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The sun of prosperity is rising over Colorado and Kansas as the result of this election. We congratulate our friends there on the bright outlook.

Another effort is being made by some of the phosphate miners of Florida to organize an association for the purpose of controlling the output and maintaining prices. It is not likely that this will succeed, as similar attempts have been made a number of times and have always failed because of unwillingness of some of the operators to bind themselves. A properly organized association or a working combination controlling all mines could undoubtedly do much toward placing the Florida phosphate industry on a more profitable basis, but this cannot be accomplished until the smaller concerns are absorbed by larger and stronger ones which can afford to hold their product against the market.

Pig iron production, as shown by the reports of the blast furnaces, made a moderate but decided gain during October. At the opening of that month our statement showed 172 furnaces in blast, with a weekly capacity of 159,148 tons. On November 1st these figures had increased to 186 furnaces and 165,138 tons. In the ten days of the month which have already passed the production has still further increased, as almost every day brings word of furnaces starting up.

For the first time in several months the number of anthracite furnaces shows a gain, due to the blowing in of several of the furnaces in the Lehigh Valley. The charcoal furnaces remain about stationary, and the main increase is in the coke furnaces. In some places, as in the Pittsburg district and the Shenango Valley, nearly every available stack is in blast.

The contrast with November of last year is marked. Then we reported only 119 furnaces in blast with a weekly capacity of 82,117 tons, or less than half the present output. Moreover, the output was then falling, whereas it is now steadily gaining.

The production on November 1st was at the rate of about 8,600,000 tons yearly, or only about 550,000 tons below the output of 1893.

Consumption seems to keep up well with production, as the stocks reported on November 1st—512,000 tons—were slightly below those noted a month earlier.

THE CYANIDE PATENTS.

Last week we stated (page 427) that an arrangement between the MacArthur cyanide process interests (the African Gold Recovery Company) and the mineowners in the Transvaal had been arrived at, by which it was said the MacArthur patents were to be extended five years and a royalty of 3½ per cent. of the gold produced be paid for their use. At the same time we were advised here that this report was not confirmed, and the cable now brings word that this compromise has failed, and the question of the validity of the cyanide patents in Africa is still unsettled.

We are now officially advised that Justice Romer, of London, before whom the recent cyanide case was heard, has rendered a decision adverse to the validity of the cyanide patents in England.

It is, of course, true that this is a decision of a lower court corresponding with our circuit courts, and it can be appealed to a higher court. On the other hand, the case against the patents in London was very imperfectly presented, and the evidence accumulated here would have greatly strengthened it if it had been used. These foreign decisions, of course, have no bearing upon the validity or invalidity of the American patents, which must stand or fall on the results of suits which have been instituted here.

Experience and skill in the use of the cyanide process, in our opinion, are worth much more than the patent-rights, and the company holding the cyanide patents in this country should by this time have acquired such skill in using cyanide as would willingly be paid for by those who wish to adopt it, whether the patents are valid or not.

THE INDUSTRIAL USE OF ALUMINUM.

The recent trials on the Thames River of a small torpedo boat, built with a steel framework and aluminum plates for the hull, have shown an unusual speed, which the makers, Yarrow & Co., state is partly owing to the use of the light metal and partly to the better balancing of the machinery, as well as the use of water tube boilers in place of the usual locomotive type.

This, and other tests reported from time to time, would lead to the belief that this metal may before long take an important place as a shipbuilding material, but they are offset by the recent tests made at the Norfolk navy yard in Virginia, where plates of pure aluminum and an aluminum-copper alloy were submerged in salt water for a considerable period, with very unfavorable results. Both the pure metal and the alloy were badly corroded and covered with barnacles. In the report submitted to the Navy Department it was stated as the opinion of the officers making the test that aluminum or such alloys as that used were unsuitable for use where subjected to the continued action of salt water, though they might answer in cases where they would come in contact with it for a

short period, as with torpedo boats carried on board of men-of-war. On the other hand, the builder of the aluminum boats used on the Wellman polar expedition says, regarding these tests, that he considers them altogether incorrect, as the experience of this expedition showed that the metal was not corroded, and that there was no trouble from barnacles adhering to it.

There have not yet been sufficient tests of this metal under the varying conditions of actual service to supply data from which any reliable conclusions can be drawn. The metal undoubtedly presents many advantages for shipbuilding work, but, apart from the objections raised by the Norfolk test, the softness of the metal and its liability to be punctured by slight blows are serious objections to it. Some of the alloys are harder than the pure metal, but even these have not as great powers of resistance as a piece of steel of equal weight, so that the advantage due to the lightness of the metal is not then apparent.

THE PROMOTION OF MINING VENTURES.

The craze over the goldfields of Western Australia is dying out in London. The success attained in bringing out the first companies naturally resulted in the formation of scores of others whose promotors hoped for equally good fortune. Most of these were based upon entirely undeveloped prospects, for the number of mines actually opened thus far in Coolgardie, Kilgarn and other districts is very small. The extraordinary richness of the pocket discovered at Bailey's Reward in the former district which first called attention to the region, has been skilfully used in the various prospectuses, while the many disadvantages which must attend the working of these mines has been carefully concealed. While some properties of permanent value may be developed, the general result of the present fever will undoubtedly be heavy losses to the British investors who are now going in so freely. A very few of them may succeed; meantime the promoters are apparently reaping a rich harvest.

One of the most interesting features of this Australian gold "craze" is the remarkable, indeed, almost asinine gullability of some of the people who are being induced to place their money in the mines. To any one familiar with mining investments it is almost incredible that any person, however ignorant, should put money into anything upon such a questionable foundation as appears to support some of these schemes. Not long since one company exhibited some specimens of very fine ore which it "claimed" came from its mine. The public subscribed, and soon the company was "floated," but while this process was going on the promoters received over twenty requests from other companies, not so successful in introducing themselves, asking the loan or lease of these specimens for the purpose of aiding in the work of floatation. While this seems too scandalous for belief, it is nevertheless true.

Another example of a similar variety of rascality appears in a letter recently written by the Paris correspondent of a London mining journal, in which the writer refers to the floating of Siamese mines in Paris, saying that the companies claim that the ores will "average" several hundred dollars in gold to the ton, and the samples on exhibition in the offices show this amount in them, but there is no proof that these are really "averages," and no expert believes it. Such statements bring to mind the attempt made some time ago to float a mine supposed to be situated on the gold coast in Africa, where no white man could live, or would if he could. The promoter sent a man out to the place where the natives said gold occurred. This person came back with some rich specimens taken, he said, from the ledge, and upon the strength of this the promoter went to London and succeeded in having the stock subscribed for several times over. There were no proofs of ownership, of actual value, or even of the existence of the so-called mine. Yet the names of a few titled "guinea pigs" on the board of directory sufficed to impress Carlisle's forty millions with their characteristic faith. Of course the profits predicted never materialized—and mining as an industry was blamed.

We have for many years cautioned investors against wildcat mining schemes in the United States as well as in other countries. To invest in any mining project without having first a thorough examination by competent and responsible engineers is foolish in the extreme, and to buy such stock without any other foundation than the statements of promoters is a supreme degree of foolishness.

EUROPEAN IRON AND STEEL NOTES.

The production of steel ingots in Great Britain for the first half of the current year is given by the British Iron Trade Association at 1,029,409 tons, the largest quantity ever reported for six months. A notable feature is the increase in open-hearth steel production. Of the total amount reported 810,392 tons were Bessemer steel and 1,029,409 tons open-hearth steel, the proportions therefore being 45 and 55 per cent. respectively. Of the open-hearth steel only 72,538 tons were made by the basic process, 956,871 tons being made by the acid process. The total number of open-hearth furnaces reported is 353, of which 57 only were built for the basic process. The amount of manufactured steel produced during the half-year was 845,662 tons. The second half of the year, owing to the Scotch coal miners' strike and other causes, will hardly make as favorable a showing as the first.

Exports of iron and steel from Great Britain for the nine months to September 30th were 1,869,621 tons, showing a decrease of 297,465 tons, or 13·7 per cent., as compared with the corresponding period in 1893, and a decrease of 157,303 tons, or 7·7 per cent., from 1892.

Imports of foreign iron ores into Great Britain for the nine months ending September 30th were 3,441,182 tons, showing an increase of 133,079 tons over last year.

The most important recent change in the British iron trade is the starting up of a number of the Scotch furnaces, which has followed the resumption of work by the coal miners in Scotland. The coal mines are not all in operation yet, but enough of them are going to insure a steady supply of fuel for the furnaces.

Some recent quotations for British iron are as follows: Scotch pig iron, $10.20 to $10.30 per ton; Middlesboro foundry, $8.50 to $8.60; forge, $8.30; Bessemer pig, $10.30. North of England quotations for finished iron are: Common bars, $23.40 per ton; best bars, $25.80; iron and steel ship plates, $23.40; iron angles, $22 to $22.25; steel angles, $22.80. Steel rails continue very low, quotations standing at $17.50 for heavy sections.

In Germany the iron trade has shown a considerable improvement this year, as far as quantity is concerned, though there, as elsewhere, complaints are made of low prices. Of the increase in quantity of production, a part is due to the increased exports, and part is the result of the absence this year of agreements to restrict the output in some of the important producing districts.

The attempt to reorganize the Rhenish-Westphalian Rolling Mills Convention has failed, and the iron mills will remain for the present without any agreement. The convention of the Silesian mills, which expires at the close of the year, will be renewed, and an attempt will be made to arrange some form of agreement or understanding with other districts as to prices and production.

For the eight months ending August 31st, this year, the German exports of iron and steel amounted to 947,765 metric tons, showing an increase over the corresponding period in 1893 of 147,108 tons, or 18.4 per cent. The greatest relative gains were in bars and angles, in railroad material, and in pig iron. As to the direction of the exports, some of the chief items were: Belgium, 109,144 tons; Russia, 100,556 tons; Switzerland, 98,966 tons; Great Britain, 97,085 tons. Eastern Asia, 66,474 tons; Italy, 50,863 tons. It is to be noted that nearly 100,000 tons of German iron and steel went to Great Britain. There were also 24,798 tons exported to Australia and 20,104 tons to British India.

French pig iron production for the first half of 1894 was 1,057,169 metric tons, the increase as compared with the first half of 1893 being 51,809 tons, or 5·2 per cent. The output of finished iron was 414,332 tons, or almost exactly the same as last year, the change being a decrease of only 75 tons. The production included 360,870 tons of merchant iron, 53,202 tons of plates and 260 tons of iron rails. The production of steel ingots was 402,501 tons, a decrease of 5,514 tons, or 1·3 per cent.; the finished steel production, however, showed an increase of 14,168 tons, or 4·3 per cent. It included 97,060 tons of rails, 78,678 tons of plates, and 168,391 tons of merchant steel. Of the 402,591 tons of ingots 252,512 tons were Bessemer and 150,079 tons open-hearth steel; 117,223 tons—110,216 tons of Bessemer and 7,007 tons of open-hearth—were made by the basic process, which is almost exclusively used in the Meurthe-et-Moselle district.

Some Belgian iron prices, taken from recent quotations on the Brussels market, are as follows, per metric ton: Charleroi foundry pig iron, $10; Luxemburg foundry pig, $9.20; forge pig, $8.45 to $9.40; plates, iron, $24.96 to $38.40; angles and beams, $21.10 to $23; Bessemer steel rails, heavy sections $19.20, and light sections $22 to $23; Bessemer steel car axles, $32.60; Bessemer steel tires, $34.50. These prices are not as low as ours in many cases; steel rails, which are kept up by a combination, being an exception.

The pig iron production of Belgium shows a considerable gain over last year. For September the furnace reports give the output at 77,700 metric tons, an increase of 19,500 tons, or 33·6 per cent. over September, 1893. For the nine months ending September 30th, the production was 670,440 tons, a gain of 146,640 tons, or 28 per cent. over last year.

The administration of the Belgian State Railroads has just called for tenders for the steel rails needed for the lines during the year 1896; the supply for 1895 has been already contracted for.

NEW PUBLICATIONS.

ELEMENTS OF HANDICRAFT AND DESIGN. By W. A. S. Benson. London and New York; Macmillan & Co. Pages 152; illustrated. Price $1.60.

This is a brief and somewhat discursive treatise on the art of design, chiefly as applied to carpentry and cabinet-making. It is intended apparently as an assistance in teaching or in a course of manual training, though the author does not believe in what is ordinarily called manual training. It contains many valuable hints and much good advice, and is fully illustrated. We have said that the author does not believe in manual training; we should, perhaps, explain that he does not

believe—as indeed no practical man does—that a trade can be taught in a school course as the advocates of the system referred to would have us believe; but he does hold that much can be done in educating the hand and eye and preparing the school boy or girl to learn a trade with comparative ease and quickness when the time comes to do it practically. He lays much stress on the importance of drawing in the workshop, and on its practical uses. While in some points disappointing, in others the book is an attractive one, and to teachers especially it should be useful.

METHODS OF GAS ANALYSIS. By Dr. Walther Hempel. Translated from the second German Edition by L. M. Dennis. London and New York; Macmillan & Co., pages 376. Illustrated.

The first edition of Hempel's gas analysis was amongst the early works upon this important branch of chemistry, and soon became a familiar textbook in all laboratories. As new methods and reagents have come into use, however, this book has gradually been set back farther and farther on the shelf, to make room for some newer work on the subject, though it was always looked upon as a good authority to fall back on. This second edition of the work is therefore an arrival at a most opportune moment, and takes the place formerly held by the first volume. An examination of its pages shows that Dr. Hempel has largely rewritten its contents, bringing it up to the latest processes and methods in gas analysis, and showing some of the later forms of apparatus. An interesting chapter is one treating on the analysis of gases occurring in the manufacture of sulphuric acid, and another on the analysis of saltpetre and the nitric acid esters. This latter gives a useful method of determining the esters in dynamite, which has the advantage of rapidity and correctness.

CONSTRUCTION AND WORKING OF REGENERATOR FURNACES By Maurice Graham. London, Eng.; E. & F. N. Spon; New York; Spon & Chamberlain. Pages, 131; illustrated. Price $1.25.

This little book is one of those convenient handbooks which contain in condensed form much of the information required by the practical worker. It is essentially, as the author states, an elementary explanatory treatise on the system of gaseous firing applicable to horizontal and inclined retort settings in gasworks. Beginning with notes as to the fireclay and firebrick found most suitable, a description is given of the various makes and forms of retorts and the quality of cement and mortar required. An interesting chapter is that on the construction of the furnaces and settings in which is given some useful rules for the thickness of arches, abutments and other parts of the plant. Treating of the form of the producer itself, the author presents illustrations of the forms of furnaces under the retorts, and points out clearly the advantage to be derived from the construction of regenerative furnaces, both because of the greater economy secured in fuel, and also for the reason that they tend to keep the temperature under the retort more uniform and are more readily controlled than the usual grate fire. Taken altogether, the book is a very handy little manual for the gasmaker, and will prove a useful addition to his library.

GEOLOGICAL SURVEY OF MINNESOTA: BULLETIN NO. X. THE IRON-BEARING ROCKS OF THE MESABI RANGE IN MINNESOTA. By J. Edward Spurr. Minneapolis, Minn.; State Printers. Pages, 268; illustrated.

In this report Mr. Spurr has undertaken a somewhat difficult task. As he himself says, the data at his command have not been full, nor have sufficient time and opportunity been afforded for a thorough study of all the geological problems which present themselves in this connection. He has nevertheless made an excellent monograph on a very interesting subject. The development of the iron ores of the Mesabi Range has had an important effect on the iron trade, and no full or connected account of the deposits had ever been published before the present one. In fact the discovery and development have been so recent that there has been no time to study them fully. The Minnesota Survey deserves credit for the work it has done and the way in which it has applied the resources at its command.

Mr. Spurr's work gives first a general account of the structure of the iron-bearing range, followed by special studies of the rocks of that range. He then gives a classification and some account of the agents which probably brought about the changes and developments of the rocks. The formation and structure of the ore deposits are very fully described and their limits indicated. The description of the probable origin and of the manner of formation of the Mesabi ore beds is a very interesting one, though there may be some difference of opinion among geologists in relation to these points.

The monograph is illustrated by several geological plans and sections, and by plates showing the result of microscopical examinations. It is a valuable contribution to the literature of economic geology and a very timely one also.

A MANUAL OF THE STUDY OF DOCUMENTS TO ESTABLISH THE INDIVIDUAL CHARACTER OF HANDWRITING AND TO DETECT FRAUD AND FORGERY; INCLUDING SEVERAL NEW METHODS OF RESEARCH. By Persifor Frazer. Philadelphia, Pa.; J. B. Lippincott Company. Pages 218; illustrated. Price, $2.

In this treatise Dr. Frazer has undertaken to sum up the various treatises on the different branches of writing. To clearly explain that which is most important in such a study he has made liberal use of the principal publications, using illustrations wherever it was necessary. The author has succeeded fairly well, though it is to be hoped that when the next edition of his work appears it will add some account of the laws governing the testimony of expert witnesses in forgery cases in the various courts of this and other countries. It was the original intention of the author to do this in his present volume, but lack of space caused him to forego the attempt. He has, however, appended to Chapter XIX. of his manual an extract from Stephen's "Law of Evidence," for the benefit of those who are interested and desire to look up the authorities cited, for themselves.

While the book is not intended to meet all the wants of students of handwriting, it is, nevertheless, a book of reference, and may be used as such to advantage by the business man, banker, financier and expert in writing. It is divided into two parts: Part I. treats of the physical examination of documents; that is, the care of papers, evidences of tampering, the sequence of lines, written characters, kinds of forgery, and gives among other things illustrations of the tremor of feebleness, illiteracy and fraud. Part II. describes the chemical examination, such as testing of inks, methods used by forgers, uses of the various chemicals, etc. The pursuit of a forged document, says the author, is like the judging of an important work of art. He states, in describing the detection of fraud, that it is a common thing for a court to choose teachers of writing, but preferably paying tellers of banks, to look into such matters. In this connection he names the methods adopted and the apparatus most suitable for such an investigation, to which the microscope is essential. There are five tables devoted to the measurement of letters and to the testing of inks. Each branch of writing is treated in as concise a form as possible, and generally in a clear way. The book is well printed and completely indexed.

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.

Map of Cooney Mining District, New Mexico. By Carl Andersen. Mogollon, N. M.; Carl Andersen. Price $2.

United States Navy Department; Annual Report of the Chief of the Bureau of Steam Engineering. 1894. Geo. W. Melville, Chief of Bureau. Washington, D. C.; Government Printing Office. Pages 23

Report of the Director of the Imperial Mint for the Year Ending the 31st of the Third Month of the 27th Year of Meiji (March 31st, 1894). Tokyo, Japan; Printed by the Insetsu Kyoku. Pages 37; with tables and diagrams.

Spain: Ministry of the Interior; Executive Commission of Mineral Statistics. Statistical Data for the Fiscal Year 1892-93, *and the Calendar Year* 1893. *First Part.* Madrid, Spain; National Printing Office. Pages 156.

Chemical and Metallurgical Handbook; Containing Tables, Formulas and Information for the Use of Metallurgists, Chemists and Mining Engineers. By J. H. Cremer and G. A. Bicknell. Cleveland, O.; J. B. Savage. Pages 280,

Yearbook of the Mining Industry in the Netherlands East Indies. Twenty-third Year; 1894. Prepared under direction of the Minister of the Colonies. Amsterdam, Holland; State Printing Office. Pages 250; with plates and tables.

Bureau of Education, Circular of Information No. 2 and No. 3, 1893; *The History of Education in Connecticut,* by Bernard C. Steiner; *in Delaware,* by Lyman P. Powell, and No. 5 and No. 6, 1893: *Higher Education in Tennessee,* by Lucius Salisbury Merriam; *in Iowa*; by Leonard F. Parker. Washington, D. C.; Government Printing Office.

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.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Mineral Industry," Vol. II.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I thank you very much for Vol. II. of the "Mineral Industry." I think it will be a great help to persons engaged, like myself, in the general teaching of mining and metallurgical subjects. The discussion by specialists of the different ores and metals is sure to be most valuable in threading the labyrinth of reading matter which has to be annually wandered through. H. O. HOFMAN, Metallurgist.

BOSTON, Mass., Aug. 2, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: . . . I have looked over this volume with even more interest than I read the first volume, as the fullness with which certain subjects of general interest to the metal trade, and the minuteness with which others with special reference to the copper trade, are treated, make it an invaluable addition to my office library. J. VAN VLECK,

Vice-President Copper Queen Consolidated Mining Company.

NEW YORK, Aug. 3, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We beg to express our appreciation for the "Mineral Industry," and to say that it is certainly a stupendous work of great value, and that the exhaustive information afforded therein cannot be too much appreciated, especially by those interested in mining industries. You are indeed to be congratulated upon the skill and intelligence displayed throughout this wonderful volume. JOHN E. BERWIND,

Vice-President Berwind-White Coal Mining Company

NEW YORK, Aug. 2, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have examined the second volume of the "Mineral Industry" with much interest, and I am deeply impressed with the attention and care that has been expended in the collection and compilation of the mass of statistics presented to the public. The clear and concise manner in which the information and figures are given adds greatly to the value of the book for reference. I notice many additions to and improvements over the pioneer number, and the "Mineral Industry" has attained an unique pre-eminence which leads already to a greedy anticipation of the pleasure of seeing another volume. E. GILPIN, JR.,

HALIFAX, N. S., Aug. 9, 1894. Commissioner of Public Works and Mines.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: Your work in my estimation cannot be too highly praised, and only those who have made the attempt to collect statistics can fully appreciate the vast expenditure of time and money, as well as harassing labor that are represented. I have checked your work in several places, and find it in every case thoroughly reliable and correct. I heartily recommend this work to all persons interested in the production of minerals. They shall, without fail, find something relating to their own branch that they have often felt the want of. I hope the value commands the circulation that it deserves and that you may long be spared to issue such works. R. FORRESTER,

CASTLE GATE, Utah, Sept. 4, 1894. Geologist and Mineralogist

MINING AND RAILROADING WITHIN THE ARCTIC CIRCLE.

Specially Written for the Engineering and Mining Journal by P. T. Lidner.

Probably few of the numerous readers of the "Engineering and Mining Journal" are aware of the fact, or at least happen to think, that modern culture and industry have already got a foothold in the arctic regions, and that mines are worked on a large scale and a railroad regularly operated in such high latitudes. This is the case in Sweden, where the Lulea-Gellivare Railroad, built for the purpose of carrying iron ore from the Gellivare mines to the seaport at Lulea, extends 50 miles above the Arctic Circle and enjoys the distinction of being the first railroad to open up the frigid zone.

Lulea, a port at the upper end of the Baltic Sea, is in summer time reached from Stockholm, the capital of Sweden, either by passenger steamers plying between Stockholm and the small cities on the upper Baltic or by rail. The northern main line of the Swedish government's system of railroads has lately been completed and connects at the station Boden with the Lulea-Gellivare road. From Stockholm to Lulea is 740 miles, and the journey requires two or three days, but is in fine weather exceedingly pleasant. At Lulea, a little city with some 5,500 inhabitants, the ore docks, surrounded by a fleet of large steamers, are of most interest. They are well constructed in conformity with approved principles and admit of the ore being speedily transferred from the hopper-shaped railroad cars into the vessels below. The road is 129 miles long, and its general course north northwest. A few hundred feet south of the station Polcirkeln, 79 miles from Lulea, the road crosses the Arctic Circle, and the remaining 50 miles up to Gellivare are in the frigid zone. After leaving Lulea the road first runs along the bottom lands of the Lulea River, which are settled and cultivated, but above Ljusa station and the rest of the way the view is not the least attractive and a more desolate and inhospitable country can hardly be imagined. A flat land with an abundance of large bogs, a desperate looking vegetation of pine, spruce, birch and willow bushes, and far off in the distance a chain of low, forest-covered hills make up the scenery.

