montreal is making additions to its force rapidly. On the Ironwood side nearly all of the mines have large crews of men at work on full time. The rate of wages is about one-third less than last year. There has been a large sale of Gogebic ores this year. Though the price is very low the contracts are numerous and of a fair size.

Arrangements had been made for a general strike of the miners on this range to take place June 18th. The large majority of the men refused to join at the last minute, however, and only one mine was stopped, the strike proving a failure at that time, although a partial movement was made later.

A despatch from Ironwood, Mich., June 20th, says that early in the morning 800 of the striking mine employees met and formed in line with the American flag at their head and marched out of the city to the mines. The Norrie was the first mine visited, and the few men at work there were forced to quit work. The column then visited the East Norrie, Aurora, Pabst and Newport mines in turn, forcing all men at work to quit, and not a pick, shovel or drill is in use at any of the mines. The men then disbanded. An effort will be made by the strikers here to stop work at the Colby mine in Bessemer, and if they do serious trouble is feared, as the Colby is in the hands of United States receivers. An effort will also be made to stop operations at the Carey, Montreal and Iron Belt properties in Wisconsin. The mass of strikers are Finns and Polanders.

Atlantic.—Superintendent Anderson has received orders from Cleveland to start the mine pumps as soon as possible. The mine will employ 100 men. It has been inactive for a year.

Eureka.—Orders have been received to begin shipping from the stock-piles, and also to start up the pumps in preparation for resuming work in the mine.

Iron—Marquette Range.

Messrs. Ames and Lundquist, who are exploring to the north of Ishpeming, have found a deposit of carbonate of lime, says "Iron Ore." The shells in the formation are seen in great quantity. They will have assays made to determine if it possesses commercial value. They say there are thousands of tons of it, and the deposit is so soft that a sharp stick can be pushed into it with slight pressure for many feet. It is a strange occurrence in this region and is attracting considerable interest.

Lake Superior Iron Company.—The first hole of those to be bored in prospecting the ground of this company at section 16 has been located. They are now preparing for the putting down of the sandpipe, and expect anywhere from 60 to 80 ft. of drift before the ledge is encountered. Mr. Henry Senicke has charge of the work of getting the plant ready for business. The engineer, Mr. Thompson, has strong hopes of being able to reveal a merchantable deposit of ore of the hard variety in the near future.

Iron—Menominee Range.

Pewabic.—This company last week paid off its men up to June, and gave notice that it would hereafter pay off twice a month.

MINNESOTA.

Duluth.

(From our Special Correspondent.)

Iron ore shipments have been large the past week, aggregating about 100,000 tons from Two Harbors and Duluth. The Mesaba range is now shipping a daily average of 11,000 tons, and the Vermilion about 6,000. The coal shortage has had a little effect, but vessel owners are doing all they can. There is no change in ore rates, which remain at 80c. a ton to Lake Erie.

Biwabik Bessemer Company.—This company, of Biwabik, capital stock $50,000, has been organized. Its incorporators are H. B. Shields, Girard, and Q. Ford and C. D. Hines, Youngstown, O. The functions of the concern are to deal in and operate mines and ores on the Mesaba.

Northwestern Contract Company, Duluth.—This company has been incorporated. Capital stock, $100,000. A. C. and F. A. Bates are officers. The company is to manufacture and operate the Bates machine for handling loose ore in open pits, tailings, stripping, earthwork, etc. It is a combination, roughly speaking, of a Ligerwood conveyor system and a clamshell dredge.

Iron—Mesaba Range.

Franklin.—Surface improvements at this mine continue. The new engine and hoisting plant is in position and ready for operation, and the boilers are being set. The new shaft house at No. 1 shaft is practically complete, and hoisting from same will be commenced. An incandescent electric plant for surface lighting will be put in operation when the new plant is started. A spur track to the stock pile is now being put in.

Oliver.—The report that the Carnegie Steel Company had bought an interest in this mine seems to have originated in the sale of a large lot of ore to that company, with possibly some cash advances.

(From our Special Correspondent.)

N. D. Moore and A. P. Woods have struck ore in quantity in town 58-19, Mesaba range.

Maps have been filed and construction will commence soon on the 6½ miles of track that will connect the Duluth, Missabe & Northern with the Adams, McInnis, Helmer, Rouchelau-Ray and St. Clair properties in the north of town 57-17.

Lake Superior Consolidated Mines.—At the Mountain Iron mine a second steam shovel has been started in the ore, and shipments are increased to an average of 3,000 tons daily. A third working shaft is going down at the Lake Superior mine of this company. At the Longyear-Mesaba in 57-21, there are 20 pits in ore, one to the depth of 110 ft.

Oliver Mining Company.—Two steam shovels will be put at work in the ore here, and a daily output of about 5,000 tons is expected. About 2,500 yards of stripping are being moved daily by the Drake & Stratton Company.

Iron—Vermilion Range.

(From our Special Correspondent.)

Minnesota Iron Company.—This company has discharged some 100 men who were at work in non-Bessemer ore.

St. Louis County.

(From our Special Correspondent.)

Reports from the gold explorations at the northern end of the county are encouraging, and the immigration is large. But little work is offered, however. The Port Arthur, Duluth & Western, a Canadian road, has received a bonus of $3,000 per mile from the province, for building into the region, and is now striving for the same bonus from the dominion, on which it will build. It will open to exploration a mineral district, rich if reports are to be believed, 125 miles long, from Gunflint Lake to Rainy Lake, running as close to the international boundary as possible.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Mr. Lewis Helm, of the Mound City Mining Company made a proposition to the Webb City Commercial Club to give his company a bonus of $5,000 for the location of his new smelting plant in Webb City. The committee appointed by the club reported back that the required amount had been subscribed, and it now seems to be only a question of selecting the proper site.

Carterville District.—The zinc mines of this district were all in operation during the past week and the sales of ore were fully up to the average, prices were steady and mild at an average of $18 per ton. The Eleventh Hour sold 339,650 lbs. zinc ore and 69,890 lead; Chatham 314,890 lbs. zinc and 3,810 lead; Mound City 408,060 lbs. zinc, Victor 88,170 lbs. zinc, other smaller companies making average sales so that the total was 1,581,820 lbs. of zinc ore and 158,430 lead, value $16,139.

Joplin District.—There was no marked activity in this district, but a steady production of both lead and zinc ore. Zinc ore sold at an average price of $18 per ton; lead ore advanced the latter part of the week, and closed at $17 25 per thousand. The Rex Mining Company sold 149,780 lbs. zinc ore and 89,210 lead; Empire Zinc Company 262,180 lbs. zinc ore and 37,520 lead; Harrison & Spencer, 102,930 lbs. zinc ore and 48,470 lead; Western Zinc Company, 37,110 lbs. zinc ore and 65,220 lead; other companies making the total sales 1,072,520 lbs. zinc ore and 398,270 lead; value $16,206.

Webb City District.—Prices ruled the same here as in Centerville, and the productions were fully up to the average. Center Creek sold 392,950 lbs. of zinc ore and 45,060 lead; Garrison, 70,050 lbs. zinc; the McCorkle-Hill Company, 51,870 lbs. zinc and 14,770 lead; other companies making the total sales 676,790 lbs. zinc ore and 100,420 lead, value $7,461.

Zincite District.—This district made a light production, only 45,330 lbs. of zinc ore and 13,960 lead, value $644.

Newton County.

(From our Special Correspondent.)

Roaring Springs District.—Mr. E. Hedburg, superintendent of the Roaring Spring Company's mines of this district, reports that the mines are all in a most prosperous condition and can at any time greatly increase their present production. Col. H. H. Gregg's Scotia mines still keep up a steady production and last week sold 22,780 lbs. of zinc ore and 8,600 lead.

Spring City District.—The sales of ore were very light at this point during the week, but the ore bins are full. The Pioneer Company is still working on a good face of ore. Morrow & Sherwood are making some new developments which look very promising.

MONTANA.

Deer Lodge County.

Elkhorn Mining Company, Limited.—The following is the return for the month of May: Mill worked 29 days and crushed 1,176 tons. Bullion produced in the mill, $26,035; 186 tons of smelting ore sold, $13,378; total produce, $39,378. The total expenses were $22,614, leaving the estimated profit for the month $16,764. The directors have declared an interim dividend of 9d. per share (free of income tax,) for the quarter ending May 31st.

Montana Mining Company, Limited.—The total output for May was: Gold, 2,700 oz., and silver, 21,650 oz. The estimated realizable value of the same is $67,000. The tonnage of ore milled during the month was 6,340 tons, 110 stamps having been in operation. The expenditure was as follows: Working expenses on revenue account, $36,300; developments, $12,000; extraneous expense, including insurance, $1,550; permanent improvements account, $1,700; total, $51,550; leaving a balance of $15,450 for the month.

Fergus County.

Yogo District.—This camp, on the upper Judith, says the Anaconda "Standard," is reported to be lively this season, and considerable of the yellow stuff is being rescued from the earth there. At the head of the gulch Tom King and George Frasier are putting in a bed rock flume, and it is said there are good prospects from the grass roots down. Farther down the creek the McDonald boys are taking out some gold, and a number of other old-timers are working in the hope of doing the same. In the canyon below, Jake Hoover, the discoverer of the gulch, has a force of men, and the result of their labors is said to be satisfactory. The Blue Dick quartz mine will soon be worked again, and the Weathernox mine will also be opened up and developed this summer. The camp promises well, and the miners appear confident.

Granite County.

Bi-Metallic Mining Company.—This company has a force at work making grades and improving the grounds around its mill at Philipsburg.

Madison County.

Golden Reef Mining and Milling Company.—In compliance with the State law providing conditions upon which foreign corporations may do business in Montana, the Golden Reef Mining and Milling Company, of Chicago, filed with the county recorder a copy of its articles of incorporation. The company was organized last February with a capital stock of $1,000,000, divided into 100,000 shares. The amount of capital paid in in cash was $250, and the remainder in mining claims located in Madison County. The assets consist of the property mentioned. There are no liabilities. The incorporators are Grant Newell, Charles E. Churchill and James H. Van Horn, and the stockholders are: Edward M. Treakle, 49,975 shares; Edward R. Purnell, 50,000 shares; Louvina A. Treakle, 25 shares. The incorporation is to exist 99 years. M. C. Harris, of Butte, was appointed legal representative of the company in Butte.

Missoula County.

The placer miners, says the Butte "Miner," have in some instances been benefited by the wet weather, as by it they get an abundance of water for sluicing. The placer mining interests in the western portion of this county are increasing in importance. Large banks of gravel, which have been heretofore overlooked or neglected as requiring more capital and labor than the individual prospector or miner could command, have of recent years been acquired by incorporated companies. They have in a number of instances put in large flumes and with giant hydraulics have commenced to work the ground by scientific methods. There is, undoubtedly, much more placer ground in this county that could be profitably worked if properly supplied with bed rock flumes.

Last Chance.—This mine, located near Saltese, on the St. Regis, has a large body of ore in sight. One carload has been shipped to the smelter and gave favorable returns. Another is ready for shipment and is necessarily held until such time as traffic is resumed on the railroad.

Silver Bow County.

Blackwell Mining Company.—This company is actively at work in the Homestake district. It is using the Kitty O'Brien 5-stamp mill, and recently made a shipment of 240 oz. amalgam.

Diamond Placer.—A mining corporation known as the Columbia Gold and Sapphire Mining Company has commenced injunction proceedings against James W. Lacey, William Beebe, William Hughes, Holland Noyes and William Howell, to restrain them from trespassing on the plaintiff's property, says the Butte "Miner." The complaint in the case alleges that the plaintiff company is the owner of the Diamond placer mining claim, situated in the Lost Child district. On April 1st last the defendants, Beebe, Hughes, Noyes and Howell, under some sort of an agreement with the defendant Lacey, and without the knowledge or consent of the plaintiff, commenced mining upon the Diamond, and since that time have removed about $500 worth of gold, of which Lacey has received one-fourth as his alleged share. They are still at work, and as each of them is wholly insolvent and the company has no speedy or adequate relief at law, an injunction against the defendants is asked to prohibit them from removing gold or other metal or precious stones from the claim. Judgment for $500 damages is also demanded against them. A temporary injunction was issued by Judge Speer, but the matter has not yet been set for hearing.

Pipestone Placer.—Notice has been received, says the Anaconda "Standard," from George W. Bourquin, receiver of the Helena land office, announcing the fact that the United States commissioner of lands at Washington had sustained the local office in its ruling in the Pipestone placer mining contest in favor of the contestant, George E. Sherman, who was regresented throughout by Mr. Lindsay and C. P. Drennan. The commissioner granted to other parties, W. S. Cobban and others, 60 days in which to appeal to the Secretary of the Interior. The decision is an important one and a victory for Mr. Lindsay and his client. The Pipestone is located about six miles southeast of Butte and covers what is known as the Shippen ranch and is a valuable piece of property. It was bonded by Cobban to some Bozeman parties, who, it is said, have made several payments on it. The placer was originally located by R. M. Cobban, A. E. Driggs and others and a lot of improvements were made thereon. When they came to apply for a patent it was discovered that the location took in a lot of Northern Pacific ground, and the application was thrown out because of that error. Thereupon W. S. Cobban and others, on October 5th, 1891, relocated the placer, leaving out the railroad ground, intending to use the improvements on the original location to cover the necessary assessment work on the new, and on December 29th, 1892, applied for a patent. George E. Sherman, learning of the condition of affairs, located the same ground, named it the Spriggs placer and filed a protest against the issuance of a patent to Cobban, alleging that $500 worth of labor had not been expended or improvements made on the claim by the applicants or his grantors. The commissioner of the general land office thereupon ordered a hearing to determine whether the necessary expenditure had been made in a manner to tend to the development of the claim. It appeared from the evidence taken at the hearing that the improvements for the development of the Pipestone, consisting of dams, ditches and reservoirs, were constructed some distance from the claim and were all made prior to the location thereof and by parties other than the applicants, and who had abandoned their claim to the ground. It furthermore appeared that the original locators who had abandoned their claim had made a verbal agreement with W. S. Cobban and others that they, the applicants, should locate the ground and claim, and apply thereto as the statutory expenditure the improvements which had formerly been made by the original locators and thereafter convey the property to them. The receiver of the land office at Helena, in his recommendation that the entry made by Cobban be canceled held that if any one could seize upon abandoned improvements and patent adjacent ground therewith, or if one could borrow such improvements and patent land therewith, the intent of the law would be defeated. Cobban appealed from the decision to the commissioner of the general office, who has just affirmed the decision of the local officials.

NEVADA.

Storey County—Comstock Lode.

Comstock Tunnel Company.—Following are extracts from a circular recently addressed by Mr. Theodore Sutro, president of the company, to the stock and bond holders: Owing to the temporary suspension of royalty payments by the mining companies due to various causes, the cash resources of our company have been exhausted. From an average per month, since the new royalty contracts went into effect, of $9,346 for 9 months of the fiscal year 1891, and $10,250 for the fiscal year 1892, our income has fallen, for the eight months that have elapsed of the present fiscal year up to May 1st, to an average per month of $1,763. Our surplus had to be drawn upon in order to meet the heavy expenses connected with the suit of Joseph Aron et al., so long pending against the company, but recently decided absolutely in our favor, and to pay necessary operating expenses which have been gradually reduced to the lowest possible basis, by going below which we run the risk of having our tunnels cave in, our property destroyed and the company rendered practically extinct. Only constant attention and the utmost economy of management have enabled us to keep our property in good condition until the present time. Our floating debt is small, and consists almost entirely of the claims of San Francisco attorneys for services rendered in the litigation referred to; but these claims cannot be neglected, and to meet them and continue the operations of the company funds are immediately required. In order to meet the immediate necessities of the company and carry it along until the extraction and milling of ore by the mining companies shall again place us in receipt of a sufficient income, the board of directors at recent meeting appointed a special committee "to propose financial measures for continuing the operations of the company." This committee concluded that a sum of at least $50,000 is required. The stock and bond holders are therefore invited to subscribe toward such a fund, and for such subscription are to receive the company's notes, payable at the end of two years or sooner at the pleasure of the company, with interest at the rate of 6% per annum; the said notes to be issued at a discount of 25%. If by July 5th, 1894, an adequate amount is not subscribed, and the present conditions continue, the directors consider that proceedings looking to the placing of the property in the hands of a receiver are unavoidable. Of the seven directors of the company, four have each subscribed $1,000, and the remaining will do so shortly. Several other stockholders have also subscribed.

Consolidated California & Virginia Mining Company.—According to the Virginia City "Chronicle," the ore accumulated in the surface bins of the Consolidated Virginia mine, and which amounts to about 850 tons, is being shipped to the Morgan mill, which will soon begin crushing. Judging from the average assay of the car samples of the ore during the last few weeks, the company should net good profits on the bullion to be produced. A west crosscut has been started from the south drift from the winze on the 1,700 level to ascertain whether the good ore in the drift 22 ft. above that level extends downward.

Following are extracts from the latest weekly official letters of the superintendents of Comstock mining companies:

Belcher.—On the 850 level the Crown Point and Belcher joint northeast drift is in 86 ft. The face is in quartz giving low assays. The north drift from the Belcher east crosscut from the main north lateral drift is in 18 ft. The face shows clay, with some bunches of fair ore. This drift has now reached the Crown Point south line, and work in it has been for the present suspended. A south drift from this same east crosscut was commenced and is now in 15 ft. The face of this drift is in porphyry. We have hoisted during the week from the upper levels 30 tons of fair grade ore.

Crown Point.—No. 2 west crosscut from the south drift on the 600 level is now out 26 ft. It has passed through a width of 20 ft. of quartz of the same character as reported last week, assaying from $4 to $7 per ton, and the face is now in porphyry. Have started No. 3 west crosscut 70 ft. south of No. 2 on this level which is now out 8 ft. The face is in porphyry. The south drift on the 500 ft. level has been extended to a total length of 233 ft. The face is in a mixture of porphyry, clay and low-grade quartz. The south drift on the 800 ft. level has been run 38 ft. since making the turn to the southwest. The face is in vein material composed of porphyry, clay and low-grade quartz.

Savage.—On the 1,050 level east crosscut 1 started from the north drift at a point 45 ft. from the station was advanced to a total length of 108 ft. This drift has reached the east clay wall and was discontinued. The west crosscut started from the top of the upraise from the north drift was advanced to a total length of 20 ft.; face in quartz giving low assay. Have resumed work in the face of the north lateral drift from the station and advanced it to a total length of 95 ft.; face is in ledge formation. On the 1,100 level crosscut 2 started from the face of the north drift was advanced 25 ft.; the face is in quartz and porphyry. Have finished repairing the lateral drift on this level. During the week we hoisted 22 cars of ore. Car samples average $23 77 per ton.

Washoe County.

Reno Borax Company.—This company, of Reno, has been organized to develop the borax fields at Grant and Sulphur Springs, 100 miles north of Reno. The officers are: W. H. Patterson, president; W. O. H. Martin, vice-president; J. W. Phillips, secretary; First National Bank of Reno, treasurer. The above, with M. E. Ward and L. Dellapiaza, form the board of directors.

NEW JERSEY.

Morris County.

About two years ago there was some local excitement over the discovery of a supposed gold mine near Budd's lake, but an attempt to work the mine proved a failure. Now it appears that the matter is to be taken up in earnest, and a company is being organized in Newark with sufficient capital to work the supposed mine on a considerable scale. This is not the first time the supposed discovery of gold has been made in New Jersey. Workings were undertaken many years ago near Campgaw in Bergen County, and at one or two points in Morris and Sussex counties, and at one time a shaft was begun on Garrett Mountain, near Paterson. No result came from any of these; and the Budd's Lake discovery seems likely to have the same ending as far as gold is concerned.

It seems that two companies have been organized, one known as the Superior Mining Company, by Thomas Benfield, and the second, the Eclipse Mining Company, by David Utermayer and others. It is understood that a considerable amount has been spent in buying land, and in fitting up a temporary mill at Woodside, near Newark, to which the ore will be carried by canal boats. The parties concerned have kept their operations as quiet as possible, and have not been willing to make any statements as to their plans for work. It is said that some 1,500 tons of rock have been taken out and are to be milled before anything further is done.

NEW MEXICO.

Bernalillo County.

Cochiti District.—Mr. W. C. Wynkoop, of Denver, Colo., has just returned from a trip to the Cochiti gold district, and the Denver "Republican" publishes an interview with him. Mr. Wynkoop is interested with D. H. Moffat, J. W. Bailey and R. W. Woodbury in the Iron King mine.

The ore is free milling and runs about $30 in gold, besides being rich in silver. The Iron King company has had men working on its property for the past four months, chiefly doing development work. A stamp mill is now being put up, and it is expected that it will be completed by July 15th.

Taos County.

According to the Santa Fe "New Mexican," the Rio Hondo Gold Mining Company, the Rockingham Placer Mining Company and others representing outside capital invested in the Amizett mining district, through their attorney, George L. Hodges, of Denver, have filed with the commissioner of the general land office a protest against surveying the Arroyo Hondo grant, in Taos County, and have served a notice of the protest upon Deputy United States Surveyor Sherrard Coleman, who went to survey the grant a few weeks ago, but returned last week without having accomplished his mission. The company was organized in October, 1892, and owns among other placer claims the Squedunk, Carmencita, Hawkeye, Keystone, Amizett, Denver and Humboldt, all situated on the Rio Hondo, and comprising an aggregate area of 621,497 acres of surface ground. The protest sets forth that prior to the acquirement of the claims by the company the same had been surveyed by W. W. Follett, United States Deputy Mineral Surveyor, for a patent, and the said survey was approved by Surveyor-General Hobart. The entry of the lands and payment therefore was prevented by the filing of a pretended protest and notice of adverse claim on the part of Julian Martinez et al., as owners of the Arroyo Hondo land grant. The complaint further declares that the true boundaries of the said grant do not extend easterly to a sufficient distance to come within at least 10 miles of the most westerly boundary line of the said placer claims. The claim is said to be based upon an erroneous description of the grant. The petitioners allege that the grant claimants seek to extend the true boundaries of their grant so as to include therein valuable tracts of mineral lands, thus defrauding both the government and the people. The entire protest, which is a voluminous document, is based upon alleged fraudulent errors in the decree of the court of private land claims confirming the Arroyo Hondo grant. The petitioners also protest against the special instructions given by Surveyor-General Easley for the

survey of the grant. In addition to this the miners also allege that the original grant, made in 1815, especially exempts all mineral lands. Surveyor-General Easley, it is said, does not think the protest will have any weight with the commissioner of the general land office at this time, for the reason that under the rules a protest cannot be entertained until after the survey is made, when those objecting to it have 90 days in which to file a protest. It is then submitted by the surveyor-general to the court of private land claims which either rejects the protest or amends the decree of confirmation.

OREGON.

Baker County.

Columbia.—On this claim, says the Baker City "Democrat," the ledge is 4 ft. wide; and from a test of several tons of ore run through a Tremaine mill, $20 per ton in gold was the amount realized. It is developed by a 70 ft. shaft and two drifts.

Friday.—On this claim a 70-ft. shaft and a short drift have exposed a vein about 2 ft. wide.

Ole Olsen.—The force employed has just completed a 40-ft. crosscut, which exposes a 4-ft. vein carrying free gold.

Clatsop County.

Henry Hanson, an old California miner, has been over at Westport looking at General Don Carlos Buell's plant he has put up at Westport to extract gold from the sands of the ocean beach, says the South Bend "Journal." When he arrived there General Buell was preparing to leave. The experiment has proved, it seems, a failure. Hanson panned out some of the sand. He found only a few colors, and they were small flakes as fine as gold leaf. Thus again have gold beach hopes vanished into thin air.

Grant County.

Mountain Lion.—At this mine, near Grant's Pass, owned by Bailey Brothers, a crosscut has struck a ledge 4 ft. wide, carrying free gold. A company has been organized under the name of the Mountain Line Mining Company by A. M. Brown, J. W. Farquhar and George H. Rivers.

Sloan & Haskell.—The last clean-up at these placers showed encouraging results.

Josephine County.

Davidson.—At this mine, on Missouri Flat, near Grant's Pass, a rich pocket has been struck, which is paying well. The extent has not been determined.

SOUTH DAKOTA.

Lawrence County.

Black Hills Gold and Silver Extraction and Mining Company.—The cyanide plant is running right along, using up about 50 tons of silicious gold ore every day, says the Deadwood "Times," and producing fine gold bricks at every clean-up.

Deadwood & Delaware Smelter.—This smelter is now in full operation on a two months' run treating Homestake concentrates almost exclusively, of which there are about 4,000 tons on hand; when this amount is used up the plant will in all probability be kept running on ores from mines owned by the smelter company.

TEXAS.

Milam County.

It is reported that a company expects to build a $35,000 plant at Rockdale to manufacturing briquettes from lignite coal. The company has leased two mines owned by A. B. Kerr.

UTAH.

Millard County.

Utah Gold Mining and Smelting Company.—This company will develop and work the Ibex mine in the Detroit mining district. There are 20 men now working on the Ibex, and more will be put on within a week.

Piute County.

Dalton Gold Mining and Milling Company.—Some of the directors of this company, accompanied by an expert mining man, have gone to Marysvale to inspect the Dalton and to put men at work on the property. The company, says the Salt Lake "Herald," has money sufficient to make an intelligent development of the mine.

Sevier County.

Sevier Mining and Milling Company.—The annual meeting of the stockholders of this company was held in Salt Lake City last week. There were represented 196,000 of the 250,000 shares of the company. The following board of directors was elected: Charles Lammersdorf, Alonzo A. Hyde, Otto Rice, Thomas Tresona and Mrs. Charles Lammersdorf. The officers will be elected by the board of directors at a later meeting. The annual reports indicate gratifying results, and sufficient ore is now in sight to keep the stamps operating for an indefinite period. With the present mill, 25 tons a day of free milling gold quartz averaging $30 a ton are being run through 10 stamps.

Summit County.

Silver King.—The owners of this mine in Park City are considering some extensive improvements to be made shortly which will include increased hoisting facilities and the erection of several buildings. The output of the property is now 50 tons of good ore per day.

Tooele County.

Marion Mining Company.—This company, says the Mercur "Mercury" retorted its own sulphides last week, the first time in the history of the mine, and the result was a success in every respect. One of the results of the operation was about 70 lbs. of quicksilver. It is probable that the Mercur Mining Company will also treat its product at home.

WASHINGTON.

King County.

Scott Mining Company.—This company has been organized at Seattle. The capital is $100,000, in 1,000 shares of $100 each. The incorporators are William H. Flett, Tim O'Conner, of Wisconsin; T. A. Derring, Samuel G. Dewsnap, of Seattle. The company will carry on a general mining business.

Lincoln County.

Wilbur has a gold excitement of her very own, and is fast being depopulated by a rush to Hellgate canyon, on the Columbia, 12 miles away, where the precious mineral is reported to be hidden in the sands in large quantities, says the Spokane "Review." The excitement is peculiar, in not having been based on the sight of a single nugget or panful of coarse gold. Several months ago a man named Moore dropped in from Seattle and stayed in Wilbur until the gossips began talking about him and commenting on the probable nature of his errand there. Recently it was found that he had quietly located 20 placer claims in Hell Gate canyon in the interests of a Seattle syndicate. A few who heard it first pegged out without delay and made locations of their own.

Okanogan County.

Boundary Creek.—Placer claims have been located by J. Murray and others, near Oro, and a considerable number of men will be at work through the summer.

Graveyard Flat.—Several teams are now at work, says the Loomiston "Journal," hauling gravel from Graveyard Flat, at Conconully, to Salmon Creek. There is a bar about 400 ft. high and nearly four miles long, from which the gravel is taken.

Stevens County.

Civil Service Gold Mining Company.—This company has been organized at Boundary City to work mines in that district. The capital stock is $100,000, and the incorporators are B. F. Budd, W. M. Pinkston and W. W. Davy.

WYOMING.

Albany County.

Emma G.—At this mine, at Cooper Creek, the shaft has again struck the vein, which pinched out some time ago. The vein as found is nearly vertical.

Fee Coal Mines.—The owners are putting in loading chutes and making other improvements. They have arranged for a 10-ton traction engine to haul loaded wagons from the mine to Laramie.

FOREIGN MINING NEWS.

NEW BRUNSWICK.

Orr's Mountain Quarries.—The Eastport (Maine) "Sentinel" says: Sheriff R. A. Stuart, of St. Andrews, N. B., representing the firm of Gibson, Stuart & Hanson, proprietors of the recently discovered black granite quarries at Orr's Mountain, in the township of Bocabec, some 6 miles from St. Andrews, and which the company is now engaged in developing, was in the city last week, interviewing prominent capitalists and business men, with a view to having polishing works for the manufacture of the stone from the Bocabec quarries established in Eastport. Monday evening there was a meeting in the Board of Trade rooms of members and citizens, for the purpose of hearing Mr. Stuart's ideas upon the subject, and it is probable that some arrangement will be made.

INDIA.

Colar Goldfield, Mysore.—The total output for May was 16,543 oz. gold, a decrease of 1,379 oz. as compared with May, 1893. The different mines make the following return: Ooregum, 6,666 oz.; Mysore, 4,148 oz.; Champion Reef, 3,503 oz.; Nundydroog, 1,720 oz; Balaghat-Mysore, 506 oz. For the five months to May 31st the total output was 81,003 oz., as compared with 87,172 oz. last year; 59,334 oz. in 1892; 50,325 oz. in 1891, and 43,041 oz. in 1890.

NOVA SCOTIA.

Cape Breton.

Dominion Coal Company.—Fire broke out on the morning of June 17th in this company's shaft at Caledonia, C. B. The fire was confined to the east side. Dense volumes of smoke poured forth from the shaft mouth all the morning. An exploring party went down about 9 o'clock by the way of the slope used by workmen in case of accident to the shaft. Upon reaching the stables they found that seven horses had been suffocated, or smothered to death. By 1 o'clock the fire was completely under control. On account of the timbers being burnt away the roof near the pit bottom caved in, and it will probably take three weeks or more before the debris can be removed. It is not known how the fire originated, but it is supposed to have caught in the stables.

ONTARIO.

Local advices report the discovery of outcroppings indicating the existence of a large body of low-grade ore, gold-bearing quartz, between Rat Portage and Port Arthur, about 20 miles south of the Canadian Pacific road. The extent of these outcrops is not yet fully determined.

International Mining and Milling Company.—Instructions from the head office of the above company have been received here by Mr. Roland, the mining engineer and agent, says the Rat Portage "Record," to make ready for the commencement of active mining operations upon the Grey Eagle and Wild Rose locations belonging to this company. Both locations are situated in the Rossland section and favorably located for transport, water power and economical mining and milling. The president of the company leaves Chicago for this district about July 1st.

Rajah Mining Company.—Mr. W. G. Morley is now making a thorough examination of this property for the English stockholders.

Sultana.—At this mine, near Rat Portage, the shaft is down 160 ft., and the vein continues to show well.

QUEBEC.

(From an Occasional Correspondent.)

Important and large deposits of chrome iron ore have been discovered, and are now being actively worked on the lands of the Cobaine Mining Company, and on those of Dr. J. Reed, at Black Lake, on the line of Quebec Central Railway. These deposits have been found in the serpentine formation in the immediate vicinity of the Canadian Asbestos Company's mines. Two carloads have been shipped to Baltimore and Philadelphia, and over 200 tons have been mined inside of the last two months.

SWEDEN.

Gellivara Malmfalt Company.—From the report of this company for 1893 it appears that in all 306,315 tons of iron ore were sent down by rail to the port of Lulea, a sum of $315,000 being paid for freight on the same; of this 259,826 tons were shipped to Germany, 212,667 tons; to Great Britain, 35,762 tons; to France, 5,105 tons; to Belgium, 4,356 tons; while 1,926 tons only were smelted at home. Diamond borings have been carried out to a depth of 82·5 meters, and good ore encountered throughout. The estimated shipments for 1894 are 400,000. Contracts have been made for 130,000 tons to go to Great Britain.

SOUTH AFRICA.

Namaqualand.

Cape Copper Company.—This company has declared a dividend of 15d. per share on both the preferred and ordinary shares.

Transvaal.

The May output of the Witwatersrand mines was 169,773 oz. gold, an increase of 1,028 oz. over April, and of 52,862 oz. over May, 1893. This makes the total output for the five months to May 31st 805,574 oz., which compares with 542,064 oz. last year; 459,451 oz. in 1892; 267,278 oz. in 1891, and 187,279 oz. in 1890.

VENEZUELA.

El Callao Mining Company.—The production in May from El Callao mine was 1,376 oz. gold; from La Colombia mine 2,250 oz. As for some time past, the work done in El Callao has been chiefly in stripping and cutting out the pillars of ore left in the old workings; the number of stamps running on rock from this mine has been reduced to 20. The milling has done something more than to cover expenses. Some new development has been carried on, and 526 ft. of drifts have been cut, but with no very encouraging results. The average result from all the ore worked was 0·68 oz. per ton.

In La Colombia mine there has been some improvement, especially on the 349 ft. level. A crosscut 24 ft. on El Caratal vein and one started 12 ft. on El Tigre vein have made an excellent showing. The new air compressor and the new pump are now completed, so that development work can be extended much more rapidly hereafter. There are now 40 stamps running on Colombia ore, and the average result for the month was 0·70 oz. per ton.

In the Remington mine the new tunnel was run 121 ft. on the vein, which continues to show very well. On the surface the railroad track has been completed to El Tigre shaft; and work has been begun on a spur to the Remington shaft.

The company has declared a dividend of 12 francs per share out of the profits from La Colombia mine.

WEST AUSTRALIA.

The Australian "Mining Standard" says: The government of West Australia has issued an official warning against a continuance of the rush to Coolgardie. A gentleman who has made a prolonged trip to the West Australian goldfields says this warning was imperatively required. The clerks, shopmen and nondescript tradesmen now leaving Victoria en masse are rushing to their destruction. It will be impossible to get through food, not to speak of water, for the numbers of men who are collecting at Coolgardie and the Murchison district. And there will be no employment for a twentieth of these men for many months to come, mining developments not being in a sufficiently forward state to absorb any considerable portion of wage-earners. This information is supported by the testimony of many men whose words can be relied on, and from the late town clerk of Bendigo comes fresh corroboration. That gentleman set out some weeks ago, and had not reached Coolgardie before he realized that the rush was being greatly overdone.

The goldfield does not present such advantages as were held out by the alluvial fields of Victoria, for the gold is in reefs, and cannot be properly worked without the aid of necessary appliances. This fact, and the scarcity of water, and the remote position of the field clearly show that developments must be a question of time, and that Coolgardie is not able to offer immediate employment to the miner.

The Premier of West Australia will shortly visit the Murchison district, and is expected to commit his Government to an extension of the railway from Mullewa to Cue, a distance of about 200 miles.

LATE NEWS.

The Boston & Colorado Smelting Company has declared its usual quarterly dividend of 2½%, payable July 2d.

A late dispatch says that the Sutro Tunnel has been attached to force the payment of claims against the company amounting to about $32,000.

Mr. William Braden, mining engineer, will leave New York shortly for Valparaiso. He expects to spend some time at the Chilean Mining Exposition.

It is reported that in the Tamarack, Jr., mine in Michigan the crosscut from the fourth level has reached the Osceola amygdaloid at a distance of 350 ft. from the shaft.

The Lehigh Zinc Company at Bethlehem, Pa., on June 21st posted notice of an advance of 10% in wages on July 1st, restoring them to the amount paid before the cut made in November last. The increase affects about 250 men.

The President has appointed Mr. E. B. Braden superintendent of the branch mint at Helena, Mont., a position which he is amply qualified to fill. The appointment has not yet been confirmed by the Senate, but no opposition is expected.

The annual report of the Duluth & Iron Range Railroad for 1893 shows that the earnings are $1,202,864; operating expenses, $501,034; net earnings, $621,830; out of which $413,171 was taken for interest and fixed charges, leaving a surplus of $168,659. The road hauled 1,197,117 tons of freight, mostly ore.

Late reports from Owyhee County, Idaho, state that at the Burro mine, near Silver City, a crosscut 225 ft. long has just reached the vein.

In the Tip Top mine on Florida Mountain an open cut has exposed a vein 2½ ft. wide, carrying gold. The owners, John Feour, and others, have begun to sink a shaft on the vein.

At the Black Jack mine the Idaho tunnel is now in 93 ft. This tunnel is being run by contract, in the expectation of cutting the vein at greater depth than has yet been reached. A cross-cut has been started on the eighth level to reach the Empire vein, which is believed to lie about 150 ft. from the Black Jack.

The Mahanoy City Colliery, operated by the Philadelphia & Reading Coal and Iron Company, was the scene of a mine fire June 21st. As the miners went to work along the gangway they discovered great quantities of smoke issuing from the Mammoth vein on the second lift. The district superintendent, with several hundred men, went to fight the fire and it was put out by noon. While engaged in fighting the flames, William H. Paul, Robert Davis, Amos Walters and a Polander were overcome by gas. They were discovered in time to save their lives, although almost fatally asphyxiated. The origin of the fire is supposed to have been sparks flying from a miner's lamp.

The annual meeting of the American Society of Civil Engineers opened at Niagara Falls June 20th, in a session at which the usual opening addresses were made and reports presented.

On the second day the morning session was occupied by the presentation of two papers and discussion on the same. The first was on "Railroad Signaling and the Block System," by John P. O'Donnell, of London, England, and the second was on the "Pulp Mill of the Cliff Paper Company of Niagara Falls," by W. C. Johnson. At noon the first business session was held and a nominating committee selected. At 2 o'clock the delegates were given a trip over the Niagara Falls Park and River Railroad skirting the Canadian bank of the Gorge to Queenstown, crossing from there to Lewiston and back to Niagara Falls on the New York Central Observation train.

In Rochester, N. Y., June 20th, Job E. Hedges, as assignee of H. H. Warner (of "Seven Stars," Arizona, fame), under authority of a deed of assignment, sold a large number of notes, accounts and judgments at auction. Some mining shares and 2,214 shares of the H. H. Warner Company, Limited, were also sold. Several of the accounts were knocked off to John P. Palmer at the following figures: $28,418 San Jose Mining and Canal Company, $30; $191,242 Genesee Gold Mining Company, $20; $3,650 John T. Cramer, $12. Several judgments for amounts ranging from $800 to $2,000 were then knocked down at a very low figure. Five hundred shares in the Yankee Girl's Silver Mining Company were then sold to J. P. Palmer for $5. On the sale of the 2,214 shares of the H. H. Warner & Co., Limited, some fair bidding was done. Mr. Moffat, said to be Mr. Warner's attorney, succeeded in obtaining them for $506. He also bought 400 more shares for $363.

Pittsburg dispatches say that there is a movement for higher wages at the Homestead Steel Works. It started with the engineers and hookers on. They met at the beginning of the week and decided to ask that the 20% reduction which they submitted to in January be restored. A committee called upon Superintendent Schwab and presented their request. Mr. Schwab replied that it was impossible to grant the demand, that higher wages are now being paid at Homestead than in any other steel mill in the Pittsburg district. The men also presented a grievance to Joseph Dickinson, superintendent of their department. They asked for double pay for cleaning boilers on Saturday night. Mr. Dickinson thought the request fair and said the firm would likely grant it. The statement by Mr. Schwab as to comparative wages is in contradiction to the assertions made by managers at Jones & Laughlin's over the proposed wage reduction in the steel departments. They said that the reasons for asking such a cut were not only because of business and fear of tariff changes, but also because higher wages were being paid at Jones & Laughlin's than in competing steel mills.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, June 22.

Statement of shipments of anthracite coal (approximated) for week ending June 16th, 1894, compared with the corresponding period last year:

	1894. Tons.	1893. Tons.	Difference.
Wyoming region	640,929	548,455	Inc. 92,474
Lehigh region	154,883	155,556	Inc. 9,327
Schuylkill region	335,747	268,412	Inc. 67,335
Totals	1,141,559	972,423	Inc. 169,136
Total for year to date,	16,562,374	19,225,569	Dec. 2,663,195

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending June 16th and year from January 1st:

Shipped East and North:	1894. Week.	1894. Year.	1893. Year.
Phila. & Erie R. R.	61	26,068	44,128
Cumberland, Md.	13,689	1,301,132	1,849,686
Barclay, Pa.	75	9,763	29,322
Broad Top, Pa.	.....	122,371	336,967
Clearfield, Pa.	262	1,122,734	2,001,080
Allegheny, Pa.	755	474,891	615,252
Beech Creek, Pa.	485	836,699	764,774
Pocahontas Flat Top	.....	1,357,925	1,365,749
Kanawha, W. Va.	32,721	1,058,226	1,466,644
Totals	48,048	6,309,809	8,473,602

Shipped West:	1894. Week.	1894. Year.	1893 Year.
Pittsburg, Pa.	27,674	573,892	611,946
Westmoreland, Pa.	13,781	556,032	959,330
Monongahela, Pa.	165	164,276	343,819
Totals	41,620	1,294,200	1,915,095
Grand totals	89,668	7,604,009	10,388,697

PRODUCTION OF COKE on line of Pennsylvania R. R. for the week ending June 16th, 1894, and year from January 1st, in tons of 2,000 lbs.: Week, 24,118 tons; year, 1,197,826 tons; to corresponding date in 1893, 2,551,098 tons.

Anthracite.

The local market is without any change from last week. It is characterized by the same features which we have been reporting for the past three weeks. It is very quiet, there having been no appreciable increase in the demand. In the absence of really active business it is almost impossible to say that prices are firm or the reverse. Perhaps just now producers are less willing to accept new orders at May prices, but for all that, when a sales-agent is asked whether prices are being shaded he invariably replies: "Not any more than usual."

The meeting of the sales-agents last week was devoid of much interest. It was known that certain prominent producers had exceeded their allotment, but at the meeting it developed that everybody else was more or less guilty of the same thing, and so it was decided to continue producing as much for the second half of June as during the first half. It was also said that contracts for delivery extending over two or three months had been accepted this month at May prices. But it seems that very few were not guilty of such practices, and the subject, if discussed at the meeting, produced no hard feeling.

During the past fortnight business with Western and line points has been very good, and in consequence of this, as well as of the increased consumption of anthracite due to the bituminous coal strike, the output has been very heavy. Last week it was overy 1,100,000 tons, and the probabilities are that it will not fall much below 4,500,000 tons for the month. Prices, considering all things, have been fairly well maintained, but if the production is not regulated as strictly during the remainder of the year as it has been during the past six months, there is a danger that they will not be as firm as producers desire.

The Reading Railroad reports that its coal shipment (estimated) for last week, ending June 16th, was 295,000 tons, of which 55,000 tons were sent to Port Richmond and 30,000 tons were sent to New York waters.

NOTES OF THE WEEK.

The Bureau of Anthracite Coal Statistics furnishes the following statement of anthracite coal shipments for May and the five months to May 31st, compiled from the returns furnished by the mine operators:

	May. 1893.	May. 1894.	Five months. 1893.	Five months. 1894.
Wyoming region	2,113,144	2,227,317	9,528,507	7,648,157
Lehigh region	611,739	554,960	2,673,257	2,291,863
Schuylkill region	982,199	1,011,026	4,705,477	4,098,958
Total	3,707,082	3,793,303	16,907,221	14,038,978

For May the increase was 86,221 tons, or 2·3%; for the five months there was a decrease of 2,868,242 tons, or 16·9%. The stock of coal on hand at tidewater shipping points was 664,180 tons on May 31st, against 849,207 tons April 30th, showing a decrease of 185,027 tons during the month.

Bituminous.

As far as the bituminous coal market itself is concerned there has been little or no change since our last report. The receipts of soft coal at tidewater, while not nearly adequate to supply the demands, are yet abundant enough to be felt. The various small mines which are in operation are sending coal forward in amounts which aggregate a fair quantity. To such an extent is this true that the importation of expensive English coal has stopped, although some Nova Scotia coal is still coming into this market.

The quantity of coal being received here does not permit of sales to outside parties, and therefore there is very little speculation and no market proper. Consumers who are unable to get their usual fuel are still using anthracite, and there are comparatively few complaints of distress on account of the inability to get bituminous coal.

It is impossible to quote any prices, although it may be said that nominally they are lower than last week. Transportation is naturally very good; all the cars desired can be obtained of the railroads.

Ocean freight rates are quite low. There is a large supply of vessels and rates from Philadelphia are quoted as follows: To Boston, Salem, Portland, Providence, New Bedford, Bath and Bangor, 50@55c.; Wareham, 60c.; Lynn, 65@70c.; Newburyport, 60@65c.; Gardiner, 55c. and towages.

The strike continues, and it is impossible to say when it will end, although it looks as though this month will see its collapse. Of the various regions, Pocahontas is working full; New River and Beech Creek, partially; Clearfield, to a limited extent; the West Virginia Central coal companies, from 300 to 400 men; George's Creek region, about 2,500 tons a day, and the various outside mines are working about one-half their capacity.

NOTES OF THE WEEK.

Judge Stake at Hagerstown, Md., has filed his opinion in the Chesapeake & Ohio Canal case, authorizing the execution of the contract with the Washington County Transportation Company and extending the period for the operation of the canal as a waterway from 4 years from May 1, 1891, to the end of 10 years from that date. The opinion will give the Baltimore & Ohio Railroad Company the control of the Chesapeake & Ohio Canal for several years more, as that corporation is practically in control now.

Buffalo.

June 20.

(From our Special Correspondent.)

It is generally an accepted fact that "no news is good news." With the exception of the topics of the near settlement of the soft coal labor troubles, the expression of hopes for a speedy resumption of business in all lines depending upon the industry of bituminous coal mining, and a final ending of the tariff question, nothing startling or edifying has occurred to make an item of interest.

The lake vessels are now getting soft coal for fuel purposes quite freely, and the shipments of anthracite westward are increasing in volume and spread over a wide territory, as will be seed by the following statement:

The shipments of coal by lake from Buffalo westward from June 10th to 16th, both days inclusive, aggregated 72,940 net tons, distributed as follows: 31,145 tons to Chicago, 16,300 to Milwaukee, 18,850 to Duluth, 2,420 to Toledo, 500 to Gladstone, 375 to Saginaw, 1,750 to Hancock, 1,080 to Racine, 400 to Bay City, 400 to Sault Ste Marie, 1,869 to Fort William, 1,000 to Detroit, 3,650 to Port Huron and 600 to St. Clair. The rates of freight were: 45c. to Chicago and Racine, 40c. to Portage, Hancock, Sault Ste. Marie, and Milwaukee; 35c. to Saginaw, St. Clair, St. Ignace, Mackinaw, and Port Huron; 30c. to Bay City, 25c. to Duluth, Superior, Fort William, Gladstone, Detroit, and Toledo. Closing steady.

News from lake ports and interior points of western New York shows that soft coal can be had in limited quantities, as the resumption of mining will enable all dealers to replenish stocks. This is a good feature and will help the resumption of business and the circulation of money. Vessel men expect a heavy fall tonnage of coal to all Western ports. The shipments of coal through the St. Mary's Falls canal from opening of navigation to June 1st, 1894, were only 126,995 net tons; for same period in 1893, 390,792 net tons; and for 1892, 553,224 net tons.

Chicago.

June 20.

(From our Special Correspondent.)

Anthracite.—The new circular rates which went into effect June 1st raised the price of hard coal 25c. per ton, but the advance has proven one which the

trade generally have ignored, for the price of coal remains as before the advance. The quantity of anthracite coal coming into this market at the present time is insignificant, in comparison with ordinary times. This is accounted for from the fact that there is mighty little demand for hard coal and the stock on hand is large enough to supply any demand that is made on it for the present. Prices are for grate, $5.25; egg, stove and chestnut, $5.50.

Bituminous coal is in sufficient supply to more than meet the prevailing demand; large quantities of it are being shipped from Ohio River points, where there seems to have been an inexhaustible supply. Now that the coal strike is undoubtedly settled, consumers are awaiting the reduction in price that is bound to occur before they purchase coal in any quantity, and this fact has made the week one of dullness in Chicago. The sales of soft coal now being made are of the hand-to-mouth policy, but should prices become normal, a revival must be expected. Soft coal is selling this week from $3.40 to $3.75. The following is the scale adopted for Illinois: Peoria and Canton sub-district, 50c. per ton gross weight summer, 55c. winter 67½c. screening in summer, 75c. in winter, 2,000 lbs. to constitute a ton, with a relative price for all places according to prices and conditions of 1893; for loading after machines, 30c. per ton in summer and 35c. per ton in winter; Norris, 5c. above the district price; Springfield, 82½c. in summer and 90c. in winter, screened coal; Braidwood, 87½c. in summer and 95c. in winter; Streator, 72½c. summer, 80c. winter, for screened coal. Bloomington, third vein, 62½c. gross weight; second vein, 52½c. gross weight; Colfax, 47½c., mine run.

Springfield district, 45c., mine run; Colchester, 4½c. per bushel screened in summer, 5c. winter.

Danville district (Danville, Glenburn and Fairmount), 60c. screened, 48c. mine run; Grape Creek, 60c. screened, 30% differential on mine run; Pana, 40c. mine run, miners to furnish their own supplies; all mines on the Big Four and south of there, except Pana, 40c. mine run except veins of 5 ft. and under, these veins to receive 5c. above district price.

On account of the bad top and water Bryden is to be 5 cents above the district price. In all places where the company is to furnish the supplies a reduction of 10 cents per ton from the district price is ordered. All miners using air drills, machine shooters, $2.50 per day; helpers, $2 per day; loaders, 15 cents per ton, mine run; machine field shooters, $2.25; loaders, $2. Machine mining, inspection districts 3, 4 and 5, machine runners, 2 7/10 cents per sq. ft.; machine helpers, 1 cent per sq. ft; all men shooting after machines to receive the same price per foot as machine runners; all measurements to be made daily and before coal is blasted down; all shooters after mining machines and air drills to receive $2.50 per day; timbermen, $2.25; track-layers, $2.25; drivers, $2; cagers, $2; trappers, $1.75; laborers, inside men, not less than $1.75; dumpers, $2; laborers on top, not less than $1.60; box car loaders, $1.85; loaders after mining machines, 15 cents per ton, mine run; loaders after mining machines who shoot their own coal and timber their places, to be paid 25 cents per ton, mine run, company to furnish supplies.

The Cook County Commissioners received bids for the coal contract from July 1st, 1894, to July 30th, 1895, this week. The coal to be supplied was for the county hospital, courthouse, criminal court, county jail and a half dozen other institutions. The bids ranged from $2 to $4 per ton for soft coal according to quality wanted and place of delivery. The bids on hard coal were from $5 to $6. The bids were referred to the superintendent of public service for tabulation.

Coke remains as last report, the supply not yet nearly reaching the demand. Price remains at $5.

Pittsburg. June 21.

(From our Special Correspondent.)

Coal.—Many of the Monongahela mines are running and others are preparing to resume in a short time. Of course some of the miners are dissatisfied, and, like Oliver Twist, "are asking for more"; this, however, is generally the case after a strike. A mass meeting was held at McKeesport, at which the first, second and third pool miners decided to stand by the scale adopted at the Columbus Convention, which is 69 cents per ton. The coal famine is over, and nearly all the railroad mines are now in operation, that is, Tom's Run division; the Wheeling division is not running, except the mines of the Pittsburg & Chicago Gas Coal Company. The coal shortage will be a thing of the past by the end of the week. The mills and factories are being supplied. At Cincinnati the bulling of the coal market has been broken and coal is now selling at $2.75 per ton; only one firm is selling at this price, but it is the largest dealer in Pittsburg coal, and the other firms will undoubtedly follow in the reduction. The local demand has not been what the merchants expected and the outside demand has not sufficiently reduced the supply. Kanawha coal is arriving freely.

Connellsville Coke.—The strikers are alarmed and well they might be. An incident shows this: On Wednesday 145 negros, intended for the Bessemer plant of the McClure company, arrived, but they were not needed. The old miners learned of the movement, held a meeting and voted to return to work; the new men were then brought to Lamont, and all the old men who could be given work at Bessemer are now at work and the plant is full; they go back at the old prices. At Lamont the company is busy building barracks for the new men. The plant is in excellent shape, having 700 cars coal. The Rainey company is shipping over 100 cars of coal per day. A few more such days and the coke strike will collapse as suddenly as it began. New men are arriving daily and are put to work at once; new ovens are being fired and a large increase of coke is the result. There is no fixed price, as the large manufacturers are selling to the highest bidder. There are between 5,000 and 6,000 ovens burning, turning out a large amount of coke daily.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 22, 1894.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending June 23, 1893. F'ces.	Tons.	Week ending June 22, 1894. F'ces.	Tons.	From Jan., '93. Tons.	From Jan., '94. Tons.
Anthracite.	71	33,699	30	12,350	833,264	390,849
Coke.....	138	133,624	41	47,690	3,382,969	2,146,286
Charcoal...	34	8,394	20	3,930	267,427	99,998
Totals....	243	175,717	91	63,970	4,483,560	2,637,133

Pig Iron.—In no wise has the condition of the pig iron market altered since our last report. The improvement in prices which many people expected would follow the decreased production brought about by the coal and coke strike has failed to come. In the Birmingham district where very few furnaces are in blast owing to the scarcity of fuel, prices are perhaps 25c. higher. But in this market brokers and agents find it impossible to obtain any advance over the figures which have prevailed for the past six or eight weeks.

Consumers are apparently as unwilling to contract ahead to-day as they were three months ago. They are doing the same hand-to-mouth buying now as then. The consequence is that the demand seems smaller than it really is, although it is very small after all. A canvass of the trade shows that thus far this month pig iron dealers have done less than one-fourth of the business that they did during the same time in 1892, and about one-third of the business done in June last year. Quotations at tidewater are as follows: Northern brands, No. 1, $12.50@$13; No. 2, $11.50@$12.50; gray forge, $10.50@$11. Southern irons, No. 1, $12@$13; No. 2, $11@$11.50; No. 1 soft soft F., $11@$11.50; No. 2 soft F., $10.50@$22 25 Scotch irons are quoted: Coltness, $21.50@$22; Eglinton, $19.50@$20; Summerlee, $20.50@$21.50.

Billets and Rods.—There is no improvement in this market; it continues quiet, prices just now being above buyers' views. Consumers prefer to wait a little while longer, when they think that prices will be lower. Quotations are nominally: Domestic billets, $19@$19.50; wire rods, domestic, $27@$27.50; foreign rods, $39@$40.

Manufactured Iron and Steel.—Some sales of structural material are reported this week, but none of them was very large. Prices are without much change from last week, and we quote: Angles, 1·30@1·40c.; axles, scrap, 1·40@1·60c. delivered; steel, 1·40@1·55c.; bars, common, 1·15@1·30c.; refined, 1·25@1·40c. on dock; beams, up to 15 in., 1·40@1·50c.; channels, 1·40@1·50c. on dock; steel hoops, 1·45@1·75c., delivered; links and pins, 1·40@1·65c.; plates, flange, 1·60c.@1·80c.; fire-box, 1·80@2·10c.; marine, 2·45@2·70c.; sheared, 1·80c.; shell, 1·40@1·60c.; tank, 1·30@1·40c.; universal mill, 1·25@1·50c.; tees, 1·50@1·60c., all on dock.

Merchant Steel.—This market is without change either as to prices or as to volume of business. Quotations this week are: Tool steel, 5·75@6·25c.; tire steel, 1·60@1·75c.; toe calk, 1·70@1·90c.; Bessemer machinery, 1·25@1·50c.; open-hearth machinery, 1·90@2c.; open-hearth carriage spring, 1·90@2c.; crucible spring, 3·50@3·75c.

Old Material.—We do not hear of much business doing in this market. Quotations are nominally as follows: Old steel rails, $9.50@$9.75; old iron tees, $10.50@$11 50 per ton; New York railroad scrap, $11.50@$12 per ton delivered at mill, and yard scrap at $10; wrought turnings, delivered at mill, $8 50@$9; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50 New York; cast borings, $6@$6.50 delivered at mill.

Rail Fastenings.—The market for track material is exceedingly dull. No business is reported and quotations remain as follows: Fish and angle plates, 1·20@1·40c. at mill; spikes, 1·50@1·75c.; bolts and square nuts, 2@2·25c.; hexagonal nuts, 2·10@2·30c., delivered.

Spiegeleisen and Ferromanganese.—This market continues quiet. Quotations remain nominally: Spiegeleisen, 10@12%, $21@$22; 20%, $25@$26. Ferromanganese, $51.50@$53.

Steel Rails.—We do not hear of any sales of standard sections this week. Prices continue $24 at mill and $24.80 at tidewater. It is reported here and in Philadelphia that these prices are not being held very firmly by the mills.

Buffalo. June 21.

(Special Report of Rogers, Brown & Co.)