Gellivare has good hotel accommodations and makes pleasant headquarters to visitors who may want to stay a few days and undertake excursions in the neighborhood. The midnight sun is visible here about six weeks, from the end of May to the 11th of July, and attracts a great number of tourists from all countries. To reach the mines we take the train from Gellivare to Malmbergel, a short run of only five miles; and at this station, which is the real terminus of the Lulea-Gellivare road, and where the track forks into several branches to accommodate the different mines, we have in view one of the most remarkable ore deposits in the world. The country rock is a fine-grained gneiss, mostly red or reddish gray, but in some places, especially in the western part of the field, the color is a dark gray. Masses of a red, fine-grained granite appear frequently. The gneiss is folded, bent and twisted in many ways, and particularly so in the neighborhood of the granite intrusions, but the general strike is northeast, southwest, and the dip, which is to the south, varies from about 50 to 70 or 80°. In the gneiss a great number of lenticular bodies of iron ore are imbedded, layers of gneiss alternating with lenses of magnetite, but hematite occurs also, either inclosed in the magnetite or as independent bunches in the gneiss. The lenses vary in width from 25 to 330 ft., and on the same streak the ends are overlapping each other, often separated with only a few feet of rock or binding. The ore field has a length of about 4·5, a width of 1·5 miles, and the ore area can safely be estimated at 2,600,000 sq. ft.

The ore is rich in iron, from 60 to 71% in the main bodies, but in some places the amount is considerably less through the admixture of foreign substances. Of impurities, sulphur from associating iron pyrites occurs in such trifling quantity that it is seldom taken into account, but the ore is, as a rule, high in phosphorus, derived from apatite, which is a constant although unevenly distributed ingredient and forms a characteristic feature not only of the Gellivare ore, but of all deposits of iron ore in the northern part of Sweden. In the center of the ore bodies the amount of apatite is generally insignificant, the phosphorus sometimes running as low as ·01%, but the quantity increases rapidly toward the sides, and in the binding I have noticed as much as 25 to 30% of apatite in several places. Apatite without iron ore occurs in a few small veins, but so far this mineral has not been found in sufficient quantity and pure enough to justify mine operations. As the sorting and classification of the ore will give the best idea about its quality and value, I may here mention that it is divided into five classes, viz.: A-ore with an average of 69% iron and less than ·05% phosphorus; B-ore, 67 to 68% iron and from ·05 to ·1% phosphorus; C-ore, 65 to 66% iron and ·1 to ·6% phosphorus; D-ore, 62 to 65% iron and ·6 to 1·5% phosphorus; and E-ore, with less than 62% iron and higher in phosphorus than 1·5%. Everybody acquainted with the metallurgy of iron will easily understand that the ore very low or very high in phosphorus commands a ready sale, but the medium grades are somewhat hard to dispose of, and the question arises, Which would be the better plan—to add a sufficient quantity of ore with a high percentage of phosphorus so as to make the mixture suitable for the basic process, or to separate the apatite by means of magnetic concentrators, and get as products an iron ore low in phosphorus and apatite with very little iron ore which could be manufactured into fertilizers? I am inclined to believe that concentration will sooner or later be established and that in the future Gellivare will produce large quantities of apatite, of which there is an enormous source in the binding and side rock as well as in the iron ore itself.

Although the ore deposits at Gellivare have been known for nearly two centuries, no regular mining or operations on a large scale were undertaken, owing to the lack of transportation facilities, until about three years ago, when the railroad was completed, but since that time mining has increased at a very rapid rate. There are as yet no underground workings. The ore is quarried at the top and on the sides of the mountain range, which has an elevation of about 340 ft. above the surrounding country. Five cuts or quarries are worked day and night, and furnish the amount of ore presently required. These openings and the size, and quality of the ore in each of them, are as follows:

Fredrika.—The ore is about 85 ft. wide, but is taken out to a width of only 65 ft., as the ore near the hanging wall is of a grade at present in very slight demand. A, B and C-ores are obtained here and are very rich in iron, often as high as 70%. The ore (C-ore) at the hanging wall will be recovered later on.

Selet.—The ore is about 100 ft. wide and very high in iron, but contains rather much phosphorus; furnishes B and C-ores.

Hertigen.—The ore here is 80 ft. wide, and this is the only place at Gellivare where sulphur has to be regarded. Although the ore in other respects belongs to class A, it is on account of the accompanying iron pyrites classed as C-ore.

Hermelin.—The ore has a width of 75 ft. and is very high in phosphorus, all being D-ores.

Tingvall's Hill is the most interesting of all the openings at Gellivare. The ore is 330 ft. wide, but only half of its width is taken out, because the present means of transportation are inadequate to carry all the ore from the quarry to the railroad. The cut offers a very pretty sight, 12 tracks being laid into it in fan shape, and in front a wall of solid ore 160 ft. long and 65 ft. high without a single streak of rock in it. The ore contains from ·7 to 1·3% phosphorus, and is consequently D-ore. No ore of class E is at present mined at Gellivare.

Of these five quarries Hermelin and Tingvall's Hill are situated in the main orefield, Hermelin to the west and Tingvall's Hill at the eastern end, and Fredrika, Selet and Hertigen on a tract a short distance south of the main streak called Kapten's Hill.

The ore is conveyed from the quarries to the railroad branches in mine cars holding 2 or 4 tons over inclined tramways, the loaded cars pulling up the empty ones; but as the expense of keeping these roads open in winter time is heavy, wire rope tramways have lately been proposed and would surely prove more suitable. The railroad cars have a capacity of 25 metric tons (55,115 lbs.), which is an unusually heavy load in European railroading, and are provided with six wheels and air-brakes of the Westinghouse system.

It is evident that with ores so favorably located, and with an efficient and energetic management, the cost of mining is very low, and although I would not give any exact figures for several reasons I feel justified in stating that the ore is delivered in railroad cars at less expense than anywhere else on either side of the Atlantic. The freight rates to Lulea are rather high, $1.07 per metric ton, but will probably be reduced in the near future; 800 men are employed in and about the mines and earn good wages. At night the quarries are illuminated with electric lights.

The Lulea-Gellivare road was built and put in operation by an English company, the Swedish-Norwegian Railway Company, Limited, and this corporation also had possession of the mines, but after a short time the company sold the railroad to the Swedish government, and under the new ownership it has been greatly improved and put in first-class condition. The English company was authorized to build a railroad from Lulea over Gellivare and Kirunavara, where still larger ore deposits exist than at the former place, and from there to Ojoten on the Norwegian coast, which is open for navigation all the year around, while the port at Lulea is closed by ice seven months of the year. Of this line only the part Lulea to Gellivare was completed; and as Swedish interests are strongly in favor of the ore being hauled to and shipped at Lulea instead of a Norwegian port, there is at present very little hope of the road being extended according to the original plan, although from a business point of view it would be of great advantage to have the mines connected with a harbor accessible at all seasons. The English company mined and shipped about 150,000 tons of ore during its short existence.

About the same time the railroad was sold, the mines also changed hands (through litigation) and belong now to The Gellivare Malmfalt Company, Limited, a Swedish corporation. This company mined, 1892, the first year, 150,000 tons; in 1893, 300,000 tons; and the output for this year is fixed at 600,000 tons. At the time of my visit to Gellivare, in the end of June, 300,000 tons had already been mined from the beginning of the year. From this can be seen that the production has rapidly increased; and it would be much larger than it is at present if the railroad were accommodating enough to furnish a sufficient number of cars for transportation. Most of the ore is shipped to Rotterdam, in Holland, where it is transferred and sent into the iron districts of Germany, and large quantities find their way to England.

It may seem strange that such valuable ores have been allowed to lay idle so long a time, and that no efforts have been made until the last few years to put them on the market. This can partly be explained by the objection and prohibitive influence of the mineowners and ironmasters in the southern districts of the country, the former fearing that the immense quantities of ore existing in the northern districts would ruin the price of their product in the domestic market, and the latter that if foreign countries to which they exported their iron were flooded with a cheap ore they would lose considerable of their former trade. But in spite of all obstacles put in the way by local interests the arctic regions of Sweden will develop into a great mining country; and although do not want to say that the ore deposits are inexhaustible, an expression too often used and misused, may state without exaggeration that all Europe can for ages get its supply of iron ore from this section. The ores at Gellivare are not the only ones, nor even the largest ones, in the Swedish Lappmarks. At Kirunavara and the closely connected Luossavara, some 60 miles farther north, there is a regular mountain of ore over three miles long, rising high above the surrounding country, and with an ore area of fully 5,300,000 sq. ft. At many other places large iron ores have been found and workable deposits of copper, lead and zinc ores are likely to be discoveted, especially as copper mines were worked in this section as far back as 200 years.

In conclusion I will say that the part of Sweden situated within the Arctic Circle has a very promising future and bids fair to become one of the principal mining districts in the world. A visit to this region is to be highly recommended and will surely afford more than ordinary pleasure and satisfaction to the sightseer, the mining engineer and the geologist.

An Old Mining Pump.—What is probably the oldest mining pump now at work in this country, according to the Ontonagon "Miner," is one owned by the Quincy Mining Company, in Michigan. It was set up in 1857 and has been running daily since that time, excepting, of course, the time taken for necessary repairs. It is still at work in the Quincy pumphouse, apparently in almost as good condition as when new.

THE ZINC MINING INDUSTRY OF SOUTHWEST MISSOURI AND SOUTHEAST KANSAS.

Specially Written for the Engineering and Mining Journal by J. R. Holibaugh.

(*Continued from page* 413.)

THE EMPIRE ZINC COMPANY.—This was organized about five years ago, and made large investments in developed and undeveloped lands, and also purchased the zinc smelter at Joplin, which it has operated continuously. The stockholders of the company are also members of the Lehigh Zinc and Iron Company, of Bethlehem, Pa. The entire management of the company's large works is under the direction of Mr. W. C. Wetherell.

Recently when Mr. R. P. Rothwell, the editor of the "Engineering and Mining Journal," made a visit to this district, he accompanied Mr. Wetherell to the Kohinoor mine and inspected the underground workings. Mr. Wetherell showed a tracing taken from the plat in his office that enabled him to know just where he was and observe the occurrence of the ore and the structure of formation. Such work is fully appreciated by every mining man who visits the district. The Empire Zinc Company first commenced mining operations and production of ore at what they call the Eagle mines, in the southern part of Joplin, called Blendsville. The company operated the mines quite extensively for about three years. Work was then stopped and now the mines are worked by sub-leasers, who produce the ore and pay the company a royalty. At present the company is operating the Kohinoor mine and concentrating mill, located in the west part of Joplin, near its zinc smelting plant. The Kohinoor concentrating mill is one of the model plants of the district, the product having been exhibited at the World's Fair, securing the first prize. The following is the productions of ore by the Empire Zinc Company from January 1st to December 31st, 1893: 10,899,390 lbs. of zinc ore, value, $198,638.71; 958,080 lbs. of lead ore, value, $19,161.60; total, $217,800.31.

THE JACOBS BRO'S. MINES.—These mines are located on a 40-acre tract of land, 2½ miles due east from Main street, Joplin, and held under lease by the Jacobs Bros. from W. M. Leckie, of the Joplin Machine Works. Five acres of this was closely identified with the early history of this district, as a large deposit of surface lead was found and about 8,000,000 lbs. of lead ore mined. The land was known as the Pinkard mine. After exhausting this lot of lead the land was prospected by various parties, but most of the work confined to gouging around in the old diggings. Finally the Jacobs Bros., of Carthage, Mo., secured a lease from Mr. Leckie for a term of years, and commenced prospecting on the west side on new ground. After working for about 10 months they struck a deposit of lead and zinc ores at a depth of about 80 ft. This was enough to attract the attention of the miners from the immediate vicinity, and soon a number of lots were taken by sub-lease.

The mine operated by Mr. Charles Frye et al. shows what has been done without the investment of other capital than the expense of sinking a shaft about 65 ft. This opened up a deposit of lead ore that was followed for a distance of 1,600 lin. ft., including the turns, and proved from 8 to 20 ft wide and 4 to 20 ft. thick. In many places the lead was found in massive form, requiring no dressing after being taken from the mine, but the greater portion of the deposits was imbedded in a mud sediment and broken fragments of chert rock, requiring washing and dressing before marketing. This mine of lead ore produced a total of 1,982,280 lbs., which sold for $40,859.29. The entire 40 acres of land shows a total value from sale of lead and zinc ore for the year 1893, or from January 1st to December 31st, 1893, of $24,448. The next 40-acre tract of land directly south of the Jacobs Brothers mines is also owned by Wm. M. Leckie, and late in the fall of 1892 was leased to Messrs. Harrison and Spencer, of Fayetteville, Ark., who commenced preliminary prospecting, but did not push work until early in 1893. Zinc ore was opened in paying quantities and the first sale made June 10th, 1893. From that time to December 31st, 1893, the land had produced and sold 2,522,160 lbs. of zinc ore and 482,270 lbs. of lead, that sold for $30,232.20. This gives a total value of productions from this 80 acres of land for 1893 of $54,680.20. At present the land is more productive than in 1893, as more mines are working under lease.

THE WESTERN ZINC COMPANY.—This is a tract of mining land containing 741 acres, located within the city of Joplin, except 40 acres at the extreme southeast corner. This tract of land and its original owners, the Pichers, have been closely identified with the history and the gradual building up of Joplin and the development of the zinc mining industry. The Pichers organized the Picher Lead and Zinc Company, and had the land surveyed and subdivided into mining lots each 200 × 200 ft. These were leased on the royalty plan to miners and operators, many of whom made snug little fortunes. The next change in ownership of the land was in the early fall of 1885, when the Pichers sold out to Mr. Cook, of Oswego, N. Y., who organized the Oswego Mining Company. The company made little or no improvements excepting putting in a central power plant to operate pumps at different points on the land, for which the miners paid a pump rent. The land again changed ownership, and passed into the hands of the Western Zinc Company, February 20th, 1893, which now controls all operations, but up to the present time no substantial improvements have been made. This has been and now is an excellent tract of land, and shows a large production, all of which has been produced by the most primitive methods. Some of the records are lost except as to amounts received; so the following figures represent the amount of cash received from the sale of ore: January 1st, 1876, to December 31st, 1893, $1,677,679.82.

Only a small portion of the land has been prospected, and the ore produced has all been mined from an average depth of less than 75 ft. One shaft was sunk on ore 125 ft. Two pump shafts were sunk by the Pichers, one 178 ft. and the other 156 ft.

WEBB CITY AND CARTERVILLE MINING DISTRICTS.—But little data of the first few years can be found, as at that time there was no system of keeping a record as at the present time. According to the best information obtainable, the first discovery of lead ore was made in this district in June, 1873, by Mr. Webb. In the fall of 1873 considerable prospecting was done and large deposits of surface lead found. At a depth of 30 to 40 ft. a heavy deposit of limestone was found, called by the miners bedrock, and at that time supposed to be the end of the lead deposits. Mining was carried on by the most primitive methods until one mine operator by the name of Gaston found a fissure or fracture in the supposed bedrock limestone which contained some cubes of lead ore, and commenced sinking his shaft on the fissure. At a depth of 65 ft. he broke through and discovered a rich zone of zinc blende ore. This induced others to sink deeper shafts, and the limestone was soon found to be the cap-rock or roof of the zinc ore deposits.

These deposits occur under the limestone in what may be termed mineralized zones, which are formed in a brecciated formation of chert, and are of considerable size. Underground workings are known where this zone has been stoped out 50 to 150 ft. wide, 30 to 80 ft. thick and 150 to 500 ft. long. Recently the Center Creek Mining Company has had a complete underground survey made of its mines, and platted in a scale of 50 ft. to the inch. This plat has proved almost conclusively that the mineralized zones must have formed in a series of fault lines, or compound fractures in the chert beds. As a rule the ore found in these zones is in a disseminated form, and when taken from the mine must be dressed by crushers, rolls and concentrating machinery to prepare it for market. For this reason there is more mining machinery and large concentrating plants in operation than at any other point in the entire lead and zinc mining belt. The following tables will show the production of the principal mining companies and operators.

CENTER CREEK MINING COMPANY, WEBB CITY.—Estimated value of the lead and zinc production from 1881 to 1886 inclusive, $1,646,613.00.

Year.	Pounds of Zinc Blende.	Pounds of Lead Ore.	Value.
1887	28,957,060	1,940,360	$282,219.21
1888	27,477 520	1,938,510	270.531.69
1889	37,882.110	3,291,890	517,598.43
1890	46,045,090	2 593,970	600,199.37
1891	34,531,060	1,769,120	417.697.01
1892	23.547,880	1.910.880	298,558.48
1893	18,436,330	1,237,828	203,457.13
Total	216,877.050	14,682,558	$4,336,874.32

KALER LAND, CARTERVILLE.

Value of production prior to 1893	$128,903.74
For 1893, 17,469,730 pounds of zinc ore, value	186 650.62
" " 3,624,980 " " lead " "	90,575.42
Total	$406.129.78

ECLIPSE MINE, CARTERVILLE.

192,000 pounds of zinc ore, value	$1,500.00
125,000 " " lead " "	2,500.00
Total	$4,000.00

STATEMENT OF EASTERN STAR MINE, CARTERVILLE.—From June, 1892, to November 1st. 1893, inclusive, 8,371,555 lbs. of zinc ore, value $91.960.57.

STATEMENT OF BLANTON & WYATT MINE, CARTERVILLE.—Two mining lots, 200 × 200 ft., in the Tracy land, only one lot mined:

Year.	Pounds of Zinc Ore.	Pounds of Lead Ore.	Amount.
1891	1,410,290	.....	$16,780.75
1892	2,675.540	187,300	25.891.09
1893	3,433,600	52,720	34,631.44
Total	$6,919,430	239,020	$77,303.28

STATEMENT OF TRACY LEAD AND ZINC COMPANY.—This is a tract of land containing 440 acres, and the corporate lines of Webb City and Carterville pass through the center of the land from the south. This is one of the noted producers of the district, and after a vast amount of labor we are able to give the productions from this land in detail, March, 1886, to May, 1892, when the lease in the land passed into the hands of the Chatham Mining Company.

MARCH, 1886, TO APRIL, 1892, INCLUSIVE.

Year.	Pounds of Lead Ore.	Amount Sold for.	Pounds of Zinc Ore.	Amount Sold for.	Total.
1886	4,280	$120.45	755,888	$7,007.40	$7,127.85
1887	162,707	3.393.72	2,659,270	26,621.52	30,014.24
1888	151,988	1,838.64	5 079,838	62,090.01	63,928.65
1889	148,685	.....	8,184,414	.....	92,354.59
1890	863,570	.....	14.869,581	.....	205,426.91
1891	1,310,300	30,801.71	25,407,100	296,204.95	327,006.66
1892	158,242	3,476.71	6.647,667	6.953.25	9,419.96
Totals	2,829.762	$39,631.23	62,594,758	$398,867.13	$940,278.86

Production of Chatham Mining Company, now operating the Tracy land:

Date—1892.	Pounds of Lead Ore.	Pounds of Zinc Ore.	Total Amount.
April	82,050	1,852 800	$23,216.76
May	126,230	1,602.920	20,906.70
June	143,910	1,650,750	23,018.92
July	84,660	1,806 460	22.010.05
August	141,050	1,264 940	17,652.73
September	72,790	1,705.740	20,171.56
October	115.520	1,867.510	21,772.46
November	5,570	2,370,710	25,227.37
December	1.510	2,317,490	25.242 16
Totals	773,290	16.439,320	$199,348.51
1893.			
January	25,750	1.979,850	$20,582.78
February	56,450	2,373,540	25,225.48
March	17,980	3.315,520	23,779.49
April	24.160	3,094 690	31,182.21
May	28,570	2,139.570	20,710.72
June	23,020	1,645,320	14,663.28
July	23,580	1.814,440	16,971.75
August	20.200	560 070	4.039.59
September	140,020	1,240,740	12,928.30
October	68.160	1,014,720	9.958 96
November	63,290	1,871,350	16,510.81
December	136.230	1,904,630	19,309.87
Totals	615,410	21,954,170	$215,234.22

GRAND TOTALS FOR CHATHAM.

1,388,700 pounds of lead ore	$414,582.13
38,393,490 " zinc "	740.278.83
Total value of ore from Tracy	$1,154,860.99
Total from land	$1,154,860.99

(*To be Continued.*)

PRODUCTION OF POTASH SALTS IN GERMANY.

In a recent report to the Department of State, Mr. T. H. Mason, Consul-General at Frankfort, gives the following data regarding the production of potash salts in Germany:

The consolidated industries which mainly supply Europe and the United States with the various salts of potash are located in a basin or alluvial plain west of the river Elbe, and to the south and southwest of Magdeburg, in the province of Saxony. This mineral region is bounded on the south and west by the Harz Mountains, and for many centuries it was worked as a source of common salt, which was obtained by evaporating the natural brine, pumped up from driven wells that reached only to the upper stratum of the vast deposit. This deposit is now known to have a thickness of nearly 5,000 ft., and is estimated to have been not less than 15,000 years in process of formation.

The minerals which contain potassium salts are found between the Palaeozoic and Mesozoic formations. They include principally carnallite, a double chloride of potassium and magnesium, from which is derived chlorate (muriate) of potash and several other important products; and kainite, a triple salt of potash, chlorine, and manganese, which is used raw as a fertilizer, and also as a crude material in the manufacture of several concentrated salts. The carnallite contains also kieserite, a natural manganic sulphate, which is likewise used for agricultural purposes. Enormous beds of rock salt both cover and underlie the several strata of potash minerals, which are still further protected by thick layers of saline clay.

The discovery and opening of natural salt mines in other parts of Germany finally rendered the artificially evaporated salt of the Elbe region unprofitable, and the Prussian government, in 1839, began boring to test the depth and thickness of the deposit, with a view of opening shafts for mining the rock salt. This led to the sinking of a shaft, which, in 1857, at a depth of 1,080 ft., reached a stratum of kainite impregnated with magnesia and potash, which was then regarded as worthless. The little potash which was then used in manufacture was derived from wood ashes, and Liebig had not yet demonstrated its important relation to vegetable life, and its consequent value as a fertilizer. The discoveries of Liebig gave a new and important value to the potash minerals of Prussian Saxony. New borings were made over a large area, new shafts were sunk at various points and extended downward through thick strata of carnallite, kainite, kieserite and saline clays to the enormous bed of salt which formed the substructure of the immense deposits, only the mere surface of which had been scratched by the borings of the previous 200 years. The first refinery for the production of muriate of potash was founded at Stassfurt in 1861. Its success was so immediate and stimulating that within four years afterward 18 potash works were in operation. Their product soon outran the then incipient demand and brought on a collapse, from which the industry was rescued in 1868 by the repeal of the state monopoly on common salt, and the organization of the nine principal potash refineries into the combination which exists to-day under the name of the "Sale Syndicate of Potash Works, Stassfurt-Leopoldshalle" (Verkaufs Syndikat der Kaliwerke). The syndicate has its central offices at the city of Stassfurt, near Leopoldshall, in the midst of the mineral district. It pools the product, regulates the sale, and controls the output of the nine principal companies which collectively form the syndicate, and which have absorbed most of the smaller mines and refineries in the district, so that it may be said to govern at present the world's supply of potash. Its principal works are at Stassfurt, Leopoldshall, Westeregeln, Loederburg, Aschersleben, Thiede, Bernburg, and Vienenburg, and the extent of its business will be realized from the statistics of its actual sales of crude salts and refined products during 1892, viz.:

Crude salts:	Tons.	Refined products:	Tons
Rock salt	293,400	Muriate of potash	111,311
Carnallite	736,750	Sulphate of potash	15,465
Kieserite	5,782	Sulphate potash-magnesia	12,550
Schoenite	40,689	Manure salts	8,296
Sylvinite	32,669		
Kainite	545,081		

Of the crude potash minerals carnallite, kainite, kieserite, and sylvinite are all used, both in a raw and pulverized state, as fertilizers for agricultural purposes, and as material for the manufacture of concentrated salts. As a raw fertilizer, kainite is the most valuable and widely used, not less than 485,593 tons of it having been used for that purpose during the past year, of which 363,223 tons were employed in German agriculture, and 122,370 tons exported. The principal material for concentrated potash salts was carnallite, of which more than 700,000 tons were consumed in the refineries of the Stassfurt syndicate during the past year, which employs as miners, manufacturing laborers, chemists, engineers, clerks, etc., about 10,000 men.