There is a fair trade to report considering the unfavorable conditions surrounding all business. The advance in freights to New England points has materially affected shipments in that direction, and as yet no compensating increase has developed in other fields. Stocks of good foundry iron tributary to this market have been heavily drawn upon, creating a positive scarcity for prompt delivery. Prices are firm on the basis of the recent stiffening, and at these figures considerable business is being booked for future delivery. Offsetting these favorable features, which are largely attributable to the cutting down of production, there is general complaint of slow business from consumers of pig iron. We quote on the cash basis, f. o. b. cars Buffalo: No. 1 foundry, strong coke iron, Lake Superior ore, $11.50; No. 2 foundry, strong coke iron, Lake Superior ore, $11; Ohio strong softener No 1, $11.50; Ohio strong softener No. 2, $11; Jackson County silvery No. 1, $15.75@$16.75; Lake Superior charcoal, $14 25; Tennessee charcoal, $15.50; Southern soft No. 1, $11.25; Southern soft No. 2, $10.75; Hanging Rock charcoal, $18.50.

Chicago. June 20.

(From our Special Correspondent.)

The Chicago iron market has made a good showing during the week, for business has been quite brisk in all lines. The coal strike having practically ceased, a number of resumptions are heard of and reports of others now making preparations to resume are coming in. All manufactured products are meeting with a sufficient demand to create steadier prices and to limit the number of concessions that have been a feature of trade for some time past.

Pig Iron.—Pig iron continues to meet with an exceedingly good demand, and the sales this week have really surpassed the large tonnage of last week. Most of the orders are for small quantities from 50 tons up to one of 5,000 tons Northern iron, which was the largest sale of the week, and as large a sale as has been transacted so far this year. The market has assumed a firmer tendency, and while prices have not advanced yet there is but slight chance of dealers making concessions as heretofore. Northern iron, as usual, has had by far the greater tonnage of the week, but the Southern material has not been neglected, for there have been several good sized transactions reported. Buyers are showing an inclination to cover for their requirements during the remainder of the year, because of the uncertainty prevailing as to southern freight rates, but the southern furnaces are unwilling to make any contracts ahead, except with the provision that such be subject to freight rate changes. Southern soft irons are having a good call, but the number of furnaces closed has limited these irons, and consequently the demand is regulated to suit the supply. Southern iron prices show an all around firmness. Prices are, per gross ton f. o. b. Chicago: Lake Superior charcoal, $15@$15.50; Lake Superior coke No. 1, $11.50@$11.75; No. 2, $10.50@11; No. 3, $10.25@$10.50; Jackson County silveries, $14.50@$15; Southern coke, foundry No. 1, $10.75@$11; No. 2, $10.25@$10.50; No 3, $9.75@$10; Southern coke, soft, No. 1, $10@$10.25; No. 2, $9.75@$10; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.75@$12; No. 2, $11.25@$11.50; Tennessee charcoal No. 1, $14@$14.50; Bessemer, $11.50@$11.75; Ohio strong softeners, $12 75@$13.25.

Structural Material.—Small lots in few sales from stock continue, and the market shows no sign of improvement. Quotations are f. o. b. Chicago: Angles, 1·40@1·45c.; tees, 1·65@1·70c.; universal plates, 1·45@1·50c.; beams and channels, 1·50@1·60c.

Plates.—Agents in this vicinity say that business has increased slightly during the week. Boiler tubes are meeting with a considerable inquiry. Prices are steadier. Flange steel is quoted at 1·70@1·80c.; firebox steel, 2·75@3·00c.; tank steel, 1·40@1·50c. boiler tubes, 75% discount.

Merchant Steel.—Business in merchant steel is not so good as last week, consumers evidently having decided that production would again commence on a large scale now that the fuel question was settled. Quotations are, carload lots: Smooth finished machinery, 1·80@1·90c.; tire steel, 1·70@1·80c.; Bessemer bars, 1·45@1·55c.; toe calks, 2·05@2·15c.; crucible spring, 3·40@3·65c.; tool steel 6½c. and upward; specials, 12@20c.

Galvanized Sheet Iron.—Business is almost wholly confined to store trade, as the mills have mostly shut down for want of fuel. Prices from store are 75 and 5% off.

Black Sheet Iron.—Conditions remain as last report, there being no actual improvement during the week. Mills continue to quote 2·40c. for No. 27 f. o. b. Chicago.

Bar Iron.—Sales continue in lots of 50 to 100 tons for immediate shipment, the tonnage for the week evidently having been a little larger than last. The Andrews Bros. Company's mills, at Youngstown, O., have resumed in all departments, after having been closed down for a few weeks from lack of fuel. Quotations are 1·10@1·20c. f. o. b. Chicago.

Billets.—Conditions are not as favorable in the billet market, the sales for July delivery having been reduced much as those of previous week. Prices remain $18.25@$18.50.

Steel Rails are in demand only in small quantities. A good number of orders have been booked during the week, and enough are in sight to keep the steel works here busy for some time to come. Quotations are still $25@$27 for standard sections.

Nails.—Quite a number of sales have been made for immediate shipment in both wire and steel cast nails. Jobbing prices in cut nails are $1.10@$1.15.

Old Rails and Wheels.—Business continues slow, with but small chances of early improvement. Old steel rails are quoted $6.50 up; old iron rails, $9.50 @$10; old wheels, $10.

Scrap.—The scrap piles remain almost untouched and business is very poor. Prices are: Forge, $8.50@$9. Cast borings, $3.50@$4; wrought turnings, $4.50@$5; axle turnings, $6@$6.50; mixed steel, $5@$5.50; tires, $12.50@$13; iron axles, $14@ $14.50.

Philadelphia. June 21.

(From our Special Correspondent.)

Pig Iron.—Business has not improved, and brokers express disappointment. Though the coal strike is practically settled, excepting in Jefferson County, two regiments were ordered at noon to-day. There is a feeling of indifference, and the dull midsummer season is here. New foundry work is scarce, and mill men will await the booking of orders before resuming full time, about July 9th. The reduction of stocks and of production has been temporarily offset by other drawbacks. Three or four foundry brands have been marked up 25 cents, but mill irons drag at $10.50.

Muck Bars.—Orders aggregating 175 tons were booked this week at $20.50@$20.75.

Steel Billets.—Makers of billets think they have sold a few hundred tons July delivery at $20.25. Most users are in a position to wait a week or two longer, and they trust that by that time manufacturers will be in a position to promise early deliveries at about $13.50@$19.

Merchant Iron.—All the iron made meets with prompt sale at good prices. The resumption of four mills is announced for the latter part of next week and orders have been taken in view of this. The best informed in the trade do not expect an all round improvement, and several millowners propose to wait and see what business they can get. Prices 1·25@1·40.

Skelp.—Additional skelp iron orders are coming along. Ruling price 1·25.

Sheet.—There is quite a run on sheet iron in stores in a retail way, and manufacturers expect to have enough work to keep them running during July and August.

Merchant Steel.—Store stocks are going down, but no effort will be made to duplicate stocks until after the mills generally resume.

Pipes and Tubes.—This has been a dull week all through, but manufacturers are promised good sized orders early in the fall.

Plate and Tank.—Good sized lots of plate have been asked for, for August delivery manufacturers show an unexpected determination to discontinue such demoralized quotations as prevailed a month or two ago. There is a good deal of work ahead, and manufacturers are resolved to adhere to fair quotations, so they say. Heavy plates average 1·30; flange, 1·60.

Structural Material.—Current business is trifling. Quotations are 1·40 for angles and 1·50 for beams and channels. Agents say there is but little chance for July business, but later on when railroad managers begin to do projected work they think mills will be comfortably filled up. Prices will continue very low on large orders, but on small orders there appears to be a little improvement.

Steel Rails.—Quoted price, $24. It is rumored shaded quotations have been made to inquirers for two or three large lots. The demand for girder rails is active, and firmer quotations are being made to a few late customers who want early deliveries.

Old Rails.—Quoted at $11@$11.50.

Pittsburg. June 21.

(From our Special Correspondent.)

Raw Iron and Steel.—Business since our last has undergone but little change. Preparations are being made for an active summer and fall trade. The settlement of the coal question will soon be felt in business circles. While it will be some days before some of the men will assume work, at the same time preparations are being made to start. While the mineowners are willing to accept and pay the prices agreed on, they refuse absolutely to sign a scale. The market is bare of Bessemer pig and soft steel billets. Either of them would command good prices, provided they were obtainable. Prospects are certainly brighter for an early resumption of the works that have been idle for some weeks. Production of both crude and finished products has declined to such an extent, and stocks in first and second hands are so small, that difficulty is experienced by consumers of certain grades of material required for immediate wants, even at the high prices offered. The business done in the local market has been very much restricted; consumers purchase what material they require for immediate use, but are making few contracts that extend far into the future. Both buyers and sellers are waiting until the situation settles somewhat before discounting the future. With higher freight rates and increased cost of production prices are likely to continue firm for some time, but whether the demand will be sufficient to meet the supply upon the resumption of work in the furnaces and mills, and prevent cutting of prices, is a problem that both sides are endeavoring to solve. A lower level is to be expected in some lines, but not a return to the demoralized values of the earlier months of the year. It is noticeable, however, that opinion is turning in favor of the position that higher prices for iron products will rule this fall. Ore is distinctly firmer in tone; what coal and coke will rule at will be learned later. With only 19 furnaces west of the Alleghanies and north of the Ohio River in blast, it is evident that the industry is practically suspended in that important district.

Coke Smelted Lake and Native Ore.

Tons.		Cash.
5,000	Bessemer, July.	$12.50
3,000	Bessemer, July, August	12.25
2,000	Bessemer, June	13.25
2,000	Bessemer, July, August	12 00
1,000	Bessemer, pro'pt	13.00
500	Bessemer, July, Aug., Sept	11.90
500	Gray Forge	9.90
500	Gray Forge	9.85
200	Mottled	9 75
100	No. 1 Foundry	11.50
100	No. 2 Foundry	10.65
100	No. 3 Foundry	10.50
100	Bessemer, June	13.25
75	No. 1 Silvery	13.50
50	No. 2 Silvery	12.75

Charcoal.

75	Cold Blast	24.00
50	Cold Blast	23.50
25	Cold Blast	24.00
50	No. 2 Foundry	16.50
50	No. 4 Foundry	16.25
25	No. 1 Foundry	17.50

Blooms, Billets and Slabs.

3,000	Billets, July, Aug., at mill	18.50
1,500	Billets, July, Aug., Sept, at mill	8.60
1,500	Billets, July, Aug., Sept., at mill	18.40
1,000	Billets, July, Aug., Sept., at mill	17.80
500	Billets, prompt, at mill	19 0
200	Billets, spot, at mill	19.00

Muck Bar.

259	Neutral, June 20.00

Ferromanganese.

50	80 per cent. delivered 54.00

Blooms, Billets, Bar Ends.

500	Billets and Bar Ends, delivered 11.00

Steel Wire Rods.

550	Five gauge American, at mill 25.75

Sheet Bars.

350	Sheet Bars at mill 22.50

Skelp Iron.

700	Sheared 1.45 4 m.
360	Wide gr'ved 1.30 4 m.
350	Nar. gr'ved 1.30 4 m.

Skelp Steel.

520	Wide gr'ved 1.20 4 m.
480	Sheared 1.30 4 m.
340	Nar'w gr'v'd 1.20 4 m.

Old Rails.

300	Iron rails 12.00
200	Steel rails, mixed lengths 9.25
100	Iron rails 12.00

Scrap Material.

600	Bloom and billet scrap, net 10.65
400	Bloom and billet scrap, net 10.50
200	Plate and tank scrap, net 7.25
100	Wrought turnings, gross 5.75
100	Boiler steel, gross 12.00

METAL MARKET.

NEW YORK, Friday Evening, June 22, 1894.

Prices of Silver per Ounce Troy.

June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	June.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
16	4.88⅛	28⅞	63	.488	20	4.88¼	28⅝	62⅝	.485
18	4.88⅛	28¾	62¾	.486	21	4.88¼	28⅝	63⅛	.489
19	4.88⅛	28⅛	62¼	.482	22	4.88¼	28⅞	62¾	.486

Owing to difficulties in getting suitable ores the smelting companies are not very active at present in putting silver bullion on the market. In connection with decreased supplies, however, the Eastern buyers are only doing a moderate business, so that we do not find ourselves able to record any marked advance in the price. Small supplies are met by a small inquiry.

The United States Assay Office at New York reports the total receipts of silver for the week to be 113,000 oz.

Gold and Silver Exports and Imports at New York, Week Ending June 16th, 1894, and for Years from January 1st, 1894, 1893, 1892.

	Gold.		Silver.		Excess of Ex. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Week	$2,305,000	$13,571	$366,596	$53,407	E $2,604,618
1894...	54,888,972	9,283,818	17,656,657	747,146	E 62,514,665
1893...	68,859,805	5,927,848	14,648,391	1,217,378	E 76,320,970
1892...	34,416,692	6,168,015	10,873,731	706,195	E 38,416,213

The gold exported for the week was chiefly to Europe, $1,500,000 going to Germany, $750,000 to London, and the rest to Cuba; of the silver $58,000 went to the West Indies, the balance to London. The imports, both of gold and silver, were from the West Indies.

During the five days ending June 21st the exports and imports of gold and silver at New York were as follows: Exports, gold, $6,908,500; silver, $428,861. Imports, gold, $196,622; silver, $27,701. Of the gold exported, $6,775,500 was in American coin, $2,590,000 of which went to France, $23,100 to South America, $2,400 to the West Indies, $3,750,000 to Germany and $500,000 to London. The remainder, $133,000, was in Spanish coin and went to the West Indies. Of the silver exported, $3,175 was in Brazilian coin, and went to South America. All the rest was in American coin and bullion, $413,800 of which went to London, and $1,906 to South America.

Gold and Silver Exports and Imports of the United States, at all Ports, for May, 1894, and for Five Months to May 31st, 1894, 1893.

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
May	$27,406,801	$4,282,743	$3,769,379	$781.752	E $26,11 ,685
1894.	47,639,955	10,552,425	20,332,271	3,815,262	E 53,614,539
1893.	71,006,712	10,749,361	15.535,377	7.086,461	E 68,706,267

The excess of gold exports alone over gold imports was $23,124,058 for May, and $37,087,530 for the five months this year, against $60,257,351 for the five months in 1893. The figures are reported by the Bureau of Statistics, Treasury Department.

NOTES OF THE WEEK.

Very little change is to be noted in the business situation during the week. The tariff debate seems to be drawing more rapidly toward its conclusion, and most men have settled down into the belief that the measure will finally pass with some modifications from the original bill. The partial settlement of the coal strike is accepted as evidence of its complete adjustment soon, and the iron and steel trades begin to show evidences of revival. On the other hand the usual hot-weather dullness is settling down and in many branches of trade activity is hardly expected until fall. The period of liquidation is evidently passing, however, and there are preparations for renewed activity which are encouraging.

Gold exports, which fell off somewhat last week, have increased again this week. The mid-week steamers took out $4,250,000, chiefly to Germany, and there has been about $3,500,000 more taken for Saturday's steamers, making a total of $7,750,000 for the week.

These persistent shipments of gold are attracting attention, and they show once more the absolute uselessness of relying on the so-called "balance of trade" as an indication of their future course. The "balance of trade" has seldom been more largely in our favor, but the exports of gold continue. Of course many theories are advanced to account for them, each putting forward some special cause. Each of these may have some reason in it, for a variety of causes have been required to produce the present situation. Probably not enough account has been taken of the sale of American securities held abroad which has been kept up quietly but persistently. Foreign investors have been alarmed at the great railroad bankruptcies of the past year, and holders of stocks and bonds of still solvent companies have been disposed to get rid of them at a loss, rather than run the risk of the greater losses, such as the reorganization of the Atchison, the Reading, the Union Pacific, the Erie and others will involve. We do not mean to say that this is the only cause, but it is a more important one than many are willing to admit.

Fourteen of the New York bank presidents held an informal conference to consider the depleted condition of the Treasury and to devise means to relieve the Treasury's gold reserve from further depletion at the hands of exporters of the precious metal. There was a very interesting interchange of views. President Williams, of the Chemical Bank, presided, and made an informal address, setting forth the fact that the associated banks of this city hold about as much gold as the Treasury, and suggesting that they meet further demands for export from their own vaults. President King, who was instrumental in calling the meeting, spoke briefly of the gold export movement, which, he said, appeared now to be near a culmination, and urged that the banks be unanimous in yielding their gold. The gold reserve fund, he said, was now only about $67,000,000, the lowest point reached since strengthened by the bond issue of February. It was suggested that the banks contribute of their gold pro rata a good round sum—perhaps $20,000,000—to the Treasury, but President Cannon, of the Chase National Bank, made an analysis of the Treasury's condition, showing that it is now carrying as much gold as its general balance renders possible. He argued that it has only about $16,000,000 of available currency, and consequently had nothing to give in exchange for proffered gold. Some criticism was made on the Treasury management. In the discussion which followed many propositions were broached, but failed to meet with general acquiescence. It was agreed that it would be unfair that those banks having the large foreign houses that export gold as depositors should have to provide all the yellow metal they required for shipment. The general opinion prevailed that these banks, for the present at least, should furnish the gold from their own vaults as required for export, and that the other banks should voluntarily surrender a portion of their holdings to reimburse the banks drawn upon. It is not certain, however, that the Treasury will not be required to furnish the metal in quantities before the gold movement has terminated.

The statement of the United States Treasury on Thursday, June 21st, shows balances in excess of outstanding certificates amounting to $116,481,951, made up as follows: Gold, $66,977,969; silver, $14,-038,784; legal tenders, $19,265,574; treasury notes, etc., $16,198,624. Changes during the week were a decrease of $2,840,738 in the total balance, and of $6,984,236 in the gold balance.

The amount of Government deposits with national banks on the same date was $12,102,635.

The statement of the New York banks for the week ending June 16th shows an increase of $329,900 in loans; decreases of $585,900 in specie, $54,900 in legal tenders, $396,500 in deposits and $80,500 in circulation. There is practically very little change from the preceding week.

The Bank of England on Thursday, June 21st, reported its gold holdings at £38,878,557, an increase

of £9,273,624 as compared with the corresponding date last year. The bank continues to suffer from a surplus of unemployed money, and its reserve is 70·46% of its liabilities.

The Bank of France on Thursday, June 21st, reported its specie holdings at 1,784,918,000 francs gold and 1,278,277,800 francs silver; an increase of 69,157,000 francs gold and of 1,343,000 francs silver, as compared with the corresponding date last year. Changes during the week were increases of 2,400,000 francs gold and 975,000 francs silver.

The Bank of Russia on May 16th (May 28th, real date) reported its specie holdings at 360,377,600 roubles ($270,283,200) gold and 38,457,600 roubles ($28,843,200) silver. The bank notes in circulation amounted to 1,025,210,000 roubles.

The Board of Trade returns give the imports of gold into Great Britain in May at £4,645,287, and the exports at £57,437, showing an excess of imports amounting to £4,587,850. For the five months ending May 31st the figures are as below:

	1893.	1894.	Changes.
Imports.....	£7,703,452	£12,144,893	I. 4,441,441
Exports..... ...	5 525,946	2,376,562	D. 3,149,344
Excess of imp.	£2.177,516	£9,768,331	I. £7,590,785

The great increase this year shows in another light the rapid accumulation of money.

The imports of silver in May were £1,156,975 and the exports £1,461,069, showing an excess of £304,994 in exports. For the five months to May 31st the statement is as follows:

	1893.	1894.	Changes.
Imports....	£4,376,933	£5,703,939	I. £827,026
Exports.....	5,057,463	5 931,817	I. 874,354
Excess of exp.....	£689,530	£727,858	I. £47,328

The increase in excess of exports this year was due chiefly to the large shipments to China and Japan.

The total merchandise imports of Great Britain for the five months to May 31st were valued at £176,798,544, an increase of £10,941,978, as compared with the corresponding period in 1893. The merchandise exports were valued at £113,430,039, a decrease of £3,573,282. The excess of imports over exports was £63,368,505, an increase of £14,515,260 over last year.

The official returns of the foreign trade of India for the fiscal year ending March 31st give the total value of the merchandise exports at 106,459,100 rupees, and the imports at 73,961,600 rupees, an excess of 32,497,500 rupees, which compares with an excess of 43,931,000 rupees in exports for the previous year. The imports and exports of the precious metals for the year were as follows, in rupees:

	Gold.		Silver.	
	1892-93.	1893-4.	1892-93.	1893-94.
Imports.	Rs. 1.781,700	Rs. 3,146,500	Rs. 15,228.000	Rs. 15,278,700
Exports.	4,594,500	2,505,300	2,334,500	1.519,500
Exces. Ex.	2,812,800	I. 641,200	I. 12,893,500	I. 13,759,200

The imports of silver were nearly the same for the two years, showing an increase of only 50,700 rupees, or 0·3%. This is somewhat remarkable, as 1893-94 included 9 months since the closing of the mints.

The sales of India Council bills in London this week amounted to 40 lakhs, and prices were firm, the full amount being taken at 13 1/16d. per rupee, an increase of the fraction over last week. The increased demand is said to be largely due to the demand for bills to pay for gold bought in India for export; but the amount of these purchases is hardly large enough to account fully for the rise, although it may have helped materially.

The Finance Committee of the French Assembly has negatived the proposal to recoin silver 5-franc pieces for the 12,000,000 francs new small coin. The committee has decided that the profit which will accrue to the State from buying silver in the open market is a legitimate one, and that the State should not lose it. Nearly half the new coinage will be in 50 centime pieces, which have been scarce since the Italian silver was withdrawn.

Domestic and Foreign Coins.

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

	Bid.	Asked.
Mexican dollars.....	$.51¾	$.52
Peruvian soles and Chilean pesos....	.51½	.52½
Victoria sovereigns.....	4.85	4.89
Twenty francs.....	3.90	3.93
Twenty marks.....	4.80	4.85
Spanish 25 pesetas.....	4.80	4.85

Other Metals.

Copper.—There is barely a new feature worthy of mention, and the dullness which has of late characterized the market still continues. Very little business has been transacted, which is not so much owing to lack of sellers—who would have been ready to book orders—but more on account of manufacturers who are unwilling to buy more than they already have, as their volume of business is so small it makes it undesirable to pursue any other but a conservative policy. Lake copper is still held for 9⅛, but must be called nominal thereat, no transactions of any importance having taken place at that figure The demand for electrolytic copper continues fair as the result of an active demand for wire for electrical purposes. We have to quote this kind at 8¾@8⅞. Casting, 8⅝@8¾; while Arizona pig remains unchanged.

The foreign market again broke the record, G. M. B's declining to £37 17s. 6d. for spot, but a reaction has set in, and the closing price to-day is £38 7s. 6d. for spot and £38 15s. for three months. Otherwise the foreign market is in a very unsatisfactory condition; consumption leaves a good deal to be desired, and orders cabled for American copper are few and far between, and, where there have been any sent, prices have been considerably below what producers would be ready to accept. How long this unsatisfactory state of affairs will continue it is difficult to say, since advices received do not even hold out any prospects of any improvement in the future. The statistics for the first half of the month show an increase in supplies of 1,600 tons, and this notwithstanding the fact that exports from here have been comparatively small. For refined and manufactured we quote: English Tough, £40 10s.@£41; Best Selected, £41 10s.@£42; Strong Sheets, £50@£50 10s.; India Sheets, £46 10s.@£47; Yellow Metal, 4¼d.

The following figures give the production (in tons of 2,240 lbs.) of copper in the United States, and also by the chief foreign mines, and the exports from the United States for May and the five months ending May 31st:

Production, fine copper, long tons:	May.	Five mos.
Reporting mines in the United States.....	12,666	59,979
Pyrites and outside sources, United States..	1,340	6,700
Reporting foreign mines.....	8,013	37,682
Total production, long tons.....	22,021	104,361
Exports from United States, fine copper....	6,140	32,793

The production and exports in May show very little change from those reported for April.

The exports of copper from the port of New York during the week ending June 22d, as reported by the New York Metal Exchange, were as follows:

Rotterdam—Amsterdam	Plates	105 tons
Liverpool—Runic	Pigs	178 "
Havre—La Bretagne	Plates	10 "
" "	Ingots	3 "
Naples—Neckar	Ingots	5 "
Antwerp—Noordland	Plates	10 "
" "	Ingots	10 "
Rotterdam—Amsterdam	Plates	54 "
" "	Ingots	30 "
" "	Sheets	30 "
Havre—La Bretagne	Pigs	28 "
Matte: Swansea—Mohican		50 tons

Exports of copper from Baltimore for the week ending June 20th are reported by our special correspondent as follows:

June 13, Liverpool—Queensmere	19 bbls. scrap,	9,378 lbs.
" Hamburg—Romulus	1,075 bars,	157,236 "
" " "	633 cakes,	112,183 "
" " "	1,463 ingots,	22,400 "

Other metals exported during the week were 75 bbls. sulphate copper, 45,000 lbs., to Hamburg.

Tin.—Values show a decline as the result of lower quotations received from abroad, where the market seems to depend more or less on what support it receives from here. There has within the last few weeks been very little support, although prices are considered low. So long, however, as business generally remains as unsatisfactory as it is now, consumers are unwilling to buy more than they absolutely need, the extremely low prices not being adapted to tempt them. One would, however, naturally conclude that the nearer we approach the period when the duty will be abolished, the more likelihood is there that prices abroad will experience an advance. We quote spot: June and July at 19·70, and August and September at 19·75@19·80

The quotation in London declined to £69 17s. 6d., which was the lowest reached during the week, and from which there has been an improvement of 7s. 6d., the market closing to day at £70 5s. for spot and £70 12s. 6d. for three months.

For the five months ending May 31st, the shipments of tin to European and American ports are estimated by Messrs. W. T. Sargant & Sons' circular as follows, in tons of 2,240 lbs.:

	1891.	1892.	1893.	1894.
Great Britain.....	8,955	8,350	12,335	11,060
Europe.....	2,225	2,520	1,980	6,390
United States.....	4,500	4,275	3,660	2,810
Total	15,680	15,145	13,035	20,260

Of the total 1,800 tons were Australian tin in 1891; 1,675 tons in 1892; 1,425 tons in 1893, and 1,775 tons in 1894. The rest was from the Straits Settlements.

Lead has not maintained the strength which it displayed during the last week, as at the higher prices a good deal of metal was offered for sale, while the demand on the other hand was not sufficient to absorb it. The stronger feeling was more noticeable out West, and has to some extent been attributed to speculative buying. It is not unlikely that the reaction is to some extent the result of an early passage of the Tariff Bill, which, as we have previously pointed out, admits of importation at a price which, based on to-day's quotation abroad, would probably not exceed 3·10 New York. The closing quotation is 3·30@3⅜ for spot, while lead for future delivery is freely offered at 3·35.

St. Louis Lead Market.—The John Wahl Commission Company telegraph us as follows: Lead firm and steady; spot lead is selling in a retail way at 12½c., whereas July and August lead is obtainable in reasonably large quantities at 3·10c.

Spelter remains weak; supplies continue in excess of the demand, and the probability is that this condition will become more pronounced. This is owing to the fact that it becomes more evident from day to day that the furnaces which have been idle for several months past will resume operations, if not all, surely the greater part of them. The metal is freely offered at 3·40 for early shipment, which is the parity of the price ruling out West, where sales are reported at 3·10@3·15, East St. Louis.

Bismuth.—Quotations on the New York Metal Exchange are $2 per lb. for lots of 500 lbs. or over; $2.25@$2.50 per lb. for smaller lots

Magnesium.—The only concern at present manufacturing this metal in commercial quantities (the Aluminum und Magnesium Fabrik, Hemelingen, Germany), quotes prices as follows: Ingots and cubes, $6.48 per kilogram; bars, $6.24; powder, $8.64, ribbon and wire, $9.12 per kilo. These prices are at the works and for orders of over 10 kilos.; for less than 10 kilos. 24c. per kilo. must be added for ingots and bars, and 48c. for powder or wire.

Nickel.—Quotations in this market are steady at 45@50c. per lb., according to grade.

Phosphorus.—Quotations are 50@52½c. per lb., f. o. b., New York or Philadelphia.

Platinum.—Prices abroad are firm, with an upward tendency. For chemical ware no change in prices is reported. Messrs. Kimer & Amend, New York, quote platinum crucibles and dishes, hammered ware, French make, at 45c. per gram for smaller quantities, 43c. per gram for lots of not less than 100 grams, and 41c. for lots of not less than 250 grams. Wire and foil at 42c., 41c. and 40c. respectively for the quantities named. Current retail price for crucibles is 50c. per gram.

Sodium.—There are no local quotations. In Germany and England the metal is quoted at 90c.@$1 per lb. at factory.

Quicksilver.—There is no change to report in this market. Quotations remain: New York, $36; London, £5 19s.@£6.

Antimony is somewhat easier; Hallett's 8½@8⅝, L. X., 8⅞@9c. and Cookson's 9¾; U. S. French Star, 10c.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, June 22.