The practical methods employed by the Stassfurt syndicate for concentrating and refining potash salts are the result of 30 years' experience by chemists of the highest ability. Carnallite, the crude mineral from which most of the refined salts are derived, is a crystallized double salt of chlorine and magnesia, the chemical formula of which is $KCl, MgCl_2.6H_2O$. It is found in various colors—white, yellow, red, gray and black—and contains, when pure, 34·5% of chloride of magnesium, 26·8% of chlorate of potash, and 57·8% of water. It is generally combined with rock salt and other impurities, the average proportion to the Stassfurt district being 60% of carnallite to 25% of rock salt, the remainder being composed of kieserite and anhydrous clay. Muriate of potash is produced by dissolving carnallite in a hot concentrated solution of chloride of magnesium. The mineral being dissolved, the solution is allowed to gradually cool, when the muriate crystallizes separately, leaving the chloride of magnesium still in solution. The operation involves four stages, viz.: (1) solution of the raw carnallite; (2) evaporation of the solution (mother-lye); (3) resolution of the secondary carnallite; (4) crystallization and purification of the muriate of potash from the secondary solution.

Kainite ($K_2SO_4, MgSO_4, MgCl_2, 6H_2O$) is found mainly in the intermediate strata which underlie the upper salt bed, and overlie the carnallite deposits. The crude mineral is white, pink, yellow, red or black, according to the oxides with which it is impregnated, and contains, when pure, 35·1% of sulphate of potash, 24·2% of sulphate of magnesia, 18·9% of chloride of magnesia and 21·8% of water. In the Stassfurt mines it is always found combined with rock salt, and the commercial product contains from 50% to 70% of pure kainite, and is sold finely pulverized as a fertilizer, with the guaranty that it contains not less than 23% of sulphate of potash, equal to 12·4% of pure potash. Of the kainite mined last year by the Stassfurt syndicate, 485,593 tons were sold raw for agricultural purposes, and 59,490 tons were consumed as material in the production of calcined and crystallized sulphate of potash-magnesia, which contains about 27% of pure potash, 16% of magnesia and a small proportion of chlorine, and is one of the most valuable of the new fertilizers. Another concentrated product derived from kainite is sulphate of potash, 90% pure, from which carbonate of potash is made by the Le Blanc process.

The preparation of kainite for commerce as a fertilizer consists of: (1) eliminating the rock salt and other impurities with which it is combined in the crude mineral, and (2) pulverizing the kainite so as to render it convenient for application to the soil, and readily soluble as plant food. For the first operation three different processes are used at different refineries. These processes are named from their respective inventors the "Borsche & Brunjes" system, the "Dupre & Hake" and the "Precht" processes. In the Borsche & Brunjes method the mineral kainite is dissolved to a saturated solution at 80° C. (176° F.), and, on cooling, deposits crystallized sulphate of potash-magnesia. In the process of Dupre & Hake the operation is similar to the above, except that a hot concentrated solution of sulphate of magnesia is used to dissolve the kainite. By the Precht method, the kainite is dissolved either in water or a solution of common salt heated under pressure to a temperature of from 120° to 150° C. (248° and 303° F.), by which means three tons of coarsely broken kainite may be reduced in about 30 minutes, and the sulphate of potash-magnesia transformed into a finely crystallized double salt, of which the formula is $K_2SO_4, 2MgSO_4, H_2O$. This product is rendered more soluble by treatment with a saturated solution of common salt, which is used in such proportion that the chloride of potash and chloride of magnesium are eliminated, leaving the new double salt undissolved.

Sylvinite, a third mineral, is also found in the mines of the Stassfurt district, and has been used to some extent in recent years for the manufacture of muriate of potash and other chemicals. It contains 22 to 30% of chlorate of potash, 60% of common salt and 4 to 12% of sulphate of potash-magnesia.

An important branch of the Stassfurt industry is the manufacture of carbonate of potash from the sulphate and chloride of potash, for which several processes are employed, notably the Le Blanc method, and another of later date invented by Engel, and further perfected by the chemists of the works at Neu-Stassfurt, where it is employed. A very complete history of these processes is published in "The Mineral Industry," Vol. II., 1893.

The degree of practical interest which may attach to this subject now or in future, from the American standpoint, will depend largely upon whether there remain undiscovered in our country deposits of potash minerals which may lead to the establishment of similar industries. The present question would seem to be: How far and how thoroughly has the search for such minerals been carried in the United States? Have the strata which underlie the salt beds of New York, Michigan, southwestern Virginia, and Utah been probed sufficiently deep to prove that the same conditions do not exist there as in Prussian Saxony? If such exhaustive search has not yet been made, it doubtless will be. Let it be remembered that the salt wells of the Stassfurt district were worked for centuries without a thought of the far more valuable carnallite and kainite which underlie the upper salt stratum, and that these, which now furnish most of the world's supply of potash, are mined at depths far less difficult than those of the deepest silver mines of Nevada. To quote the opinion of a leading European expert: Not until the substrata which lie beneath all the principal American salt beds have been explored to a depth of at least 3,000 ft. will it be definitely known whether or not nature has stored on the western continent a supply of potash adequate and fitted to complete the trinity and balance the nitrates of Chile and the phosphates of the Florida peninsula.

The Minimum Temperature of Visibility.—Mr. P. L. Gray, of the Mason Science College, of Birmingham, England, says the "New Science Review," has recently made some interesting experiments to determine the lowest temperatures at which bodies heated could be made visible in the dark. The experiments were conducted with bright and lamp-blacked platinum strips, and gave the following results: During the morning hours, when the eye is least sensitive to radiation of low frequency, the minimum temperature of visibility of a solid is about 470° C.; at nighttime this temperature is reduced to 410° C.; and after resting the eye for some time in complete darkness the temperature may be still further reduced to 370°. Different people's eyes differ in their luminous perceptive powers, but seemingly to no great extent. The losing color, or color of last appearance, however, seems to be variously interpreted, to some appearing red or whitish, and to others lilac and yellow.

Aluminum as a Naval Material.—Washington dispatches say that the Navy Department has just completed a test of aluminum as a material for ship's boats, with the object of determining its adaptability to naval uses. On account of its comparatively light weight, its utility on board ship would be almost inestimable if it were not for the fact that it has been now shown to be exceedingly susceptible to the corrosive action of salt water. Two sheets, $\frac{1}{16}$ of an inch thick were immersed for three months at the Norfolk Navy Yard. One was of pure metal and the other slightly alloyed with nickel. The pure plate was thickly covered with large barnacles throughout the surface and was more or less pitted by the action of salt water. The alloyed plate was incrusted with smaller barnacles and was badly corroded, being perforated and eaten away over much of its exposed surface. This plate was as injuriously affected as a combination of iron and copper would have been with the same exposure. The claim that barnacles would not adhere to the metal was not substantiated in the smallest degree. In the opinion of naval experts it will not be advisable to build aluminum boats if they are intended to remain any length of time in the water, though its use may be advantageous on account of the great gain in lightness for metal work exposed to salt water only occasionly. The use of aluminum cannot be recommended near salt water under any circumstances.

THE WASTE-DUMP AT THE HAVRE COAL MINES, BELGIUM.*

By Adolph Demeure.

Some time since it became necessary to establish a new dump for the waste taken from the coal mines of Havré, as the old dump, which deposited the waste upon the low ground on the left bank of the Haine, could no longer be used. In designing the new works, two objects were kept in view to reduce the cost of running and the labor required as much as possible, and to so arrange it that the removal of the waste could be done chiefly during the night and would interfere as little as possible with the use of the tracks and mine wagons for coal during the day. To secure these objects it was proposed by M. Deguelvre, engineer of the company, to provide a reservoir into which the mine cars could be dumped and from which the cars carrying the waste to the dumping ground could be filled when most convenient. The amount to be removed was assumed to be from experience a maximum of 500 mine carloads daily.

The Havre colliery has two shafts 60 meters apart, each shaft being double. The two shafts are joined by tracks meeting at a point about half way between them, on which the cars are hauled by rope traction. This arrangement allowed the placing of a large reservoir, hauling some 300 carloads at a point between the shafts where the waste cars could be loaded. The tracks are carried to this point on an iron trestle, and the cars pass into two revolving dumps which reverse them and empty their contents into the reservoir. The arrangement is shown in cross section in Fig. 3 and in longitudinal section in Fig. 4. The reservoir itself is in shape of an inverted pyramid, the bottom or small end of which is 2 meters above the ground. The walls of this pyramid or reservoir are inclined at angle of 50° to the horizontal. This reservoir is supported by masonry walls and iron columns, and, as mentioned above, it is to contain about 300 mine-car loads. At the base there are four chutes arranged in pairs above the two tracks leading to the dump, and as these are at the bottom the reservoir can be completely emptied. The chutes can be opened by an ingenious device which, when brought down, allows

FIG. 1.

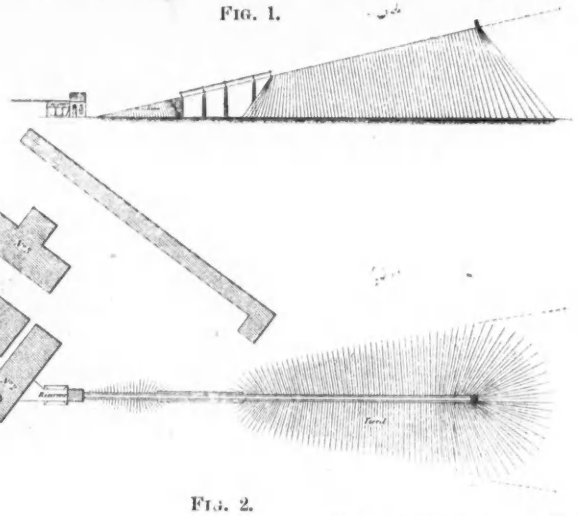

FIG. 2.

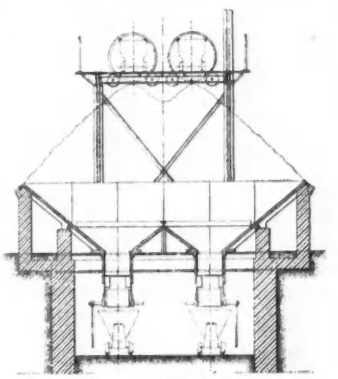

FIG. 3.

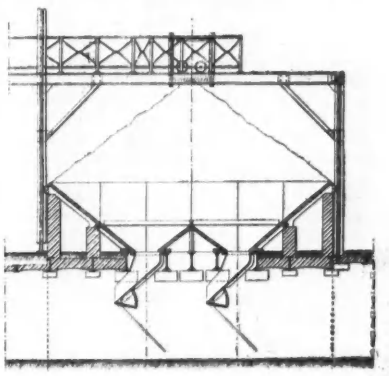

FIG. 4

WASTE DUMP AT THE HAVRE COLLIERY, BELGIUM

the earth to fall into the cars standing below, but when released closes instantaneously and arrests the fall of earth. A long lever is used, making the opening easy, and the charging of the dump car is very quickly done. Under the chutes the track is horizontal, but a grade of 0·25% commences at once when the track passes out of the building. For some distance these tracks run upon the natural grade or embankment and then upon an iron trestle which carries them to the dump, which is situated a short distance away from the building. The tracks have a gauge of 0·60 meter, and the clear space between them is 1 meter. The rails are of steel and weigh about 18 lbs. to the yard They are supported on steel ties of the Le Grand system. The cars will carry each 0·80 cubic meter, and dump at the side and on the outside of the track. The cars are drawn by a wire rope, driven by an engine rated at 10 H. P. It has two cylinders, each 0·18 meter diameter and 0.40 meter stroke, working upon a common shaft which carries two drums, upon which the hoisting ropes are wound and unwound. These ropes are of steel wire of the best quality and are 315 meters in length. They run between the tracks to the top of the dump, then over return pulleys; and the cars are attached directly to them.

At the present time the length of the dump tracks is 151 meters. At the upper end they terminate in a very sharp incline with a much steeper grade, formed by rails of heavy section 18 meters in length, carrying at the extremities the tracks for the return pulleys of the wire rope, and a platform where the workman who regulates the dumping of the cars stands. These rails form the movable part of the dump. They are advanced two meters at a time whenever necessary. At the present height to which the track extends—about 30 meters—this advance of two meters has to be made about once a month.

Four workmen are employed, one man and a boy to charge the cars under the reservoir, one to dump the cars, and one to run the engine. They work usually from five o'clock in the morning to three o'clock in the afternoon; the total amount of wages is 13fr. a day. The ground where the waste can be dumped is shown in plan in Fig. 2, and Fig. 1 is an elevation showing the general arrangement of the dump. The axis or center line of the track runs southwest from the shaft. It is estimated that within the limit shown on the plan, with the grade of 0·25% for the track, and with 1·327 to 1 for the natural slope of the earth, it can reach a height of 54 m. and a length of track of 230 m., and the waste pile will then contain about 245,000 cu. m. At present the highest point reached is 35 m., the length of the track is 150 m., and the amount of waste in the dump is 66,300 m. At the present rate the limit of the ground at disposal will be reached in six years.

The plan described has the advantage of simplicity and minimum first cost, where no natural slope or hollow exists of which advantage can be taken.

* Translated and abstracted from paper read before the Association of Graduate Engineers of the School of Liege.

TRIAL TRIP OF THE BATTLESHIP "MAINE."

The recent trial of the armored cruiser "Maine" will result in earning for its builders a premium of $22,900 on account of surplus horsepower developed by her machinery. The specifications called for 9,000 H. P., and the premium above that figure was $100 per horsepower. The "Maine" is the first vessel that has been designed wholly by the Bureau of Steam Engineering of the Navy Department, and the specifications given out were especially severe. The "Maine's" engines are of the usual twin-screw inverted triple expansion type, with cylinders 35½, 57 and 88 in. in diameter, by 36 in. stroke, and were designed to develop 9,000 H. P. The columns which support the cylinders, though required to be of cast steel, are steel forgings, the change having been voluntarily made a year or two ago by the Quintard Iron Works, after the failure of smaller and less difficult steel castings for other parts of the engines, and after the cast steel columns had been made. A special feature of the design of the engines is an arrangement for discontinuing the low-pressure cylinder when cruising at slow speed, in order to obtain economy, the condensation in the large cylinder of triple-expansion engines at low power being very large.

The "Maine" is fitted with eight single-ended return tubular boilers, each 14 ft. 8 in. in diameter by 10 ft. long, which were designed for a working pressure of 135 lbs. Each of these contains three corrugated furnaces 42 in. in diameter, and the total grate surface in all boilers is about 580 sq. ft., and heating surface about 19,000.

The official trial lasted four hours, covering a course of 25 miles. Capt. F. M. Bunce, commander of the "Maine," states that during the trial the ship passed along the line of buoys laid out for the trial of the "Ericcson," and, marking the time when each buoy was passed, the rate of speed for successive measured intervals in knots per hour was 14·51, 15·78, 16·29, 15·93, 17·82, 14·64, 16·59, 16·44 and 16·07, or an average of 15·95 The 25 miles were run against a strong head wind and a tide estimated to have a current of 1·5 knots. The ship's draught during the trial was 18 ft. forward by 19 ft. aft. Although the horse power developed on the trial, 9,229, is in excess of the contract requirements, and entitles the contractors to a premium of $22,900, it is the general opinion of the engineers of the navy who witnessed the trial that, had the men in the fire-rooms kept up to their work during the latter part of the four hours' run, as do the men employed by the Cramps, the engines would have developed upward of 9,500 H. P.

The specifications for this machinery were generally acknowledged, at the time the contract was given to the Quintard Iron Works, to be the most complete of any ever issued by the Navy Department, and the manner in which the carrying out of the design has been done is the subject of congratulation for the department, as well as of commendation for the builders.

Belgian Briquettes.—The exports of briquettes from Belgium in August were 39,304 tons, as compared with 43,024 tons in the corresponding period of 1893. The aggregate exports for the first eight months of this year were 391,960 tons, as compared with 314,582 tons in the corresponding period of 1893. France figured in these latter totals for 153,930 tons and 152,755 tons respectively, while the exports to Switzerland were 57,793 tons and 50,101 tons respectively.

Cost of Naval Fuel.—The annual report of the Chief of the Naval Bureau of Equipments shows that during the past year there were purchased at home 42,190 tons of coal, costing $178,163, of which quantity 9,505 tons were purchased on the Pacific Coast at an average cost of $7 per ton and 32,685 tons on the Atlantic Coast at an average cost of $3.33 per ton. There was expended abroad $462,192 for 52,146 tons of coal, an average cost per ton of $8.86. Of a total of 56 722 tons of coal used by the new ships of the navy during the year 40,521 tons, or 71%, was for steaming purposes, and 16,201 tons, or 29%, was for auxiliary purposes, including electric lighting, distilling, heating, flushing, cooking, ventilation and steam cutter service.

The amount spent for fuel last year was $191,291 in excess of the year preceding, on account of the increased activity of the navy due to the Brazilian, Salvadorian, Mosquito Coast and Hawaiian incidents. The maintenance of a large fleet on the China station will make a greater increase this year

THE CAPILLARY-ELECTROLYTIC SLUICE IN THE EXTRACTION OF GOLD.

Specially Written for the Engineering and Mining Journal by Jos H. Jory.

Aside from all carelessness and inexpertness of the manipulators of gold bearing rock, there are two general causes which go to produce the enormous loss in gold which occurs after the ore has been taken from the mine—a loss estimated by the best authorities to exceed an average of 50%.

In the first place, the extreme fineness in which the particles of free gold are often found renders its extraction by the older methods practically an impossibility, for the reason that gravity is depended on to bring the gold into contact with the mercury placed for its amalgamation when the fact is that gold in a minutely divided state and held in suspension in slimes is but little influenced by that force, and is often carried several miles after passing into the stream before being deposited. The genius who conceived the idea of skimming the creeks in Colorado to obtain the cream of the output of the mills in the vicinity, however successful he may have been, was certainly not lacking in observation.

The second, although generally imagined to be very different from the former, is in one respect at least quite similar as an ultimate cause. In this case the precious metal is so associated with other minerals which conceal and imprison it that the ore is said to be "refractory" or "rebellious." I have used the terms, conceal and imprison, advisedly, for there can be no reason to doubt what most good metallurgists concur in holding, viz.: that gold exists in a metallic state in every form of ore in which it occurs, and though generally alloyed with other metals it is always extraneous to the oxides or sulphides of those or other metals.

When associated with iron or copper bisulphides, although some of the gold occurs free and coarse and is readily amalgamated, much of the metal is extremely fine and appears to form the nucleus on which the pyritic crystals are built. So fine, indeed, is some of the gold thus occurring that it would appear to be the unconsolidated precipitate from a solution. When the gold is freed from these "sulphurets"—chemically—by roasting, the sulphur is driven off by heat and the pyritic crystals are decomposed: But the gold still in a metallic state remains covered more or less by the resulting oxides of the baser metals and not in a state to be amalgamated in the usual manner; thus rendering further chemical means necessary for its recovery.

That the gold may be freed also by mechanical means cannot be doubted. The following laboratory experiment—as one of many differing but slightly in result—goes to establish this and some other of the propositions made above:

A quantity of pyritic ore containing iron and copper sulphides with a small percentage of galena and assaying $104.85 in gold and nearly 2 oz. in silver, was crushed coarsely in a mortar and divided into three equal parts. Sample 1, on being treated in the usual manner with potassium cyanide, yielded only 49% of its value in the solution; sample 2 was thoroughly roasted in a muffle, and on being treated with cyanide yielded a solution of 97% in value; sample 3, unroasted, was again placed in the mortar and triturated to an impalpable powder; this was also subjected to the cyanide process and yielded 98½% of the assay value. This extreme pulverization of pyritic ores and other rock containing gold in an extremely divided state has, however, hitherto given extremely poor results practically, either in chemical or mechanical and amalgamating methods, for the reasons that in the former case a paste is formed almost impervious to chemicals, and in the latter because the mercury and gold are converted into "float" which is carried away in the stream and lost. A foreign company having a large display at the World's Fair of mining and milling apparatus, appreciating the losses occurring from this source, advertises the prevention of float by having its mills adjusted so as to crush coarsely. This method is not quite original, however, as many of our large Californian mills have practiced it for years with the result that numerous arrastras worked by Italians and Mexicans are now reaping a rich harvest by running through the tailings of those mills. The fact is, the millman is placed between the two horns of a dilemma: he must either crush coarsely and lose some of his gold as float and much as tailings, or he must crush finely and lose some as tailings and much as float.

The capillary-electrolytic sluice offers a solution to this problem in providing an apparatus that dealing with metals in the finest possible division renders impossible any loss of the minutest particle of gold in either free milling or extracted ores and makes entirely unnecessary the slow and costly processes of chemical extraction.

The method is applicable to quartz mills, beach mining or hydraulic mining. In the former case much cumbrous machinery now used as concentrators and amalgamators may be dispensed with so that either in labor or power no expense will be added to the free milling methods now employed, while the resulting product will be from 10 to 50% increased. As applied to hydraulic mining the 60% now lost as float in the slickens may be almost entirely saved with but slight additional expense.

The capillary-electrolytic sluice, as applied to the extraction of gold, consists of a series of amalgamated copper plates set almost vertically in a sluicebox in such a manner that very narrow "capillary" passages are formed between the plates; flood-gates placed at each end preventing the passing of fluids except through these passages. the widths of which are controlled by a hand-screw acting on simple adjusting mechanism.

The copper plates used are 12 × 14 in., with a thickness of ¼ in., and are 2 in. apart when exactly vertical; when adjusted, however, they incline at an angle of about 45°. The number of plates and consequent length of sluice are dependent on the flow which the apparatus is intended to control. A sluice of fifty plates has been found a very convenient size, and a number of such is preferable in large mills to one or two of larger dimensions. The slimes or water carrying the particles of gold flow into the sluice, and after attaining such depth as the capillary passages are adjusted to, become exactly equal to the flow into the sluice, and thus an overflow is automatically prevented.

The capillary passages being extremely narrow—about $\frac{1}{50}$ of an inch generally—every particle of metal must of necessity be brought into intimate contact with the amalgamated surfaces. The contiguity of the plates also calling into play the little considered but very subtle molecular force, capillary action, which in this instance acts powerfully in attracting to the plates the metals with which they are in affinity.

The electrolytic action of the sluice is produced by passing a current of electricity through the series of plates, and the flowing fluid passing through the capillary passages between.

The action of the electric current is twofold: first, in carrying and holding to the plates the particles of the precious metals contained in the flow in a manner analogous to the processes of electroplating: and second, in decomposing the films of oxides or sulphides adhering to the amalgam or to the flowing particles, that might otherwise prevent a free amalgamation.

Under a continuous current of electricity some heterogeneous particles, under certain conditions of the ore, may adhere to the plates even when the affinity is but slight. This difficulty has been obviated by employing an alternating current, under the vibratory action of which any adhesion of the electro-negative elements is prevented, while at the same time those metals of the highest electro-chemical character, such as gold, silver, platinum and mercury, adhere to both surfaces. The impact given by the vibratory action also produces a more dense amalgam and a firmer adhesion than would be otherwise the case. This is of some advantage where the gold is much alloyed with silver or lead.

It will be seen that the capillary-electrolytic sluice is a continuous process that may be applied to any wet-crushing mill; the only condition being that the slimes shall be delivered in the finest possible state of mechanical division to secure the best results: while for hydraulic or beach-mining work all coarse gravel and sands must be screened from the flow before entering the sluice.

As before stated the process presents no increased cost to milling operations, while the extraction of gold is infinitely greater. As compared with chemical methods it is more certain in result, affords less opportunity for loss, is more easily adapted to the changing character of the ore, is more rapid, and presents none of the great elements of expense attending those processes.

Manufacture of Incandescent Lamp Filaments.—In order to obtain incandescent lamp filaments which will stand a very high temperature, M. Baum proceeds as follows: Organic fibers are treated with phosphate ammonia, hydro-chlorate of ammonia, calcium chloride and magnesium chloride. At a known temperature the salts of ammonia are volatilized, and the filament is formed of the precipitated porous phosphates of lime and magnesia. The filaments are afterward strengthened with a solution of gelatine and dilute carbonate of lime.

Improvement in the Manufacture of Plumbago.—An improvement in the manufacture of plumbago or graphite has been described in a recent patent specification. Graphite, crushed and passed through a sieve of from 120 to 150 meshes per inch, is stirred into a saturated solution of alum or aluminium sulphate at 212° Fah.; steatite is then added, and more water if required. After mixing, excess of water is evaporated until a consistency suited to grinding in a chilled steel or other mixer is obtained. More graphite may here be added; then, after thorough grinding, the material may be compressed into cakes for household use, or is ready for the manufacture of pencils or crucibles. The average formula of the mixture is: Graphite, 80; steatite, soapstone, or talc, 14; alum, 6: but this varies with the purpose to which the material is to be applied. When several different kinds of graphite have to be employed, the richest in carbon is first mixed into the alum solution. By this process graphites previously regarded as incapable of being compacted are utilizable, and are improved in polishing power: for pencils, the material may be hard without being brittle, and black without being soft; while crucibles made from the treated graphite are at once harder, more durable, and lighter.

Use of Sodium Peroxide in Pyrites Analysis.—In a communication to the "Chemiker Zeitung," C. Glaser says he has examined more closely the proposal made by M. Hoehnel, as it offered a possibility of avoiding the tedious and repeated evaporation with hydrochloric acid to expel nitric acid from melts with carbonate and nitrate. But it was found that the matter was less simple than it appeared at first sight. A series of experiments was instituted, the results of which, in so far as they are conclusive, were as follows:

1. Pyrites with 41·12% total sulphur gave, according to Hoehnel's process, only 88·37%. On acidulating the filtrate from the melt, some sulphur was separated out, and a distinct odor of the decomposition products of hyposulphurous acid was recognized. More sodium peroxide was therefore used for the following experiments, at last 5·0 grms. Na_2O_2 to 0·5 grm. pyrites. In order to avoid any loss before acidulation with hydrochloric acid, some c.c. of hydrobromic acid were added, and the liquid was then boiled until nearly all the bromine was expelled. Precipitation with barium chloride then followed in the usual manner. The result was 41·13%. To avoid the destruction of the nickel crucible, it is advisable to heat at first for ten minutes with so small a flame that the mixture in the crucible merely softens and sinters together. It is then heated for 15 to 20 minutes with a powerful "roaring" burner. If these precautions are observed the determinations can be effected without notable injury to the crucible. Toward the end, it is necessary to heat the melt so strongly that it enters into waving ebullition. When the attempt is made to avoid this, the brown metallic oxides become black on lixiviation by the re-formation of iron sulphide. The examination of the residue on the filter after separate treatment with hydrobromic acid gave each time a notable quantity of barium sulphate; while when the mixture is heated to wavy ebullition, the filtrate passes off colorless, and without the use of hydrobromic acid there appeared on acidulation merely a slight separation of sulphur, while the residue insoluble in water proved quite free from sulphur. It is therefore necessary to attend to the following points: (1) Gentle heat at the commencement of the fusion; (2) toward the end ignition to full ebullition; (3) oxidation by means of hydrobromic acid. A determination can be effected in from two to two and a half hours.

Sodium peroxide may be used conveniently for determining the sulphur in burnt ore. We take to 1 grm. burnt ore 0·5 Na_2O_2 and 2·0 grms. Na_2CO_3, and heat the mass in a nickel crucible with a moderate flame for 15 minutes. The melt is easily lixiviated, but before acidifying with hydrochloric acid it is recommended to add a few drops of hydrobromic acid. We then precipitate with barium chloride. Watson's method, which Lunge strongly recommends, is not applicable to American ores, but it gives satisfactory results with Spanish pyrites.

THE DEEP RIVER COALFIELD OF NORTH CAROLINA AND THE EGYPT COAL COMPANY'S PLANT.

Specially Written for the Engineering and Mining Journal by E. G. Tuttle.

The coalfields of North Carolina comprise two regions, one the Egypt or Deep River field in the central-eastern part of the State, and the Dan River coalfield, in the northern part. Developments have so far been mostly confined to the Deep River field, but have been retarded because of the unsatisfactory business conditions in the past few years.

The economic relation of those fields to the development of the industries and commerce of the State is one of growing importance. The advantage of the location will be more fully realized when it is understood that these fields have an advantage of 300 or 400 miles in haul as compared with nearest West Virginia and Tennessee fields on coal delivered to the principal railroad lines, and to Raleigh, Wilmington and other points.

	Mileage from		
	Egypt.	Tennessee.	Pocahontas, Va.
To Raleigh, N. C.	45	442	366
" Wilmington, N. C.	124	559	482
" Danville, Va.	102	409	237
" Lynchburg, Va.	168	475	171

The coal is free-burning, gives off gas freely and produces a good coke. It is now in demand by gas companies, industrial and other works at Raleigh, Wilmington, Fayetteville, etc., and has proved a satisfactory fuel in tests made by various railroads in the eastern part of the State. The town of Egypt is situated centrally in the field, where the principal developments have been made by the Egypt Coal Company. The outlet is over the Cape Fear & Yadkin Valley Railroad and the Raleigh & Western Railroad, connecting with the Seaboard Air Line at Sanford and Colon respectively, nine miles to the east. The Cape Fear Railroad also connects the field with Fayetteville, 40 miles to the southeast, and Wilmington and other large cities in the eastern part of the State. The Seaboard Air Line connects the field with Raleigh, 45 miles to the northeast, and other important points in the State.

The analysis of the coal is as follows: Fixed carbon, 60·7; vol. comb. matter, 32·7; ash, 5·3; sulphur, 1·3. The following is the section of the seam generally mined: Coal, upper, 4 ft.; black band ore, 1 ft. 4 in.; coal, 1 ft. 10 in.; slate, 6 in.; coal, lower, 7 in.

The mining is confined mainly to the 4-ft. bench; occasionally the lower benches are removed. There is another seam of coal 1 ft. thick 25 ft. below the main seam, and occasionally another seam 18 in. thick is found 200 to 250 ft. above the main seam.

The black-band ore running with the ore has the following composition: Carbon, 31·30; peroxide iron, 47·50; silica, 9·00; bituminous matter, 8·81; sulphur, 3·39.

After roasting the sulphur is reduced to 0·89% S. This ore has been used in the old furnaces in blast before the war, but now in ruins in the neighborhood. The quality of the ore and coke of this field are such as may prove of value in the future development of industries.

The coal of the Deep River region is of Jurasso-Triassic formation. It extends a distance of 20 miles to east and west in the shape of a crescent, with the rounded side northward. The town of Egypt is situated near the center of the field, which lies in close proximity to the southeasterly course of Deep River. The coal outcrops one mile north of Deep River at Egypt, and dips southward at an angle of 15° to 18°, passing under the bed of the river, where it is reached by shafting at 158 to 455 ft. deep. The extent of this coal territory to the southward has as yet not been determined.

The earliest developments in this field were in 1850 when the Egypt shaft was started on the South side of Deep River and completed in 1853, being 420 ft. deep. Recently the property was acquired by the Egypt Coal Company which sank the shaft 455 ft. deep to work the coal further to the dip. During the Civil War this property was operated by the Confederates, the coal then being loaded on barges and taken down Deep river, which was navigable by locks, to Wilmington to supply blockade runners during the war.

In the last few years most of the locks have been removed as the increase in agriculture along the river bottoms demanded it to prevent destruction to crops during freshets.

The mine was then operated by a single shaft, one compartment being made the upcast for ventilation with a furnace at the bottom. A water box was operated in one compartment for unwatering the mine, and men and cars of coal were hoisted and lowered in the other. The remains of old wooden mine car wheels, wooden track, tipple horns, drum hill planes and machinery of 30 or 40 years ago may still be seen around as used.

In the period of the operation of this mine up to the close of the civil war some explosions of gas occurred, resulting in the loss of 11 lives at different times. Since the war operations have been almost entirely suspended until recently, when the Egypt Coal Company acquired the property and has been gradually improving the plant to facilitate an increased output. The entire production of the Egypt field is estimated at 80,000 tons from its opening in 1850 to date. The present output is some less than 100 tons daily, but with the present contemplated improvements to the plant completed, the production will be over 500 tons daily. Among these improvements are a newly erected headframe, a platform with revolving tipples for dumping the mine cars. The cars are of one-half ton capacity with 9-in. wheels. Tracks, 2 ft. 6-in. gauge.

A new 18 × 32 in. Litchfield fast motion engine has been erected, fitted with Beach's patent balanced slide valve. The drum is 7 ft. diameter and wood lagged, and each half holds 30 coils of 1 in. wire rope. The hoisting shaft is 10 ft. × 18 and 455 ft. deep, with 3 compartments. The two cageways are each 5 × 10 ft. clear. Litchfield cages are operated, and are provided with automatic water boxes below the car platform for unwatering the mine at lower levels or in case of accident to aid the pump. In the third compartment are located the rods and pipe column of a Cornish pump. The rods are connected with the end of a wooden bob extending over the shaft; these are worked by an 18 in. × 5½ ft. horizontal, fly-wheel engine, geared one to four, with a wooden connection rod from the gear to the top of the pump bob. The pump rods make 6 strokes per minute. At a depth of 170 ft. a 9-in. plunger 6 ft. stroke, is operated from the rods into a barrel raising the water from a lodgment through a 9-in. pipe to the surface. At a depth of 470 ft. a 6-in. plunger is operated from the rods, raising the water through a 6-in. pipe to the lodgment above, 80,000 to 100,000 gallons of water are pumped or lifted by the cages daily.

Two small underground engines raise the coal from the dip workings by two slopes to the gangway level leading onto the cages, each capable of handling 150 cars daily. Power is supplied to operate the plant by three 60 in. × 14 ft. return flue boilers. An airshaft 8 ft. × 12 ft. has been sunk 158 ft. for ventilating the mine. Other openings have been made in the Egypt field that have determined its extent for considerable distance in different directions. Openings in the 4-ft. seam have been made at the settlement of Farmersville, some two or three miles northeast of Egypt. One of these openings was made on the slope and nearly as early as the Egypt shaft. The ruins of the old plant, hoisting, pumping and other machinery, are still in view, but somewhat buried or hidden by overgrowth. To the south some two miles an opening in 18 in. of coal has been made, which is believed to be a small seam overlying the 4-ft. seam at considerable distance. To the southwest 1½ and 3 miles, openings in the 4-ft. seam have been made in the neighborhood of the town of Gulf, a small amount being used as the needs of the settlement require for blacksmithing and other purposes.

THE AUSTRALIAN MINING LAWS.

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

The contribution on the subject of the prevention of mine litigation, by Mr. F. T. Freeland, appearing in the "Journal" of the 22d ult., together with the article by Dr. Raymond in the same issue, have been read with much interest in Colorado. It may be pertinent to point out that regulations similar to those suggested by Mr. Freeland have been long in force in the Australian colonies. The general results have been excellent. Mine litigation is infrequent. The acquisition of mineral land is simplified, and the proper development of the mining regions is facilitated.

When gold, for instance, is discovered in any region previously not mined, a government surveyor is dispatched to examine the locality. If there be proper evidence of mineral the locality is "declared" a mining district, and its territory becomes open to location by any one possessing a "miner's right." The latter is simply a license to mine and usually costs the bearer 5s. Having such a license, any one can "peg out" a claim without reference to a particular vein, without any complication of apex, side lines or end lines—in other words, location is permissible without discovery. A miner takes up acreage, not apex. The claim may have any shape, so long as it does not overlap others which may have been previously pegged. Extralateral rights are not recognized. If a vein is known to traverse the location, and if it is evident that it has a flat dip, then the locator will peg a claim of such a shape as will best cover the continuation of the vein on its dip. Two men's claim is usually 15 acres. They pay the government a rent of 5s. per acre per annum. After filing their application at the nearest court-house, the government surveyor rectifies their lines so as to insure the absence of overlaps. The application for lease is sent to the Mining Department. In due course, and usually without much delay, it is approved.

Title is given in the form of a lease for 15 years renewable in perpetuity as long as the condition imposed by the mining regulations are carried out. Of these conditions the most important are those known as the "labor covenants," by which work has to be regularly performed to an amount proportionate to the acreage of the claim. Machinery and other outlay are considered as equivalent to labor expenditure. The neglect to perform the required work is called "shepherding." It is checked by the regular and conscientious supervision of the local mine inspector. This official is not a broken-down politician, but is usually an old mine manager of experience and integrity.

The granting of ownership only so long as the mine is properly worked is in itself a most important feature of the law. The patenting of mining claims leads to the locking up of large areas of valuable mineral territory when owned by men, who rather than risk money in their development, await the time when some neighbor shall have proved up their value. The large number of idle patented mines in this and other Western States prevents that consolidation which alone can render many districts possible of profitable exploitation. Only too often owners will not, or cannot, work their own patented claims, and yet place such a fictitious value upon them that their purchase by those who could, and would, operate them is put out of the question. The mines therefore remain idle, and there is nothing more worthless to the community than an idle mine—a hole in the ground fit to bury a dead mule in.

By the colonial law such mines would have to be operated unless good cause were shown. Failure to operate would be followed by loss of ownership. This regulation is not interpreted harshly; on the contrary, reasonable time is always given for owners to raise funds or to make other arrangements to operate their mines. It does, however, effectively put a forcible stop to a dog in-the-manger policy.

The successful administration of the mining regulations is largely due to the "wardens," or mine magistrates, who hold court at regular intervals in the various districts. These officers are not political appointees; they hold their position for life; they are generally men who have had some experience as police magistrates and are conversant with the practice of mining. Frequent attendance at wardens' courts in the different colonies enables the writer to vouch for the fair, sensible and satisfactory manner in which they interpret the regulations. It is the spirit just as much as the letter of the law that guides their decisions. For instance, quite recently, at Coolgardie, a man pegged 12 acres and subsequently two other parties pegged six acres each. The latter being mounted reached the warden's office and lodged their applications for lease before the first locator, who walked in, covering 50 miles by noon next day. The warden ruled that the first "pegger" was protected since he used reasonable haste in making his application.

An appeal from the warden's court is permitted, but rarely invoked. This in itself bears strong testimony to the high character of the decisions. The simplicity of the mining law and the integrity of the wardens are the two factors which render the evils of mine litigation, as we have them in Colorado, unknown in the Australian colonies.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

SUPREME COURT OF CALIFORNIA.

Notice to Corporate Officer by Board of Equalization.

A notice by a county board of equalization, addressed to one as "Owner" of a mine, is not evidence that the property was assessed to him. Where a notice by a county board of equalization was to such party as "Owner" of a mine, it may be shown that he was an officer of a corporation owning the mine, authorized to accept service of the notice.—Allison Ranch Mining Company vs. Nevada County, 37 Pacific Reports, 875.

UNITED STATES CIRCUIT COURT, NORTHERN DISTRICT OF CALIFORNIA.

Jurisdiction of Federal Courts.

A contest between mining claims necessarily involves a consideration of the laws of the United States. These laws prescribe how the location shall be made, and the effect of end lines and side lines on the rights to the mineral veins and lodes. The evidence by which these things are proved, whether direct or through the estoppel of some act of the party, or by a judgment of a court, does not remove consideration of the laws as elements of decision. The motion to remand must be based upon the petition for removal and the record as sent from the State court. If the petition in connection with the record is sufficient, on its face, but states, as ground of removal, facts which are not true, as, for example, in regard to citizenship or value, an issue may be taken in the circuit court by a plea in the nature of a plea in abatement. But citizenship and value have no other purpose than to fix the tribunal. The case in its progress, or the judgment, does not depend upon them. The Supreme Court says, "The question of citizenship constitutes no part of the issue upon the merits." The same may be said of value, so far as fixing jurisdiction. But a law of Congress, upon which, as a factor in decision, a party's rights depend, determines, in conjunction with the facts, the judgment to be rendered. The form in which the evidence shall be introduced does not, therefore, remove the law of Congress from being an element of decision, and hence of cognizance in a federal court.—Consolidated Wyoming Mining Company vs. Champion Mining Company, 62 Federal Reports, 949.

Process for Bronzing Copper.—Mr. Mondit, of Caen, has published a process for bronzing copper, which is briefly thus: After the metal has been scoured, it is covered with the following mixture by means of a brush: Castor oil; 20 parts; alcohol, 80 parts; soft-soap, 40 parts; water, 40 parts. The mixture is left on till the required shade is obtained, then dried with hot sawdust, and coated with a very dilute varnish. The depth of tone can be regulated by the length of time the metal is exposed to the solution.

Electrolytic Preparation of Manganese.—At their chemical laboratory at Linden in Hanover, Germany, Konigsmaier & Ebell have undertaken the electrolytic separation of manganese from its compounds. They have succeeded in obtaining the metal in a condition practically pure, in the form of a fine powder. In preparing alloys of the metal, in order to avoid the loss inevitable from this finely divided condition, they use in the crucibles alkaline chlorides and chloride of manganese, which is not subject to oxidation by the air. The processes adopted have been covered in Germany by patents.

Erosion of Mountains by Natural Forces.—In a paper which he recently read before the Scientific Congress at Paris, M. de Lapparent expressed the opinion that all mountains will vanish off the face of the earth in course of time. He declared that, if the actual natural forces at work upon our globe retain their present intensity, in 4,500,000 years all inequalities of surface will be leveled. He instanced as a striking example the reduction of the Ardennes, which were once a chain of the Alps, but which had already shrunk to their present dimensions at the outset of the Tertiary epoch. The Alps, he said, exemplified the youth, the Pyrenees the maturity, and the mountains of Provence the declining years of mountain ranges, while the central plateau of France was typical of their death and dissolution.

The Length of the Vara.—Mr. James M. Hamilton furnishes us with the following list of varas in use in different countries and states: "The lawful vara in Texas is 33⅓ in.; in California, 33·372 in.; in Mexico, 32·992 in.; in Guatemala, 32·870 in.; in Salvador and British Honduras, 32·91 in.; in Honduras, Nicaragua, Costa Rica, Bolivia and Chile, 32·904 in.; in Cuba, Venezuela and Spain, 33 384 in.; in Colombia, 31·496 in.; in Brazil, 43·307 in.; in Peru, 32·913 in.; in Uruguay and Argentine Republic, 34·1208 in.; and in Paraguay, 33 in."

(There is evidently need of reform here, as the small differences are both puzzling and annoying. We shall be pleased to hear from any of our readers who can add to or correct this list.—Ed. "Engineering and Mining Journal.")

Artificial Hematite Crystals.—A method of preparing hematite artificially is the introduction of Mr. H. Arctowski, who proceeds as follows: "A current of ammonium chloride vapor when passed over oxide of iron, heated to dull redness, converts the oxide into crystalline hematite. Ferric oxide heated at 350° absorbs ammonium chloride vapor, and melts to a black mass, from which ferric chloride soon distils. The residue absorbs water from the air, and is a mixture of ammonium chloride and ferric chloride. At 600° the ferric oxide is partially converted into small crystals, and then mechanically absorbs ammonium chloride without melting. At 700° the ferric oxide becomes crystalline. The crystals are of the same form as the hematite crystals from Elba. The gases of fumaroles contain ammonium chloride, and the fissures in the vicinity are generally covered with crystals of hematite."

Australian Serpentine.—Serpentine, admirably adapted for industrial purposes, and of an oil-green color, semi-transparent, is found on the Murrumbidgee; at Bingera, county of Murchison; Warialda, county of Burnet; Barraba, Manilla county of Darling; and Stony Batta, county of Hardinge. Different varieties of red-veined serpentine, steatite and other similar minerals are reported in the Upper Peel River. It also occurs at Coolac and Jones' Creek, near Gundagai, county of Clarendon, and on the Clarence River. A foliated variety of serpentine occurs on the Murrumbidgee, of a yellowish color, associated with a dull red and green serpentine rock, and at Cowabee, 40 miles from Wagga Wagga, with leaf gold. A fibrous variety of serpentine is found at Kelly's Creek, Gwydir River, and in the serpentine at Bingera, county Murchison, with meerschaum. It occurs also as a green striated mineral at Lucknow, county Wellington, and Wentworth, near Orange, county Bathurst.

Rainfall in New South Wales.—The average rainfall of New South Wales, as compared with that of several other countries, does not support the idea of those who regard the colony as peculiarly arid; and it could be shown that droughts, which are occasionally the great scourge of the country, are common to almost every part of the habitable globe. It is true that a largely diminished rainfall is not so disastrous in its consequences in more temperate climates as it is in Australia; but the meteorological records of England show that during the period between 1740 and 1750 there was only 71% of the average rainfall. In some parts of Europe —Sweden and Russia—the rainfall is as low as 15 in. per annum; the average for 20 years at Marseilles was 12·8 in., and at Alicante the total for the year has fallen as low as 7·1 in. The New South Wales rainfall is greatest in the coastal regions, and least in the inland districts beyond the Darling. The mean rainfall of the whole colony during the last 33 years is about 25 in.

Smuggling Gold from Mexico.—The vigilance of the Mexican custom guards to prevent the exportation of gold bullion from Sonora, upon which there is an export duty of 10%, is being well rewarded of late, says the Nogales "Vidette" of recent date. The third seizure of the past few weeks has just been made at the custom-house in Nogales, Sonora. At Magdalena a woman got on the train in the guise of a vegetable peddler, of whom many come up from various points in Sonora. But some keen-eyed Mexican Hawkshaw discovered the fact that a basket of luscious and inoffensive tomatoes contained also a much more valuable cargo in the shape of about 20 lbs. of gold bullion, which the seeming vegetable woman was endeavoring to clandestinely transport from the country. She was allowed to proceed unmolested blissfully unconscious that her precious secret was known, until the train entered the Free Zone, when a gendarme took the woman in custody and confiscated her basket of mixed comestibles and treasure. The smuggler and the seizure were brought up to Nogales and turned over to the authorities on the other side. The bullion was estimated to be worth about $5,000. The officials are reticent as to the name of the owner of the bullion, if they have discovered that important fact themselves.

A New Mine Cage.—Alex. Gray, a young mechanic formerly in the employ of the Anaconda company, is the inventor of a patent mine cage, which is now in operation at the Leiter mine at Sheridan, Mont., says the Butte "Inter-Mountain." The principal feature of the cage is the method adopted to do away with the accidents in mines using the old-style chairs. In this cage the chairs are made a portion of the cage, and by a slight pressure of a lever they can be thrown in or out at will. The station tender can never leave the chairs in, as they fly back as soon as the engine takes the load off of them. They can be used and are very useful in making repairs to the shaft, such as retimbering, etc., as they will rest on any set of timbers, and the men employed in the shaft feel safer resting on the chairs than if hanging by the rope. Allowing the cage to drop on the chairs at a station is a frequent source of trouble at all the mines of the district, as the chairs are now arranged. With this cage the only way damage can be done is by dropping into the sump or hoisting into the sheaves. With the old-style cage, the old bottom can be taken off and another bottom with the chairs substituted in about three hours. At the Leiter mine the cage was in running order 2½ hours from the time work began on the change, and it is claimed that it costs less to substitute the new bottom and chairs than it does to put in an ordinary set of chairs.

Astronomical Work of the Navy.—The reports of the Superintendents of the Naval Observatory and Nautical Almanac show that the great 26-in. equatorial has been mounted during the year and several months have been spent in adjusting it. It is now ready for observation purposes, and Prof. Asaph Hall, the distinguished naval astronomer, now on the retired list, who discovered the satellites of Mars, will make further observations of these satellites during the opposition of that planet next month.

Prof. Simon Newcomb is in charge of the Nautical Almanac and reports the substantial completion of the work of determining the fundamental constituents of astronomy and the element and masses of the major planets from Mercury to Saturn, inclusive. This great undertaking, which was commenced several years ago, has excited the admiration as well as elicited the hearty co-operation of all great observatories. More than 100,000 observations of the sun and its three nearer planets have been used. It will interest mathematicians to know that ordinarily the determination of the elements of a planet only involves the solution of equations involving six or seven unknown quantities. But in the present theory it was necessary to the satisfactory character of the results that the equations in the case of the planets observed each should involve 22 or 23 unknown quantities.

It is noted that much of the expert mental labor involved in these important investigations is furnished gratuitously, and in at least one instance the necessary funds for a very important routine computation have been supplied by a woman, Miss Caroline Bruce, of New York.

PERSONAL.

Don Ricardo Johnson, owner of the Mina Colorado in Sonora, Mexico, recently returned to that country from a trip to the United States.

Mr. John Stanton, secretary and treasurer of the Atlantic Mining Company, has been spending some time in Michigan, making a careful examination of the mine and the new mill.

Col. Frank Pickard has been appointed superintendent of the Mullin plant of the McClure Coke Company, in place of William Murray, who has been transferred to the Painter works of the same company.