Heavy Chemicals.—There is no change to report in the condition of the heavy chemical market as outlined in this column for the past few weeks. For caustic soda there has been the usual jobbing demand and a few sales for spot and prompt delivery are reported this week. Carbonated soda ash and alkali are both very quiet. A fair amount of business has been done in sal-soda. Bleaching powder is quiet. Prices generally are without change from last week. We quote: Caustic soda, 60%, 2·82½@2·97½c.; 70%, 2·60@2·70c.; 74%, 2·62½@2·72½c.; 76%, 2·70@2·80c. Carbonated soda ash, 48%, 1·05@1·25c.; 58%, 1·05@1·15c. Alkali, 48%, 1·05@1·15c.; 58%, 1@1·10c.; according package. Sal soda, ·80@·90c. Bleaching powder, 2·05@2·50c.

Acids.—Trade in this market shows no improvement from the condition reported in our last issue. The demand generally is light, and is of a jobbing nature. We quote: Acids, per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acetic, in barrels, $1.62½@$1 75; muriatic, 18°, 80c.@$1; 20°, 90c.@$1.10; 22°, $1@$1.25; nitric, 40°, $4; 42°, $4.50@$4.75; sulphuric, 75c.@$1; chamber acid, $7.50@$8 per ton. Mixed acids according to mixture, oxalic, $6.40@$7.25 per 100 lbs. Blue vitriol is quoted at $3.75; glycerine for nitro-glycerine, 11½@12½c., according to quality and quantity.

Brimstone.—The brimstone market continues dull Quotations are as follows: Best unmixed seconds, on the spot, $16.25. August-September shipments, $15.75. Best thirds are 75c.@$1 less.

Fertilizing Chemicals.—We do not hear anything doing in this market. Stocks are not heavy, but they are fully sufficient to meet the present demand, which is very light just now. Prices show little or no change from last week and we quote: Sulphate of ammonia gas liquor $3.85, and $3 25 for bone. Dried blood, $2.05@$2.10 per unit for high grade and $2@$2.05 for low grade. Azotine, $2.15. Concentrated phosphate 30% available phosphoric acid), 75c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 60c. per unit at seller's works in bulk. Dissolved boneblack, 17% to 18% P_2O_5, 95c. per unit. Acidulated fish scrap, $15@$16, and dried scrap nominally $25 f. o. b. fish factory; wet scrap $15 f. o. b. fish factory. Tankage, high grade, $22.50@$23; low grade, $21@$21.50. Bone tankage, $23@ $24; bone meal, $24@$25 50.

In lots of 50 tons on contracts we quote: Double manure salts, 48 53% (basis of 48%): New York and Boston, $1.12; Philadelphia, $1.14½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.17. High grade manure salts, 90-95% and 96-99% (basis 90%), respectively: New York and Boston, $2.07@$2.11; Philadelphia, $2.09½@$2.13½. Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.12@$2.16.

Phosphate Rock.—Mr. Paul C. Trenholm sends us the following statistics showing domestic shipments of phosphate rock from Charleston, S. C. during the

month of May: 1892, crude, 14,182 tons; ground, 621 tons; 1893, crude, 13,435 tons; ground, 300 tons; 1894, crude, 15,445 tons; ground, 100 tons. In May, 1894, 2,100 tons were shipped to Genoa. Charleston, S. C., quotations are as follows: Acid phosphate, $6.25 @$6.50 cash f. o. b. in bulk; phosphate rock, standard land, kiln dried, $4.50@$4.75 f. o. b. mines; ground rock, $6 f. o. b.

Muriate of Potash.—In lots of 50 tons, quotations are as follows: 80-85% and minimum 95% (basis 80%), respectively: New York and Boston, $1.78 @$1.91; Philadelphia, $1.80½@$1.83½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.83½ @$1.86.

Kainit.—Prices for kainit (minimum 23%) in cargo lots for 1894 delivery are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $9@$9.25; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.75@$10. For sylvinit, 27-35%, prices are as follows per cent. per gross ton, invoice weight: New York, Boston and Philadelphia, 37½c.; Charleston, Savannah, Wilmington, N. C., and New Orleans, 41c. Actual weight, 1c. more per cent.

Nitrate of Soda.—We quote this week: Spot, $2.25; summer shipments, $1.95@$2.

Liverpool. June 14.

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

As far as chemicals are concerned the position shows little change since our last report.

Soda Ash is as dull as ever, and for Leblanc makes quotations are nominally about as follows:

Caustic Ash, 48%, £3 15s.@£4 per ton; 57-58%, £4 10s.@£4 15s. per ton, net cash.

Carbonate ash, 48%, £3 5s.@£3 15s.; 58%, £3 15s.@ £4 per ton, net cash.

Ammonia ash, 58%, does not appear to attract much attention from buyers, and prices are unchanged at £3 10s.@£3 15s. per ton net cash for tierces, or 5s. less for bags.

Soda Crystals are quiet at £2 12s. 6d.@£2 15s. per ton, less 5%.

Caustic Soda—The demand does not improve, and orders are still scarce. Quotations vary according to export market, the nominal spot range being about as follows: 60%, £7 10s.@£8 5s. per ton; 70%, £8 10s.@£9 5s. per ton; 74%, £9 10s.@£10 5s. per ton; 76%, £10 10s.@£11 5s. per ton, net cash. For parcels under 10 tons 5s. per ton extra is charged.

Bleaching powder is not active, but Alkali Company's quotations are unaltered, ranging from £7 10s. to £8 5s. per ton net cash for hardwood packages, according to destination. Chlorate of potash is still nominally quoted by resellers at 6¾@6¾d. per lb. for promptly delivery, but if anything the tone is a shade firmer. The output has been considerably curtailed, and when the demand comes on again this reduction in make will no doubt have an effect.

Bicarb. soda is steady at £6 15s. per ton, less 2½% for one cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia strong and scarce at £14 7s. 6d.@£14 12s. 6d. per ton, less 2½% for good gray 24 and 25% in double bags f. o b· here, according to quality.

Nitrate of soda a shade easier at £10@£10 2s. 6d. per ton, less 2½% for double bags f. o. b. here.

Carb. Ammonia.—Lump, 3¾d. per lb.; powdered, 4d. per lb. less 2½%.

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Aspen, Colo.; Baltimore, Pittsburg, St. Louis, London and Paris, see pages 598 and 600.]

NEW YORK, Friday Evening, June 22.

During the past week total sales of mining stocks at the Consolidated Stock and Petroleum Exchange amounted to 3,460 shares. It is difficult to say whether the dullness in the mining stock market is greater than the heat in the exchange or 'vice versa." At any rate both are excessive, and mining brokers suffer accordingly.

The Comstocks have been neglected during the past week. Best & Belcher declined from $1.55 to $1.25, with total sales of 700 shares. Mexican declined from $1.15 to 85c., total sales, 500 shares. Other sales of Comstocks were: Chollar, 200 shares at 35c.; 100 shares Comstock Tunnel at 5c.; 100 shares Gould & Curry at 95c.; 100 shares Hale & Norcross at $1.65; 460 shares of Ophir at $2.05@ $2.75; 100 shares of Sierra Nevada at 85c., and 300 shares of Yellow Jacket at 50@75c.

Of the California stocks the only one to show any transactions this week was Standard Consolidated, 300 shares of which changed hands at $1.70@$1.75.

Of the Colorado stocks, Leadville Consolidated was stationary at 9c., with sales of 400 shares; Little Chief shows a sale of 200 shares at 15c.

The stock of the Victor Mining Company was listed at the Consolidated Stock and Petroleum Exchange this week. From the official statement of the company we learn that it was incorporated on February 16th, 1893, under the laws of the State of Colorado. The capital stock is $1,000,000, divided in 200,000 shares at the par value of $5 each. The stock is full paid and non-assessable. The principal office of the company is at Denver, Colo., and the transfer office is at No. 35 Wall street, New York City. Mr. C. H. Wildes is the transfer agent. All the stock certificates are registered at the Farmer's Loan and Trust Company. The officers are: W. E. Johnson, president; Eben Smith, vice-president; R. H. Reid, secretary, and George E. Ross-Lewin, treasurer. These, with James A. McClurg, constitute the board of directors. There are 50 shareholders in the company. The property is located at Cripple Creek, El Paso County, Colo. There has been expended by the present company $75,000 for mine development and $15,000 for milling machinery. The vein is from 3 to 6 ft. wide, and the main shaft is 350 ft. deep. The average value of the ore, by the reduction test, is $300 per ton. The cost of mining is $5 per ton, and of reduction, including transportation, is $12 per ton. The ore is refractory. The company has mined 1,150 tons of ore, from which the gross value of the bullion produced was $235,000. The company has paid 12 dividends, aggregating $150,000. The stock to-day was offered at $3, and $2.50 was bid for it. No sales are reported.

The Horn Silver Mining Company has declared dividend No. 34, of 12½c. per share, or $50,000. In spite of the low price of silver and of the recent disastrous fire at its mill, this company continues to declare its regular quarterly dividend by reason of its good management. It is an example worthy of emulation by all the mining companies.

Mr. James Lee, who has been connected with the Consolidated Stock and Petroleum Exchange in an official capacity since its inception, and who was also connected with the old Mining Board, which was subsequently merged into the Consolidated, has resigned his position with the latter, and will devote himself to a general brokerage business. Mr. Lee will make a specialty of mining stocks, for which his long experience well qualifies him. His offices are at No. 60 Broadway.

Boston. June 21.

(From our Special Correspondent.)

It is the same old story of dullness and inactivity in the copper stock market. There is some investment buying of the dividend-paying stocks, but an entire absence of speculative activity in the balance of the list, and there is nothing in the outlook to warrant the belief for any material improvement in the near future.

Calumet & Hecla is firm at $270, at which all the sales were made, and Tamarack sold at $158@$160 for moderately small lots. Quincy declined $1, to $84, but there is little demand for it, and any large amount coming on the market would have to submit to lower prices. The scrip sold at $29 and $28¾ respectively, same as last week. Osceola seems to have found bottom last week at $18½ and sold up to $19½, losing the fraction in later dealings. Franklin is dull with sales of 10 shares only at $8¼.

Atlantic advanced $¼ to $8¼ for 20 shares. Kearsarge came out quite freely at a decline from $6 to $5, and Centennial sold at 75c. for moderate lots. Tamarack, Jr., sold at $9¼ for three shares, the previous sale, May 15th, being at $15; later a lot of 60 shares sold at $13. Wolverine sold at $1 for 10 shares, and Allouez at 25c., same as previous sale.

The Montana stocks have been quiet, only 160 shares of Boston & Montana changing hands at $23½@$23¾, a decline of $½. Butte & Boston was in better demand, and more freely dealt in; it advanced to $9½, but later the advance was lost, closing at $9.

Closing Prices.—Boston & Montana, $23¼ bid, $23½ asked. Butte & Boston, $8¾@$9¼. Calumet & Hecla, $265@$270. Osceola, $19@$19½. Quincy, $82@$84. Tamarack, $156@$158.

San Francisco. June 15.

(From our Special Correspondent.)

The week is ending much better than it began in the mining stock market. Prices declined and sales were light in the earlier days of the week, but to day the general advance was about 20% on ruling rates.

A better feeling, too, has been created by a decision of the Supreme Court as to the taxing of the seats in the San Francisco Stock and Exchange Board. The case was that of C. E. Anderson vs. The City and County of San Francisco, wherein a judgment in favor of the city and an order denying a new trial have been reversed and the case remanded for retrial. In deciding that the lower court erred the Supreme Court says: A seat in the San Francisco Stock and Exchange Board is merely a personal privilege of being and remaining a member of a voluntary association with the assent of associates. On this account, therefore, a seat in the board is not property that could pass under a common writ of execution.

All the real and personal property in the possession or control of the San Francisco Stock and Exchange Board is assessed to the board and company, and the taxes levied under such assessments are paid by the company. Accordingly, to attempt to tax an individual member upon his seat in the board would be in effect double taxation, and according to law would be illegal and void. On these grounds the Supreme Court reversed the decision of the lower court and decided that a seat in the board is not taxable.

Reports of a favorable nature continue to be received from the Consolidated California & Virginia mine. The crosscut on the 1,700 level will soon reach the point when it is expected ore will be cut. The weekly reports are anxiously awaited. Meantime the stock ruled to-day at $4.60. This is an advance of 55c. on the week's trading. Ophir sold for $2.75; Mexican for $1.10; Sierra Nevada for 85c., and Union Consolidated for 58c. These prices are much the same as last week but much better than the ruling rates on Monday and Tuesday.

In the Middle group of Comstock, prices have not recovered the strength of last week. Best & Belcher ruled to-day for $1.50; Chollar, 38c.; Gould & Curry for $1.05; Hale & Norcross for 70c.; Potosi for 56c., and Savage for 70c. There was a sharp decline during the afternoon in the last named stock, which declined to 61c. At these prices sales were quite large, 3,500 shares being sold in the regular afternoon session.

The Gold Hill stocks have sold quietly and, like the Middle Comstocks, have sold at a decline on last week's rates. Belcher sold for 88c., a 10c. decline during the week. Bullion sold for 20c.; Crown Point for 72c.; Justice for 18c.; Overman for 18c., and Yellow Jacket for 60c.

After the call prices shaded off in the Comstocks from one to five points until the close.

Of the outside stocks Bodie Consolidated has sold for 99c., Bulwer for 8c., and Mono for 28c., with moderate sales.

BY TELEGRAPH.

SAN FRANCISCO, June 22.—The opening quotations to-day are as follows: Best & Belcher, $1.15; Bodie, 92c.; Bulwer, 5c.; Chollar, 26c.; Consolidated California & Virginia, $3.15; Eureka Consolidated, 25c.; Gould & Curry, 66c.; Hale & Norcross, 59c.; Mexican, 78c.; Mono, 18c.; Navajo, 10c.; Ophir, $2.00; Savage, 40c.; Sierra Nevada, 64c.; Union Consolidated, 38c.; Yellow Jacket, 46c.

Paris. June 12.

(From our Special Correspondent.)

The stock market throughout has been much disturbed by the controversy between the government and the railroads over the new guarantees, of which we cannot enter into the details here; but it shocks the French investor to find any argument over a national guarantee admissible at all.

The Suez Canal Company shows a better report than had been expected, the decrease in earnings being light. The British traffic, which is the mainstay of the canal, decreased considerably, but there was a gain from some other quarters. The company has recognized the past by voting to M. de Lesseps a pension of 120,000 francs, with reversion to his wife and children. A graceful act this, which would comfort the old man under the blow of the Panama disaster, were he in a condition to comprehend it; but, unhappily, he is not.

As I wrote you in my last, speculation has been almost dead, and the markets are extremely quiet. The metallurgical shares are firm, though Acieries de la Marine has shown some weakness.

The only stock which has shown much activity is Malfidano, which has been lively under rumors of the formation of a zinc syndicate at Brussels, which will endeavor to regulate production and prices. What there is in these reports is still uncertain.

Nickel still fluctuates, with a downward tendency. Huanchaca (silver) is remarkably steady. The copper stocks have shown some reaction under the dispatches from your side, which seem to fix prices of the metal at a low point for some time to come. Rio Tinto, Tharsis, Cape Copper and Jerez-Lanteira have all fallen.

The Transvaal gold stocks continue to be favorites, Robinson, Langlaagte and Durban-Roodepoort especially. DeBeers has been weaker.

Toward the close the report of trouble with England over the African territorial matters has come like a damper on the market. Hardly any one thinks of war as a result, but in these times we all hope for the best—and expect the worst.

AZOTE.

DIVIDENDS.

Boston & Colorado Smelting Company, dividend of 2½% payable July 2d, at the office of the company in Boston, Mass.

Elkhorn Mining Company paid a dividend of 9d. per share, June 22d, at the office of the company in London, England.

Horn Silver Mining Company, dividend of 12½c. per share, $50,000, payable June 30th, at the office of the company, 56 Broadway, New York City.

Tennessee Coal, Iron and Railroad Company.—The coupons due July 1st, 1894, on the Birmingham Division bonds of this company will be paid on and after Monday, July 2d, 1894, at the Hanover National Bank, New York City.

MEETINGS.

Central Coal and Coke Company, at the office of the company in Philadelphia, Pa., June 26th, at 12 o'clock noon.

Central Coal Company of Pennsylvania, at the office of the company in Philadelphia, Pa., July 10th, at 12 o'clock noon.

Rockingham Gold Mining and Milling Company, at the office of the company, No. 407 Mining Exchange Building, Denver, Colo., July 3d, at 2 P. M.

Small Hopes Consolidated Mining Company, at the office of the company in New York City, June 26th, at 1 p. m.

Whale Mining and Milling Company, at the office of the company, Room 523, Mining Exchange Building, Denver, Colo., July 3d, at 2 p. m.

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 16.		June 18.		June 19.		June 20.		June 21.		June 22.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H	L.	H.	L.	
Belcher, Nev.	....	....	....	....	....	....	....	....	....	....	....	....	.....
Belle Isle, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Bodie Cons., Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Bulwer, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Chrysolite, Colo	....	....	....	....	....	....	....	....	....	....	....	....	.....
Comstock T. bonds, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
" scrip., Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cons. Cal. & Va. Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Crown Point, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Deadwood, Dak	....	....	....	....	....	....	....	....	....	....	....	....	.....
Eureka Cons., Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Father de Smet, Dak	....	....	....	....	....	....	....	....	....	....	....	....	.....
Gould & Curry, Nev	....	....	95	....	....	....	....	....	....	....	....	....	100
Hale & Norcross, Nev	....	....	....	....	....	....	....	....	1.65	....	....	....	100
Homestake, Dak	....	....	....	....	....	....	....	....	....	....	....	....	.....
Horn-Silver, Utah	....	....	....	....	....	....	....	....	....	....	....	....	.....
Kentuck, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Leadville Cons., Colo	.09	....	.09	....	....	....	....	....	....	....	....	....	400
Little Chief, Colo	.15	....	....	....	....	....	....	....	....	....	....	....	200
Mono	....	....	....	....	....	....	....	....	....	....	....	....	.....
Mt. Diablo, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Navajo, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
N. Belle Isle, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ontario, Utah	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ophir, Nev	2.75	....	....	....	....	....	2 30	....	2 05	....	2.15	....	460
Plymouth, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Quicksilver, Pref., Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
" Com., Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Savage, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Sierra Nevada, Nev	....	....	....	....	....	....	85	....	....	....	....	....	100
Silver King, Aris	....	....	....	....	....	....	....	....	....	....	....	....	.....
Standard Cons., Cal	....	....	....	....	....	....	1 70	....	1 75	....	....	....	300
Yellow Jacket, Nev	.75	....	.60	....	....	....	....	....	.50	....	....	....	300

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	June 16.		June 18.		June 19.		June 20.		June 21.		June 22.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am. Flag	....	....	....	....	....	....	....	....	....	....	....	....	.....
Alpha	....	....	....	....	....	....	....	....	....	....	....	....	.....
Alta	....	....	....	....	....	....	....	....	....	....	....	....	.....
Barcelona, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Belmont, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Best & Belcher, Nev	1.55	....	1.40	....	....	....	1.35	....	1.25	....	1.30	....	700
Brunswick, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Castle Creek	....	....	....	....	....	....	....	....	....	....	....	....	.....
Chollar, Nev	....	....	....	....	....	....	....	....	.35	....	....	....	200
Comstock T., Nev	....	....	....	....	....	....	....	....	....	....	.05	....	100
Con. Imperial, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
El Cristo, Rep. of Col	....	....	....	....	....	....	....	....	....	....	....	....	.....
Exchequer, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Independence, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Julia, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Justice, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
King & Pembroke	....	....	....	....	....	....	....	....	....	....	....	....	.....
Lacrosse, Colo	....	....	....	....	....	....	....	....	....	....	....	....	.....
Mexican, Nev	1.15	....	....	....	....	....	....	....	1.00	....	.83	....	500
Middle Bar, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Mono	....	....	....	....	....	....	....	....	....	....	....	....	.....
Nevada Queen, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
N. Standard, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
N. Commonwealth, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Overman, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Oriental & Miller, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Phœnix of Aris	....	....	....	....	....	....	....	....	....	....	....	....	.....
Potosi, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Scorpion, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Seg. Belcher, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Union Cons., Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Utah, Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....

*Ex-dividend. †Dealt in at New York Stock Ex Unlisted securities. ‡Assessment paid. ‖Assessment unpaid. Dividend shares sold 1,960. Non-dividend shares sold, 1,500.
Total shares sold, 3,460.

BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	June 15.		June 16.		June 18.		June 19.		June 20.		June 21.		SALES.
Atlantic, Mich	....	....	8 25	....	....	....	....	....	....	....	....	....	20
Breece, Colo	....	....	....	....	....	....	....	....	....	....	....	....	.....
Bost. & Mont., Mont	....	....	....	....	....	....	24.00	23.75	....	....	23.50	23.25	660
Bonanza Development	....	....	....	....	....	....	....	....	....	....	....	....	.....
Calumet & Hecla, Mich	....	....	270	....	....	....	270	....	....	....	....	....	45
Central, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Coeur d'Alene, Id	....	....	....	....	....	....	....	....	....	....	....	....	.....
Franklin, Mich	....	....	....	....	....	....	8 50	....	....	....	....	....	10
Honorine, Utah	....	....	....	....	....	....	....	....	....	....	....	....	.....
Horn Silver, Utah	....	....	....	....	....	....	....	....	....	....	....	....	.....
Kearsarge, Mich	5.50	....	5.50	....	....	....	5.50	5 00	5.00	....	....	....	405
Lake Superior, Iron	....	....	....	....	....	....	....	....	....	....	....	....	.....
Minnesota Iron, Minn	....	....	....	....	....	....	....	....	....	....	....	....	.....
Napa, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ontario, Utah	....	....	....	....	....	....	....	....	....	....	....	....	.....
Osceola, Mich	19 50	19.25	19.38	....	....	....	19 25	....	19.50	19.00	19.13	....	575
Quincy, Mich	85 00	84 50	....	....	....	....	84 00	....	84.00	....	....	....	21
" scrip	....	....	....	....	....	....	....	....	29 00	28.50	....	....	16
Silver King, Aris	....	....	....	....	....	....	....	....	....	....	....	....	.....
Tamarack, Mich	158½	....	158½	....	....	....	....	....	....	....	160	156	116
Tecumseh, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....

NAME OF COMPANY.	June 15.		June 16.		June 18.		June 19.		June 20.		June 21.		SALES.
Alloues, Mich	....	....	....	....	....	....	.25	....	....	....	....	....	200
Arnold, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Aztec, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Brunswick, Cal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Butte & Boston, Mont	9.25	9.12	9 50	....	....	....	9.00	....	9.00	....	9.00	....	800
Centennial, Mich	.75	....	....	....	....	....	.75	....	....	....	.75	....	160
Colchis, N. Mex	....	....	....	....	....	....	....	....	....	....	....	....	.....
Copper Falls, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Hanover, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Humboldt, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Huron, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Mesnard, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
National, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Native, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Oriental & M., Nev	....	....	....	....	....	....	....	....	....	....	....	....	.....
Phœnix, Aris	....	....	....	....	....	....	....	....	....	....	....	....	.....
Pontiac, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Tamarack, Jr., Mich	9 25	....	....	....	....	....	....	....	....	....	13.00	....	63
Washington, Mich	....	....	....	....	....	....	....	....	....	....	....	....	.....
Wolverine, Mich	....	....	....	....	....	....	....	....	....	....	1 0	....	10

Dividend shares sold, 1,868. Non-dividend shares sold, 1,233. Total shares sold, 3,101.

COAL AND COAL RAILROAD STOCKS.

NAMES OF STOCKS.	June 16.		June 18.		June 19.		June 20.		June 21.		June 22.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am. Coal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Balt. & Ohio	72	....	72½	....	71½	71	71½	....	....	....	....	....	545
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Buff., R. & P	....	....	....	....	....	....	....	....	....	....	....	....	.....
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cambria Iron	....	....	....	....	....	....	....	....	....	....	....	....	.....
Ches. & Ohio	17	....	....	....	....	....	....	....	....	....	17	16½	1,650
do. 1st pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Col. C. & I	....	....	....	....	....	....	....	....	....	....	....	....	.....
Col. Coal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Colorado Fuel	....	....	....	....	....	....	....	....	....	....	....	....	.....
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Col., H.V.& Tol	....	....	17	....	17	....	....	....	....	....	16½	....	300
do. pfd	....	....	....	....	....	....	....	....	....	....	....	....	.....
Col. & H. Coal	....	....	9½	....	....	....	....	....	....	....	....	....	50
do. pfd	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cons. Coal	....	....	....	....	....	....	....	....	....	....	....	....	.....
Del. & Hud. C	131	....	130½	130	130½	....	130	129¾	130¾	....	130⅜	130⅛	1,5 8
Del., L. & West	131¼	....	161⅛	....	161	....	....	....	....	....	160⅛	....	1,100
Hunt. & B.Top	....	....	....	....	....	....	....	....	....	....	....	....	.....
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Lake Erie&Wes	....	....	....	....	....	....	....	....	16	....	....	....	500
do. pref	....	....	67	....	....	....	....	....	....	....	....	....	200
Lehigh C. & N	51⅜	51⅛	51¼	....	51¼	51	51	....	5	....	....	....	96
Lehigh Valley	37½	37⅜	....	....	37⅝	37¼	37⅛	37¼	37⅜	37¼	....	....	477
Maryland Coal	....	....	....	....	....	....	....	....	....	....	....	....	.....
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Morris & Essex	153⅜	....	....	....	153	....	....	....	....	....	....	....	170
New Cent. Coal	....	....	....	....	....	....	....	....	....	....	....	....	.....
N. J. Central	....	....	108	....	106⅜	....	108¼	....	107¼	107	....	....	264
N. Y., L. & W	1.3¼	....	....	....	....	....	....	....	....	....	....	....	10
N. Y., L. E.& W	....	....	13⅛	....	13⅜	12⅜	12⅛	12	12⅜	14⅜	12⅜	11¾	11,630
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
N.Y., Susq.& W	15⅛	....	15⅛	....	15	....	15	....	....	....	15	....	525
do. pref	40⅜	....	40	....	40	....	....	....	....	....	39⅜	....	425
N. & West	....	....	....	....	....	....	....	....	....	....	....	....	.....
do. pref	....	....	....	....	....	....	20⅜	....	20	....	....	....	120
Penn. Coal	315	....	....	....	....	....	....	....	....	....	....	....	35
Penn. R. R.	49⅜	49	49⅛	49	49¼	49⅛	49⅛	49	49⅛	49	....	....	1,434
Phil. & Reading	17	16⅞	17	16⅜	16⅝	15⅞	16⅛	16¼	16⅜	15⅝	16⅛	16	19,085
Tenn. C. & I	19¾	....	20	19¼	19⅛	....	19⅛	19⅛	19⅛	19¼	19⅝	19⅛	4,550
do. pref	....	....	....	....	....	....	....	....	....	....	....	....	.....
Wheel. & L. E	10⅝	....	11⅜	11	11	....	11⅜	....	10⅜	....	10⅜	9⅞	1,5 0
do. pref	....	....	45⅜	....	....	....	45⅜	44	45⅜	....	....	....	410

Total shares sold, 46,624.

INDUSTRIAL AND TRUST STOCKS.

NAME OF STOCKS.	June 16.		June 18.		June 19.		June 20.		June 21.		June 22.		Sales.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Adams Express	152	....	....	....	150	....	....	....	....	....	....	....	160
Am. Cotton Oil	....	....	....	....	28¼	27¾	28¼	....	27¾	....	27¾	....	800
do. pref	....	....	69	....	69	....	70	....	70	69	....	....	559
Am. Dist. Tel	....	....	....	....	....	....	....	....	....	....	....	....	.....
Am. Express	....	....	....	....	....	....	....	....	110¼	109	....	....	60
Am. Sugar Ref	98¼	97⅛	99⅜	98⅜	99⅜	98⅜	98⅜	96⅞	98	96⅛	99¼	96⅛	145,448
do. pref	91¼	....	92	91⅜	91⅜	91⅜	90⅝	90	90	89¼	....	....	1,532
Edison E. Ill. Co	....	....	100⅜	....	100	....	....	....	....	....	....	....	520
Edison Gen. El	38⅜	36⅜	37⅝	36⅜	37	36¼	38⅜	36	36	35¼	35⅜	34⅛	17,913
Nat. Lead Co	38⅝	38⅛	39⅛	38¼	....	....	39¼	38⅛	39⅛	39	39⅛	39⅛	7,881
do. pref	84	....	84	....	84⅜	83⅛	84⅜	....	84⅜	....	....	....	451
Nat. Linseed Oil	....	....	....	....	....	....	....	....	18	....	....	....	200
U. S. Cord. Co	....	....	....	....	23⅜	22¼	23¼	22⅜	23¼	22⅜	23¼	22½	31,995
do. pref	....	....	....	....	41	39½	40	39⅜	40	38¾	....	....	5,607
U. S. Express	....	....	51	....	....	....	53⅜	51	51	50¾	....	....	2 0
U. S. Rubber	37	....	37	....	....	....	....	....	....	....	....	....	250
do. pref	....	....	....	....	....	....	92	....	94½	94	....	....	110
Wells, Fargo Ex	....	....	124⅜	123⅜	....	....	124½	123	124	....	....	....	222
Western Union	85	84⅝	85⅜	84⅞	85⅛	85¼	84	83⅜	84	83⅜	83⅜	83⅛	13,404

Total shares sold, 230,312.

PENNSYLVANIA.

Philadelphia.

	June 21. Bid.	Asked.
Cambria	....	.....
Central Coal & C., pref	....	$85.00
Edison E. Light Co	.....	125.00
Northern Liberties Gas	....	.....
Penn. Salt	95 00	.....
Penn. Steel	....	.....
Washington, D. C., Gas	46.00	.....
Westmoreland C	50.50	51.00

UTAH.

Salt Lake City.

(Special Report by James A. Pollock.)

Stock quotations week ending June 16th 1894:

	Bid.	Asked.
Alliance	....	$0.75
Anchor	$2.00	3.00
Centennial Eureka	....	32.50
Cleveland Con	....	0.50
Crescent	....	0.04
Dalton	0.01½	0.03
Daly	6.00	8.00
Horn Silver	2.60	2.90
Little Pittsburg	....	0.25
Mammoth	1.20	1.40
Meears	....	0.75
Mercur	....	3.85
Ontario	8.75	11.00
Silver Spar	....	1.00
Tetro	....	0.25
Utah	....	1.20

FOREIGN.

London Quotations.

	June 14, 1894. Buyer. £ s. d.	Seller. £ s. d.
Alaska Treadwell, Alaska Ter	3 0 0	3 2 6
Almada & Tirito, Mex	3	9
American Belle, Colo	1 6	2 0
Bonanaza Gold, Cal	5 0	6 0
De Lamar, Idaho	18 0	19 0
Elkhorn, Mont	12 6	13 6
Emma, Utah	3	6
Golden Feather, Cal	8 9	9 3
Golden Gate, Cal	6 3	6 9
Golden Leaf, Mont. & N. M	6	9
Harqua Hala, Ariz	9 0	10 0
Holcomb Valley, Cal	9	1 0
Idaho Exploring	1 3	1 6
Jay Hawk & Lone Pine, Mont	6 0	7 0
La Yesca, Mex	1 0	1 3
Mesquital del Oro, Mex., P	10 0	1 0 0
Mesquital del Oro, Mex., D	2 6	7 6
New Guston, Colo	13 9	16 3
New Montana, Mont	5 9	6 3
Palmarejo, Mex	1 0	1 6
Pinos Altos, Mex	6 6	7 6
Plumas Eureka, Cal	12 6	15 0
Poorman Con. Idaho	7 3	7 9
Rajah Gold, Can	1 0	2 0
Richmond Con., Nev	8 0	10 0
Sierra Buttes, Cal	8 0	10 0
Springdale Gold, Colo	2 0	2 3
United Mexican, Mex	1 0	1 6

CALIFORNIA.

San Francisco.

NAMES OF STOCKS.	CLOSING QUOTATIONS. June 15.	June 16.	June 18.	June 19.	June 20.	June 21.
Alpha	....	....	....	....	....	.....
Alta	....	.36	.18	.22	.23	.16
Belcher	....	....	....	....	....	.....
Belle Isle	....	....	....	....	....	.....
B. & Belch	1.40	1.10	1.20	1.10	1.10	.....
Bodie	.98	.82	.71	.65	.73	.....
Bulwer	.08	.07	.08	.05	.05	.....
Challar	.35	.28	.28	.27	.25	.....
Com'w'lth	....	....	....	....	....	.....
Con. C. & V.	4.35	3.35	3.55	3.25	3.00	.....
Con. Pac	....	....	....	....	....	.....
Crown Pt.	.67	.55	.62	.57	.52	.....
Del Monte	....	....	....	....	....	.....
Eureka Con	....	....	....	....	....	.....
Gold & C'y	.97	.83	.83	.75	.64	.....
Hale & N.	.66	.59	.61	.62	.54	.....
M. White	....	....	....	....	....	.....
Mexican	1.00	.88	.92	.80	.74	.....
Mono	.25	.20	.20	.20	.14	.....
Mt. Diablo	....	....	....	....	....	.....
Navajo	....	....	....	....	....	.....
Nev. Qu'n.	....	....	....	....	....	.....
N. Belleisle	....	....	....	....	....	.....
N. Co'w'th	....	....	....	....	....	.....
Ophir	2.55	2.10	2.25	2.00	1.85	.....
Potosi	.57	.50	.55	.50	.45	.....
Savage	.56	.46	.50	.45	.38	.....
Sierra Nev	.80	.67	.73	.64	.60	.....
Jul'n Con	.53	.48	.48	.45	.35	.....
Utah	.08	.06	.06	.05	.05	.....
Yel. Jack	.58	.47	.50	.50	.42	.....

COLORADO.

Denver.

Prices and sales for week ending June 18th, 1894.

	High.	Low.	Sales.
Alamo	.01½	.....	4,000
Amity	.00¾	.....	2,000
Anaconda	.32½	.31	3,500
Aola	.02	.01⅞	4,000
Argentum	.65	.63	1,538
Bankers	.05½	.05	7,000
Big Six	.03¼	.....	1,000
Bob Lee	.01	.00⅝	36,000
Calumet	.02¼	.01¾	32,000
Creede & Cr. Cr'k	.01½	.01¼	1,500
Golden D	.00⅞	.....	167,500
Gold S	.03½	.03	3,000
Isabella	.19½	....	500
Jack Pot	.02	.....	1,000
Justice	.01½	.01⅜	3,000
Lottie Gibson	.01¾	.....	500
Mollie Gibson	1.26	1.24	2,300
Mt. Rosa	.05¾	.....	1,000
Pharmacist	.10	.09½	2,500
Puzzler	.02	....	3,000
Union P	.04	.03¼	13,100
Western M	.01½	.01	28,500
Work	.03	.02¾	2,000
World	.02½	.....	6,000

Total shares sold 326,438

MARYLAND.

Baltimore.

COMPANY.	June 21. Bid.	Asked.
Atlantic Coal	....	.50
Balt. & N. C	....	....
Conrad Hill	....	....
Cons. Coal	....	....
Silver Valley	....	.30

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total Levied	Date and amount of last.			Dividends. Total paid.	Date & amount of last.		
1	Adams, s. l. c.	Colo.	$1,500,000	150,000	$10	*				$687,500	Jan.	1892	.05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25					1,900,000	Apr.	1894	.37½
3	Alice, s.	Mont.	10,000,000	400,000	25	*				975,000	Nov.	1891	.06¼
4	Amador, g	Cal.	1,250,000	250,000	5	*				81,250	Aug.	1890	.12½
5	American, g	Colo.	3,000,000	300,000	10	*				225,000	Mar.	1892	.05
6	American Belle, s. g. c	Colo.	2,000,000	400,000	5	*				50,000	April	1891	.12½
7	Americ'n & Nettie, g. s	Colo.		300,000						175,000	Mar.	1892	.05
8	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb.	1891	.00
9	Argyle, g	Colo.	1,000,000	1,000,000	1	*				20,000	Mar.	1892	.01
10	Aspen Mg. & S., s. l.	Colo.	2,000,000	200,000	10	*				860,000	Dec.	1893	.10
11	Aurora, i	Mich.	2,500,000	100,000	25					650,000	Feb.	1893	2.00
12	Badger, s	Ont.	250,000	50,000	5					37,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	*				195,000	May	1894	.10
14	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1					67,500	Dec.	1891	.00¾
15	Belle Isle, s	Nev.	10,000,000	100,000	100	280,271	Sept	1893	.10	300,000	Dec.	1879	.25
16	Belcher, s. g	Nev.	10,400,000	104,000	100	3,262,930	Nov.	1893	.20	15,397,000	April	1876	1.00
17	Bellevue, Idaho, s. l.	Idaho	1,250,000	125,000	10	120,000	Dec.	1889	.25	200,000	Jan.	1890	.10
18	Best Friend	Colo.	1,000,000	1,000,000	1	*				90,000	Feb.	1892	.01
19	Bi-Metallic, s. g	Mont.	5,000,000	200,000	25					1,630,000	June	1893	.10
20	Bodie Con., g. l.	Cal.	10,000,000	100,000	100	714,990	July	1893	.15	1,602,572	April	1885	.50
21	Boston & Mont., g	Mont.	2,500,000	250,000	10	*				520,000	June	1886	.15
22	Boston & Mont., c. s.	Mont.	3,125,000	125,000	25	*				2,075,000	Nov.	1891	1.00
23	Brotherton, i	Mich	2,000,000	80,000	25	*				120,000	Mar.	1893	.50
24	Bulwer, g	Cal.	10,000,000	100,000	10	155,000	July	1893	.15	190,000	Oct.	1892	.05
25	Bunker Hill & S. s. l.	Idaho	3,000,000	300,000	10	*				150,000	Oct.	1888	.06
26	Caledonia, g	Dak.	1,000,000	100,000	100	505,000	May	1885	.15	192,000	Oct.	1890	.06½
27	Calliope, s	Colo.	1,000,000	1,000,000						140,000	Jan.	1891	.00
28	Calumet & Hecla c	Mich.	2,500,000	100,000	25	1,200,000				40,330,000	May.	1894	5 00
29	Centen'l-Eureka, s. l.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	765,000	Dec.	1893	1 00
30	Central, c.	Mich.	500,000	20,000	25	100,000	Oct.	1861	.65	1,970,000	Feb.	1891	1.00
31	Champion, g	Cali	340,000	34,000	10	150,000				173,700	Apr.	1894	.10
32	Chrysolite, s. l.	Colo.	10,000,000	200,000	50	*				1,650,000	Dec.	1884	.25
33	Clay County, g	Colo.	200,000	200,000	1	*				56,000	Nov.	1891	.02
34	Clinton Con, g	Cal.	5,000,000	100,000	5					90,000	Nov.	1891	.10
35	Coeur D'Alene, s. l.	Idaho	5,000,000	500,000	10					340,000	June	1893	.03
36	Colorado Central, s. l.	Colo.	2,750,000	275,000	10	*				502,661	April	1893	.05
37	Commonwealth, s.	Nev.	10,000,000	100,000	100	200,000	Nov.	1893	.10	20,000	Nov.	1890	.20
38	Confidence, s. l.	Nev.	2,496,000	24,960	100	1,589,550	Aug.	1892	.50	199,680	April	1889	1.00
39	‡Cons. Cal. & Va., s. g	Nev.	21,600,000	216,000	100	216,000	Dec.	1892	.50	3,682,800	Aug.	1891	.50
40	Contention, s.	Ariz.	12,500,000	250,000	50					2,637,500	Aug.	1892	.20
41	Cook's Peak, s	N. M.	2,000,000	200,000	10					119,532	Nov.	1892	.05
42	‖Cop. Queen Con., c.	Ariz.	2,000,000	200,000	10					1,660,000	May.	1894	.25
43	Coptis	Nev.	10,000,000	100,000	100					67,000	July.	1892	.12
44	Cortez, s	Nev.	1,500,000	300,000	05	*				687,000	Mar.	1892	.50
45	Crescent, s. l. g	Utah	15,000,000	600,000	25	60,000	Oct	1892	.10	238,000	Oct.	1888	.03
46	Crown Point, g. s.	Nev.	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan.	1875	.00
47	Daly, s. l	Utah.	3,000,000	150,000	20					2,850,000	May.	1893	.25
48	†Deadwood-Terra, g.	Dak.	5,000,000	200,000	25	*				1,140,000	Sept	1892	.05
49	DeLamar, g s	Idaho	2,000,000	400,000	25					1,350,000	April	1894	.50
50	Derbee B. Grav., g.	Cal.	10,000,000	100,000	100	100,000	Sept.	1892	.10	265,000	Mar	1894	.05
51	Dexter, g. s	Nev.	1,000,000	100,000	10					105,000	July	1893	.25
52	Elkhorn, s.	Mont.	1,000,000	200,000	5	*				1,261,000	Mar.	1894	.18
53	Enterprise, s.	Colo.	2,500,000	500,000	5	*				850,000	June	1893	.25
54	Eureka Con., s. l. g.	Nev.	1,000,000	50,000	100	550,000	June	1889	.50	5,112,500	Jan	1892	.25
55	Evening Star, s. l.	Colo.	500,000	50,000	10	*				1,437,500	Dec.	1889	.25
56	Father de Smet, g	Dak.	10,000,000	100,000	100	200,000	Nov.	1878	1.00	1,125,000	Dec.	1885	.20
57	Franklin, c.	Mich.	1,000,000	40,000	25	220,000	June	1871		1,240,000	Dec.	1893	2.00
58	Glengarry	Mont.	1,000,000	100,000	10					10,000	June	1891	.10
59	Golden Reward	S.Dak	1,250,000	250,000	5					85,000	April	1893	.02
60	Gould & Curry, s. g.	Nev.	10,800,000	108,000	100	4,688,400	Oct.	1893	.10	3,826,800	Oct.	1870	10.00
61	Grand Prize, s	Nev.	10,000,000	100,000	100	785,000	Jan.	1890	.30	495,000	Mar.	1884	.25
62	Granite Mountain, s.	Mont.	10,000,000	400,000	25					12,120,000	July.	1892	.20
63	Great Western, l. q.	Cal.	5,000,000	50,000	100					388,366	Nov.	1893	.25
64	Hale & Norcross, g. s.	Nev.	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug	1888	.50
65	Hecla Con., s. g. l. c.	Mont.	1,500,000	30,000	50					2,055,000	Sept.	1893	.50
66	Hel'a Mg. & Red, s. l. g.	Mont.	3,315,000	663,000	5	*				197,970	July.	1886	.06
67	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5					170,000	July.	891	.02
68	Helena & Victor	Mont.	1,000,000	200,000	5					80,000	May.	1892	.05
69	¶Holmes, s.	Nev.	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr.	1892	.25
70	Homestake, g	Dak.	12,500,000	125,000	100	200,000	July.	1878	1.00	5,156,250	Apr.	1894	.15
71	Hope, s	Mont.	1,000,000	100,000	10	*				533,250	Mar.	1894	.25
72	Horn-Silver, s. l.	Utah	10,000,000	400,000	25	*				4,930,000	Mar	1894	.12½
73	Idaho, g	Cal.	310,000	3,100	100					5,489,000	Sept.	1893	2.50
74	Illinois, s	N. M.	100,000	100,000	1	*				45,000	April	1889	.20
75	Iron Mountain, s	Mont.	5,000,000	500,000	10	*				265,000	Feb.	1894	.02
76	Iron-Silver, s. l.	Colo.	10,000,000	500,000	20	*				2,500,000	April	1889	.20
77	Jackson, g. s	Nev.	5,000,000	50,000	100	247,500	Mar.	1893	.20	60,000	Jan.	1891	.10
78	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	80,000	Jan.	1890	2.00
79	Kennedy	Cal.	10,000,000	100,000	100					1,266,000	Apr.	1894	.45
80	Kentuck, s. g	Nev.	3,000,000	30,000	100	454,180	Oct.	1891	.15	1,350,000	Dec.	1886	.10
81	Leadville Con., s. l.	Colo.	4,000,000	400,000	10	*				316,000	Feb.	1893	.03
82	Lexington, g. s.	Mont.	4,000,000	40,000	100	*				652,200	July.	1893	.90
83	Little Chief, s. l.	Colo.	10,000,000	200,000	50					820,000	Dec.	1890	.05
84	Maid of Erin	Colo.	3,000,000	600,000	5					708,900	April	1893	.25
85	Mammoth, s. l. c.	Utah	10,000,000	400,000	50	110,000		1882	.25	1,040,000	Dec.	1891	.10
86	Maxfield	Utah	3,000,000	300,000	10					117,000	April	1892	.03
87	Mayflower, d. gravel	Cal.	1,200,000	60,000	20					178,000	Apr.	1894	.10
88	May Mazeppa, s. l.	Colo.	1,000,000	100,000	1					205,000	Oct.	1891	.03¾
89	Minas Prietas, g. s.	Mex.	1,000,000	100,000	10	*				350,000	Dec.	1890	.50
90	Minnesota, c.	Mich.	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar.	1876	
91	Minnesota Iron, i	Minn.	16,500,000	165,000	100					2,745,000	April	1893	1.50
92	Mollie Gibson, s.	Colo.	5,000,000	1,000,000	5	*				3,930,000	Dec.	1893	.05
93	Monitor, g	S.Dak	2,500,000	250,000	10					45,000	Oct.	1890	.03
94	Mono, g	Cal.	5,000,000	50,000	100	797,500	Feb.	1893	.25	12,500	Mar	1886	.25
95	Montana, Lt., g. s.	Mont.	3,300,000	660,000	5	*				2,619,075	June.	1891	.12½
96	Morning Star, s. l.	Colo.	1,000,000	100,000	10					1,025,000	Dec.	1891	.25
97	Morning Star Drift, g	Cal.	240,000	2,400	100					213,600	Apr.	1894	4.00
98	Moulton, s. g	Mont.	2,000,000	400,000	5	*				410,000	Nov.	1892	.07½
99	Mt. Diablo, s	Nev.	5,000,000	50,000	100	137,500	June	1880	2.00	225,000	Nov	1893	.30
100	Napa, q	Cal.	700,000	100,000	7					620,000	April	1894	.10
101	Navajo, g. s.	Nev.	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,111	April	1889	.10
102	New Guston, s	Colo.	550,000	110,000	5					1,877,500	April	1892	.75
103	North Banner Con.	Cal.	1,000,000	100,000	10					20,000	July.	1891	.05
104	North Commonw'th	Nev.	10,000,000	100,000	10	90,000	Jan.	1893	.10	25,000	June.	1891	.25
105	N. Hoover Hill, g. s.	N. C.	300,000	120,000	2½	*				30,000	Dec.	1885	.06¼
106	North Belle Isle, s.	Nev.	10,000,000	100,000	100	518,075	April	1893	.10	230,000	May.	1888	.50
107	North Star, g	Cal.	1,000,000	100,000	10	20,000		1885	.02	450,000	June	1893	.50
108	Omaha Cons., g	Cal.	2,400,000	24,000	100					86,400	Apr.	1894	.15
109	Ontario, s. l.	Utah	15,000,000	150,000	100					13,175,000	Oct.	1892	.50
110	Ophir, g. s.	Nev.	10,000,000	100,000	100	4,391,040	July.	1893	.25	1,595,800	Jan.	1880	1.00
111	Original, s. c.	Mont.	1,500,000	60,000	25	*				138,000	Jan.	1889	.05
112	Oro, s. l. g.	Colo.	500,000	100,000	5					95,000	July.	1890	.20
113	Osceola, c.	Mich.	1,250,000	50,000	25	480,000	April	1876	1.60	1,847,500	Dec.	1892	1.00
115	Pacific Coast, b	Cal.	1,500,000	15,000	100					422,500	July.	1893	1.00
115	Parrot, c.	Mont.	1,800,000	180,000	10					1,569,000	June	1893	.10
116	Petro	Utah.	10,000,000	10,025	100					17,500	July.	1891	.75
117	Plumas Eureka, g	Cal.	1,406,250	140,600	10					2,696,295	Oct.	1893	.18
118	Plymouth Con., g	Cal.	5,000,000	100,000	50	*				2,280,000	Feb.	1888	.40
119	Poorman, g. s	Idaho	375,000	300,000	125	*				68,260	Sept.	1892	
120	Quicksilver, pref., q.	Cal.	4,300,000	43,000	100					1,823,911	June	1891	1.25
121	" com., q.	Cal.	5,700,000	57,000	100					643,867	July.	[illegible]	.40
122	Quincy, c.	Mich.	1,250,000	50,000	25	200,000	Dec.	1862		6,870,000	Feb.	1894	8.00
123	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec	[illegible]	.10
124	Reed National, s. g.	Colo.	500,000	500,000	1	*				50,000	Dec.	1890	.01
125	Retriever, l.	S.Dak	1,250,000	250,000	5					20,000	Aug.	1891	.03
126	Rialto, g	Colo.	300,000	300,000	1	*				50,250	April	1892	.01½
127	Richmond, s. l.	Nev.	1,350,000	54,000	25	*				4,359,887	Oct.	1893	.25
128	Rico-Aspen	Colo.	5,000,000	1,000,000	5					175,000	May.	1894	.02½
129	Ridge, c.	Mich.	1,250,000	50,000	25	219,939	Mar.	1886	50	99,785	Feb.	1880	.50
130	Robinson Con., s. l.	Colo.	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
131	Savage, s.	Nev.	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
132	Sierra Buttes, g	Cal.	2,225,000	122,500	10					1,559,933	Oct.	1893	.12½
133	Sierra Nevada, s. g.	Nev.	10,000,000	100,000	100	6,521,910	Aug	1893	.20	102,000	Jan.	1871	1.00
134	Silver Cord, s. l. g.	Colo.	4,500,000	450,000	10					265,000	April	1889	.10
135	Silver King, s.	Ariz.	10,000,000	100,000	100	97,479	Aug.	1892	.25	1,950,000	July	1887	.25
136	Silver Mg. of L. V., s. l.	N. M.	500,000	500,000	1					300,000	Dec.	1891	4.05
137	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*				3,225,000	Oct.	1893	.10
138	Standard, g. s	Cal.	10,000,000	100,000	100	100,000	June	1890	.50	3,731,159	May.	1894	.10
139	Swansea, g. s	Colo.	600,000	60,000	10					39,000	Sept.	1893	.10
140	Tamarack, c.	Mich.	1,250,000	50,000	25	520,000	April	1885	3.00	3,670,000	Dec.	1893	4.00
141	Tombstone, g. s. l.	Ariz.	12,500,000	500,000	25	*				1,250,000	April	1882	.10
142	Trinity Riv'r Hydr., g	Colo.	500,000	500,000	1	*				37,500	Apr.	1894	.00½
143	United Verde, c.	Ariz.	3,000,000	300,000	10	*				207,500	Jan.	[illegible]	.10
144	Victor, g	Colo.	1,000,000	200,000	5					150,000	Feb.	1894	.07½
145	Ward Con., s.	Colo.	2,000,000	200,000	10					20,000	Dec.	1889	.05
146	W. Y. O. D.	Cal.	60,000	30,000	2	22,500	May.	1891	.10	69,000	Apr.	1894	.10
147	Yankee Girl, s.	Colo.	1,300,000	260,000	5					1,405,000	Sept.	1893	1.50
148	Yellow Jacket, g. s.	Nev.	12,000,000	120,000	100	5,556,000	July.	1893	.25	2,184,000	Aug.	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total levied	Date and am't of last.		
1	Alliance, s. g.	Utah	$100,000	100,000	$1	$120,000	Feb.	1891	.10
2	Allouez, c.	Mich.	2,000,000	80,000	25	1,424,937	Oct.	1891	.10
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 Flag, s.	Colo.	1,250,000	125,000	1	300,000	June	1887	
6	Anchor, s. l. g.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.2
7	Barcelona, g	Nev.	5,000,000	200,000	5	*			
8	Belmont, g	Cal.	500,000	500,000	100	*			
9	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April	[illegible]	.10
10	Best & Belcher, s. g.	Nev.	10,080,000	100,800	10	2,405,275	Aug.	1892	.25
11	Black Oak, g	Cal.	3,000,000	300,000	100	*			
12	Brownlow, g	Colo.	250,000	250,000	5				
13	Brunswick, g	Cal.	2,000,000	400,000	2				
14	Bullion, s. g.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
15	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10				
16	Butte Queen, g	Cal.	1,000,000	100,000	1	6,000	Jan.	1892	.04
17	Calaveras, g	Cal.	500,000	500,000	5				
18	Calaveras Con., g	Cal.	800,000	160,000	10				
19	California, s	Cal.	1,000,000	100,000	5	9,000	Mar.	1892	.03
20	California Con. l. q.	Cal.	2,250,000	450,000	10				
21	Challenge Con., g. s.	Nev.	5,000,000	50,000	10				
22	Chollar, s. g.	Nev.	11,200,000	112,000	2	1,820,000	May.	1892	50
23	Colchis, s. g	N. M.	500,000	150,000	5				
24	Colorado, s	Colo.	1,625,000	325,000	1				
25	Comstock, s.	Utah.	1,250,000	250,000	100				
26	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar.	1887	.10
27	Con. Imperial, g. s	Nev.	5,000,000	50,000	50	2,062,500	Jan.	1892	.25
28	Con. New York, s. g.	Nev.	5,000,000	100,000	100	110,000	Mar.	1892	.10
29	Con. Pacific, g	Cal	6,000,000	60,000	10	198,000	June	1890	.10
30	Crescent, s. l.	Colo.	3,000,000	300,000	100	*			
31	Crocker, s	Ariz.	10,000,000	100,000	1	165,000	Aug	[illegible]	.05
32	Crowell, g	N. C.	500,000	500,000	1				
33	Dahlonega, g	Ga.	250,000	250,000	10	*			
34	Decatur, s	Colo.	1,500,000	300,000					
35	Denver City s.	Colo.	5,000,000	500,000	11	*			
36	Denver Gold, g	Colo.	300,000	60,000	5				
37	Dickens-Custer, s.	Idaho	2,100,000	420,000	5				
38	Durango, g	Colo.	500,000	500,000	1	*			
39	El Dorado, g	Cal.	1,000,000	250,000	4	*			
40	Emma, s	Utah.	625,000	500,000	125				
41	Emmons, s. l.	Colo.	2,000,000	2,000,000	1				
42	Empire, s.	Utah.	10,000,000	100,000	100				
43	Eureka Tunnel, s. l.	Nev.	10,000,000	100,000	100	*			
44	Exchequer, s. g.	Nev.	10,000,000	100,000	100	940,000	Jan.	1892	.25
45	Found Treasure, g. s.	Nev.	10,000,000	100,000	100	130,500	Jan.	1892	.50
46	Gogebic I. Syn., i.	Wis.	5,600,000	200,000	25				
47	Gold Cup, s.	Colo.	500,000	500,000	1	*			
48	Golden Era, s	Mont.	1,000,000	200,000	10	*			
49	Gold Flat, g	Cal.	1,000,000	100,000	10	5,000	Mar.	1892	.05
50	Gold Rock, g	Cal.	1,000,000	500,000	2				
51	Golden Feather Co., g	Cal.	900,000	180,000	5				
52	Goodyear g. s. l	Mont.	1,000,000	200,000	5	13,000	Feb.	1892	.01
53	Grand Duke, s.	Colo.	800,000	80,000	10				
54	Gregory Con., g	Mont.	3,000,000	300,000	10				
55	Harlem M. & M. Co., g.	Cal.	1,000,000	200,000	5				
56	Hartery Con., g	Cal.	1,000,000	100,000	10	22,000	Oct.	1890	.05
57	Hartshorn, g s. l	S.Dak	1,250,000	250,000	5	8,750	Sept.	1891	.00½
58	Head Cent. & Tr., s. g	Ariz.	10,000,000	100,000	100	16,981	Mar.	1892	.03
59	Hector, g	Cal.	1,500,000	300,000	5	45,000	Jan.	1889	.15
60	Himalaya, g. s l	Utah.	1,800,000	80,000	10	12,800	Oct.	1892	.00½
61	Holywood	Cal.	200,000	100,000	2				
62	Huron, c.	Mich.	1,000,000	40,000	25	280,000	May.	1887	3.00
63	Idaho, g. s	Idaho	1,250,000	250,000	5				
64	Ingalls, g	Colo.	100,000	20,000	5				
65	Ironton, i	Wis.	1,000,000	40,000	25				
66	Iroquois, c.	Mich.	1,250,000	50,000	25				
67	Kentuck Con	Nev.	10,500,000	105,000	00	57,750	July	1892	.10
68	Julia Con., g. s.	Nev.	11,000,000	110,000	100	1,463,000	Jan.	1889	.10
69	Justice, g. s. c	Colo.	500,000	500,000	1	*			
70	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
71	Little Josephine, s.	Colo.	250,000	50,000	5				
72	Lone Star Cons., g.	Cal.	500,000	500,000	1	10,000	April	1892	.00½
73	Madeleine, g. s. l.	Colo.	750,000	50,000	1	4,500	Feb.	1892	.00½
74	Mammoth Gold, g	Ariz.	2,500,000	500,000	5	*			
75	Mayflower Gravel, g	Cal.	1,000,000	100,000	10	*			
76	Mexican, g. s.	Nev.	10,000,000	100,000	100	2,917,560	ct.	1892	.50
77	Michigan, g s	Mich.	2,500,000	100,000	25	40,000	Mar.	1892	
78	Mike & Starr, s. c	Colo.	1,000,000	200,000	5	*			
79	Milwaukee, s.	Mont.	500,000	500,000	1	*			
80	Modoc Chief, l s. g.	Idaho	1,000,000	200,000	5	5,000	Jan.	1892	.00½
81	Monitor, g	Colo.	100,000	100,000	1	12,500	May.	1891	.01
82	Montreal, g. s. l.	Utah.	750,000	150,000	5	4,500	Feb.	1892	.00½
83	Mutual Mg. & Sm.	W'sh	100,000	100,000	1	*			
84	Neath, g	Colo.	1,000,000	100,000	10				
85	Nelson	Cal.	50,000	10,000	5				
86	Nevada Queen, s.	Nev.	10,000,000	100,000	100	200,000	Oct.	[illegible]	.25
87	New Gold Hill	N. C.	1,750,000	350,000	5				
88	New Pittsburg, s. l.	Colo.	2,000,000	200,000	10	*			
89	North Standard, g	Cal.	10,000,000	100,000	100	20,000	Nov.		
90	Occidental Con., g. s		10,000,000	100,000	100	245,000	April	1892	.25
91	Oneida Chief, g	Cal.	500,000	125,000	100	*			
92	Oriental & Miller, s.	Nev.	10,000,000	400,000	100				
93	Original Keystone, s.	Nev.	10,000,000	100,000	100	250,000	Mar.	1892	.10
94	Osceola, g	Nev.	5,000,000	500,000	10	*			
95	Overman, g. s.	Nev.	11,520,000	115,200	100	4,001,840	May.	1892	.10
96	Pay Rock, s	Colo.	1,000,000	200,000	5				
97	Peer, s.	Ariz.	10,000,000	100,000	100	190,000	Feb.	1892	.10
98	Peerless, s	Ariz.	10,000,000	100,000	100	405,000	Oct.	1890	.15
99	Pennsylva'a Cons., g	Cal.	5,150,000	515,000	10	36,050	Feb.	1892	.10
100	Phoenix, g	Ariz.	500,000	500,000	1	*			
101	Phoenix Lead, s. l.	Colo.	100,000	100,000	1	*			
102	Pilgrim, g	Cal.	600,000	300,000	2	*			
103	Pioche M. & R., s. g. l.	Utah.	20,000,000	000,000	10				
104	Poorman, Ltd., s. l.	Idaho	250,000	50,000	5				
105	Potosi, s.	Nev.	11,200,000	112,000	100	1,573,000	Mar.	1890	.50
106	Proustite, s.	Idaho	250,000	250,000	1	*			
107	Puritan, s. g	Colo.	1,500,000	150,000	10	*			
108	Quincy, c	Colo.	3,000,000	300,000	10				
109	Rainbow, g	S.Dak	1,250,000	250,000	5	4,250	July.	1892	.00½
110	Rappahannock, g. s.	Va.	250,000	250,000	1	*			
111	Red Mountain, s.	Colo.	300,000	60,000	5				
112	Ropes, g. s	Mich.	2,000,000	80,000	25	167,200	Feb.		.50
113	Ruby & Dun., s. l. g.	Nev.	25,300	506	50	*			
114	Russell, g	N. C.	1,500,000	300,000	5				
115	Sampson, g. s. l.	Utah.	10,000,000	100,000	100	288,15[illegible]	July.	1888	1.08
116	Silver Age, s. l. g.	Colo.	2,000,000	200,000	10	*			
117	Silver Bell, s.	Ariz.	850,000	170,000	5				
118	Silver King, s.	Cal	2,000,000	400,000	5				
119	Silver Queen, c.	Ariz.	5,000,000	200,000	25	*			
120	Silverton, s	Colo.	300,000	60,000	5				
121	Siskiyou Con., l.	Cal.	2,000,000	200,000	10	13,000	May.	1892	.01½
122	South Bulwer, g	Cal.	10,000,000	100,000	100	100,000	May.	1881	.25
123	South Hite, g	Cal.	10,000,000	100,000	100	195,000	Jan.	1888	.05
124	Stanislaus, g	Cal.	2,000,000	200,000	10				
125	St. Kevin, s. g	Colo.	100,000	100,000	1	*			
126	St. Louis & Mex., s.	Mex.	000,000	500,000	10	*			
127	St. Louis & St. Elmo.	Colo.	.000 000	200,000	10				
128	St. L. & Sonora, g. s.	Ariz.	3,000,000	300,000	10	*			
129	Stemwinder, l. s.	Idaho	,500,000	500,000	1				
130	Sunday Lake, i	Mich.	250,000	50,000	25				
131	Sullivan Con., g	Dak.	600,000	200,000	3	*			
132	Sylvanite, s.	Colo.	5,000,000	500,000	10	*			
133	Taylor-Plumas, g	Cal.	425,000	65,000	5	3,575	Mar.	1892	.01½
134	Telegraph, g. s.	Cal.	325,000	65,000	5	3,575	Mar.	1892	.01½
135	Telegraph, g. s.	Mex.	100,000	100,000	1	70,000	Feb.	1892	.10
136	Teresa, g. s.	Cal.	1,000,000	200,000	5	10,000	Feb.	1888	.10
137	Tioga Con., g	Nev.	10,000,000	100,000	10	295,000	May	1888	.25
138	Tornado Con., g. s.	Nev.	100,000	100,000	1	*			
139	Tuscarora, s.	Nev.	10,000,000	500,000	20	385,000	Jan.	1892	.25
140	Union Con., g. s.	Nev.	10,000,000	100,000	100	370,000	June	1892	.25
141	Utah, s.	Nev.	10,000,000	100,000	100	245,000	Aug.	1890	.25
142	Ute & Ulay, s. l.	Colo.	1,000,000	500,000	2	1,500	Mar.	1892	.001
143	Valley, g	Cal.	575,000	460,000	125				
144	Washington, c.	Mich.	1,000,000	40,000	5				
145	West Argentine, s.	Colo.	750,000	150,000	5				
146	West Granite Mt., s.	Mont.	500,000	100,000	5				
147	Whale, s.	Mont.	5,000,000	500,000	10	*			
148	Wood River, g	Idaho	2,000,000	200,000	10	3,000	Aug.	1891	.00½
149	Yuma, c. s. g	Ariz.	10,000,000	400,000	2				