It is announced that Prof. S. F. Emmons, of the United States Geological Survey will, have general charge of the geological work to be carried on in the Rocky Mountain region. Professor Emmons is at present in Leadville, Colo., on special duty.

Mr. Charles D. Walcott, director of the United States Geological Survey, has been making a tour of the West to inspect personally the work now in progress. Recently he passed several days in Boise City, Ida., and while there, by invitation, addressed a meeting of business men and miners.

Prof. Geo. F. Beeker, of the United States Geological Survey, who has been engaged on a reconnaissance survey of the southern Appalachian goldfields during the past summer, is in Charlotte, N. C. In company with Mr. H. B. C. Nitze, of the North Carolina Geological Survey, he will make an investigation tour of the principal mines of the central southern portion of North Carolina.

Dr. Theo. B. Comstock, President of the University of Arizona, and Director of the Arizona School of Mines, is making an eastern tour of the principal cities on business connected with his institution. He will visit New York, Philadelphia, Washington, Cleveland, Chicago, Detroit, St. Louis and Kansas City during November. He is a delegate to the American Association of Agricultural Colleges and Experiment Stations meeting in Washington, November 13th to 16th, and will represent "Mines and Mining" by appointment of the Governor of Arizona at the Trans-Mississippi Congress, which convenes November 26th in St. Louis. His address until November 16th will be Ebbitt House, Washington.

OBITUARY.

Joseph Graves, who died in Wheeling, W. Va., November 5th, aged 65 years, was for 40 years engaged in business in that city, and was well known in the Ohio River trade. He was largely interested in the coal and iron interests of West Virginia and southern Ohio.

SOCIETIES AND TECHNICAL SCHOOLS.

Technical Society of the Pacific Coast.—At the next regular meeting, November 2d, in the Academy of Sciences Building, San Francisco, a discussion opened on the subject of the "Relation of Railway Transportation to Production in California," papers upon which were recently read before the society by R. L. Dunn and W. G. Curtis. Mr. Curtis also presented a paper to the society entitled "Timber Preserving Methods and Appliances," which was read and discussed.

Western Foundrymen's Association.—The regular meeting was held in Chicago, October 24th, when a number of new members was elected. The secretary then read a long and interesting paper by Mr. Thomas D. West, on "Comparisons of Strength in Specialty Mixtures of Cast Iron." The paper gave a large number of tests, and in connection with it test bars were exhibited. This paper called out a long discussion, in which nearly all the members present took part, giving some interesting statements of experience.

Society of Chemical Industries.—The New York Section held its first meeting November 6th. The society is composed of all the leading English-speaking chemists, and many German ones. It has its head office in London, and has a membership of over 2,000. Prof. James Dewar, of London, Prof. Roscoe and Ludwig Mond have been its presidents. At the meeting Alfred Henry Mason, who is its local chairman, delivered his inaugural address. The society has appointed a committee to confer with the Secretary of the Treasury in regard to the taxation of alcohol used in chemical processes.

Association of Engineers of Virginia.—At the regular informal monthly meeting of this association held in Roanoke, Va., October 16th, the papers prepared to be read before the Good Roads convention, meeting in Richmond, October 18th, by Mr. C. C. Wentworth on "Country Road Bridges," and by Mr. Clarence Coleman on "What Bad Roads Cost," were read and discussed. Mr. Wentworth's paper brought out much information of value to those who have to do with the keeping up of the highways of the State. Mr. Coleman's paper showed very clearly what a great cost to the State were her bad roads, and the fact that this large sum was paid without being appreciated, because it was paid indirectly.

Canadian Society of Civil Engineers.—At the regular meeting in Montreal, November 8th, the following resolution, drafted by asub-committee appointed at the last meeting, was discussed: "Whereas it is becoming the custom of certain small municipalities in Quebec and Ontario to seek gratuitous professional advice by asking engineers to submit plans and estimates without compensation, this meeting records its disapproval of members acting on such proposals as being unprofessional and against the interests of the Society, engineers and the public at large." Discussion on the papers on "Building Railways Across Peat Bogs or Swamps," by Mr. D. A. Stewart, and on "Retaining Walls," by Mr. H. Irwin, was continued.

Boston Society of Civil Engineers.—A regular meeting was held in Boston, October 17th, President W. E. McClintock in the chair, 76 members and visitors present. Mr. Walter C. Stevens, of Melrose, Mass., was elected a member of the society. The secretary read a circular-letter from Mr. E. L. Corthell submitting a proposition for the organization of an International Institute of Engineers and Architects. On motion of Mr. Noyes the communication was referred to the board of government. Mr. Spencer Miller, chief engineer of the Lidgerwood Manufacturing Company, was then introduced, and read a very interesting paper on "Cableways." The paper was fully illustrated by a large number of stereopticon views. After passing a vote of thanks to Mr. Miller the society adjourned.

Spokane Academy of Science.—The first meeting of the Mining Section was held in Spokane, Wash., recently. The section was organized by the selection of Chester F. Lee as leader, and a general plan of work for the ensuing year was outlined and agreed upon. The section will meet the second and fourth Tuesday of each month and will discuss the general formation, value and workings of the various mining districts tributary to Spokane. Charts of the several mines will be prepared showing locations, development and values, and it is expected that mineowners, considering that the work is for their benefit, will cheerfully impart all desired information. All of this matter collected will be compiled with a view to publication in pamphlet form. At the next session the Cœur d'Alene mines will be under consideration, and special assignment will be made of various mines to different members

Washburn Engineering Society.—This society, of the Worcester Polytechnic Institute, held its annual meeting at the Institute, October 8th. Officers were elected for the ensuing year and 23 new members were received, among them the new president of the Institute, Dr. T. C. Mendenhall. A carefully prepared paper by Mr. Paul B. Morgan traced the evolution of the reheating furnace from the earlier Siemens to the modern types, like the Ekman-Allen furnace. Thirty years ago reheating was done almost wholly in a simple direct-fired reverberatory. The economy of this furnace is very low; from 720 lbs. to 1,400 lbs. of coal being required to heat a gross ton of metal. Oxidation of metal under treatment was about 10%. The experiments and inventions of the Messrs. Siemens between the years 1846 and 1870 marked a new epoch in the history of metallurgical processes. There were two distinctly new principles involved in the furnace designed by the Siemens brothers. First, the application of gaseous fuel; and second, the use of regenerators to collect the otherwise waste heat. In the Siemens furnace the construction and operation of which are generally well known, a gross ton of steel is heated to welding heat by the consumption of from 220 lbs. to 300 lbs. of coal. The oxidation is in some cases reduced to less than 2%. Later and shortly after the introduction of gaseous fuel, Herr Ekman, a Swede, brought out his reheating furnace, which is still used in Sweden and other countries. In this furnace the gas producer is built into one end of the furnace. The gas, which comes from the producer very hot, is met by a jet of air from the arch just before reaching the combustion chamber. The products of combustion give up a large part of their heat, in passing over the metal. A simple arrangement of cast-iron tubes placed in the stack, through which the air, supplying the producer and for combustion of gas, passes and absorbs an additional portion of heat which is returned to the furnace. A Mr. Allen, of Sheffield, England, conceived the idea of pushing billets, by means of a hydraulic cylinder, into a furnace, on water-cooled ways formed of heavy water pipe, which are mounted on longitudinal walls, raised above the bed of the furnace, in such a way that the flame comes in contact with the lower as well as the upper side of the metal. The Ekman-Allen furnace, which is of American design, combines the advantages of simplicity of design, ease of operation, absence of valves, economy of fuel, reduced first cost of plant, and low cost of labor. A gross ton of steel has been heated by consumption of 196 lbs. of coal, while the loss from oxidation is not more than in the best Siemens furnaces. Crude petroleum has been used successfully in the Ekman-Allen furnace, heating copper, about 7·8 gall. being consumed per gross ton of copper. What the next step in the direction of improvement may be, it is impossible to say. Perhaps the electric current may be utilized. Experiments along that line have been conducted, but the results thus far leave something to be desired.

Mr. E. E. Johnson contributed a paper giving his experience in improving the efficiency of a single cylinder, poppet-valve steam engine of about 100 H. P., running under unfavorable conditions, such as excessive back pressure, faulty governor, inadequate steam pipes, etc. After a discussion of these papers by members of the society, and a short address by Dr. Mendenhall, the meeting adjourned.

INDUSTRIAL NOTES.

The Ingleton Manufacturing Company, a new organization, will establish works in Pottstown, Pa.

The Lunkenheimer Company, Cincinnati, O., has published a useful catalogue and price list of its valve and other specialties.

The Lime Rock Furnace of the Lime Rock Iron Company, at Lime Rock, Conn., has blown in after an idleness of nearly three years.

The plant of the Windsor Locks Steel Company at Windsor Locks, Conn., was to be sold by the receiver at public sale on November 10th.

No. 1 furnace of R. Hecksher & Son at Swedeland, Pa., has gone into blast. It will make a special low-phosphorus iron, using chiefly Spanish ores.

Work on the Exposition grounds and buildings at Atlanta, Ga., is progressing steadily, several contracts for buildings, roads and other improvements having been made.

It is reported that Captain McDougall, of West Superior, Wis., is negotiating for the establishment in Pittsburg for a yard for building river barges of the "whaleback" type.

The two furnaces of the Reading Iron Company, at Pa., which have been idle for two years past, went into blast November 8. They have been thoroughly repaired and many improvements have been made.

The coal chute of the Export Coal Company, Pensacola, Fla., which was recently destroyed by fire, is now being rebuilt, so the company hopes to avoid any delays in continuing its shipments to foreign ports, a trade which has grown rapidly within the past year.

The Allington & Curtis Manufacturing Company, of Saginaw, Mich., has won its suit against infringers of its patent metallic dust collector, the patents for which practically cover the process of separating dust by centrifugal force. The opinion was rendered by Judge Grosscup in the United States Court at Chicago.

The reorganization of the Diamond Drill Co., of Birdsboro, Pa., has been completed, and the works will be operated under the name of the Diamond Drill and Machine Company. The incorporators are: George Brooke, Edward Brooke, Robert E. Brooke, William H. Rahne and Philip S. Zeiber. The works are already in operation.

The Paine Fertilizer Company, at Jacksonville, Fla., has removed its offices from the Hubbard Block to the building in front of its factory, Nos. 658 and 662 East Bay street. An officer of the company says that this will be decidedly the largest season in fertilizers in Florida that has yet been known, and that it will be more on a cash basis.

The Schenectady plant of the General Electric works has many pressing orders on hand, and the company will send some work to the Thomson-Houston works at Lynn, which the Lynn plant is well equipped to do, so as to relieve the pressure on the Schenectady works. The work will probably increase the force at Lynn some 300 or 400 men.

The Hyde Park Iron and Steel Company has been organized to erect a rolling mill at Hyde Park, Westmoreland County, Pa., to be equipped with one hot and one cold train of rolls, three sheet and three pair furnaces, two heating furnaces, one scrap furnace, squeezers and shears, and one pickling machine. Iron and steel sheets and light plates will be manufactured.

The Eastman Kodak Company is installing in its works at Rochester, N. Y., a system of narrow gauge cars and tracks by which cars loaded with glass may be transferred from one track to any number of tracks parallel to it. To accomplish this it is to use a transfer car with rails on top which runs on an auxiliary track perpendicular to the others. This system of cars and track is the design of the C. W. Hunt Company, of New York.

The Pittsburgh Reduction Company has issued a neat little pamphlet containing much valuable information relative to the physical characteristics of aluminum and its uses. A chapter which will be found particularly serviceable to all who use this metal is that giving the best methods of working it, in melting, casting, rolling, etc., as well as the more delicate work of polishing or frosting for decorative effects. A description is given of the various aluminum alloys, showing the effect produced by this and also by small proportions of other metals upon alloys.

The Manufacturers' Association of Cincinnati has before it a plan for promoting American trade with South America and Mexico. It includes the holding of expositions in all the South American countries, the first to take place in Mexico in 1897. It is proposed to hold a convention of manufacturers in Cincinnati at an early date for the purpose of organization and to devise methods of carrying out this plan in the best way. The immediate object, of course, will be to arrange for the Mexican exposition and the proper representation of manufacturers there.

The Sloss Iron and Steel Company, of Birmingham, Ala., will ship some of its steam coal to Mo-

bile to be given a trial in the cruiser "Montgomery" when she visits Mobile the latter part of this month. The Tennessee Coal, Iron and Railroad Company and the Sloss Iron and Steel Company will both have coal from their mines tested on this occasion, and it will then be demonstrated whether or not Alabama coal is suited for use on ocean steamers. These shipments of coal to be tested by the "Montgomery" will be at the request of the Secretary of the Navy, as before noticed in these columns.

The Ingersoll-Sergeant Drill Company, New York, has issued advance sheets of its catalogue, No. 50, relating to coal mining machines, air compressors and general coal mining appliances. Much useful information is given as to the performance of the Sergeant coal cutters in various classes of work, and a number of illustrations shows the position of the machines while at work. A portion of the catalogue will be devoted to costs of supplying a coal mining plant with compressors, drills and other necessary machinery and estimated cost of operating.

At the Montreal meeting of the American Society of Mechanical Engineers an interesting paper was read on methods for preserving metal used in pipes, roofs, bridges, poles, construction work, etc. In conclusion, the whole question of how best to protect iron and steel from corrosion in all the varying conditions that the wants and usages of to-day demand, seems to resolve itself into several "Don'ts" as the best method of answering it, to wit: Don't have any scale on the metal. Don't paint it with anything but pure linseed oil and oxide of lead or graphite paints. Don't forget that frequent inspection and care are very necessary. Don't let the cost and interest accounts be the governing factors in the case of protecting any metal structure on whose continuity and strength human life and safety depend. Referring to the latter paint the Joseph Dixon Crucible Company, Jersey City, N. J., says that graphite has a strong affinity for metal surfaces, and experienced painters claim that even where light colors are desirable, graphite paint should be used as a priming coat, and further, it is impervious to the action of heat, cold, sea air, acid or alkali fumes.

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.

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GENERAL MINING NEWS.

ALASKA.

A letter from W. D. Moore was lately received by his brother at Victoria, B. C., which bears the date of May 25th, and was written from Arctic City, Koukuk River. Mr. Moore states that he has sold out his business and with three others purchased a placer claim. This was paying $10 to $15 a day to the man by the use of the rockers. The new owners, however, propose to lay on sufficient water to sluice, by which method they hope to recover from $20 to $50 per day to the man. The claim has been prospected well and contains enough gravel to keep the owners busy for four years to come. Mr. Moore says that he would not advise men to come to that section, as they would be compelled to prospect for an opening. The river at the time of writing was just getting clear of ice, and during the previous winter the thermometer registered 72° below zero, with 5 ft. of snow. The place is well within the Arctic circle.

Alaska-Mexican Gold Mining Company.—This company on November 5th paid at its London office its first dividend, 15c. per share, amounting to $30,000.

Alaska-Treadwell Gold Mining Company.—This company paid its regular quarterly dividend of 37½c. per share, or $75,000, October 29th, at the London office.

ARIZONA.

Cochise County.

Sunnyside.—At this mine, in Buckhorn Basin, in the Chiricahuas, says the Tombstone "Epitaph," the ledge is being opened upon the 100-ft. level, pending the placing of a pump plant, when sinking will be resumed. It is the intention of the company to sink at once to 300 ft., opening up the three levels before placing a reduction plant. The ledge makes a good showing on the 100 the entire length of the drift. James McCan is the superintendent.

Graham County.

Arizona Mine.—At this mine in Aravaipa canyon, sinking for development is now being done, the work being down 500 ft. up to date. Water in considerable quantities is being struck at that depth. The sinking will probably be pursued to a depth of 700 or 800 ft. The mine is a silver-lead property. No work except development is being done. Sinking is being done with a 6 H. P. gasoline engine.

(From an Occasional Correspondent.)

The principal mining work conducted in this county is for copper, two companies operating near Clifton in the eastern part of the county. The Arizona Copper Company, Limited, at Clifton has a large smelting plant with an auxiliary electric and leaching plant. Its mines lie some miles back in the mountains and are reached by a steam tramway. The company owns also the Arizona & New Mexico Railroad, connecting this region with the Southern Pacific at Lordsburg, 74 miles southeast from Clifton. The other plant is owned by the Detroit Copper Company, in which Phelps, Dodge & Co., of New York, are interested. Its plant is situated at Morenci some five miles west of Clifton. These two mines pay about one fourth of the taxes in Graham county.

Maricopa County.

Gila Monster.—This mine, 18 miles from Phœnix, in the Winifred district, has been sold to A. P. Fuller, of New York, but formerly of California. The price is said to have been $20,000.

A considerable number of miners are reported at work in the Hassayampa canyon. Most of them are said to be doing well.

Yavapai County.

Venezia Group.—A sale of one-half interest in this group in Cook Canyon, near Prescott, has been made to S. S. Kennedy, of Denver. The mine is a gold producer.

Yuma County.

A new gold strike is reported from up the river, says the Yuma "Times." It was made by Francisco Pacheco, and is located near Norton's Landing, half a mile from the old Azure King Landing. The ledge is said to be 13 ft. wide, well defined, free milling low-grade ore. The formation is porphyry with gneiss, slate and quartzite. The find has created considerable excitement in the vicinity, and a number of prospectors have gone in for locations. The district is 40 miles from Yuma by river and about 25 miles by rail.

CALIFORNIA.

Los Angeles County.

San Francisquito Canyon.—Some work has been done this season in the placers, beginning at a distance of about three miles from Saugus, a station on the Southern Pacific Railroad, and running in a northerly direction for about 10 to 13 miles. The grounds are extensive and are all taken up. They lie chiefly in township 5, range 16 west, San Bernardino meridian, in sections 22, 14, 13, 11 and 1 north, range 15 west, and are owned by individuals and two or three mining companies. The Cora Bell mining district, on which these placers are located, is a well known district to miners. It is very hard to say at present how rich these grounds will run, and it can only be determined by working the same on a large scale. Several men are now working on a small scale with insufficient water and still make more than wages every day. These men naturally are compelled to waste time in prospecting for rich pockets and yet do well.

Nevada County.

Pennsylvania Mining Company.—At the annual meeting in Grass Valley last week the old directors were re-elected.

COLORADO.

By a decision rendered November 3d at the Pueblo land office, says the Denver "Republican," the State of Colorado is confirmed in its title to that section of land on which the town of Berwind stands, together with the rich coal mines around it. The value of these mines may be estimated when it is known that since 1891, at a royalty of 10c. per ton they have paid into the school fund of the State $20,894. Benjamin M. Freese, backed by the Colorado Fuel and Iron and other companies, so the State Land Board claims, sought to take the title of the section away from the State and invest it in the United States. Had this been done, it would have been possible to purchase the lands outright. The Land Board regards the decision as an important one, although it is believed that the case will go up higher. The claim of Freese was that the State had no right to the land, it being mineral bearing. In the instance of the Berwind section, the State received the land as agricultural and grazing. In the Pueblo trial Frees' side contended that "each 40 acres contained mineral, and this fact was known prior to the date of of the State's claiming it as farming land." The State's defense was that it had no knowledge of the land being mineral bearing at the time it claimed it, and as proof cites leases made by the State in which it was recorded as "farming land."

Mineral surveys approved by the United States surveyor-general for Colorado during the week ending October 27th, 1894:

No. 9,076, Leadville, Detroit placer, San Francisco No. 1, San Francisco No. 2 and San Francisco No. 3 lodes; No. 9,103, Pueblo, Snow Storm; No. 9,082, Pueblo, Alchemist; No. 9,109, Pueblo, Mollie; No. 9,145, Durango, Little Giant; No. 9,074, Leadville, Queen City; No. 9,117, Pueblo, National Belle; No. 9,073, Leadville, Monarch; No. 9,123, Montrose, White Pine; No. 9,128, Denver, Sedalia; No. 9,138, Pueblo, Sandown; No. 9,124, Gunnison, Spring placer; No. 9,142, Denver, Rising Sun and J. C. lodes; No. 9,047, Anna J.; No. 9,051, Pueblo, Theresa and Pocohontas; No. 7,558 Am., Pueblo, Fairview, High Tide and Londonderry lodes.

Gilpin County.

Empire Mill.—The section of rapid-drop stamps—65 drops to the minute—placed in the mill at Black Hawk by the Hendric & Bolthoff Company, is pronounced a success by local authorities. The saving on the plates is about the same as in the slow-drop mill, but the concentrates show a gain of $8 per cord on the same material. The slimes, of course, carry less value. The rapid stamp crushes about two tons of ore per day, whereas the slow-drop treats but one.

Topeka Mining Company.—The stockholders, who are chiefly residents of Pittsburg, are considering the question of raising money to reopen the mine and resume work.

Lake County—Leadville.

(From our Special Correspondent.)

Arena Mining Company.—In the Little Ella mine this company made a good strike this week. The shaft is down 600 ft.; and in drifting a fine body of ore, similar to that of the Ibex and Vinnie properties, was disclosed. Arrangements are being made to ship.

Big Six Mining Company.—In the Nettie Morgan shaft 2 ft. of good mineral has been opened up. The ore runs well in gold and gives a good lead percentage. Shipments are to be commenced soon.

Bison.—The work of sinking has been renewed and the shaft will be sent down 125 ft. to the second contact. At a depth of 150 ft. farther a fine body of sulphide ore will be opened up. There is good iron ore in the first contact, but no shipments will be made of this stuff at present.

Bohn Shaft.—The trouble with water has been overcome and the solid formation has been encountered at a depth of 254 ft. The new shaft will now be sent right down to contact.

Golden Eagle.—The Little Vinnie shaft of this property, operated by the Golden Chain Mining Company, is shipping steadily, the production amounting to 70 tons a day of $30 ore. The mineral comes from the drifts run out from the 400-ft. level, and a fine body of ore has been opened up.

Eliza Mining Company.—This company was recently organized and will put down the old shaft on the Eliza a further distance of 300 ft., at which depth it is expected to catch the rich ore chute of the Johnnie. W. R. Hark, of the Union Smelter; P. W. Breene and Ronald Morrison are at the head of the new company.

Irene Mining Company.—These people are sending down a new shaft next to the Little Johnny at a vigorous rate. An excellent plant of machinery is to be put in place at once.

Jay Bird Group.—This includes the Jay Bird, Frank and Grover Cleveland mines, and the upper tunnel is now in ore that averages $6 to $8 a ton.

Maid & Henriett.—Lessees are working the upper contact, and some good ore has been opened up by them. On the Lower Henriett the company is taking out 60 tons a day of very good ore.

October Summary.—There is a noticeable increase in the output, and shipments show 1,000 tons a day output, with a probable increase in November. There are 10 new shafts going down on the Gold Belt while important work is being carried on in the older properties.

R. A. M.—Shipments from the Marian lease have been increased to 150 tons daily of iron sulphide ore. The shaft is over 1,000 ft. deep and a fine surface plant and two cages have been placed in position.

Resurrection Mining Company.—A new shaft is being sent down on the New Year's property. A full plant of machinery is in place. The shaft is located on the trend of the Little Ella ore chute, which, it is hoped, will be caught in the new shaft at a depth of from 600 to 700 ft.

Ulster-Newton.—Ronald Morrison is working this mine under lease. The workings are near the old Louisville, and it is thought that the Louisville ore chute, which is a good one, will be encountered on the Ulster-Newton.

White Cap.—This mine is producing steadily under lease. Small shipments of a good grade carbonate ore are being made daily.

Park County.

Sunflower.—At this mine, on Mt. Lincoln, recently, in driving a crosscut a vein was found 4 ft. wide carrying gold. A car-load of ore has been taken out and will be shipped to Denver for a smelter test.

Pitkin County.

The directors of the Pontiac, the Champion-Empire and the St. Joe & Mineral Farm companies have called special stockholders' meetings for December 17th, to consider and adopt a scheme for consolidating the three companies into one. The properties of the companies are adjoining, and all worked through the Cowenhoven tunnel. In our issue for October 6th we noted the plan for consolidation which had been just proposed.

Mollie Gibson Consolidated Mining Company.—It is reported that a rich pocket of ore has been struck on the ninth level, from which shipments are now being made.

Pitkin County—Aspen.

(From our Special Correspondent.)