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. † 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 $12,390,000. ‖ Previous to the consolidation of the Copper Queen with the Atlanta, August, 1885, the Copper Queen had paid $1,350,000 in dividends. ¶ Previous to this company's acquiring Northern Belle, that mine paid $2,400,000 in dividends against $425,000 in assessments.

COLORADO.

Aspen. June 16.

	Price.
Argentum-Juniata	$0.52
Aspen Contact	.38
Aspen Deep Mining	.04½
Best Friend	.06
Bi-Metallic	.05
Bushwacker	.11
Delia S.	.85
Gold Valley Placer	....
Little Annie	.04½
Mollie Gibson	1 27½
Pontiac	.04
Smuggler	....
St. Joe & Mineral Farm	.04½
U. S. Paymaster	....

Colorado Springs.

Prices and sales for the week ending June 15th, 1894:

Cripple Cr'k (gold):	High.	Low.	Sales.
Alamo	.01½	.01½	700
Anaconda Gold	.33	.26	2,750
Aola	.02½	.01¾	134,800
Argentum Juniata	.61	.60	500
Bankers	.06	.05½	13,000
Blue Bell	.02½	.02½	2,000
Bob Lee	9.00	8.50	111,200
Calumet	.02¼	.01¾	24,500
Cripple Creek Con	.03	.02¾	45,500
Enterprise	.02½	.02¼	500
Fannie Rawlings (S. & G.), Leadville	.07	.06½	17,500
Gold and Globe	.05	.04½	42,000
Gold King	.11¼	.11	1,000
Golden Dale	3.50	3.00	75,800
Golden Eagle	16.00	15.00	97,000
Goldstone	7.50	6.50	6,000
Gould	.07	.06½	16,700
Granite Hill	9.00	8.50	....
Isabella	.20	.18½	11,000
Jack Pot	.02½	.02½	38,000
Lottie Gibson	.02	.02	6,000
Mollie Gibson	1.27½	1.25	1,400
Ophir	.05	.04½	12,500
Pharmacist	.10	.09	6,900
Sacramento	.03½	.03½	4,000
Summit	.15½	.14½	11,000
Union	.23	.22½	16,350
Virginia M	.03	.03	4,000
World	.02½	.02¼	15,250
Total shares sold			717,250

PENNSYLVANIA.

Pittsburg. June 21.

	Bid.	Asked.
Allegheny County Light	80	....
Bridgewater Gas	48	....
Chartiers Block Coal	....	35
Chartiers Valley Gas	13	14
Fisher Oil	....	50½
Hazlewood Oil Co	....	11
Luster Mining Co	11½	13
Manufacturers' Gas	33	....
Monongahela Nav. Co	....	69
Monongahela Water	32	....
Nat. Gas Co. of W. Va	25	....
N. Y. & Cleve. Gas Coal	48	....
Olive Valley Gas	23	24
People's Nat. Gas	25	....
People's Pipeage Co	14	....
Pennsylvania Gas	10	10½
Philadelphia Co	21¼	21⅝
Pittsburg Gas Co	78	....
Pittsb. Plate Glass Co	140	....
Stand. Undergr. Cable Co.	90	93
Tuna Oil	8	11
U. S. Glass Co., pref	....	92
" " common	24⅞	25¼
Westinghouse Air Brake	122½	124
Westingh'se Elect., 1st prf	52	....
" " 2d "	36½	....
" " com	23	....
Wheeling Gas	....	19

MISSOURI.

St. Louis. June 19.

Closing quotations:	Bid.	Asked.
Adams	$0.40	....
American & Nettie, Colo	.25	$0.30
Bi-Metallic, Mont	2.00	3.00
Elizabeth, Mont	.15	.20
Granite Mountain, Mont	1.25	1.75
Hope	....	2.50
Leo	.01¾	.02
Small Hopes	....	.50

MONTANA.

Helena.

(Specially Reported by S. K. Davis.)
Stock quotations week ending June 16th.

	Bid.	Asked.
Bald Butte (Mont.)	$4.25	$5.00
Benton Group (Neihart), Mont	....	.25
Combination (Phillipsb'g), Mont	.30	.50
Helena & Frisco	....	1.50
Helena & Victor, Mont	....	.25
Iron Mountain (Missoula), Mont	.40	.50
Piegan (Marysville), Mont	.35	.50
Poorman (Cœur d'Alene), Idaho	.25	.50
Whitlach Union & MacIntyre	....	.25

MINNESOTA.

Duluth. June 19.

LISTED STOCKS.

	Par.	Bid.	Asked.
Biwabik M. Iron Co	100	$20.00	$21.00
Cincinnatt Iron Co	25	.25	.30
Clark Iron Co	100	....	.60
Great Northern Min. Co.	100	2.75	3.50
Kanawha Iron Co	100	.10	.20
Keystone Iron Co	....	....	.40
Lake Superior Iron Co	25	....	2.50
Lincoln Iron Co	....	....	.50
Mesaba Moun. Iron Co.	100	14.00	17.00
Minneapolis Iron Co	100	.02	.15
Mountain Iron Co	100	50.00	65.00
Shaw Iron Co	100	2.50	3.00
Security Land & Exp. Co.	10	10.00	15.00

UNLISTED STOCKS.

Adams Iron Co	10	$7.00	$9.00
Ashland Iron Co	25	....	40.00
Buckeye Iron Co	100	....	2.50
Buffalo Land & Exp. Co.	1	....	.50
Chandler Iron Co	25	20.00	26.00
Charleston Iron Co	100	.15	.30
Cleveland Cliffs Iron Co.	100	20.00	40.00
Chicago Iron Co	100	.20	.30
Detroit Iron Co	25	.01	.02
Elmira Land & Iron Co.	100	.05	.25
Great Western Mining Co.	100	1.90	2.25
Homestead Iron Co	25	.00½	.02
Internat'l Development	10	....	22.50
Jackson Iron Co	25	....	60.00
Lake Supr. (Marquette)	25	20.00	27.00
McCaskill Mining Co	10	.01	.03
Mesaba C., L. & Ex. Co.	10	....	6.00
Mesaba Chief Iron Co	100	1.75	2.00
Mesaba Iron Co	30	....	20
Metropolitan L. & L. Co.	25	50.00	70.00
Northern Light Iron Co	100	....	.25
Ohio Mining Co	100	5.00	8.00
Ophir, gold	10	....	1.00
Penn. Iron & Steel Co	100	.04	.10
Pioneer Iron Co	25	....	1.00
Pittsburg & Lake A. Co.	100	110.00	125.00
Putnam Iron Co	100	....	.80

FOREIGN.

Shanghai, China.

May 25, 1894.

(Special Report by J. H. Bisset & Co.).

	Taels.
Sheridan Con., Colo	2.50
Punjom Mining, Ltd	4.75
" Pref	1.46
Jelebu Mg. & Trading, Ltd	4.20
Raub A'lian G. Mg., Ltd	2.92
Shanghai Gas Co	215.00
Hong Kong Electric Co	3.54

Paris, France. June 11.

	Francs.
Acieries de Creusot	2,155.00
" Fives-Lille	675.00
" de France	805.00
" de la Marine	915.00
" de St. Etienne	1,270.00
Aguas Tenidas	530.00
Anzin (coal)	1,450.00
Helmes, Spain	665.00
Callao	24.75
Callao Bis	....
Cape Copper	33.75
Carmaux	1,180.00
Champ d'Or	38.25
De Beers Consolidated	425.00
Dombrowa	630.00
Firminy	1,775.00
Golden River, Cal	....
" " parts	....
Huanchaca	122.50
Huta-Bankowa	1,461.25
Jerez-Lantejira	20.00
" " parts	5.00
Kebao	525.00
Laurium, Greece	581.50
Lexington, Mont	42.00
" parts	0.80
Malfidano	....
Mokta-el-Hadid	800.00
Nickel, New Caledonia	449.00
Ouro Preto	....
Phosphates de France	412.50
Placers Haute Italie	50.75
Pontgibaud	230.00
Rio Tinto, Spain	342.50
Salines de l'Est	480.00
Soufres Romaines	2.00
Tharsis, Spain	114.00
Transvaal Coal	17.50
Uruguay	25.00
Vieille-Montagne, Belgium	483.25

ASSESSMENTS.

COMPANY.	No.	Dlnqt. in office.	Day of sale.	Amt per sh're
Alta, Nev	48	June 19	July 10	.10
B.& Belch, Nev	56	June 5	June 26	.25
Buchan'n, Mex	2	July 2	July 21	.12½
Bulwer, Cal	9	June 29	July 27	.10
Conlon, Cal	2	June 30	July 20	.05
Con. N.Y., Nev	12	June 19	July 12	.05
Exchequer, Nev	37	June 14	July 2	.10
George Hearst, S. Dak	2	June 15	June 30	.01
Hale & Norcross, Nev	105	June 5	June 28	.25
Kent'k C., Nev	9	June 14	July 3	.10
Mexican, Nev	50	July 17	Aug. 7	.25
Occid'tal, Nev	16	July 5	July 31	.10
Ophir, Nev	62	June 6	June 26	.25
San Martina, Mont	3	June 16	....	.00½
Segr. Belch. & Mides, Nev	14	July 16	Aug. 6	.10
Silv. K'g, Ariz	10	June 11	July 9	.20
Washington Con., S. Dak	8	June 12	July 2	.01

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
Hyarobromic, dilute, U. S. P. .25@.30
Hydrocyanic, U. S. P. .45@.50
Hydrofluoric .30@.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. .07¼@.08
Carbonate, ℔ lb., English and German, .07¼@.08
Muriate, white, in bbls., ℔ lb. .03¼
Aqua Ammonia—(in cbys) 18° ℔ lb. .03@.04
20°, ℔ lb. .04@.05
26°, ℔ lb. .04½@.05
Antimony—Oxymur, ℔ lb. .04@.06
Regulus, ℔ lb. .10@.11¼
Argols—Red, powdered, ℔ lb. .15
Arsenic—White, powdered ℔ lb. .02@.03¼
Red ℔ lb. .065@.07
Yellow .09@.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@6
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@.07¼
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton $15.00@$29.00
Barium—Carbonate, pure, ℔ lb. .45
Carbonate, commercial, ℔ lb. .05@.10
Chlorate, crystal, ℔ lb. .75
Chloride, commercial, ℔ lb. .10
pure, ℔ lb. .16
Iodide, ℔ oz. .40
Nitrate, ℔ lb. .05½@.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 £5
No. 1, Casks, Runcorn, " " £4 10 0
No. 2, bags, Runcorn, " " £3 15 0
Bauxite—℔ ton $10.00
Bichromate of Potash—Scotch, ℔ lb. .11@.12
American, ℔ lb. .11@.12
Bichromate of Soda—℔ lb. .09½@.10
Borax—Refined, ℔ lb., in car lots .08@.09
San Francisco .08@.08½
Concentrated, in car lots .07½@.08
Refined, Liverpool ℔ ton 26
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. .03¼@.03¾
" extra .04½
Nitrate, ℔ lb. .40
Copperas—Common, ℔ 100 lbs. .85@.95
Best, ℔ 100 lbs. $1.35@$1.50
Liverpool, ℔ ton, in casks £2@£2 10s.
Corundum—Powdered, ℔ lb. .04½@.09
Flour, ℔ lb. .03
Cryolite—Pow., ℔ lb., bbl. lots .07@.08
Emery—Grain, ℔ lb. (℔ kg.) .04½@.05
Flour, ℔ lb. .02¾@.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. a. 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@.01¼
47°, ℔ lb. .02@.02¼
Kaolin—*See China Clay.*
Kieserite—℔ ton $9@$10
Lead—Red, American, ℔ lb. .06¾@.07¼
White, American, in oil, ℔ lb. .06¾@.07¼
White, English, ℔ lb., in oil .06¾@.08¾
Acetate, or sugar of, white .06@.06¾
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. .02¾@.03¾
Mercuric Chloride—(*Corrosive Sublim ate*) ℔ lb. .92@.94
Powdered ℔ lb. .95
Marble Dust—℔ bbl. $1.25@$1.50
Metallic Paint—Brown ℔ ton $20@$25
Red $20@$25
Mica—In sheets according to size, 1st quality, ℔ lb. .25@$6.00
Mineral Wool—Ordinary slag .01¼
Ordinary rock .02¼
Ground, ℔ ton .....
Naphtha—Black .....
Nitre Cake—℔ ton $10.00
Ochre—Rochelle, ℔ lb. .01¼@01¾
Washed Nat Oxf'rd, Lump, ℔ lb. .06¾@.08¾
Washed Nat Oxf'rd, Powder, ℔ lb. .07@.07¾
Golden, ℔ lb. .03@.05
Domestic, ℔ ton $12@$30
Oils, Mineral—
Cylinder, light filtered, ℔ gal. .14@.16
Dark filtered, ℔ gal. .10@.12
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. 67%, ℔ lb. .52
mining .40
Bromide, domestic, ℔ lb. .28@.32
Chlorate, English, ℔ lb. .18@.18¼
Chlorate, powdered, English, ℔ lb. .18¼@.19
Carbonate, ℔ lb., by casks, 82% .04¼@.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. .21¾@.22½
Red Prussiate, ℔ lb. .39@.40
Pumice Stone—Select lumps, ℔ lb. .03¾@.15
Original cks., ℔ lb. .01¾@.02
Powdered, pure, ℔ lb. .01¾@.01¾
Pyrites—Non-cupreous, p. units .10@.11
Quartz—Ground, ℔ ton $6.00@$10.00
Rotten Stone, Powdered, ℔ lb. .03¾@.03¾
Lump, ℔ lb. .06@.07
Original cks., ℔ lb. .04½@.05¼
Rubbing stone, ℔ lb. .03¾@.04
Sal Ammoniac—lump, in bbls., ℔ lb. .80½
Salt—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton $7@$7.50
Common, fine, ℔ ton $4.50@$5
Turk's Island, ℔ bush .26@.28
Salt Cake—℔ ton $10.00@$15.00
Saltpeter—Crude, ℔ lb. .03¼@.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. .08¼@.06
Sulphur—Roll, ℔ lb. .01½@.02¼
Flour, ℔ lb. .01¾@.02
Sylvinit, 27@35%, S.O.P., per unit, 3.75
Talc—Ground French, ℔ lb. .01¼@.01¾
American No. 1, ℔ lb. .01¼@.01¾
American No. 2 .006
Terra Alba—French, ℔ lb. .05@.50
English, ℔ lb. .05@.50
American, No. 1, ℔ lb. .60@.80
American, No. 2, ℔ lb. .40@.50
Tin—Crystals, in kegs or bbls. .14@.15
feathered or flossed. .20
Muriate, single .07@.12
Double or strong, 54° B. .10@.15
Oxymur, or nitro .19
Vermilion—Imp. English, ℔ 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. .04½@ .06
Antwerp, Red Seal, ℔ lb. .06¼@.07
Paris, Red Seal, ℔ lb. .07½@.08
Muriate solution .06
Sulphate crystals, in bbls., ℔ lb. .03@.03¼

THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

Arsenic (metallic), per kilo $0.25
Barium (ex amalgam) 2.12
" (per electrol.) 7.75
Bismuth (metallic), per kilo 6.25
Cadmium (metallic), " 2.75
Calcium (per electrol.) 5.25
Cerium (pulv.) 2.25
" (fusum in globulis) 5.50
Chromium (fus.) .40
" (cryst.) .75
Cobalt (metallic), per kilo 10.00
" (pure), per kilo 40.00
Didymium (pulv.) 5.50
Erbium-Yttrium (oxydat.) 10.00
Gallium (cryst.) 100.00
Germanium (fus.) 37.50
" (pulv.) 35.00
Glucinum (pulv.) 7.00
" (cryst) 10.75
Indium 5.00
Iridium (fusum) 1.25
Lanthanum (pulv.) 6.00
" (per electrol.) 11.00
Lithium (in glob.) 5.00
" (wire) 6.25
Manganese (fusum) .25
Molybdenum (pulv.) .12½
Niobium (pulv.) 4.25
Osmium 1.00
Palladium (wire) .06
" (pulv.) 1.00
Potassium (metal), per kilo 27.50
Rhodium 1.63
Ruthenium 2.50
Rubidium 6.25
Selenium (cryst.) .50
" (precipitates) .62½
Strontium (per electrol.) 7.25
" (ex amalgam) 3.25
Tantalum 4.75
Tellurium (fusum) .50
" (precipitates) .32½
Thallium .03½
Titanium 1.13
Tungsten (pure) .05
Uranium 1.00
Vanadium 4.00

RAILROAD MATTERS.

The Youngstown Car Company, Youngstown, O., is building 150 flat cars for the Ferro-carril de la Habana in Cuba.

The Rogers Locomotive Works, Paterson, N. J., have an order for eight locomotives to go to Cuba. Five of them are eight-wheel passenger engines with 18 by 24 in. cylinders, and three are eight-wheel Forney engines, with 16 by 24-in. cylinders, for switching work.

Since the beginning of the present year, the Southern Railroad of Brazil has put in the track, in renewals, 15,000 steel sleepers, costing, delivered at Rio Grande do Sul, $1.12 apiece. The cost of pine ties delivered at the same point is 77 cents each.

Under a decree of the United States Circuit Court the Baltimore & Lehigh Railroad, with all of its rights, privileges, franchises and property, has been sold for $250,000 to Mr. J. Wilson Brown for the first mortgage bondholders. The purchasers, as soon as the sale is ratified, will take measures to reorganize the road and standard gauge it.

The Easton & Amboy Railroad, a leased line of the Lehigh Valley road, has transferred to the firm of M. Guggenheim's Sons, of New York, mineowners, controlling extensive silver and copper mines in Colorado and Mexico, a tract of 50 acres of land on the east shore of Staten Island Sound, north of Perth Amboy, N. J. The firm proposes erecting a plant costing $1,000,000 at Perth Amboy for smelting and reducing their ores

The directors of the Chesapeake & Ohio company make emphatic denials of the truth of the statements in an article published in a Baltimore paper, that the company proposed to extend its system in Southern West Virginia so as to compete with the Norfolk & Western Railroad. The company is not doing any new construction at present, to say nothing of building lines in competition with existing roads which occupy their special fields.

The Colbert Shoals & Western Alabama Railroad Company was organized at Sheffield, Ala., on June 15th, by the election of E. P. Reynolds, Jr., of Riverton, Ala., president; R. T. Abernathy, Jr., of Tuscumbia, Ala., vice-president; J. H. Nathan, of Sheffield, Ala., secretary, and S. E. Phelps, of Riverton, Ala., treasurer. The company's representatives state that the northern terminus of the line for the present will be on the south bank of the Tennessee River near Pride's Station, Ala., and will be constructed southwesterly toward Columbus, Miss. It is expected to commence work as soon as the proper location surveys can be made.

At the 27th annual convention of the Master Mechanics' Association in Saratoga this week, reports were presented by committees on the following subjects; the name of the chairman of each committee is given: Cracking of Back Tube Sheets, T. B. Purves; Oiling Devices for Long Runs, J. Davis Barnett; Locomotive Fire Kindlers, John Hickey; Exhaust Nozzles and Steam Passages, Robert Quayle; Boiler and Firebox Steel, A. W Gibbs; Sanding Devices, O. Stewart; Special Shop Tools, T. W. Gentry; Standard Tests of Locomotives, J. N. Lauder; Fire Treatment, A. E. Mitchell; Cost of Maintaining Locomotives, G. W. Rhodes.

Contracts have been awarded for the construction of the Baltimore & Cumberland Railway, the eastern extension of the West Virginia Central Railway. The road will extend from Cumberland, Md., to a point near Hagerstown, Md., where connection will be made with the Cumberland Valley branch of the Pennsylvania system. The construction of the line was agreed upon after the West Virginia Central failed to secure the Western Maryland, and the object in building it is to give an outlet to Philadelphia and New York for coke and coal from the mines of West Virginia operated by Henry G. Davis, Stephen B. Elkins and other stock and bond holders of the West Virginia Central.

The "Diario Oficial" publishes the concession granted to Mr. Solomon Guggenheim for the construction of a railroad in the State of Aguas Calientes, Mexico, from a point on the Central Railway to the mines of Tepezala, with the privilege of extending it to Asientos or any other mining district of that State. Work must begin within 18 months; 15 kilometers must be built within each year thereafter, and the whole completed within four years. All the rolling stock and fixed material for the line can be imported free of duty for 15 years; and the usual other franchises, privileges and obligations are included in the concession. As a guarantee, $5,000 in bonds of the public debt must be deposited in the National Bank within six months.

The regulation tests in regard to color blindness receive extended notice in the annual report of the Society of Locomotive Engineers and Firemen of England. Many railway employees are not at all satisfied with the vigorous tests that are applied by some of the companies, and it is declared in the report that several instances have come to the society's knowledge where men have been disqualified by medical examiners, and they have gone to other medical men who have certified them as capable of fulfilling their duties. As practical men, the engine drivers admit that it is necessary that men who have the safe keeping of the traveling public in their hands should be able to distinguish the colors they have to work to by night and by day. But they believe that the only reliable test that would satisfy the traveling public and themselves is a practical test by the colors of the signals they have to work to by day and by night.

At the annual meeting of the Master Car Builders' Association at Saratoga last week the following reports were presented by the committees; the name of the chairman of each committee is given: Indelible Pencils, R. P. C. Sanderson; Standard Sizes for Catalogues, Specifications, etc., G. W. Rhodes; Tests of M. C. B. Couplers, J. M. Wallis; Air-Brake Tests, G. W. Rhodes; Steel-Tired Wheels, R. E. Marshall; Road Tests of Brake-Shoes, R. H. Soule; Laboratory Tests of Metal for Brake-Shoes, S. P. Bush; Brake-Beams, E. D. Nelson; Safety Chains for Freight Cars, H. Coulter; Heating Passenger Equipment, W L Hoffbecker; Ventilation of Passenger Equipment, R. P. C. Sanderson; Lighting Passenger Equipment, C. A. Schroyer; Wheel and Flange Gauges, J. N. Barr; Lubrication of Cars, A. M. Waitt; Air-Brake and Hand-Brake Apparatus on Cars, E. D. Bronner; Compressed-Air Appliances and Hydraulic Machinery, J. C. Barber; Freight-Car Trucks, J. J. Hennessy.

The report of the receivers of the Philadelphia & Reading Railroad Company for the month of April, 1894, shows gross receipts, $1,475,258; gross expenses, $880,437, leaving a profit in operating of $594,821; net receipts from other sources, $34,664, thus showing a gross profit for the month of $629,485. From this is to be deducted $47,280 for equipment payments, $50,000 for terminal trackage, and $705,000 for one-twelfth of the current year's fixed charges estimated, leaving total charges of $802,280, thus showing a net deficit for the month of $172,795; for the corresponding period of last year the net deficit for the month was $72,952. The total deficit for the present fiscal year up to date is $1,218,035, a decrease of $31,185 as compared with the corresponding period for the last fiscal year. The statement of the Philadelphia & Reading Coal and Iron Company, for April, 1894, shows gross receipts of $1,428,055, gross expenses of a loss from mining for the month of $50,839. Adding the fixed charges, the total deficit for the month is $173,040.

ALPHABETICAL INDEX TO ADVERTISERS.

— Indicates every other week or monthly advertisements.—

A

Abbott, Wheelock & Co..... 34
Adams, W. H..... 4
Advertising Rates..... 33
Ætna Powder Co..... 26
Aetna Foundry & Machine Co..... 12
Ainsworth, Wm..... 3
Aitcheson, R., Perf. Metal Co..... 16
Allen, Chas. A..... 12
Allis Co., Edw. P..... 27
Allison Coupon Co..... 13
Alteneder, Theo., & Sons..... 2
American Developing and Mg. Co..... 21
American Metal Co..... 20
American Mg. & Mill. Mach. Co..... 28
American Zinc Lead Co..... 31
Arms and Explosives..... —
Armstrong Brothers..... 9
Askew & Russell..... 4
Atkins, J. L..... 1
Atlantic Mining Co..... 34
Atlas Cement Co..... 1
Austen, Peter T..... 20
Australian Mining Standard..... 2

B

Babcock & Wilcox Co..... 9
Bacon, E. C..... 27
Baker & Adamson..... 3
Baker & Co..... 3
Balbach Smelting & Refining Co..... 34
Baltimore Copper Works..... 20
Bandell, H. E..... 6
Bath, Henry, & Son..... 29
Becker, Christian..... 3
Beckett Foundry & Machine Co..... 28
Berge, J. & H..... 3
Berlin Iron Bridge Co..... 10
Berwind-White Coal Mining Co..... 14
Bethlehem Iron Co..... 10
Bieber & Sohne, F. D..... 6
Billings, Robt., & Co..... 6
Bishop, Victor & Co..... 23
Blake, Geo. F., Mfg. Co..... —
Blake, T. A..... 27
Blandy, John F..... 4
Blauvelt, Harrington..... 4
Boggs, W. R., Jr..... 4
Boss, Clarence M..... 4
Boss, M. P..... 4
Bostelman, Lewis F..... 36
Boston & Montana Mining Co..... 34
Boston Ore Machinery Co..... 24
Brandis Sons Co..... 2
Brandt, Randolph..... 21
Bristol Co..... 1
Broderick & Bascom Rope Co..... 16
Brodie, Walter M..... 4
Brown Hoisting & Con'ing Mch. Co..... 32
Buckeye Engine Co..... 9
Bucyrus Ste'm Shov'l & Dredge Co.8 & 30
Bullionist, The..... 32
Bullock & Crenshaw..... 3
Bullock, M. C., Mfg. Co..... 20
Burfeind, J. H..... 4
Burleigh Rock Drill Co..... 36
Burlingame, E. F..... 4
Butte & Boston Mining Co..... 34
Butters, Charles..... 4

C

California Wire Works..... 33
Cameron, A. S., Steam Pump W'ks..... 12
Campbell-Johnston, R. C..... 4
Canadian Copper Co..... 20
Carpenter, Geo. B., & Co..... 8
Carpenter, Franklin R..... 4
Cary & Moore..... 20
Case, Wm. H..... 4
Castner & Curran..... 14
Casin, Franz..... 4
Central Mining Co..... 34
Chandler & Shapleigh..... 4
Channing, J. Parke..... 4
Chester Steel Castings Co..... —
Chrome Steel Works..... 11
Clayton Air Compressor Works..... 1
Clement, Victor M..... 4
Climax Fuse Co..... 26
Cole, Geo. J., & Co..... 6
Cole, Wm. E..... 13
Colliery Guardian..... 14
Collins, J. H. & Sons..... 4
Colorado Iron Works..... 31
Columbian University..... 6
Compress Wheel Co..... 28
Consolidation Coal Co..... 14
Contracts Open..... 18
Cookson & Co..... 34
Cooper, Hewitt & Co..... 33
Copper Queen Con. Mg. Co..... 34
Corcoran Scientific School..... 6
Correspondence School of Mechanics and Industrial Sciences..... 6
Courtis, Wm. M..... 4
Cuxe Bros. & Co..... 14
Crawford, John S..... 4
Crescent Steel Co..... 11

D

Darling Smelting & Ref. Co..... 34
Davis, Floyd..... 4
Davis, F. M., Mfg. Co..... 21 & 32
Davis, Lewis K..... 4
De La Bouglise, Geo..... 4
Denver Fire Clay Co..... 2
Denver Tent & Awning Co..... 3
Detroit Copper Mining Co..... 34
Dewey, Fred P..... 4
Dewey-Walter Refining Co..... 1
Dickerman, Alton L..... 4
Dickinson, Henry P..... 4
Dixon, Jos., Crucible Co..... 16
Donald, J. T..... 4
Drysdale, Dr. W. A..... 4

E

Eddy Valve Co..... 9
Ede & Burwell..... 4
Eimer & Amend..... 3
Electrical Plant & Electrical Industry. —
El Minero Mexicano..... 32
Engelhardt, E. C..... 4
Engineering Employment Bureau..... 18
Epping, Carpenter & Co..... 12
Eureka Co..... 34
Everette, Dr. W. E..... 4
Exeter Machine Works..... 31

F

Farrel Foundry & Machine Co..... 32
Fearn, Percy L..... 4
Fibre Conduit Co..... 13
Financial Times..... 30
Fisk, W. W..... 4
For Sale Advertisements..... 19
Fraser & Chalmers..... 25
Freeland, Francis T..... 4
Freese, E. M. & Co..... 2
Froehling, Dr. Henry..... 20
Frue Vanner Concentrator..... 30
Furlonge, W. H..... 4

G

Gates Iron Works..... 28
Garden City Sand Co..... 2
Garrison, A., Foundry Co..... 11
General Electric Co..... 30
Gold and Silver Extraction Co..... 19
Goldsmith Bros..... 7
Gooding, C. T..... 4
Goulds Mfg. Co..... 13
Grant, E. R..... 6
Griffith & Wedge Co..... 24
Groetzinger, A., & Sons..... 11
Gurley, W. & L. E..... 20

H

Haddock, Shonk & Co..... 14
Hahn, O. H..... 4
Halse, E..... 4
Hammond, John H..... 4
Hampton, Wm. Huntley..... 4
Handy & Harman..... 6
Hardman, John E..... 4
Harrington & King Perforat. Co.... 1 & 20
Harrison Safety Boiler Works..... 11
Hartford St'm Boiler Insp. & Ins. Co.. 9
Harvard University..... 6
Hasenzahl, W..... 20
Hastings, John B..... 20
Heil, Henry, Chemical Co..... 3
Hendrick Mfg. Co..... 16
Hendrie & Bolthoff Mfg. Co..... 24
Hicks & Sprague..... 6
Hiertz, T. & Son..... 10
Hofmann, Ottokar..... 4
Hollibaugh, J. R..... 4
Holton Iron & Steel Roofing Co..... 11
Hooker & Lawrence..... 4
Hoskins, William..... 3
Hunt, C. W., Co..... 8
Hunt & Robertson..... 30

I

Ihne, F. W..... 4
Illinois Smelting Co..... 1
Indian Engineering..... 24
Ingersoll-Sergeant Rock Drill Co..... 36
Iron & Coal Trades Review..... 32

J

James & Shakspeare..... 30
Jeansville Iron Works..... 12
Jeffrey Manufacturing Co.....16 & 32
Jenkins Bros..... 1
Jennings, E. P..... 5
Johnson, Matthey & Co..... 3
Jones & Jones..... 5
Journal of the Asso. of Engineering Societies..... —

K

Kansas City Sm. & Ref. Co..... 35
Kearsarge Mining Co..... 34
Keasbey, Robert A..... 8
Kennedy, Julian..... 5
Kent, Wm..... 5
Kerr, Mark B..... 5
Keyes, W. S..... 5
King & Andrews Co..... 11
Kirby, Edmund B..... 5
Knowles Steam Pump Works..... 12
Krom, S. R..... 25

L

Laflin & Rand Powder Co..... 26
Lammers, T. L..... 5
Lands & Mines for Sale..... 19
Languth, Werner..... 5
Lau, J. H. & Co..... 26
Lavagnino, G..... 5
Lawrence Scientific School..... 6
Ledoux & Co..... 20
Leffel & Co., James..... 12
Leggett, Thomas H..... 5
Leschen, A., & Sons' Rope Co..... 16
Lewisohn Bros..... 20
Lexow, T..... 23
Lloyd & Rigney..... 5
Loring, Frank C..... 5
Lowell, S. J., & Pushie, J. A..... 5
Lunkenheimer Co..... 9

M

Macbeth, Jas., & Co..... 26
MacDonald, B..... 5
Machinery for Sale..... 19
Mariner & Hoskins..... 5
Martinez, Dion..... 5
Maryland Coal Co..... 14
Mason Regulator Co..... 1
Mass. Institute of Technology..... 6
Mathison Smelting Co..... 34
Maynard, George W..... 5
McDermott & Duffield..... 5
McGowan, John H., Co..... 12
McIndoe, Hugh..... 6
McKiernan, S. G. & Co..... 36
Mechanical Gold Extractor Co..... 1
Mecklenburg Iron Works..... 23
Merwin & Richardson..... 5
Metallic Cap Mfg. Co..... 26
Michigan Mining School..... 6
Milton Mfg. Co..... 36
Mineralized Rubber Co..... 21
Miners' Assay Office..... 6
Minger, W. C..... 5
Mining Journal..... 9
Miscellaneous Wants..... 19
Missouri School of Mines..... 6
Mixer & DuBois..... 5
Moore, Dr. Gideon E..... 3
Moore, Samuel L., & Sons' Co..... 27
Mueller Mfg. Co..... 1
Mutual Life Insurance Co..... 6

N

National Lead Co..... 11
Newberry, W. E..... 5
New Mexico Mining Exchange..... 6
New York Belting & Packing Co., Ltd. 23
Newell Coal Co..... 14
Nicholson, Frank..... 5
Norwalk Iron Works Co.....1 & 23

O

Obermayer Co..... 8
O'Brien, Frank..... 5
Okonite Co., The, Ltd..... —
Olcott, Eben E..... 5
Ontonagon Miner, The..... 30
Orford Copper Co..... 20
Osceola Con. Mg. Co..... 34
Overland Machinery Co..... 31
Overbrook Chemical Co..... 3

P

Pacific Mining Agency & Trust Co..... 24
Page, Wm. Byrd..... 5
Parkhurst & Wilkinson..... 34
Peabody & Kolff..... 6
Pearse, Arthur L..... 5
Pencoyd Bridge & Const. Co..... 11
Penn Smelting and Refining Co..... 34
Penn, Diamond Drill & Mfg. Co..... 21
Pennsylvania Military College..... 6
Pennsylvania Salt Mfg. Co..... 2
Penrose & Barringer..... 5
Peters, Edward D., Jr..... 5
Phelps, Dodge & Co..... 34
Phillips, Wm. B..... 5
Phosphor-Bronze Smelting Co..... 8
Picher Lead Co..... 34
Pickhardt & Kuttroff..... 18
Pittsburg Bridge Co..... 9
Pollock, Wm. B., & Co..... 13
Poole, Robt., & Son Co..... 27
Porter, H. K., & Co..... 8
Porter, J. A..... 5
Positions Vacant..... 18
Potter, William B..... 5
Potts, Frederick A., & Co..... 14
Powell Co., The Wm..... —
Pratt & Whitney Co..... 12
Pulsometer Steam Pump Co..... — 12
Pushie, J. A..... 5

Q

Quebrada R. R. Land & Copper Co., Lt. 34
Queen & Co..... 2

R

Racine Hardware Co..... 9
Rand Drill Co..... 36
Randolph, John C. F..... 5
Raymond Bros., Impact Pulv. Co..... 28
Raymond, R. M..... 5
Raymond, Rossiter W..... 5
Richards & Co..... 3
Rickard, T. A..... 5
Ricketts & Banks..... 20
Robertson, E. C..... 6
Roberts, A. & P., & Co..... 11
Robinson, G. H..... 5
Robinson & Orr..... 19
Roebling's, J. A., Sons Co..... 16
Roessler & Hasslacher Chemical Co..... —
Ropeways Syndicate, Ltd..... 32
Rose Polytechnic Institute..... —
Rothwell, John E..... 5 & 18
Rothwell, Richard P..... 5
Russell Process Co..... 1

S

St. Louis Sampling & Testing Works... 1
Sargent, E. H., & Co..... 3
Scaife, William B., & Sons..... 10
Schwarz, Theodore E..... 5
Scientific Machinist Co..... 6
Scoville Iron Works..... 26
Shapleigh, W..... 4
Sheffield Car Co..... 1
Shields & Middleton..... 5
Shultz Belting Co..... 1
Simonds, Francis M..... 20
Situations Wanted..... 18
Skewes, Edward..... 5
Smith, C. H., & Co..... 6
Snow & Fiscus..... 6
Solvay Process Co..... 2
Souther John, & Co..... 8
Squire, J..... 5
State Ore Sampling Co..... 34
Stedman's Foundry & Machine Wks.. 28
Stearns Bros..... 23
Stein, Walter M..... 5
Stickney, Conyngham & Co..... 14
Stieren, W. E..... 2
Stilwell, Bierce & Smith-Vaille Co.12 & 13
Stoiber, E. G..... 5
Sullivan Machinery Co.....1 & 23

T

Tamarack, Jr., Mining Co..... 34
Tamarack Mg. Co..... 34
Taylor, John, & Co..... 3
Taylor & Brunton..... 5
Terhune, Richard H..... 5
Thies, Adolph..... 5
Thomson-Houston International Co... 30
Totten & Hogg..... 28
Trenholm, Paul C..... 6
Trent, L. C..... 5
Trenton Iron Co..... 33
Troemner, Henry..... 3
Truax Mfg. Co..... 9
Tudor Boiler Mfg. Co..... 9
Tyler, W. S., Wire Works Co..... 16

U

Union Iron Works.....1 & 27
Unzicker, Hermann..... 5

V

Van Slooten, Wm..... 5
Victory Chemical Co..... 34
Vulcan Iron Works..... —

W

Walburn-Swensen Mfg. Co..... 30
Walter Bros..... 5
Wannemaker, J. F..... 5
Ward & Olyphant..... 14
Weber Gas & Gasoline Engine Co..... 26
Webster, Camp & Lane Mach. Co..... 24
Whitney, A., & Son..... —
Williams Bros..... 16
Williams Mfg. Co..... 11
Williamsport Wire Rope Co..... 16
Wilson, J. Howard..... 6
Wood, R. D., & Co..... 8
Worthington, Henry R..... 3
Wright & Adams Co..... 27
Wyatt & Saarbach..... 6
Wyckoff & Son, A..... 13

Y

Young & Park..... 6
Young Lock Nut Co..... 8
Youngstown Bridge Co..... 10

WIRE ROPE MANUFACTURERS.

BRODERICK & BASCOM ROPE CO.

SOLE MANUFACTURERS OF

Established 1875.

"POWER" ROPE.

St. Louis, Mo.

THE MOST POWERFUL ROPE MADE.

SEND FOR ILLUSTRATED CATALOGUE

A. LESCHEN & SONS ROPE CO., ST. LOUIS, MO.

Sole Manufacturers of

HERCULES WIRE ROPE.

BEST ON EARTH.

[TRADE MARK REGISTERED.

JOHN A. ROEBLING'S SONS Co.
IRON & STEEL
WIRE ROPE
TELEGRAPH WIRE COPPER WIRE
Works at Trenton, N.J.
WAREHOUSES:
117 LIBERTY ST. NEW YORK.
25 FREMONT ST. SAN FRANCISCO.
173 LAKE ST. CHICAGO, ILL.
MAGNET WIRE & ELECTRIC WIRES
INSULATED

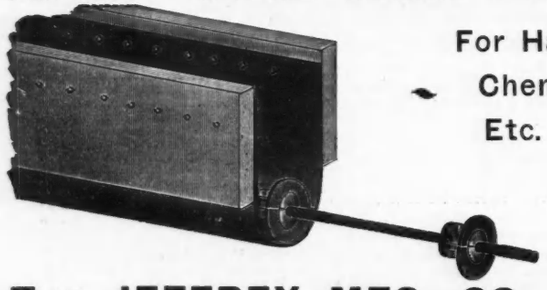
THE ROBERT AITCHISON PERFORATED METAL CO. CHICAGO, ILL.

Perforated Metals

FOR ALL USES IN

Mining and Ore Dressing.

JEFFREY STEEL CABLE CONVEYORS



For Handling Coal, Ores, Chemicals, Refuse, Etc., Etc.

Simple in Construction.

SEND FOR CATALOGUE.

THE JEFFREY MFG. CO., COLUMBUS, O.

Also, 163 WASHINGTON STREET, NEW YORK.

DIXON'S PURE, FOLIATED, DRY AMERICAN GRAPHITE

PERFECT LUBRICATOR.

Its enduring qualities are several times greater than those of any oil. Unlike either oil or grease, it is not affected by heat, cold, steam, acids, etc., and acts equally well under the most varying conditions of temperature and moisture. Its natural impurities contain substances fatal to anti-friction purposes, namely, quartz or grit. Its proper selection, sizing and perfecting for lubricating purposes is a matter requiring large skill, much machinery and great experience. We have made this a special study, and, by methods of sizing and dressing, peculiar to ourselves, have produced a graphite unequaled for purity, for correct size of flake and unrivaled for lubricating qualities.

Manufactured and Warranted Only by the

JOS. DIXON CRUCIBLE CO., JERSEY CITY, N. J.

W. S. TYLER Pres. PROCTOR PATTERSON, Sec. & Tr.

W. S. TYLER WIRE WORKS COMPANY.

MANUFACTURERS

EXTRA HEAVY Double Crimped STEEL, IRON, COPPER AND BRASS

BATTERY Mining Cloths.

Cleveland, O.

FRASER & CHALMERS AGENTS, CHICAGO, ILL.

Williamsport Wire Rope Co.,

MANUFACTURERS OF

Iron, Steel and Galvanized

WIRE ROPE

Hoisting and Haulage Ropes a Specialty.

CORRESPONDENCE SOLICITED.

WILLIAMSPORT PA.

PERFORATED SHEET METALS

OF EVERY DESCRIPTION

FOR MINING PURPOSES.

THE HENDRICK MANUFACTURING LIMITED CO. PERFORATED SHEET METALS OF EVERY DESCRIPTION CARBONDALE, PENNA.

THE HENDRICK MFG. CO., LTD.,

CARBONDALE, PA

WELL DRILLING MACHINERY,

MANUFACTURED BY

WILLIAMS BROTHERS,

ITHACA, N. Y.,

Mounted and on Sills, for deep or shallow wells, with steam or horse power.

Send for Catalogue.

ADDRESS

Williams Brothers

ITHACA, N. Y.

CLASSIFIED LIST OF ADVERTISERS.

Air Compressors and Rock Drills.
Bostelmann, Louis F.
Bullock, M. C., Mfg. Co.
Burleigh Rock Drill Co.
Clayton Air Compressor Works.
Hasenzahl, W.
Ingersoll-Sergeant Rock Drill Co.
McKiernan, S. G. & Co.
Norwalk Iron Works Co.
Penn Diamond Drill & Mfg. Co.
Rand Drill Co. (See Diamond Drills.)

Amalgamators
Bucyrus Steam Shovel & Dredge Co.
Gate Iron Works.

Anti-Friction Metals
Hiertz, T. & Son. | National Lead Co.

Architects and Builders.
Berlin Iron Bridge Co. | Pittsburg Bridge Co.
Pencoyd Bridge & Con-struct. Co. | Pollock, Wm. B. & Co.
Scaife, Wm. B. & Son.

Assayers' and Chemists' Supplies
Ainsworth, Wm. | Penn Sm. & Ref. Wks.
Baker & Adamson. | Penna. Salt Mfg. Co.
Baker & Co. | Queen & Co.
Berge, J. & H. | Richards & Co.
Bullock & Crenshaw | Roessler & Hasslacher Chemical Co.
Denver Fire Clay Co. | Solvay Process Co.
Goldsmith Bros. | Taylor, John, & Co.
Henry Heil Chem. Co | Troemner Henry.
Hosking, Wm. | Victory Chemical Co.
Miners' Assay Office.
Overbrook Chem. Co.

Attorney, Corporation
McIndoe, H.

Babbitt's Metal
Epping, Carpenter & Co.

Band Wheels
Poole, R., & Son Co.

Bankers and Brokers
Amer. Devel. & Mg. Co | Pac. Mg. Ag'cy & Tr. Co.
Bandell, E. | Peabody & Koiff.
Bieber & Sohne | Robertson E. C.
Billings, Robt. & Co. | Snow & Fiscus.
Grant, E. R. | Smith, C. H.
Handy & Harman. | Trenholm, Paul C.
Hicks & Sprague. | Van Frank, P. F., & Co.
New Mexico M. Ex'ge.

Belting
Carp'ter, Geo. B., & Co. | Mineralized Rub. Co.
Groetzinger & Sons. | New York Belting & Packing Co., Ltd
Hendrie & Bolthoff Mfg. Co. | Shultz Belting Co.
Jeffery Mfg. Co.

Blasting Caps and Fuse
Lau, J. B., & Co. | Metallic Cap Mfg. Co.
Macneth, James, & Co

Blowers
Garden City Sand Co.

Boiler Compound
American Fluoride Co.

Boilers
Babcock & Wilcox Co. | Stilwell-Bierce & Smith-Vaile Co.
Pollock, Wm. B., & Co. | Tudor Boiler Mfg. Co.
Scaife, Wm. B. & Sons. (See Machinery.)

Brass Castings
Epping, Carpenter & Co.

Brass Rolling Machinery
Poole, R., & Son Co.

Brattice Cloth
Mineralized Rubber Co.

Brick Machinery
Fletcher, S. K. | Freese, E. M., & Co.

Bridges
Berlin Bridge Co. | Scaife, W. B. & Sons.
Pencoyd Br. & Con Co. | Youngsto'n Bridge Co.
Pittsburg Bridge Co.

Buckets
Scaife, Wm. B. & Sons. (See Machinery.

Cable Railways
Gagnier-Griffin Sus. Ry. Bridge Co.
Poole, R., & Son Co.

Carbons
Bishop, Victor, & Co. | Lexow, Theodore.
Bostelmann, Louis F.

Car Wheels
Whitney & Co.

Cement
Atlas Cement Co.

Chain and Link Belting (See Belting.)

Chemicals
Baker & Adamson. | Penn. Salt Mfg. Co.
Bullock & Crenshaw. | Roessler & Hasslacher Chemical Co.
Henry Heil Chem. Co. | Solvay Process Co.
Overbrook Chem. Co.

Chlorine Liquid
Pickhardt, Wm., & Kuttroff.

Clutches, Friction
Poole, R., & Son Co.

Coal
Berwind-White Coal Mg. Co. | Maryland Coal Co.
Castner & Curran | Newell Coal Co.
Consolidation Coal Co. | Potts, F. A., & Co.
Coxe Bros. & Co. | Stickney, Conyngham & Co.
Haddock, Shonk & Co. | Ward & Olyphant.

Coal Cutters
Ingersoll-Sergeant Drill Co.
Jeffrey Mfg. Co. (See Machinery.)

Coal Tipples.
Youngstown Bridge Co.

Coke Ovens
Sheffield Car Co.

Concentrators, Crushers, Pulverizers, Separators, Etc.
Allis, Ed. P. & Co.
American Mining & Milling Machinery Co.
Becket Foundry & Machine Co.
Blake, Theo. A.
Boston Ore Machinery Co.
Colorado Iron Works
Fraser & Chalmers.
Frue Vanner Concentrator.
Gates Iron Works.
Hendrie & Bolthoff Mfg. Co.
Krom, S. R.
Mechanical Gold Extractor Co.
Raymond Bros. Imp. Pulv. Co.
Stedman Foundry & Mach. Co.
Totten & Hogg.
Walburn-Swenson Mfg. Co. (See Machinery.

Conduit, Fibre Fibre Conduit Co.

Copper Dealers and Producers
Abbott, Wheelock & Co | James & Shakspeare.
American Metal Co. | Kearsarge Mg. Co.
Atlantic Mining Co. | Lewisonn Bros.
Balbach S. & Ref. Co. | Orford Copper Co.
Baltimore Cop. Wks. | Osceola Con. Mg. Co.
Boston & Mont. M. Co. | Penn. Salt Co.
Butte & Boston M. Co | Phelps, Dodge & Co.
Canadian Copper Co. | Quebrada R. R. L. & C. Co.
Central Mining Co. | Tamarack Mg. Co
Copper Queen Mg. Co. | Tamarack, Jr., Mg. Co.
Detroit Cop'r Mg. Co..

Copper Rolling Machinery
Poole, R., & Son Co.

Contractors and Miners' Supplies
Bucyrus Steam Shovel and Dredge Co.
Pollock, Wm. B., & Co.
Pratt & Whitney Co. (See Machinery.)

Corrugated Iron
Berlin Iron Bridge Co | Scaife, W. B. & Sons.

Crucibles, Graphite, Etc.
Denver Fire Clay Co. | Stedman's Foundry & Machine Works.
Garden City Sand Co,
Obermayer Co.

Crucible Steel Castings
King & Andrews Co.

Crushed Quartz
Garden City Sand Co.

Cupola
Garden City Sand Co. | Obermayer Co.

Dermatine
Groetzinger & Sons.

Diamonds
Bishop, Victor, & Co | Bostelmann, L. F.
Lexow, Theodore.

Diamond Drills
Bishop, Victor, & Co. | Penn. Diamond Drill & Mfg. Co.
Bostelman, L. F. | Stearns Bros.
Bullock Mfg. Co., M.C. | Sullivan Machin'y Co.
Hasenzahl, W.
Lexow, Theodore.
(See Air Compressors and Rock Drills.)

Drawing Materials
Altenedor, Theo. & Son.
Queen & Co.

Dredges
Bucyrus Steam Shovel & Dredge Co.
Souther & Co.

Dredging Machines
Poole, R., & Son Co.

Dump Cars
Hunt Co., C. W. | Wright & Adams Co.
Truax Mfg. Co.

Educational Institutions
Columbian University.
Correspondence School of Mines.
Harvard University.
Mass. Inst. of Technology.
Michigan Mining School.
Missouri School of Mines
Pennsylvania Military College.
Rensselaer Polytechnic Institute.
Scientific Machinist Co.

Electrical Machinery and Supplies
General Electric Co. | Okonite Co., Limited.
Jeffrey Mfg. Co. | Thomson-Houston International Co.
King & Andrews Co.

Elevators, Conveyors and Hoisting Machines
Brown Hoisting and Convey. Mach. Co.
California Wire Works.
Cooper, Hewitt & Co.
Hunt, C. W., Co.
Jeffrey Manufacturing Co.
Scaife, Wm. B. & Sons.
Union Wire Rope Tramway Co.
Vulcan Iron Wks.
(See Wire Rope Tramway and Machinery.)

Elevator, Grain, Machinery
Poole, R., & Son Co.

Emery Wheels
New York Belting & Packing Co., Ltd.

Employment Bureaus
Engineering Employment Bureau.