Argentum-Juniata.—At this mine the shaft has been pumped out to the 600-ft. level, and the station pump at that point which for a long time has been submerged has been recovered and put in working order.

Famous Concentrator.—Stephens' patent slimer has been introduced at this concentrator. Whether or not it will be an improvement remains to be seen.

Regent Mining Company.—This company has removed its surface plant from the Regent to the Iowa shaft, saving by this means some 1,500 ft. of pipe line.

Taylor & Brunton Sampling Works.—These works have been shut down for a few days for improvement and repair.

CONNECTICUT.

Middlesex County.

New England Brownstone Quarry Company.—This company has secured some large contracts for stone and is working its quarries at Cromwell full time, instead of four days a week, as for some time past.

New Haven County.

Hamden Soapstone Company.—This company has been incorporated to work the old Blandford soapstone quarries.

FLORIDA.

Citrus County.

There is some activity being displayed among phosphate miners and investors in phosphate properties, a number of transactions having taken place within the past two weeks.

Hillsboro County.

Shipments from Port Tampa for the month ending October 31st have been as follows: October 4th—Land Pebble Phosphate Company, 2,997 tons pebble, for Helsingborg. October 6th—Terra Ceia Phosphate Company, 800 tons pebble for Baltimore. October 7th—Anglo Continental Guano Works, 2,017 tons pebble, for Hamburg. October 11th—Bone Valley Phosphate Company, 629 tons pebble, for Mantua Creek, N. J.; Terraceia Phosphate Company, 209 tons for Baltimore. October 16th—Bone Valley Phosphate Company, 1,788 tons pebble, for Philadelphia. October 18th—Land Pebble Phosphate Company, 2,495 tons pebble for Stettin. October 22d—Anglo Continental Guano Works, 3,204 tons pebble, for Fiume October 24th—Florida Phosphate Company, 2,132 tons rock, for Stettin. October 27th—Florida Phosphate Company, 1,606 tons rock, for Genoa. Total number of tons, 17,877.

Marion County.

Bone Valley Phosphate Company.—This company is actively developing its territory. The company shipped over 100 carloads in one week recently.

Bonnie May Phosphate Company.—This company's phosphate mines are now in full operation, and the new machinery added by the company to its extensive plant is working satisfactorily.

IDAHO.

Shoshone County.

Daddy Mine.—This mine has shown up well since the new tunnel was started, and five additional stamps have been ordered for the mill.

Golden Chest.—The lower tunnel on this mine, at Murray, has reached the vein at a point about 130 ft. below the old workings. The tunnel shows free-milling gold ore.

(From our Special Correspondent.)

Poorman Consolidated Mine.—It is rumored that a sale is pending of the Poorman, Tiger, Frisco and Gun mines to an English company, but like many another rumored sale this may end in smoke.

ILLINOIS.

Jackson County.

Sato Coal Mining Company.—This company has increased its capital stock to $25,000 and removed its office from Ava to Sato.

Will County.

Chicago, Wilmington & Vermilion Coal Company.—This company has sold the Leceyville coal shaft, with 4,000 acres of coal rights to C. J. Devlin, for some time past manager of the Atchison, Topeka & Santa Fe Company's coal interests.

MICHIGAN.

Copper.

Tamarack Mining Company.—The breakdown of the hoisting engine at No. 1 shaft will take some time to repair, and about 40 men employed in that shaft have been laid off temporarily. The repairs, it is thought, can hardly be completed before the end of December.

Dickinson County.

Northern Michigan Marble Company.—The directors have voted to resume operations at their quarries in Breen township with a full force of men. They have also decided to build in the spring a mill for cutting and finishing the marble.

Iron—Marquette Range.

Escanaba River Land and Iron Company.—The old board of directors and officers of this company has resigned and a new one has been elected. Mr. J. B. Mass is president.

Republic Iron Company.—Work at the Morgan and Pascoe pits has been shut down and about 80 men thrown out of employment, says the Norway "Current." The rails and track have been taken up and Nos. 8 and 10 are now the only ones being worked. A new line of pulley stands to take care of the work has been run from No. 5 engine house, the other engine house having been abandoned. The exhaustion of the ore body, coupled with the high cost of production by reason of the smaller stopes, necessitated such action. It is regretted that this has come and at this season of the year, but it is hoped that improvement at No. 8 may make up for the falling off in the other end of the mine.

Winthrop Iron Company.—At the South Winthrop the pumps are still lifting water, and will be moving for some time yet before the shafts are emptied. At the old open pit on the north side they have put the steam shovel at work stripping the low grade ore, says the Norway "Current." There are about 8,000 yds. to be shifted this fall and winter. The stripping is from 12 to 20 ft. thick, and is mostly sand. The 2 ft. covering the ore is hard pan. There is a large amount of this ore, enough to require several years to exhaust.

Iron—Menominee Range.

Chapin Mining Company.—This company's property was sold October 29th, under the judgment obtained by the second-mortgage bondholders for $648,772. The sale included the mining lease for a term of 30 years, also 2,000 shares in the Hydraulic Power Company's buildings, some 400 in number, real estate and operating plant. The property was purchased by M. A. Hanna & Company, of Cleveland, for $88,973. The purchasers represent a combination of the bondholders, who will organize a new company and operate the mine.

MINNESOTA.

Iron—Mesabi Range.

Lake Superior Consolidated Mines.—In Duluth, October 30th, Alfred Merritt brought a suit against John D. Rockefeller and F. T. Gates, his private secretary, for $1,226,400, in which amount he claims he was damaged by what he alleges to be their fraudulent representations in the forming of the Lake Superior Consolidated Iron Mines. Plaintiff claims that at various times in August, 1893, in New York, before he had transferred his interests in various iron mines and the Mesaba railroads, the defendants represented to him that the Penokee & Gegobic Consolidated Mines, which, with others controlled by Rockefeller, were to be taken into the Lake Superior consolidated iron mines, was a solvent and prosperous company, also the Spanish American and the Aurora; that the railroad stocks were well worth what Rockefeller was to receive; that Rockefeller & Wetmore promised to lend to Merritt on his consolidated stock money at 40 cents on the dollar at par value. All of these representations and promises, plaintiff claims, were fraudulent. There will, it is said, be several more suits before the matter is ended. The capital of the consolidation was at first fixed at $3,000,000, but later on increased to $30,000,000.

MISSOURI.

Jasper County.

(From our Special Correspondent.)

Joplin, Nov. 5.

Saturday evening closed a week marked with activity throughout the entire zinc and lead mining district. The demand for zinc ore is steadily increasing, and the purchasing agents of the smelters are after everything offered on the market. Mr. S. C. Edgar, of the Carondelet Zinc Works, at South St Louis, arrived in Webb City, Saturday, and he will be in the market this week. Prices ruled steady during the past week at from $18 to $21 per ton, the latter price only being paid for choice clean lots of ore. Lead ore still remains at $15 to $16.25 per thousand, with but little prospects of an advance. The Pichen Lead Company is running its works steadily and is taking all the lead ore offered at present prices. The Case-Serage Lead Company, located at Grand Falls, five miles south of Joplin, is running its smelter full capacity and is a steady buyer at present prices. Following are the sales of ore from the different camps: Joplin, 1,108,260 lbs. of zinc ore and 347,040 lead, value $15,391; Webb City, 881,530 lbs. of zinc ore and 42,800 lead, value $9,059; Carterville, 1,198,440 lbs. of zinc ore and 121,880 lead, value $13,333; Oronogo, 28,590 lbs. of zinc ore and 43,510 lead, value $1,220; Zincite, 33,800 lbs. of zinc ore and 41,690 lead, value $881; Galena (Kan.), 1,340,000 lbs. of zinc ore and 132,100 lead, value $14,400; Spring City, 28,070 lbs. of lead ore, value $435; district's total value, $54,719; Granby, 351,550 lbs. of zinc ore and 118,540 lead, value $5,117; Aurora, 840,000 lbs. of zinc ore and 120,100 lead, value $8,555; Stotts City, 88 000 lbs. of zinc ore, value $792; Springfield, 44,000 lbs. of zinc ore, value $429: lead and zinc belt's total value, $69,622.

Mr. Grant Ashcroft, of Webb City, is now opening up a new mining camp five miles due east of the main street of Joplin and two miles west of the old Scotland mines. Mr. Ashcroft purchased 70 acres of land in fee simple some time ago and commenced preliminary prospecting by drilling, which proved up shallow deposits of lead on which shafts were sunk, and, as development has advanced, the lead has been formed in exceptionally large deposits. Last week in two days, 35,000 lbs. of clean lead ore were taken from one shaft. The indications now are, from the amount of prospecting that this new district will prove very productive and possibly be the means of reopening the old Scotland and Burch mines which in the early days were large producers of lead ore.

Mr. Fred Hills, owner of the Tenderfoot mine south of Carterville, returned last week from New York City, and while away perfected arrangements for the building of a concentrating mill on his property. Mr. Hills located on a new and undeveloped tract of land almost two years ago, and sunk a shaft over 200 ft. in depth, and then cut a zone of ore by drifting, which, as far as developed is proving very productive. The opening up of this property has been very expensive, as there is almost a river of water to handle, requiring two 12-in. Cornish lift-pumps, and 8 in. steam and cock pumps to control the water. Other parties are making arrangements to open up shafts to the south and east and put in pumps, which will be of a great advantage to the Tenderfoot mine.

MONTANA.

Deer Lodge County.

North Star.—A lead said to be of great size was recently struck in this mine, which adjoins the property of the Montana Company. The lead is in a granite formation and the ore carries free gold.

Jefferson County.

Elkhorn Mining Company.—During the month of September the usual amount of new prospecting and drifting was carried on, with no special developments. The amount of ore hoisted was 1,171 tons. The official statement of the milling department for the month shows 1,058 tons worked. The proportion of salt used was 14%. The average assay value was 37·08 oz.; value of tailings, 3·22 oz., showing 92·43% saved. The stamps were in service 27 days 2 hours; the pans, 28 days 12 hours. The mill was stopped one day for repairs to the engine. The product was 36 bars bullion, containing 33,853 fine oz. silver and 26,417 fine oz. gold. The estimated value of this bullion was $10,955; value of 150 tons smelting ore shipped, $12,446; total returns, $33,401. The expenses were $21,685, leaving a profit of $11,716 for the month. During the month the mill building was reshingled and other preparations made for winter.

State Mining Company.—This company has received bids for sinking a shaft 100 ft., and running 100 ft. or more, of levels on its property in the Big Foot district, near Boulder.

Lewis & Clarke County.

Giant Claim.—This is a new discovery made by H. Meracle and E. Grogan on the east side of Granite Butte. The lead, says the Marysville "Mountaineer," is a deposit 150 ft. wide in porphyry and slate, and about 25 ft. from the north end of the lead is a pay streak 2 ft. in width of free milling gold which continues to widen as the work of sinking progresses. Work is now being pushed on development.

Madison County.

West Fork Gold Placer Company.—This company has been incorporated by T. A. Metzel, H. S. Gilbert and others at Puller Springs, to work placer ground on the West Fork of Madison river.

Missoula County.

Little Maggie Group.—This group on Burns Mountain has been bonded by C. and H. Jackman, of Helena, for $15,000. There is a tunnel started, which the lessees intend to run in 500 ft. The claims are silver, the lode showing galena in considerable quantities.

Silver Bow County.

Butte & Boston Mining Company.—This company is working a small force on the Belle of Butte near Walkerville, and taking out some ore. A. McIntyre, who is leasing a section of the mine, is taking out ore from the 100 ft. level.

Butte & Boston Mining Company.—With regard to a reported sale of the Davis stock in this company to J. B. Haggin, Manager C. H. Palmer recently made the following statement to the Butte "Miner": There is not a word of truth in the reported purchase of the Davis stock. The stock, amounting to 90,000 shares, is held in Massachusetts by two special administrators appointed by the court. On of these administrators represents Irwin Davis' interests; the other the interest of the various contestants of the Davis will. These administrators have no authority whatever to dispose of this stock or any portion of it; hence it would be impossible for Mr. Haggin or any one else to purchase it at any time until after the Davis will case is settled. At the recent annual meeting of stockholders this stock voted in favor of the present officers of the company, therefore there will be no changes made in the present administration.

Dennise A.—John Alix, Leon Dussault, Joe Gosselin and R G. Robinson have secured a lease on the Dennise A and Adelaide quartz claims, south of Rocker, and will at once commence work. These properties are owned by A. J. Marchand & Co., but very little development work has been done on them.

The following recent notes are from the Butt "Inter-Mountain":

The Alex Scott is a property which is located north and east of the Mountain View. It has been developed on a limited scale by the Butte & Boston company during the past year, but, when the order came to shut down all the lesser properties of the concern, work was suspended and the mine reverted to its former owner, James A. Murray. Recently Jacob Swenk secured a lease on the property and began developing a shaft. At a depth of 60 ft. he uncovered a 4 ft. ledge of first-class copper ore. He will continue sinking to the 100 before he begins the work of stoping.

Devine & Company, who are working the Odin in Dublin gulch, west of the Never Sweat, have completed developing the shaft and are now cross cutting for the ledge at a depth of 150 ft. The lessees also have a bond on the property for $50,000, which they hope to raise.

The new shaft of the Mountain Consolidated No. 2 has reached a depth of 700 ft. Sinking will be continued another 100 ft., when the old workings of the Mountain Consolidated No. 1 will be connected at the 800 ft. level.

H. E. Lipman has secured a lease on the Baltic mine from the Davis estate, and work will be commenced on it in a few days. The Baltic adjoins the High School on the east and the Blue Jay, one of the producers of the Butte & Boston company. The lessees will at once begin the development of the shaft another 100 ft.

On the West Adelaide, one of the Anaconda properties, situated north of the Modoc mine, work was suspended this week and it will be allowed to fill with water. During the past year Frank H. Cooney and Hugh Carney have worked the mine continuously without making a single shipment of ore. The suspension is due to the fact that in cutting this ledge the leasers failed to find the ore chute.

NEVADA.

Storey County—Comstock Lode.

Alpha Consolidated Mining Company.—At the annual meeting 85,585 shares were represented, and the old directors and officers were re-elected, with Charles Hirschfeld as president; A. K. P. Harmon, vice-president; Charles E. Elliott, secretary: and A. C. Hamilton, superintendent. There was $2,452 in the treasury October 1st.

The following are extracts from the latest official letters of the mine superintendents:

Alta.—The north winze was sunk and timbered 16 ft. during the week; total depth 129 ft. No change in the formation. The 825 level drift is cleaned out and retimbered to the face, 521 ft. west of the shaft. We continue to extract a little ore of milling value from the south winze.

Belcher.—Forty-eight tons of fair-grade ore have been hoisted during the week.

Best & Belcher.—On the 200 level the south drift from incline upraise No. 1, 58 ft. above this level, has been extended 20 ft., passing through porphyry, clay and quartz; total length, 32 ft. On the 800 level the west crosscut No. 2, from main north drift, has been extended 16 ft.; total length, 608 ft.; face in hard porphyry.

Bullion.—The west drift from the Ward shaft, 820 level, has been advanced 13 ft. during the week; total length, 1,160 ft.; face in soft porphyry and clay.

Challar.—The north drift, 450 level, has been repaired and retimbered for a distance of 32 ft. since last report. The north winze, 450 level, has been sunk 11 ft. for the week and is now down 24 ft; the bottom shows a width of 9 ft. of ore, face samples of which go from $35 to $65 per ton. We continue to extract a few carloads of fair grade ore per day from the fillings and ground in place in the old stope on this level. From that and the winze we have extracted during the past week 136 tons and 1,700 lbs. of ore, which has been shipped to the Nevada mill for reduction, the average battery sample of which was $36.55 per ton.

Consolidated California & Virginia.—On the 1,650 level with the usual force of men employed in working in the new ore body in the stopes from the fifth floor up to the tenth floor, and in the winze there has been extracted during the week 350 carloads of ore—about 347 tons—the average assay value of which, per mine car samples, was $76.2[illegible] per ton. The faces of the stopes continue to present the same favorable appearance as heretofore. The winze which was started on the sill floor of the south drift on the 1,700 level has been sunk during the week 15 ft. in ore which gives an average assay value of $75.83 per ton; total depth of the winze on the slope 40 ft. Some of the time was spent in completing the timbering down to this point. The bottom of the winze is in good ore, excepting some streaks of porphyry in the northeast corner, and samples taken from the whole mass in the bottom gave an average assay value of $70 24 per ton. We have shipped to the Morgan mill 783 tons 1,120 lbs. of ore, the average assay value of which, per railroad car samples, was $92.83 per ton. The average assay value of all ore worked at the mill during the week (784 tons) was $83.98 per ton. Bullion shipped to the Carson Mint, assay value $29,705. Bullion now in assay office, assay value about $15,000.

Crown Point.—There were extracted from openings in the 600 and 700 levels stopes during the week 795 tons 1,750 lbs. of ore, which have been shipped to the Mexican mill for reduction, the average battery sample of which was $9.69, of which $8.62 was gold.

Hale & Norcross.—On the 975 level have advanced No. 1 west crosscut 12 ft.; total length, 60 ft.; face in very heavy clay and porphyry.

Justice.—During the week they extracted 50 tons of low grade ore, which was shipped to the Taylor mill. On the 18th inst. bullion valued at $1,470 was shipped to the Carson Mint, being the result of 90 tons of ore worked at that mill.

Mexican.—On the 1,465 level the drift running north from the end of west crosscut started from the top of the upraise which was carried up 45 ft. above the sill floor of this level at a point 40 ft. west from the main north drift and 100 ft. north from the south line of the mine, has been extended during the week 15 ft.; total length 70 ft Face in porphyry and quartz carrying some value. As joint work with the Ophir company are making repairs in the ophir shaft on the 1,100 level and upward.

Occidental.—From the west ledge above the 400 level we extracted about 7 tons of ore of the average assay value of $26.40 per ton.

Ophir.—On the 1465 level, the west crosscut. 62 ft. up, from the upraise carried up 80 ft above the sill floor of this level, at a point 70 ft. in from the mouth of the crosscut, run east from the main north lateral drift and 124 ft. north from the main west crosscut from the shaft was extended 18 ft.; total length, 79 ft.; continuing in porphyry and quartz of low assay value. Have continued jointly with the Mexican Company the work of making repairs to the main shaft on the 1,100 level and upward.

Potosi.—Have stopped west crosscut No. 5, started from the south drift 450 level, and started a south drift from main west drift, 550 level, at a point 500 ft. west of shaft. The winze from the 450 level, 200 ft. south of the north line, is down 20 ft.; the bottom is in porphyry, with a streak of low-grade quartz 18 in. to 2 ft. wide running through it. Little or no progress has been made in the shaft at the croppings, due to timbering, etc.

Savage.—On the 950 level the east drift from the new station is advanced 6 ft. On the 1,000 level in the north lateral drift, started from the east drift, they continue to extract ore from the sill floor upward to the seventh floor. The south drift started from the face of the east drift was advanced 10 ft.; total length, 71 ft.; face is in clay and porphyry. During the week have hoisted 61 cars of ore. Car samples average $23.91 per ton.

Sierra Nevada.—The northwest drift, at a point 100 ft. west of the mouth of the Layton tunnel, is out 128 ft.; advanced 41 ft. during the week; face in clay, with stringers of quartz through it. The east crosscut No. 1, from north lateral drift No. 2, at a point 140 ft. north of intermediate tunnel, is out 68 ft.; advanced 16 ft. during the week; face in quartz and porphyry.

West Consolidated Virginia & California.—On the 1,100-ft. level the west crosscut run from a point 320 ft. north of the shaft station has been extended 15 ft. during the past week and is now in a total distance of 1,255 ft. Face is in the same hard rock as when last reported. The flow of water has slightly diminished, the temperature of which is lower; temperature in the drifts registers 100°.

NEW HAMPSHIRE.

Grafton County.

Enfield Pink Granite Company.—This is the title of a corporation formed to operate the plant of Buckley & McCormick at Enfield. It is organized under the State law with a capital of $10,000.

Hillsboro County.

Stevens Granite Company.—This company has been organized with $20,000 capital scock to operate granite quarries at Milford. Mr. C. W. Stevens, of Nashua, is president.

NEW MEXICO.

Grant County.

Ivanhoe Mine.—A new shaft has been sunk to a depth of 60 ft. upon this mine at Hanover; the old shaft was in such bad shape as to be dangerous. A large body of ore is in sight in the mine and several hundred tons piled on the dump,

Santa Fe County.

San Lazarus Gold Mining Company.—This company is steadily at work with a number of men on its proporty at San Pedro.

Taos County.

La Belle District.—This new district is on Comanche Creek, about 40 miles from Catskill. The deposits which have been opened show free gold. Numbers of miners and prospectors are said to be going to the camp from New Mexico and Colorado.

OHIO.

Summit County.

Dyke Marble Company.—This company is doubling the capacity of its present quarry plant near Akron.

OREGON.

Douglas County.

Marble quarries are to be opened near Roseburg by S. M. Keenan and others. The marble is said to be of fine quality and beautifully veined and marked.

Grant County.

Sloan & Haskell Placers.—This property, says the Baker City "Democrat," has been sold for $40,000 to parties from Connecticut who will extend the workings.

Josephine County.

Galice District.—A new opening has been started by Green Brothers, four miles north of their old claim. They have sunk 60 ft., and run a tunnel 150 ft., and have a considerable amount of ore out. The indications are of a large deposit of low grade, free-milling gold ore.

Union County.

Cornucopia.—A considerable shipment of ore has been made to the Everett smelter from this mine.

Crystal Palace.—On this group the Wood Brothers have 12 men at work, and intend to put on quite a force as soon as buildings are erected to accommodate them, says the Baker City "Democrat." Their foreman came from New Mexico to take charge.

Keystone.—This mine has been bonded by Mr. Bowles and others for $15,000. They agree to begin work at once and to put up a mill.

PENNSYLVANIA.

Anthracite Coal.

Lehigh Coal and Navigation Company.—The directors, on November 5th, declared a semi-annual dividend of 2%, with 2½% in May last and 3% one year ago. This makes the total dividends for this year 4½%, while last year 6% was paid to the stockholders. Depression in the anthracite trade was the cause of the reduction. The dividend is payable November 27th.

Lehigh Valley Coal Company.—On November 1st this company assumed possession of J. C. Hayden's colleries No. 1 and 4, at Jeanesville; the Yorktown Colliery, which has been operated by the New York & Lehigh Coal Company, at Audenried, and the Pardee mines, including Sugar Loaf and Laurel Hill, Cranberry No. 6, Crystal Ridge and Upper mines. The two Jeanesville colleries alone have an output of 45,000 tons per month, and the others are equally as large. The combined output will in the aggregate foot up 170,000 tons of coal per month. The company has for some time been buying all the coal lands and mining plants available in the Lehigh region.

Philadelphia & Reading Company.—The collieries drawn to return prices of coal to determine the rate of wages to be paid (West Shenandoah, Tunnel Ridge, Gilberton, Girard Mammoth and Bast) make returns, the average of which is $2.263; and the rate of wages to be paid for the last two weeks of October and the first two weeks of November, 1894, is 8% below the $2.50 basis.

Silverbrook Collieries.—The recent report that arrangements had been made to ship the output of these collieries over the New Jersey Central Railroad hereafter is contradicted.

Bituminous Coal.

Adelaide Coal Mine.—A new air shaft has been completed at this mine, near Connellsville. It will be used as an outcast in the ventilation of the mine. Heretofore the manway has been used as an outcast.

Oliver Coke and Furnace Company.—The work of construction at Oliver No. 2 shaft of this company is progressing rapidly. A new air shaft has just lately been completed and the engines at the hoisting shaft are being placed in position. At present coal is being hoisted by means of a pair of portable engines.

Percy Mining Company.—This company is shipping raw coal from the mine at Percy Station. The coke ovens are shut down.

Sterling Mine.—At Spangler, in Cambria County, a large vein of bituminous coal has been developed at Sterling Mine No. 11. The coal is reported to be 8 ft. thick, and remarkably free from defects or dirt.

Northampton County.

Hazel Dell Slate Company.—This company sold and delivered during the month of October 13,000 sq. ft. of blackboard stone, an extraordinary product for a quarry only recently opened. In addition to the above the company manufactured several hundred squares of roofing slate.

Somerset County.

Glade Milling Company.—This company, which has been operating for some years past in Butler County, has lately secured options on some 1,600 acres of land near Confluence. No oil has ever been found in that district, but the company intends to put down one or more test wells at once.

Westmoreland County.

An extensive deposit of fireclay of good quality has been opened up on the Ligonier Valley Railroad, not far from Latrobe. Arrangements are being made to work it.

California Coal Company.—This company, at California, has been making some improvements, among them being a fan 25 ft. in diameter and 8 ft. face. The contractors agree that this fan shall furnish at least 150,000 cu. ft. of air per minute in the airways of the mine.

Charleroi Coal Company.—This company has introduced a system of rope haulage into its mines at Charleroi.

McClure Coke Company.—This company has completed the work of laying a pipe line from the mains of the Oliver Water Company to its Lemont Nos. 1 and 2 plants. The Oliver lines extend from the Yough River, and furnish an abundant supply.

Westmoreland & Cambria Natural Gas Company.—This company, which supplies consumers in Johnstown, has had a couple of test wells sunk on the Hart and Rose farms, about three miles southwest of Latrobe, along the Loyalhanna Creek. On the Hart farm water was struck, and at the Rose well the drill had reached a depth of 1,400 ft. when operations were suspended. The gas rock in that locality is estimated at about 1,500 ft., and it is likely the company will have the hole sunk deeper.

RHODE ISLAND.

Washington County.

Vars Quarry.—This property, at Niantic, has been leased by Alden Saunders, who has begun work opening up a granite quarry.

Westerly Granite Company.—This company's quarry, at Niantic, has been transferred to Reinhalter & Co., a new firm.

SOUTH DAKOTA.

Butte County.

Indications of oil have been observed for some time on the Belle Fourche, near the mouth of Wind river. B. G. Bently, who has taken up a claim there, has now made arrangements to put down a well and ascertain whether petroleum exists in paying quantities.

Clark County.

South Dakota Mining Company.—A test run of 125 tons of ore from this company's Kattie lode on Anna Creek was recently completed at the Garden City Chlorination Works, and the result is said to have shown an assay of $30 per ton.

Lawrence County.

Deadwood & Delaware Smelter.—It is stated that this company is making arrangements to add considerable to the capacity of its works. It is also announced that as soon as the improvements are completed the smelter will treat ores at from $3 to $10 per ton, according to their character. This action is doubtless to meet the competition of the chlorination and cyanide custom works.

Highland Mining Company.—The suit brought some time ago by Samuel W. Allerton to recover a large amount of damages from this company is now on trial in the United States Court at Sioux Falls. Mr. Allerton claims that the company appropriated wrongfully an interest owned by him in the claim known as the Homestake No. 2, and asked to be awarded his share in the rents and profits of the mine.

Pennington County.

Apex Consolidated Mining Company.—This company has been incorporated by John J. Farrar and others, of Rapid City, with $2,000,000 capital stock. The property consists of the old Standby and some adjoining claims. The Standby was first discovered and located in 1880, and a 60-stamp mill erected. The enterprise was not at that time successful, however, and the mine has since passed through various hands. Recently a large ore body has been opened up by driving a tunnel some distance beyond the old workings.

Holy Terror Mining Company.—At Rapid City work has been started on this company's new mill. In the mine considerable development work is in progress.

Keystone Mining Company.—This company has timbered through the disastrous cave on the 350 ft. level which occurred last June. A new stope is being opened in ore of the same grade that was being milled before the cave. The mine is now in the same shape it was in June. 4½ months having been lost in dead work in getting through the cave, and in a few days the mill will again be running its full capacity. The opening of the ore body at this depth showing a regular continuous fissure downward, with a better grade of ore, coarser gold and of greater fineness than on the upper level.

UTAH.

There was a $20,000 increase in the total valuation of reported bank ore and bullion receipts for the week ending November 3rd, says the Salt Lake "Herald," as compared with that of the previous week. This total was $144,328, and does not include the value of a 23,774 oz. shipment from the Ontario, another of 20,525 oz. from the Daly, $10,600 worth of ore from the Ontario and the value of several Daly ore shipments. None of the gold producers came to the front during the week, but several clean-ups are in progress, and the shipments will probably be made during the coming week.

The smelters are still operating seven stacks, but early in the week the number will be cut down to six. The Pennsylvania people have decided to operate but one furnace upon the firing up of the new 100-ton smelter. They are now operating two, but both are to be blown out with the commencement of operations at the recently completed furnace. The Hanauer is operating two stacks, one on ore and one on matte, while both of the Germania's are working on ore.

Chase County.

Reed & Goodspeed Tunnel.—This tunnel, in Little Cottonwood canyon, together with the mill-site and buildings, was sold in Salt Lake, Oct. 27, by the United States marshal, and was bought in for $30,000 by H. C. Goodspeed, who holds a judgment of $83,000 against the company, and who was also a large stockholder. A new company will be organized at once, and the work prosecuted. The tunnel, which was intended to develop the Reed & Benson mine, cost over $200,000, and is now in 6,000 ft., and directly under the shaft some 1,100 ft. from the surface. The tunnel has cut a number of stringers of ore, but has not yet reached the main ore body. Under the new management it will be pushed on.

Juab County.

Eureka-Hill Mining Company.—The new mill is now in full operation. It is a complete plant. The boiler-room contains six boilers, and is supplied with coal by a tramway. The engine, rated at 350 H. P., is a compound, the high-pressure cylinder being 22 × 48 in., and the low-pressure cylinder 32 × 48 in. Power is transmitted by ropes to the shafting which drives all the machinery at the mill. In the engine-room are the dynamos to generate electricity for lighting, etc. The building it 240 × 180 ft., with a rise from the bottom to top of ore-house of 144 ft. Still above this is the salt-house. The ore is hauled to the highest part of the mill by a double tramway, extending from the mine hoist 850 ft., with a rise of about 300 ft. On reaching this floor the ore is thrown into Comet crushers, through which it passes and drops into the large ore bin ready to be run down into the self-feeders and on into the batteries. The eight batteries have 40 stamps weighing 850 lbs. each. These batteries have single discharge from which the wet pulp runs over silver plates, where most of the gold is caught and saved by quicksilver. From the plates the pulp runs to the 6-ft. Frue vanners, 24 in number, which save the concentrates. The tailings go to the numerous sand-tanks, where the water is drained off. After this comes the work of 24 amalgamating pans and 12 settlers; from these it goes to the tailings dump. The mill site occupies nearly six acres, and besides the mill there are other buildings. The blacksmith shop stands by itself away from the mill, as do also the milling-room, assay office, two retorts, etc., in a building 30 × 40 ft., part of which is two stories, the upper one being used for storage of assay supplies, etc. At a convenient point a residence for the superintendent has been erected. The company supply from Homansville. To get this to the mill required the putting in of powerful pumping machinery to send water through nearly 20,000 ft. of 6 in. pipe, with a rise of about 500 ft. A reservoir to hold 600,000 gals. has been constructed at the mill. The machinery was built by Fraser & Chalmers, of Chicago.

Salt Lake County.

Tiewaukee.—This mine is working a full force of men and some high-grade ore is being taken out.

West Mountain Placer Mining Company.—The shaft on this company's property is now down 111 ft., and is in shifting ground, the first yet encountered. This is giving considerable trouble, and slow progress toward bedrock is being made. The indications are becoming more favorable daily, however, and the colors in the washings increase with depth. The pumps are taking care of the water with ease, although the flow is 300 galls. per minute.

Summit County.

Ontario Mining Company.—It has been decided to continue the great drainage tunnel from shaft No. 2 to shaft No. 3, a distance of 1,100 ft., and work began November 1st. This will complete the drainage of the mine between the 1,000 and 1,500 ft. levels, and also facilitate the connections with the Daly Mining Company's workings. As large a force as possible will be placed on the work. The company last week made a shipment of bullion containing 26,581 fine ounces of silver.

Ontario Mining Company.—Superintendent Chambers reports to the Salt Lake "Herald" that within the next few days the water from the upper levels of the Ontario and from the Daly will be turned into the main drain tunnel, and the Cornish pump will cease to raise the water to the 1,000-ft. level. The grade in the latter level is now nearly reversed, so as to enable the water to drain back into the main shaft and thence down to the 1,500-ft. No start has yet been made on the extension of the drain tunnel from shaft No. 2 to shaft No. 3, but this work is to commence at once. During the week the Ontario shipped 23,774 fine oz. of silver and the Daly 20,525 fine oz. In addition, the Ontario put out $10,600 in ore, and the Daly also made some shipments of high grade ores.

Union Mining and Milling Company.—This company has decided to begin active development work on the Union group, adjoining the Silver King mine at Park City.

Tooele County.

Elko Gold Mining and Milling Company.—This company was incorporated last week. The capital stock is $500,000, divided into 200,000 assessable and fully paid up shares of the par value of $2.50 each. The property of the corporation consists of the Elko, Utah Girl, Pride of the West, Kingfisher, Night Hawk and Elgin lode claims, situated in Camp Floyd mining district, in Utah and Tooele counties. The officers for the ensuing year are E. H. Airis, president; Timothy J. Driscoll, vice-president; George W. Heintz, secretary and treasurer. Each of the officers owns 15,000 shares, and, in addition, John Dern and James Kennelly have subscribed to the same number of shares. Timothy J. Driscoll has 75,000 shares as trustee, and 50,000 shares are reserved as treasury or working stock. The Elko Company's property is in close proximity to the Mercur bonanza, and Messrs. Dern and Airis, who are large stockholders in the company, are also at the head of the Mercur management.

New Tintic Mining and Smelting Company.—The Honorine drainage tunnel of this company is at last completed, says the Salt Lake "Herald." The Honorine group, near Stockton, was very extensively developed to the 600 ft. level, where the water became so abundant that the company decided to put through a tunnel which would drain the entire group to the bottom of the deepest shaft. The mouth of the tunnel is out on the level plain toward the town of Stockton, and its entire length is over one mile. The connection with the development tunnel, which was run west from the 600 ft. level was made October 21st. After the Honorine company had pushed the tunnel some 2,500 ft. into the mountain in the direction of the workings of the mines, the funds gave out and the work was abandoned. A new company was incorporated under the name of the New Tintic Mining and Smelting Company, at the head of which is P. A. H. Franklin. Burleigh drills and a good force of men, working night and day, pushed the drain some 540 ft. farther before the connection with the shaft tunnel was made. From its mouth to the eastern ore body of the Honorine the tunnel is over a mile in length and will drain the entire section of country. It is 9 ft. square. In the 540 ft. put through by the New Tintic company two large ore bodies of exceptional richness were encountered and considerable ore has already been taken out, enough, in fact, to keep the old concentrator at the town of Stockton in operation. It was in the hopes of striking these ore bodies that the development tunnel was run out from the main workings. Work will now be carried on upon a large scale. An air compressor is to be located at the mouth of the tunnel for the purpose of furnishing power for the drills and pumps in the mine, and a new concentrator is to be located near the dump of the mine. It is the intention of the company to at once sink 350 ft. from the present lower level and then crosscut, for the purpose of encountering the ore bodies, which have been worked out above and which are said to increase in richness with depth.

Uintah County.

Gilsonite Asphaltum Company.—It is stated that an explosion occurred last week in the mine of this company near Fort Duchesne, killing two miners who had just begun work. Full particulars have not been received.

VERMONT.

Rutland County.

True Blue Marble Company.—This company, at Rutland, has secured the contract for furnishing the marble to be used in the construction of the new University building at Burlington, Vt. This contract will take 120 carloads of marble.

Vermont Variegated and White Marble Company.—H. O. Edson, A. B. Edson, J. D. Spellman, Charles Bullard and R. H. Hayes, of Rutland, Vt., have organized this company. They propose to quarry marble and to manufacture the same at Tinmouth, with the principal office of the company in Rutland. The company has a capitalization of $75,000, divided into 1,500 shares of $50 each.

Washington County.

West Berlin Granite Quarry.—J. C. Smith and E. B. Ellis, of Northfield, Vt., have leased this quarry and commenced work.

WASHINGTON.

Stevens County.

(From our Special Correspondent.)

Hunter Creek District.—The claims in this district continue to excite great interest and new finds are recorded frequently. The latest is the discovery of a dry silver ore vein and named the Barney Daisy. The vein is 4 ft. wide and consists of copper-stained quartz assaying 57 oz. silver. The discovery of another big outcrop of galena, similar to the Cleveland in the same district is reported. The showing is claimed to be 22 ft. wide, is not so base as that from the Cleveland. The wagon road from Springdale, on the Spokane Falls & Northern Railroad to the mines is nearly completed, and as soon as the tunnel now being run to tap the Cleveland mine at a depth of 50 ft. is completed shipments will commence.

WEST VIRGINIA.

Kanawha & New River Coal and Coke Company.—This company, just organized, is the result of the recent meeting of coal operators of the Kanawha and New River districts. The company will not mine coal, but will represent the operators in handling and selling their output. It will control substantially all the coal from the districts named.

Fayette County.

Morris Coal and Coke Company.—A large block of coking coal owned by this company near Belva is to be opened up by an extension of the 20-mile branch of the Chesapeake & Ohio road.

WISCONSIN.

Sauk County.

Wisconsin Granite Company.—This company has been organized by C. A. Langdon and others to operate quarries near Baraboo. The office is in that town.

WYOMING.

Assays of some ore taken from a claim owned by John S. Watkins, of Laramie, has shown, it is claimed, platinum in considerable quantities. It is claimed that the ore exists in a well defined vein on the claim, and steps will be taken to develop it further.

Converse County.

Spring Creek Placer Company.—This company, which has been operating on Spring Creek and which is owned by M. T. Benham and others, has this season built 600 ft. of bedrock flume and one-half mile of ditch to carry water, besides a number

of buildings for the accommodation of its workmen, etc. The pipes are now being placed on the ground and work will be opened actively as soon as the weather will permit in the spring.

FOREIGN MINING NEWS.

ARGENTINE REPUBLIC.

Buenos Aires.—The "Standard" prints the following letter, written from Mendoza: Sir: I wish you would publish this miner's warning. I have been up to the famous San Rafael Coal Mining Company's place, trying to get a collier's job, but there is no colliery at all. There is certainly some very good coal in small crevices, on narrow lodes and veins, but only in very small quantities. There is no coal-seam whatsoever. The width of the veins is generally from half an inch to 10 or 12 in., and the lode swells out suddenly in a very few places of the Eloisa claim, to pockets of several feet thickness, out pinching out then very rapidly, like pipe-veins will do. I dare say there is no more than about 8 or 10 tons of coal discovered on the total of ground worked till now. To get this quantity out, it wants the blasting of a very considerable amount of the enclosing hard wall-rock, a rather costly operation anyhow. Respectfully, G. Olson.

CHILE.

The Chilean government has issued a decree ordering the sale of 15 nitrate establishments on May 15th, 1895. Six of the fields will be sold at a valuation to be set by a commission, which meets on March 10th. The remaining grounds will be sold under the conditions which have governed the previous sales. No date has been fixed for the auctioning of the properties not sold on October 15th.

CHINA.

The "North China Herald" says: "Tang Chiung, an officer bearing the brevet rank of a provincial governor, and Imperial High Commissioner of mining enterprises for the province of Yunnan, reports that he has received repeated messages from the Metropolitan Boards to hurry on the transportation to Peking of Yunnan copper, of which this province is bound to furnish a certain quantity every year to the central government. Owing, however, to the low scale of carriage fees permitted by the Board of Revenue on this head, memorialist has been unable to comply with his instructions, owing to the wholesale evading of the work by the owners of pack-horses and cars, who have confessed that the regulation fees allowed by government per hundred catties of copper from the capital (Yunnan-fu) to the city of Weining, within the borders of Kueichou province, a distance of about 120 miles as the crow flies, or 10 days' regular march, would not be sufficient, under present circumstances, to pay for the feed of a single pack-horse, let alone its driver. For instance, the government rate per hundred catties, from Yunnan-fu to the Kueichou border city of Weining, amounts to a total of one tael two mace nine candareens and two li. Now Yunnan province has been suffering from repeated famines for many years past; to such an extent has consequent scarcity of the rice stuff attained in the province, that for every shih or 160 catties weight of rice the price has risen from the unprecedented sum of Tls. 15 to the enormous one of Tls. 30! This state of affairs has never yet been equaled within the known history of the province. If the government rate of one tael two mace odd be adhered to at the present day, the copper that should go to Peking will naturally go on accumulating at the capital from the mines, which, on their part, are doing their regular work, with no prospect of ultimate transportation forward. To remedy this, and in response to the pitiful petitions of the carriers, who are ready to rebel at forced work, memorialist has been compelled, and thinks it but reasonable, to make a slight addition of one mace and eight candareens to the present government rate of one tael two mace odd per hundred catties, making it one tael four mace from Yunnan-fu to Weining; and would moreover pray that His Majesty's consent may be given to the new scale of rates. When we come to think that private fares paid by merchants and traders are something like treble the government rates, one can imagine that nothing short of stern force will make the pack-horse and cart owners consent to carry government stores at starvation wages. But by the slight addition above made, memorialist has been enabled to transport forthwith the copper that has been detained and accumulated at Yunnan-fu, beginning from the second installment of the 13th lot up to the first installment of the 14th lot. The government granted the request and referred it to the Board of Revenue.

MEXICO.

Guerrero.

Xochistlahuaca Placers.—It is said that preparations are being made to work these placers, which are in the extreme eastern portion of the State.

Lower California.

Restauradora.—This is a new mine in the Prietas district. The ore is a free milling quartz, and a test run is reported to have shown $50 per ton for 30 tons.

Sonora.

Xavaros.—Reports have been received of a discovery of promising silver deposits in the mountains near Xavaros, and steps are to be taken to explore the supposed veins.

(From an Occasional Correspondent.)

Senator S. W. Dorsey, Frank Rodebusch, Wm. Penberthy, Carl W. Meyer and Thomas Wünsch have been on a tour of inspection through the State of Sonora examining mines with a view to investing; Mr. Wünsch in the interest of D. H. Moffat and Mr. Meyer representing St. Louis capital. They visited El Plomo company's mines near La Ciénega and also the St. Elena on the Sonora River, 120 miles above Hermosillo, and expressed themselves as highly pleased with both properties.

Zacatecas.

Mesquital del Oro Gold Mining Company.—During July last this company ran 50 stamps during 703 hours, crushing 3,711 tons. The bullion produced was 829 oz. valued approximately at $15,000, or $18 per oz., besides copper of the value of $170.

NICARAGUA.

It is reported that placers very rich in gold have been discovered at Xinotega on the Bondegui river. The place is near the northern boundary of the republic, in a remote and little known region, inhabited chiefly by Indians.

NOVA SCOTIA.

Stellarton Gold Mining Company, Limited.—This company, with headquarters at New Glasgow, N. S., has applied for incorporation under Nova Scotia statutes for the purpose of mining in the Sherbrooke district. Authorized capital $20,000, in shares of $10. The directors are: John McQuarry, Guysboro; W. L. Ormond, Thornburn; John McQuarry, Stellarton; Duncan McGreggor, Westville; and James Keith, New Glasgow.

QUEBEC.

The following notes on mica and phosphate mining are from the "Canadian Mining Review":

The main shaft of the mica mine of Messrs. Wallingford & Company, in the Eighth range, township of Templeton, has attained a depth of 90 ft. The vein, which has been followed to that depth, measures 10 ft. in width and contains for the greater part large sized crystals, and is continuing regularly in a northwest direction. A drift has laid bare the vein for a length of 60 ft. It is the intention of the operators to sink the shaft farther into the vein and to open up the same in lower levels by drifts. The amount of mica taken out daily is between 4 and 6 tons, cutting for the greater part 2 × 5 in. and upward. Eighteen men are steadily at work. Some new buildings and hoisting machinery have been added to the plant with a view to increased capacity. Taking into consideration the vast amount of mica crystals as laid bare by the drifts and shafts it is safe to say that this mine can be considered at present the most valuable mica deposit in the township of Templeton.

The Lake Girard Mica Syndicate is working the Stevenson property, lot 15, in the Eighth range, of Templeton. The main shaft, which was worked some years ago for phosphate, is at present about 35 ft. deep, yielding a considerable quantity of apatite intermixed with well-defined mica crystals. Some 150 tons of apatite have been taken out this season. On the western slope of the property a vein of well-defined mica crystals was discovered this month. The crystals on the surface are of a perfect nature and of a regular shape, some cutting 4 × 6 in. clear. This vein has been laid bare for 25 ft in length, and shows regularity in occurrence. It is intended to work same at once with a large force of men.

The so-called Goldering mine, one of the oldest phosphate mines in the township of Templeton, situated on lot 17, in the Ninth range has been leased to Mr. A. McLaurin, from the Bank of Hochelaga, for six months. Operations were commenced on the 10th of this month, and a great deal of mica crystals are reported to be in the main shaft. Eight men are employed.

The white mica mine on Lac Pieds-des-Monts, Murray Bay, belonging to Mr. F. B. Hayes, Ottawa, has been sold to the Canadian Mica Company, represented by Baumgarten & Starke, the consideration being $8,500, almost wholly in shares of the company. A good force of men is already employed and it is reported to be the intention to put up a steam plant very soon. The Beaver Lake mine in Bergeron County and the Perkins property in Hull have been acquired by the same people. The consideration for the latter was, we understand, simply stock.

SOUTH AFRICA.

Griqualand.

Regarding the Griqualand West nitrates, "South Africa" says: The arrival in England of Mr. John Power, who recently completed the negotiations and arrangements in connection with the Prieska nitrate fields, which he was reported to have acquired from the South African Nitrate Syndicate on behalf of financial houses in Europe, has aroused very considerable interest. The nitrates are found in large quantities and to considerable depth on five farms in the Prieska district; and provided quick and cheap means of transport can be procured and a connection formed with the Cape trunk line of railways at De Aar, it should be easily possible to place the nitrates on the Transvaal market at a price which, considering the value attainable there, ought to yield a profit.

LATE NEWS.

It is reported that Capt. Thomas Couch will shortly resign his position as mining superintendent of the Boston & Montana Company, to take charge of the operations of the new Merced Gold Mining Syndicate in California.

Outputs of Lake Superior copper companies for the month of October are reported as follows: Franklin, 182 tons, against 171 tons in September and 172 tons in October, 1893. Quincy, 851 tons, comparing with 796 tons in September and 750 tons in October of last year.

The latest advices in relation to the compromise agreement proposed for the settlement of the Transvaal litigation over the MacArthur-Forrest cvanide patents, are to the effect that some of the parties have refused to sign the preliminary agreement, and that the African Gold Recovery Company has therefore withdrawn its assent. This, apparently, leaves matters in the position where they were before the compromise was proposed, and the suits will therefore be continued.

Cripple Creek, Colo.

(From our Special Correspondent.)

Big Banta.—This claim, on the north slope of Battle Mountain and worked under lease, is a prospect of more than usual promise, and from present appearances will do much to increase the output of Cripple Creek.

Cripple Creek Placer.—This placer, just west of town, is yielding the new owners handsome profits. The last steam-up of the Snodgrass machine for six days' work gave 24 oz. The expense of engine to work the machine, of two teams with scrapers to feed the machine at the rate of six tons an hour; one team at the plow loosening the black loam and soil, and three men, made the cost of operating about $30 a day. In the clean-up two weeks ago a nugget worth about $5 was found. The capacity of the machine is from 10 to 12 tons per hour with 6 in. of water. Here the water is less than 3 in. and is used over and over again reducing the capacity of the machine to 6 or 7 tons an hour. The machine seems peculiarly adapted to this work.

Gregory.—This claim, owned by the Raven Mining Company, on Raven Hill, is being worked on lease, and the lessees are highly elated over their prospects. At a depth of 12 ft. the mud assays $200 and the vein 8 oz., and shipments have been made with very gratifying results indeed.

Lawrence Gold Extraction Company.—This company is increasing the plant to 80 tons, the present capacity being about 30 tons. The building is almost completed for the Pearce furnace and most of the machinery on the ground, and, it is hoped, will be in running order at the close of the month. After a few months of experimental work the owners know what they can do with the ores of the camp, and the mineowners know what the mill can do. Not a mill in the State has grown so rapidly in public favor as this, and deservedly so.