Engineers, Chemists, Metallurgists
Adams, W. H.
Askew & Russell.
Baker & Co.
Blandy, John F.
Blauvelt, Harrington.
Boggs, W. R., Jr.
Boss, Clarence M.
Boss, M. F.
Brodie, Walter M.
Burfeind, J. H.
Burlingame, E. E.
Butters, Charles.
Campbell-Juston R. C.
Carpenter, Franklin R.
Cary, & Moore.
Case, Wm. H.
Cazin, Franz.
Chandler, W. H.
Channing, J. Parke.
Clement, Victor M.
Collins, J. H. & Sons.
Courtis, Wm. M.
Crawford, J. S.
Darling, L. B.
Davis, Floyd.
Davis, Lewis K.
De la Bouglise, Geo.
Dewey, Frederic P.
Dickerman, Alton L.
Dickinson, H. P.
Donald, J. T
Drysdale, Dr. W. A.
Fede & Burwell.
Engelhardt, E. C.
Everette, Dr. W. M.
Fearn, Percy L.
Fink, W. W.
Forbes, George.
Freeland, Francis T.
Froehling, Dr. Henry.
Furlonge, W. H.
Gooding, F. W.
Hahn, O. H.
Halse, E.
Hammond, John Hays
Hampton, W. Huntley
Hardman, John E.
Hastings, John B.
Hofman, Ottokar.
Holibaugh, J. R.
Hooker & Lawrence.
Hunt & Robertson.
Ihne, F. W.
Jennings, E. P.
Jones & Jones.
Kennedy, Julian.
Kent, William.
Kerr, Mark B.
Keyes, W. S.
Kirby, E. B.
Lammers, T. L.
Lavagnino, G.
Ledoux & Co.
Leggett, Thomas H.
Loring, Frank C.
Lowell, S. J.
Mariner & Hoskins.
Martinez, Dion.
Maynard, George W.
McDermott & Duffield.
Merwin & Richardson
Minger, W. C.
Mixer & DuBois.
Moore, Gideon E.
Newberry, W. E.
Nicholson, Frank.
O'Brien, Frank
Olcott, Eben E.
Page, Wm. Byrd.
Pearse, A. L.
Penrose & Barringer.
Peters, Edward D.
Phillips, W. B.
Poole, Robt., & Son Co.
Porter, J. A.
Potter, William B.
Pushie, J. A.
Randolph, John, C. F.
Raymond, Rossiter W.
Raymond, R. M.
Rickard, T. A.
Ricketts & Banks.
Robinson, G. H.
Rothwell, John E.
Rothwell, Richard P.
Schwarz, Theodore E.
Shapleigh, W.
Shields & Middleton.
Skewes, Edward.
Squire, Jos.
Stein, Wm. M.
Stoiber, E. G.
Taylor & Brunton.
Terhune, Richard H.
Thies, A.
Trent, L. C.
Unzicker, H.
Van Slooten, Wm.
Walter Bros.
Wannemaker, J. F.
Wilson, J. Howard.
Wyatt & Saarbach.
Young & Park.

Engineers' Instruments
Altenedor, T. & Son. | Keller, Chas. S.
Brandis' Sons. | Stieren, Wm. E.
Bullock & Crenshaw | Queen & Co.
Gurley, W. & L. E.

Engines
Armstrong Brothers. | Union Iron Works.
Buckeye Engine Co. | Weber Gas & Gasoline Engine Co.
Bullock, M.C., Mfg. Co. | Webster, Camp & Lane Mach. Co.
Racine Hardware Co. | Wright & Adams Co. (See Machinery.)
Scoville Iron Works.
Stilwell-Bierce & Smith-Vaile Co.

Excavators
Bucyrus Steam Shovel & Dredge Co.
Souther & Co.

Fans, Steam
Cole, Wm. E.

Fertilizer Machinery
Poole, R., & Son Co.

Fibre Conduit
Fibre Conduit Co.

Fire-Brick and Clay
Denver Fire Clay Co. | Garden City Sand Co.

Flour Mill Machinery
Poole, R., & Son Co.

Fluorspar Obermayer Co.
Fly Wheels Poole, R., & Son Co.
Founders Poole R., & Son Co.
Foundry Cranes Obermayer Co.
Foundry Supplies Obermayer Co.
Friction Clutches Poole, R., & Son Co.
Furnaces Pollock, W. B. & Co.
Hosking, Wm. Sheffield Car Co.
Moore, S. L., & Son Co. (See Machinery.)

Fuses, Powder
Climax Fuse Co.

Gas Engines.
Weber Gas & Gasoline Engine Co.

Gas Works
Pollock, Wm., B. & Co. | Wood, R. D. & Co.

Gauges, Recording, Etc.
Allen, Chas. A. | Bristol Mfg. Co.

Gearing
Poole, R., & Son Co.

Grain Elevators
Poole, R., & Son Co.

Grease, Graphite, Etc.
Dixon, Jos., Crucible Co.

Hangers
Poole, R., & Son Co.

Heavy Machinery
Poole, R., & Son Co.

Hopper Cocks
Mueller Mfg. Co.

Hose, Rubber, Etc.
Allen, Chas. A.
Mineralized Rubber Co.
New York Belting & Packing Co., Ltd.

Injectors
Young Lock Nut Co.

Inspection and Tests
Hunt, The Robert W. Co

Insulated Wires and Cables
Okonite Co., Ltd.

Insurance Companies
Hartford Steam Boiler Inspect'n and Ins. Co.
Mutual Life Insurance Co

Iron Castings
Poole, R., & Son Co.

Laddies
Obermayer Co.

Lamps, Miners'
Stieren, Wm. E.

Lead, White, Machinery
Poole, R., & Son Co.

Locomotives Porter, H. K., & Co
General Electric Co. | Thomson-Houston International Co.
Hunt, C. W. Co.

Machine Molded Gearing
Poole, R., & Son Co.

Machinists
Poole, R., & Son Co.

Marine Railways
Poole, R., & Son Co.

Machinery.

Dealers in Mining, Milling, and Other Machinery
Ætna Fdy. & Mach. Co. | Overland Mach. Co.
Allis, Edw. P., & Co. | Penn Diamond Drill & neering Co
Amer. Mining & Milling Machinery Co | Pollock, Wm. B., & Co.
Armstrong Brothers. | Poole, Robt. Son & Co.
Beckett Foundry & Machine Co. | Raymond Bros. Imp. Pulv. Co.
Bostelman, L. F. | Scaife, W. B., & Sons.
Boston Ore Mach'y Co. | Scoville Iron Works.
Buckeye Engine Co. | Stedman Fdy. & M. Co.
Bullock, M. C., Mfg. Co. | Sullivan Mach'y Co.
Carp'ter, Geo. B., & Co. | Thomson-Houston International Co.
Colorado Iron Works. | Totten & Hogg.
Exeter Mach. Wks. Co. | Trenton Iron Co.
Fraser & Chalmers | Union Iron Works.
Griffith & Wedge Co | Vulcan Iron Works.
Hendrie & Bolthoff Mfg. Co. | Walb'rn-Swens'n Mig. Co.
Jeffrey Mfg. Co. | Webster, Camp & Lane Mach. Co.
McKiernan, S. G. & Co. | Wright & Adam Co.
Mech'l Gold Extr. Co. | Youngsto'n Bridge Co.
Meckenburg Ir. Wks.
Moore, Sam. L., & Son.

Metal Dealers
Abbott, Wheelock & Co. | Johnson, Matthey & Co.
American Metal Co. | Lewisohn Bros.
Am. Zinc-Lead Co. | Mathison Sm'lting Co.
Baker & Co. | Orford Copper Co.
Bath, Henry & Son. | Phelps, Dodge & Co.
Eureka Co. | Pioher Lead Co
Goldsmith Bros | State Ore Sampling Co.
James & Shakspeare. | Victor Chemical Co.

Metallurgical Works and Ore Purchasers' Processes
American Zinc Lead Co.
Baker & Co
Balbach Smelting & Refining Co.
Baltimore Copper Works.
Canadian Copper Co.
Goldsmith Bros.
Kansas City S. & Ref. Co.
Ledoux & Co.
Mechanical Gold Extractor Co.
Orford Copper Co.
Pennsylvania Salt Mfg. Co.
Ricketts & Banks.
Russell Process Co.
St. Louis Sampling & Testing Works.
State Ore Sampling Co.
Walburn-Swenson Mfg. Co.

Mine Cars
Sheffield Car Co. | Truax Mfg. Co.

Mining and Land Companies
Amer. Devel. & Mg. Co. | Hicks & Sprague.
Atlantic Mg. Co. | Kearsarge Mg. Co.
Boston & Mont. M. Co. | Osceola Con. Mg. Co.
Butte & Boston Mg. Co. | Quebrada R. R. L. & C. Co.
Central Mg. Co.
Copper Queen Mg. Co. | Tamarack Mg. Co
Detroit Copper Mg. Co. | Tamarack, Jr., Mg. Co.
Eureka Co.

Moulding Sand
Garden City Sand Co.

Nickel
Canadian Copper Co.

Nuts, Lock
Young Lock Nut Co.

Ore Cars
Truax Mfg. Co.

Ore Testing Works
Hunt & Robertson. | Ricketts & Banks.
Ledoux & Co. | State Ore Sampling Co

Packing and Pipe Coverings
Brandt, Randolph. | New York Belting & Packing Co., Ltd.
Jenkins Bros. | Wyckoff & Son, A.
Keasby, Robt
Mineralized Rubber Co.

Patents
Atkins J. L.

Perforated Metals
Aitcheson, R., Perf. Metal Co.
Harrington & King Perforating Co.
Hendrick Mfg. Co.

Periodicals
Arms and Explosives. | Iron & Coal Trades Review.
Austral'n Mg. Stand'd | Indian Engineering.
El Minero Mexicano. | Jour. of Assoc. of Engineering Societies.
Electrical Plant & Electrical Industry. | Mining Journal.
Financial Times.

Phosphates
Trenholm, Paul C.

Phosphor-Bronze
Phosphor-Bronze Smelting Co.

Pile Drivers
Bucyrus Steam Shovel and Dredge Co.

Pipes
Pollock, Wm. B., & Co. | Wyckoff & Sons, A.

Planed Gearing
Poole, R., & Son Co.

Platinum Johnson Matthey & Co.
Baker & Co.

Plumbago—East India
Obermayer Co.

Portland Cement
Atlas Cement Co.

Powder
Ætna Powder Co.
Lafin & Rand Powder Co.
Lau, J. H., & Co.

Publications
Allison Coupon Co | Financial Times.
Arms & Explosives. | Iron & Coal Trades Rev.
Australian Mining Standard. | Jour. of Assoc. of Engineering Societies.
Electrical Plant & Electrical Industry | Mining Journal.

Pulleys
Poole, R., & Son Co.

Pumps
Ætna Fdy. & Mach. Co. | Knowles Steam Pump Works.
Allen, Chas. A. | McGowan, John H., & Co.
Blake, Geo. F., Mfg. Co. | Pulsometer Steam Pump Works.
Cameron, A. S., Steam Pump Works. | Scoville Iron Works.
Epping, Carp'ter & Co. | Stilwell-Bierce & Smith-Vaile Co.
Goulds Mfg. Co. | Worthington, Henry.
Groetzinger, A., & Sons
Jeanesville Iron Wks.

Quarrying Machines
Bostelman, L. F.
Ingersoll-Sergeant Rock Drill Co.
Rand Drill Co.
Sullivan Machinery Co.
Union Wire Rope Tramway Co.

Quicksilver
Eureka Co.

Railroad Supplies and Equipment
Carp'ter, Geo. B., & Co. | Porter, H. K., & Co.
Garden City Sand Co. | Robinson & Orr.
Hunt, C. W., Co. | Young Lock Nut Co.
(See Machinery

Regulators, Damper, Heat, Etc.
Eddy Valve Co. | Mason Regulator Co.
Lunkenheimer Co.

Rock Drills. (See Air Compressor.)

Rolling Mill Machinery
Poole, R., & Son Co.

Roofing
Berlin Iron Bridge Co. | Phelps, Dodge & Co.
Holton Iron & Steel Roofing Co. | Pittsburg Bridge Co.
Pencoyd Bridge and Const. Co. | Scaife, Wm B. & Sons.
Youngsto'n Bridge Co

Rope Wheels
Poole, R., & Son Co

Rubber Goods
New York Belting & Packing Co., Ltd

Safety Lamps
Wm. E. Stieren.

Screens
Aitcheson, R., Perf. Metal Co.
Exeter Machine Works Co.
Harrington & King Perforating Co.
Tyler W. S., Wire Works Co.
(See Machinery.)

Screen Plates
Harrington & King Perforating Co.

Separators
Harrison Safety Boiler Works.

Shafting
Poole, R., & Son Co.

Shoes and Dies
Chrome Steel Works. | Crescent Steel Co.

Shovels (Steam)
Bucyrus Steam Shovel & Dredge Co.
Souther & Co.

Smelting and Refining Works
Balbach S. & Ref. Co. | Penna. Salt Mfg. Co.
Baltimore Cop'r Wks. | Penn Smelting and Refining Works.
Kansas City S. & Ref. Co. | Phosphor-Bronze Smelt. Co.
Mathison Smelting Co.
Orford Copper Co.

Steam Fans
Cole, Wm E.

Steel Rails, Castings, Rolls, Drill Steel
Abbott, Wheelock & Co. | King & Andrews Co.
Bethlehem Iron Co. | Moore, S. L., & Sons Co
Chester Steel Cast. Co. | Roberts, A. & P., & Co.
Chrome Steel Works. | Robinson & Orr.
Crescent Steel Co. | Whitney, A., & Sons.
Exeter Machine W. Co | (See Metal Dealers.)
Garrison, A., Fdry. Co.

Tanks
Pollock, Wm. B. & Co.
Scaife, Wm. B. & Sons.
Williams Mfg. Co.

Tapping Machine, Gas Main, Etc.
Mueller Mfg. Co.

Telegraph Wires and Cables
Okonite Co., Ltd., The.

Tin Plate Rolling Machinery
Poole, R., & Son Co.

Tools
Pratt & Whitney Co.

Tubes
Pollock, Wm. B. & Co. | Williams Bros.

Tubing-Rubber
New York Belting and Packing Co., Ltd.

Turbines
James Leffel & Co., The.
Poole, Robt. & Son Co
Stilwell-Bierce & Smith-Vaile Co.

Turbine Water-Wheels
Poole, R., & Son Co.

Valves
Eddy Valve Co. | Lunkenheimer Co.
Jenkins Bros. | Mason Regulator

Ventilators
Bullock, M. C., Mfg. Co.

Vulcanite Emery Wheels
New York Belting and Packing Co., Ltd.

Washers
Milton Mfg. Co.

Water Pressure Reducers
Mueller Mfg. Co.

Water Pressure Regulators
Mueller, H., Mfg. Co.

Water-Wheels
Poole, R., & Son Co.

Well Drilling Machinery
Bostelmann, L. F.
Penn Diamond Drill & Mfg. Co.
Sullivan Machinery Co.
Williams Bros.

Wheels, Car
Sheffield Car Co

White Lead Machinery
Poole, R., & Son Co.

Wire Cloth
Aitcheson, R., Perf. Metal Co.
Harrington & King Perforating Co.
Tyler, W. S., Wire Works.

Wire Rope & Wire
Abbott, Wheelock & Co. | Leschen, A., & Sons Rope Co.
Broderick & Bascom Rope Co. | Phelps, Dodge & Co.
California Wire Wks | R'bling, J. A. Sons & Co.
Carp'ter, Geo. B., & Co. | Ropeways Synd., Ltd.
Cooper, Hewitt & Co. | Trenton Iron Co.
Hunt, C. W., Co. | Williamsport Wire Rope Co.

Wire Rope Tramway
Brown Hoist. & Convey. Machine Co.
California Wire Works.
Colorado Iron Works.
Cooper, Hewitt & Co.
Hunt, C. W., Co.
Roebling, J. A., Sons & Co.
Trenton Iron Co.
Vulcan Iron Works.

FREE ADVERTISING.

Inquiries from employers in want of Superintendents, Engineers, Metallurgists, Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

The labor and expense involved in ascertaining what positions are open, in gratuitously advertising them and in attending to the correspondence of applicants, are incurred in the interest and for the *exclusive* benefit of *subscribers* to the ENGINEERING AND MINING JOURNAL.

☞Applicants should inclose the necessary postage to insure the forwarding of their letters.

Positions Vacant.

1330 WANTED—EXPERIENCED CHEMIST for blast furnace. One willing to help in office preferred. Give experience, references, and full particulars. Address IVANHOE, ENGINEERING AND MINING JOURNAL.

1331 WANTED—A DRAUGHTSMAN who has had some experience in designing mining machinery, and who is a graduate of some good mechanical school. A permanent position for the right man. Address MECHANICAL, ENGINEERING AND MINING JOURNAL.

1332 WANTED—A MANAGER THOROUGHLY familiar with the manufacture of alum. Address ALUM, ENGINEERING AND MINING JOURNAL.

1334 WANTED — MINING ENGINEER and assayer, speaking and writing Spanish, for silver mines; salary $75. Address, with full particulars as to experience and references, ZACATEC, ENGINEERING AND MINING JOURNAL.

1335 WANTED—FIRST-CLASS ENGINEER for large steam plant. One familiar with both theory and practice. Answer with references and salary required, to PROCTOR, ENGINEERING AND MINING JOURNAL.

1336 THERE IS AN OPENING ON THE editorial staff of the ENGINEERING AND MINING JOURNAL. Preferably a mining engineer and metallurgist familiar with our Western mining districts, and who has had experience in reading exchanges and newspaper work. Address, stating experience and salary expected, STAFF, ENGINEERING AND MINING JOURNAL.

1337 WANTED—A COMPETENT FOREman for converting department of copper plant. Must have experience in blowing copper. Give full particulars and references. Address "DURANGO," ENGINEERING AND MINING JOURNAL.

1338 WANTED—ASSISTANT IN ANAlytical laboratory; one experienced in analysis of ores, coals, limestones, phosphates, etc., and assaying of gold and silver ores. Address, with references, stating age, experience and salary expected ANALYTICAL, ENGINEERING AND MINING JOURNAL.

Situations Wanted.

Advertisements for SITUATIONS WANTED will be Charged only 10 cents a line.

A GENERAL MACHINIST WANTS A SITUATION as Foreman. Address STEAM, ENGINEERING AND MINING JOURNAL. No. 16,497, June 30.

SITUATION WANTED BY AN ENERGETIC civil and mining engineer of six years' experience as mine superintendent and mining engineer. Can give good references. Address PLYMOUTH, ENGINEERING AND MINING JOURNAL. No. 16,600, June 30.

MECHANICAL AND METALLURGICAL Engineer, graduate, seven years' practical experience in the West as designer and builder of mills, smelters, special works, mining machinery, etc., and fully acquainted with the latest requirements, desires a suitable position of responsibility. Best references. Address M. & M. E., ENGINEERING AND MINING JOURNAL. No. 16,625. July 7.

OPEN FOR ENGAGEMENT. HAVE HAD charge of the mining engineering department of the Michigan Mining School for the past four and one-half years. Practically experienced in all kinds of mine surveying, in railroad and in general engineering work. Well acquainted with mining on Lake Superior. F. W. DENTON, Houghton, Mich. No. 16,602, July 21.

SITUATION AS MINING ENGINEER, ASsistant superintendent, or with manufacturer of mining machinery; technically educated; experienced; familiar with the mining of large bodies of ore; large mining acquaintance; references furnished. Address L. S., ENGINEERING AND MINING JOURNAL. No. 16,603, July 21.

AN ALL-ROUND CIVIL ENGINEER (thoroughly American) familiar with Spanish language and customs, capable of taking full charge, willing to be an assistant. If with general contracting firm prefer an interest to salary; at present second chief engineer; employers as reference. Experienced in handling, reconnaissance, preliminary, location, construction and men, both as engineer and superintendent. Parties needing the same (especially those interested in South America enterprises) address CHARACTER, ENGINEERING AND MINING JOURNAL. No. 16,527, Aug. 4

POSITION WANTED AS ASSISTANT TO mine manager or mining engineer, by a recent graduate of the Columbia College School of Mines. Address METAL MINING, ENGINEERING AND MINING JOURNAL. No. 16,500 tf.

Contracts Open.

MISSOURI SCHOOL OF MINES, ROLLA, Mo.—Bids are now open on the $10,000 equipment for the new mining and metallurgical laboratory. Bids will be received and specifications furnished on a 50-H.P. power plant; a 30-ton per day ore dressing plant; a smelting and roasting furnace plant; a "works" laboratory; a hot-water heating plant; a 40-lamp electric light plant; furnishing the Instruction Department with chairs, desks, tables, cases, etc.

Further particulars can be had from

Prof. H. K. LANDIS, ROLLA, Mo.

PIPING.—Victoria, B. C.—Sealed tenders will be received up to July 3d for furnishing approximately 310 tons (of 2,240 lbs.) of cast iron coated plain water pipes and 3¼ tons of special castings for the waterworks, in accordance with specifications to be seen at the office of the water commissioner, where also forms of tenders may be obtained. WELLINGTON J. DOWLER, C. M. C.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., June 15th, 1894.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 18th of July, 1894, and opened immediately thereafter, for all the labor and materials required for the superstructure and roof covering, including approaches of the U. S. Post Office and Custom House Building at Fargo, N. Dak., in accordance with the drawings and specification, copies of which may be had at this office, or the office of the Superintendent at Fargo, N. Dak. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be inclosed in envelopes, sealed and marked, "Proposal for the Superstructure, Etc., of the U. S. Post Office and Custom House at Fargo, North Dakota," and addressed to JEREMIAH O'ROURKE, Supervising Architect.

WATER-WORKS.—Jefferson, Ia.—Sealed proposals will be received by the City Council until July 6th, for furnishing the materials and constructing a system of water-works for this city. The works will consist of a 12-post steel tower 129 ft. high; a wood tank 30 ft. in diameter, 20-ft. staves, to be complete, including frost-proofing; about 1,120 ft. 10-in. pipe; 2,240 ft. 8-in. pipe; 3,300 ft. 6-in. pipe; 5,500 ft. 4-in. pipe; about 7,500 lbs. special castings, and 16 double-hose hydrants. Bids for furnishing and laying pipe must be per foot. HENRY HAAG, Mayor; M. E. HALL, City Clerk.

STEEL, TIN, BRASS, WIRE, ETC.—Sealed proposals, in triplicate, will be received until July 13, 1894, for furnishing silver, steel, tin, brass, iron, copper and brass rivets and burrs; iron, brass and copper wire; nails, screws, tacks, bolts, nuts, leather, paints, oils, chemicals, paper, cleaning and polishing materials, files, lumber, etc., during the fiscal year ending June 30, 1895. All information furnished on application to COLONEL A. R. BUFFINGTON, Ordnance Department, Rock Island, Ill.

BRIDGE, NEW YORK, N. Y.—Bids are wanted by the deyartment of works until July 17, for alterations to the arch conveying the Croton aqueduct across Nepperhan avenue in the city of Yonkers.

BREAKWATER.—Newport, R. I.—Sealed proposals, in triplicate, for stonework at Stonington breakwater, Conn., will be received until July 17. Full information furnished on application. W. H. BIXBY, Captain Corps of Engineers, U. S. A.

BRIDGE.—Cathlamet, Wash.—O. M. Harvey invites bids until July 10 for constructing a drawbridge.

WATER-WORKS.—Key West, Fla.—The Board of City Commissioners will receive bids for the space of 20 days for the furnishing of plans and specifications, and for the furnishing of material necessary and for the construction of a complete system af water-works for the city of Key West, in accordance with set of plans and specifications which may be adopted by the board, and will pay for the accepted set of plans and specifications a sum not to exceed $2,000; all other plans and specifications which may be furnished and which are not accepted will not be paid for. And the city of Key West reserves the right to pay for plans and specification and all material and labor required in the construction of the work in whole or in part in 6 per cent. semi annual interest bearing water-works bonds of the city of Key West at not less than par value.

WATER-WORKS.—Sealed proposals will be received by the City Council of Jefferson, Ia., until July 6th, 1894, for furnishing the materials and constructing a system of water-works for said city. Bids for furnishing and laying pipe must be per foot. Plans and specifications will be on file in the Mayor's office, Jefferson, Ia., and with the United States Wind Engine & Pump Company, Batavia, Ill., and Bankers Iowa State Bank, Des Moines, Ia. No bids will be received unless accompanied with a certified check on some responsible bank for $300, payable to the order of the Treasurer of the city of Jefferson, Ia.

WATER-WORKS.—St. Bernard, O.—Sealed proposals will be received by the board of water-works until July 7, for the construction of a system of waterworks, which will comprise pumping machinery, stop valves, fire hydrants, cast iron, water pipe, stand pipe and foundation. Address H. J. WITTE, president.

ELECTRIC WIRES.—Dallas, Tex.—T. F. Nash, judge of Dallas County, invites bids until July 9 for placing electric wires in the court-house.

ARC LIGHTS.—Rome, N. Y.—C. A. Fowler invites bids until Aug. 6 for furnishing 150 arc lights for one, three or six years.

WATER-WORKS.—Farmington, Ill.—Sealed proposals will be received until June 25, for furnishing all material required in constructing a complete system of water-works. Following are the approximate amounts of material, etc.: 4,000 lin. ft. of 8-in. cast iron pipe, 43 lbs. per foot; 1,000 lin. ft of 6-in. cast iron ripe, 33 lbs. per foot; 6,000 lin. ft. of 4-in. cast iron pipe, 22 lbs. per foot; 10,000 lbs. special castings; 25 double discharge fire hydrants; three 8-in. gate valves; four 6-in. gate valves; ten 4-in. gate valves; 16 valve boxes; one duplex fire pump; one vertical acting pump; one steel standpipe, 10 ft. in diameter by 100 ft. high, erected on foundation furnished by city. Specifications for the above material, stand pipe, machinery, etc., may be obtained on application to the city clerk of this city or to Chas. F. Sturtevant, consulting engineer, 800 North Second street, St. Louis, Mo. A certified check of $200 on some national bank, made payable to the treasurer of said city, must accompany each bid. W. H. MILLER, Mayor.

TREASURY DEPARTMENT, OFFICE SUPERvising Architect, Washington, D. C., June 20th, 1894.—Sealed proposals will be received at this office until two o'clock P. M. on the 19th day of July, 1894, and opened immediately thereafter, for all the labor and materials required for the brick and terra cotta floor and ceiling arches, concrete filling, terra cotta furring, etc., for the United States Post-office building at Worcester, Mass., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Worcester, Mass. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The right is reserved to reject any or all bids or to waive any defect or informality in any bid should it be deemed in the interest of the government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be inclosed in envelopes, sealed and marked, "Proposal for Floor Arches, Concrete Filling, Etc., for the United States Post-office, Etc., Building at Worcester, Mass.," and addressed to JEREMIAH O'ROURKE, Supervising Architect.

U. S. ENGINEER OFFICE, NEWPORT, R. I.—Sealed proposals, in triplicate, for stonework at Stonington breakwater, Conn., will be received here until July 17th, 1894. Attention of bidders is invited to Act of Congress approved August 1st, 1892, Sections 1 and 2 (Public No. 193). Full information furnished on application. W. H. BIXBY, Captain Corps of Engineers, U. S. A.

Continued on page 19.

MACHINERY AND SUPPLIES FOR SALE.

MISCELLANEOUS WANTS.

WANTED—PARTNER OR PARTNERS TO organize a stock company for manufacturing a patented automatic coal, clay and freight conveyor. In demand; $3,000 stock already insured for $1,500, or for the sale of the same. Illustrated catalogue on application.
Address L. BOUDREAU, No. 170 E. Spruce Street, Manchester, N. H.

WANTED—CARBONATE OF LEAD.

Advertisers are in want of large amounts of Carbonate of Lead. Estimates invited for number of tons of Carbonate of Lead Concentrate that can be furnished per annum, and lowest cash price for same delivered at St. Louis and Kansas City. Parties furnishing must guarantee quantities.
JOHN I. COVINGTON,
No. 113 Broadway, New York, N. Y.

WANTED.—
EXPERIENCED CONTRACTORS

to join in sinking a deep shaft through wet ground. Must be able to command $100,000; very large profits can be made on the job.
SHAFT.
ENGINEERING AND MINING JOURNAL.

WANTED—TO PURCHASE A GRAPHITE property. Address, with full particulars as to location, extent, history, etc.,
P. L. FEARN,
1326 Monadnock Block, Chicago, Ill.

THE SO-CALLED SQUIRTING OFF (PARtial cracking off) of (in) enamel can be remedied even in the most obstinate cases, against a small payment, by a safe and efficient process. Acknowledgments can be furnished. Address I. A., 9693 Rudol Mosse, Berlin, S. W. (Germany).

Contracts Open
Continued from page 18.

WATER-WORKS AND ELECTRIC LIGHT.—Sealed proposals will be received by the Board of Water-Works and Electric Light Trustees of the village of St. Bernard, O., at the office of the clerk of said Board, until the 7th day of July, 1894, for a system of water-works and the installation of an electric light plant for said village. Copies of specifications will be furnished bidders upon application to the clerk of the Board of Trustees or their Consulting Engineer, and the drawings can be seen at the latter's office. HERMAN J. WITTE, President; JOHN A. LARKIN, HENRY IMWALLE, Board of Trustees; GEO. HORNUNG, Consulting Engineer, 30 East Fourth street, Cincinnati, O.

THE VILLAGE OF LANCASTER, ERIE County, N. Y., is desirous of obtaining a system of water-works. Proposals for the furnishing of a supply of water will be received by the Trustees of said village until July 1st, 1894. The village at present has a population of about 3,000 inhabitants. JOHN LEININGER, Village Clerk.