Moose.—In this mine there was recently encountered a nice body of telluride ore in both the fourth and fifth levels south of shaft. This mine has now the deepest shaft in the camp, nearly 400 ft., and instead of "playing out," to use a pessimistic view, the mine never looked so well or had as much reserves.

Orphan Bell.—On this property there are now 16 different parties leasing. A shipment recently made to the smelter yielded 2·48 oz. of gold per ton.

Raven.—The lower tunnel has just encountered the phonolite dike which assays the whole width $77 per ton in gold, whereas in the upper tunnel the phonolite carried no value. The winze being sunk from the upper tunnel to connect with the lower tunnel (200 ft. below) is in good ore. The lessees on the north end of the Raven claim are making good wages.

Short Stop and El Paso.—These claims, situated in Poverty Gulch and owned by the Gold King Company, employ 26 men, the output being two cars of smelting ore per week, the quality varying from 5 to 10 oz. per ton. The upper tunnel is over 550 ft. in length, the lower tunnel is over 600 ft. This was the first property in Cripple Creek that made a shipment and has been a constant shipper ever since. The claim was staked in February, 1891, and several small shipments of float were made before the assessment work was done.

Victor Mine.—The output for the month of October was 112 tons of the usual grade of ore. The mine at present employs 73 men. The development of the mine is being kept ahead. At present there are five drifts being prosecuted, one each at the fifth, fourth and third levels and a crosscut is being driven north to intersect the new vein at a greater depth. This new vein was discovered by a crosscut north from the second level, and although not parallel with the old vein it only varies 5° to the west. The length of the crosscut was 26 ft. The vein is about 12 in. wide for the 135 ft. opened, and the lowest assay has been $270, the highest $750.

By Telegraph. — Nov. 8. — The ore tonnage carried over the Florence & Cripple Creek Railroad and the Colorado Midland Railroad from Cripple Creek amounted to 9,787,779 lbs. of smelting ore for the month of October.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 9.

Statement of shipments of anthracite coal (approximated) for week ending November 3d, 1894, compared with the corresponding period last year:

Regions:	Nov. 3, 1894. Tons.	Nov. 4, 1893. Tons.	Difference.
Wyoming region.....	553,447	522,044	Inc. 31,403
Lehigh region.....	148,216	167,800	Dec. 19,584
Schuylkill region.....	287,881	291,559	Dec. 3,678
Total.....	989,544	981,403	Inc. 8,141
Totals for year to date.	31,162,914	36,286,343	Dec. 1,123,429

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending November 3d and year from January 1st:

Shipped East and North:	1894. Week.	1894. Year.	1893. Year.
Phila. & Erie R. R.....	1,397	62,512	68,825
Cumberland, Md.....	74,874	2,406,982	3,520,576
Barclay, Pa.....	†	16,841	40,713
Broad Top, Pa.....	†	295,438	497,155
Clearfield, Pa.....	70,972	2,193,079	3,235,367
Allegheny, Pa.....	34,143	1,013,602	1,056,727
Beech Creek, Pa.....	‡88,351	1,866,503	2,377,121
Pocahontas Flat Top.....	†	2,730,530	2,365,289
Kanawha, W. Va.....	‡105,513	2,155,956	2,760,304
Totals.....	375,249	12,741,443	15,922,080

† Returns not received.
‡ To October 31st.

Shipped West:	1894. Week.	1894. Year	1893 Year.
Pittsburg, Pa.....	38,875	1,204,347	1,022,916
Westmoreland, Pa.....	35,536	1,345,962	1,586,241
Monongahela, Pa.....	10,678	559,516	596,995
Totals.....	85,089	3,109,825	3,206,152
Grand totals.....	460,329	15,851,268	19,128,232

Production of coke on line of Pennsylvania Railroad for the week ending November 3d, 1894, and year from January 1st, in tons of 2,000 lbs: Week, 105,461 tons; year, 2,850,288; to corresponding date in 1893, 3,459,946 tons.

Anthracite.

Our last week's report of the coal market applies as well to-day as it did then, so little has the change been. In general conditions we do not find any difference whatever, the trade being neither better nor worse. There has been very little new business done, and the general demand has not improved appreciably.

We find that in this city and in the Eastern tidewater markets generally, dealers are still well supplied and are under no urgent need of replenishing their stocks. The cool weather which prevailed for two or three days since the writing of our last report made some dealers sell slightly more coal, and in a few instances it resulted in the placing of a few small orders for immediate delivery. In most cases, however, when a dealer's stock of a certain size is appreciably decreased, it simply calls for the hastening of deliveries on old orders.

We do not find that any change whatever has taken place in prices. They are neither firmer nor higher, nor will they rule so until we experience a protracted spell of really cold weather. We quote to-day good free-burning coals on board as follows: Stove, $3.45@$3.50; chestnut $3.30@$3.40; egg, $3.25@$3.35; and broken, $3.20@$3.30 Middlemen, of course, obtain still lower prices. It will thus be seen that despite all the assurances of the producers it has been found impossible to make the prices named in the last circular obtain in this market. It is doubtful whether stove coal will sell for $4 alongside at any time this year unless an unexpectedly severe winter spell comes upon us. Thus far it is to be doubted whether any seller, company or independent operator is getting much more for his product than he could have obtained a month ago.

The scarcity of empty cars noted in our last issue continues. To a considerable extent this is due to the great number of loaded cars standing on the side-tracks and switches of the various roads. The fact that the operators are unable to get a sufficient supply of cars is really the reason for the semi-restriction which is reported. Were cars abundant there is no telling how much anthracite might not be mined now that it has been decided to work on full time. It is, perhaps, a fortunate thing for the operators that such a state of affairs exists, for a full tonnage this month would more than ever diminish the chances of seeing firmer prices.

COAL NOTES OF THE WEEK.

The trade will hear with regret of the death of Mr. John F. Randall, the senior member of the firm of Randall & McAllister, the largest coal dealers of Portland, Me., and one of the most prominent east of Cape Cod. Mr. Randall died at Portland on November 6th aged about 60 years. He was a man whose personal and business traits made him very popular among the trade at large, who will mourn sincerely for him.

Bituminous.

There has been a falling off in the volume of business doing in the soft coal trade. The demand for prompt shipments is slight and most of the producers are merely filling old contracts. The great scarcity of vessels has prevented shipments to shoal water ports, and there thus remains a balance of orders to fill up as soon as the expected fleet reaches the shipping ports.

There is considerable coal on the way from the mines to tidewater points and this naturally retards transportation.

There is little or no change in prices. The margin of profit on present values is so slight that "cutting" would wipe it out entirely. Some exceedingly low figures have been quoted in trade circles, so low as to meet with unbelief. We are reliably informed that in two instances the figures named have been just equal to the freight rate of the main line roads, and disregarded the cost of production and the haulage on the "lateral" feeder from the mines to the main line. In some instances the railroads have insisted on relief from the coal standing on cars, and thus some coal has been thrown upon the market at about cost, but sellers probably have not let it go below that, so that the reports alluded to lack verisimilitude. We quote: $1.80@$2.10 f.o.b. Norfolk and Newport News; $1.85@$2 25 f.o.b. Baltimore; $1.80@$2 25 f.o.b. Philadelphia, and $2 50@$2.75 f.o.b. Perth and South Amboy and other New York harbor shipping points.

The dullness in the trade extends over all the consuming territories, though possibly Sound points are a little better than the rest. The all-rail trade does not seem to be affected to the extent that tidewater shipments are.

The open season this year has permitted of more continued free shipments than for several years, and notwithstanding the long strike the tonnage of the various regions is not far behind last year's.

The transportation of coal from the mines continues slow, the Pennsylvania Railroad still being the chief offender. Most of the roads have been hampered by the coal sidetracked along their lines which has been obliged to remain unshipped by the lack of vessels. The Pennsylvania is still semi-blockaded and has placed embargoes on shipments to certain points at tide and also on all-rail shipments to northern New York. It takes cars two or three times longer than usual to reach tide, and this, just now, is rather a good thing, owing to the lack of light vessels to receive the coal. The car supply, when all things are considered, is good.

In the vessel market rates are strong, with practically no vessels at shipping ports, but a large fleet, reported to be of several hundred sail, is expected to arrive at any moment. The market, however, will take a large number as soon as it arrives

We quote ocean freight rates as follows from Philadelphia: To Boston, Salem and Wareham, 90c. alongside; Portland, 90@95c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 75c.; Portsmouth, 95c.; Newburyport, $1@$1.05; Gardiner and Bangor, $1@$1.10, alongside and towages.

Boston. Nov. 8.

(From our Special Correspondent)

For the past three or four days the weather has been quite cold here in Boston and vicinity and it has naturally started a considerable retail demand for domestic and furnace sizes. It has not as yet been any benefit to the wholesale trade which has ruled quiet for so many weeks. The companies claim to be getting full circular but cases are cropping up continually where cuts are made. Individual operators particularly are selling for about any price they can get.

The companies' prices net New York are as follows: Stove, $4; egg, $3.65; free broken, $3.60; chestnut, $3.90. Individual operators are cutting these prices by from 15 to 25c. per ton.

There is less doing in bituminous than there was a week or 10 days ago, as much of the anxiety to get coal deliverad quickly has passed. The deliveries of the past few weeks have been quite large and on old contracts. There has been but a very moderate number of new orders taken in the past month. Soft coal on cars here is worth the following: Cumberland, $3.20; Pocahontas and New River, $3.15@$3.20; and Clearfield, $3.05@$3.10.

Tonnage is getting scarcer and prices firmer. They are: From New York, 60c.; from Philadelphia, 85@90c.; from Baltimore, 90c.; from Newport News and Norfolk, 85c.

Retail prices are as follows: Stove, $5@$5 25; nut, $5@$5.25; egg, $4.75@$5; furnace, $4.75@$5; Franklin stove, $6.75@$7; Lehigh egg, $5@$5.25.

Buffalo. Nov. 8.

(From our Special Correspondent.)

The anthracite coal market continues quiet, and prices a shade firmer; stocks large. Whether the conditions of trading which have existed for many weeks, practically cutting schedule prices, are still in vogue, remains to be seen. The old saying, "The proof of the pudding is in the eating," can be applied to figures of sales in the coal business. Bituminous coal is also dull and quotations demoralized. Dealers are not at all satisfied with affairs as appear on the market, but are hoping that before long a better condition of affairs will exist. Coke quiet and unchanged. For the months of November and December, the prices of anthracite coal per 2,240 lbs. delivered free on board vessels at Buffalo: $4.70 for grate and $4.95 for egg, stove and chestnut; per 2,240 lbs. delivered on cars at Buffalo or Suspension Bridge: grate $4.40 and $4.65 for egg, stove and chestnut. Per 2,000 lbs. at retail delivered within city limits: grate, $5.00; egg, stove and nut, $5.25; pea, $4.00; and Blossburg, $4.00.

The shipments of coal westward by lake from Buffalo from October 28th to November 3d, both days inclusive, aggregated 110,630 net tons, distributed as follows: 46,750 tons to Chicago, 20,720 tons to Milwaukee, 13,200 tons to Duluth, 4,560 tons to Toledo, 15,700 tons to Superior, 7,400 tons to Gladstone, 600 tons to Saginaw, 300 tons to Port Huron, and 1 400 tons to Sault Ste. Marie. The rates of freight were as follows: 70@60c. to Chicago; 6 @55c. to Milwaukee; 30c. to Duluth, Superior and Gladstone; 25c. to Toledo; 40c. to Saginaw; 30c. to Port Huron, and 50c. to Sault Ste. Marie. Closing with unsettled quotations to Lake Michigan ports. A severe storm prevailed over the Lake region on Friday and Saturday, and part of Sunday, with wind 58 miles an hour at times. Many disasters and loss of life reported.

The following statistics were prepared by Mr. William Thurstone, the secretary of the Buffalo Merchants' Exchange, showing the coal trade of the port of Buffalo thus far this season as compared with preceding years:

Railroad receipts and shipments of coal not reported by request. Receipts by lake thus far this season, none. Shipments of coal westward by lake for month of October 389,378 net tons, as compared with 359,465 net tons in 1893 and 546,523 net tons in 1892; for the season to November 1st, 1,953,355 net tons, as compared with 2,189,707 net tons in 1893 and 2,344,432 net tons in 1892. The receipts of coal by canal for the month of October, 4,084 net tons, as compared with 10,663 net tons in 1893 and 20,616 net tons in 1892; total receipts for the season to November 1st, 30,287 net tons as compared with 66,045 net tons in 1893, and 46,829 net tons in 1892. The shipments of coal for the month of October, 456 net tons as compared with 3,727 net tons in 1893, and 3,570 net tons in 1892; total shipments for the season to November 1st 6,725 net tons, as compared with 17,661 net tons in 1893, and 25,577 net tons in 1892. The aggregate shipments of coal by lake this year to November 1st, as compared with 1893, show a decrease of 236,352 net tons, and as compared with 1892, a decrease of 391,077 net tons. The rates of lake freight during the month of October from Buffalo to places named were: 55@70c. to Chicago; 50@65c. to Milwaukee; 20@30c. to Duluth and Lake Superior ports; 25c. to Toledo; 50c. to Green Bay; 25c. to Detroit; 60@70c. to Racine; 40c. to Saginaw, and 30@35c. to Bay City. A year since the rates for the month were: 25@35c. to Chicago and Milwaukee; 15c. to Duluth and Lake Superior ports; 30@35c to Green Bay; 20c. to Toledo and Detroit; 50c. to Racine; and 25c. to Bay City. The coal shipments by lake thus far this season were distributed about as follows: 835,092 tons to Chicago, 470,444 tons to Milwaukee, 181,499 tons to Duluth, 162,484 tons to Superior, 29,000 tons to Gladstone, 76,685 tons to Toledo, 26,625 tons to Racine, 17,150 tons to miscellaneous ports, 9,959 tons to Hancock, 1,300 tons to Houghton, 600 tons to Amherstburg, 1,115 tons to Port Huron, 1,450 tons to Marinette, 8,125 tons to Kenosha, 37,385 tons to Green Bay, 9,161 tons to Detroit, 15,700 tons to Bay City, 15,805 tons to Saginaw, 17,150 tons to Marquette, 1,350 tons to Alpena, 1,450 tons to Washburn, 900 tons to Manistique, 1,300 tons to Kincardine, 3,490 tons to Sheboygan, 1,275 tons to Grand Haven, 600 tons to Mackinaw, 6,266 tons to Ft. William, 1,407 tons to Windsor, 450 tons to East Tawas, 22,375 tons to Manitowoc, 5 400 tons to Sault Ste. Marie, 600 tons to Benton Harbor, 2,810 tons to Lake Linden, 600 tons to Sand Beach, 8,110 tons to Ashland, 2,000 tons to Port Arthur, 1,150 tons to Ludington, 400 tons to St. Ignace, 300 tons to Kelly Island, 2,305 tons to Cheboygan, 1,930 tons to Muskegon, 448 tons to Toronto, 650 tons to Owen Sound, 600 tons to Traverse City, 1,800 tons to Escanaba, 2,350 tons to St. Clair, 700 tons to Sarmia, 850 tons to Menominee, 1,290 tons to Hamilton, 650 tons to Michigan City and 900 tons to Marine City.

Chicago. Nov. 7.

(From our Special Correspondent.)

The coal trade in and about Chicago remains in an inactive condition. The weather and the election have undoubtedly combined to prevent any activity. Now that the election is over, and cold weather has put in appearance, it is expected and hoped that some very good business will show between now and Christmas. Retailers in and out of the city have found the past two weeks, dull and they are consequently buying past little coal. The rumor going the rounds that the production of hard coal would not be restricted has occasioned a great deal of hesitation among the retailers and larger coal consumers. It is supposed that with an unrestricted output the circular prices can never hold, and naturally no one wants to contract under such conditions. Manufacturing concerns that consume great quantities of hard or soft coal still refuse to contract, but just order for immediate wants, and as a rule they wait until their supply is pretty low and then order for quick delivery. There appears one good feature in the market, and that is in coke. The past week has developed an unusual activity in that article. One of the larger houses dealing in coke here has booked during the week 50% more orders than for any week in six months or more past. A number of these are good sized contracts and run for a number of months. Connellsville 72-hour coke is in most demand. Circular rates on anthracite coal are: Grate, $5.25; egg, stove and chestnut $5.50. For bituminous prices are, f. o. b. Chicago: Youghiogheny, $3.15; Raymond, $3.50; Shawnee, $2.50; Blossburg, $3 90; New Kentucky, $2.75; Hocking, $2.90; Brazil Block, $2.40; Birdseye Cannel, $5.25.

Connellsville foundry coke is selling for $3.90; Connellsville coke crushed, $4.15; Pocahontas, $4 New River, $3.90@$4.15.

Pittsburg. Nov. 8.

(From our Special Correspondent.)

Coal.—There has been a falling off in lake port shipments during the week, owing to the close of the lake shipping season. In the general market, no changes being reported, prices are steady. The

prospect for a boating rise before the close of the week is good. The total output of coal from the pools of the Monongahela River into the Pittsburg harbor for the week aggregated 2,230,000 bushels, being the largest run for some time. Figures from mines show a decrease in the output of coal in the fifth bituminous district. The mine inspector gives the following statistics: Number of mines in the district 69, of which 55 are in operation. There were 6,680 men employed an average of 158 days, and the output of coal for 1893 was 3,629,559 tons. The production for 1892 was 7,300,101, which shows a large decrease for 1893. There were 12 fatal and 44 non-fatal accidents during the year.

Coal loaded and ready for shipment in the harbor from Dam No. 1 to Davis Island Dam is 12,500,000 bushels; in pools No. 4 and 5, Monongahela River, about 3,500,000 bushels; the lower pools are bare of coal.

Connellsville Coke.—A change for the better is reported in the coke regions; production has improved. The week shows 14,508 ovens in blast and 3,066 ovens idle, with an estimated production of 140,363 tons as against 142,052 tons the week previous, a falling off of 1,689 tons. There were 142 ovens left out last week, but the indications are that a better run will be made by the ovens in blast the present week, and a few additional ovens may be fixed up. The average time made during the week was 5·5 days, the same as last week. The H. C. Frick Coke Company made 6 days at 19 plants, 5 days at 3 plants. The McClure Company made 5 days at each of its 9 plants in blast. The Raineys made 6 days at 3 plants, 5 days at 3 plants. The furnace plants all made 6 days except Stewart, which made 5 days. The Independent made 6 days at 5 plants, 5 days at 3 plants. The shipments foot up as follows: To Pittsburg, 2,343 cars; to points east, 1,420 cars; to points west, 3,793 cars; total, 7,556 cars. Prices are nominal. Circular rates: Furnace coke, 95c.@$1; foundry coke, $1.15; crushed coke, $1.40; all per ton of 2,000 lbs. on cars at ovens.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 9, 1894.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Nov. 10, 1893		Week ending Nov. 9, 1894.		From Jan.,'93.	From Jan.,'94.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	35	16,449	37	18,999	1 263 018	728,937
Coke...	59	60,567	126	141,402	4,893,384	4,260,708
Charcoal...	25	5,170	23	4,746	359,024	185,476
Totals ...	119	82,117	186	165,138	6 515,426	5,175,121

The natural interference with business caused be the election during the early part of the week prevented any transactions, but during the latter part of the week the market has had a more active and brisk tone than for some time past. This is probably due more to the feeling that political dissensions have been settled for some time to come than to any real improvement in sales on the market. Nevertheless, the general feeling is better and that of itself is apt to improve market conditions.

At other centers our correspondents note a greater activity in both pig and manufactured iron, and our returns of the monthly production and number of furnaces in blast shows what we said last week, that all plants placed so as to be able to produce cheap iron were in operation, while the only ones out of blast, with a very few exceptions, are those which, either because of old fashioned equipment or being so located as to have practically prohibitive freights on ore and fuel, cannot produce at the present market price. It will be noted that the production for the last week of October has increased materially over the last weeks of the previous two months, and is almost double that of the same period in October, 1893, though slightly less than the output in October, 1892. As regards stocks, there has been a slight decrease, which, though not very material in itself, still, taken in conjunction with the increased production, shows that the consumption is keeping pace with the output. This is a most satisfactory condition of affairs. But just now, with this revival, there will likely be more buying by some consumers who have been waiting the turn of affairs, and this may advance the price. If it does, some of the less favorably situated plants will go into operation and the market may again fall. It is to be hoped that such a condition may be avoided.

The hope expressed by iron makers and brokers that the price will again rise to the level of some two years ago, is certainly not going to be realized in any ordinary condition of business. The cost of production has been forced so low that any large advance in market quotations would leave such a margin for price shading that it would be impossible to maintain the market figure in the face of our productive capacity.

Pig Iron.—There is a slight improvement over the condition of the market last week, but this is more in the better feeling existing since the close of political discussion than in any increase in the movement of the metal. It is generally conceded that prices are firmer and the market showing indications of greater activity. Quotations remain as follows: Northern brands, No. 1, $12.50 @$13; No. 2, $11@$12.50; gray forge, $10.50@$11; Southern irons, No. 1, $11.75@$12.50; No 2, $10.75@$11.50; No. 1, $10.75@$11.25; No. 2, soft F., $10@$10.75.

Spiegeleisen and Ferromanganese.—There is no change in the market. Nominal quotations remain $20.50@$21 for 20% spiegeleisen, and $49@$50 for 80% ferromanganese.

Billets and Rods.—There is little demand here, but the prices show indications of weakening. Present quotations are $18@$18.25 for billets, and $25@$25.50 for domestic wire rods.

Rails and Rail Fastenings.—There has been a number of inquiries for rails, but thus far no business of consequence has been transacted. Quotations remain: Standard sections, $24 at mill, $24.80 @$25.50 at tide-water. In rail fastenings quotations are: 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.

Structural Iron and Steel.—The market is in the same position as last week, few sales having been made but there has been some talk of new buildings which may, if the plans are carried out, open a market for a considerable quantity of this material. Quotations remain: Angles, 1·30@1·40c.; beams up to 15 in., 1·40@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·50@1·60c. on dock.

Old Material.—There are no features in this market differing from last week. Neither sales nor inquiry has been noted. Nominal quotations remain: Old steel rails, $9.50@$10; old iron tees, $10@$11 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@ $8.50; 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.

Merchant Steel.—There has been an improvement noted in some lines, particularly bars and plates, but sales remain very light. No changes in quotations, which remain: Tool steel, 5·65@6·25c. tire steel, 1·50@1·60c.; toe calk, 1·70@1·90c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85@2c.; open-hearth carriage spring, 1·70@1·90c.; crucible spring, 3·40@3·65c.; axles, scrap, 1·40@1·60c.; steel, 1·40@1·55c.; bars, common, 1·15@1·30c.; refined, 1·25@1·40c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·65c.; plates, flange, 1·60@1·80c.; firebox, 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@1·40c.; all on dock.

Buffalo. Nov. 8.

(Special Report of Rogers, Brown & Co.)

A very general feeling of hopefulness prevails since the election. During the week little attention has been given to anything else, The general opinion is that improvement may now be expected, gradual but steady. Very little buying has been done, although there have been a number of inquiries. We quote for cash f. o. b. cars Buffalo: No 1 foundry strong coke iron Lake Superior ore, $11 75; No. 2 foundry strong coke iron Lake Superior ore, $11.25; Ohio strong softener No. 1, $12 25; Ohio strong No. 2, $11.25, Jackson County silvery No. 1, $15.75@$16 75; Lake Superior charcoal, $13.50; Southern soft No. 1, $11.50; Southern soft No. 2, $11.25; Hanging Rock charcoal, $18.50.

Chicago. Nov. 7.

(From our Special Correspondent.)

The iron market of Chicago during the past week has been fairly active. There is somewhat of an improved condition, as buying is undoubtedly a little larger than the previous week. Sales, however, indicate the hand-to-mouth policy, being chiefly for small quantities. Opinions on the result of the election are very favorable and all are hopeful of better times. The Illinois Steel Company reports having made 27,000 tons of billets during the month of October. It has orders on hand aggregating 70,000 tons, thus insuring the running of its mills into January of next year. Their report of steel rails is not favorable; the business transacted in rails has fallen off greatly over those of two years ago. The amount of orders in at the present time will not keep mills busy later than November 30th.

Pig Iron.—In pig iron buying has been rather better than the preceding week. Sales in the aggregate foot up a fair tonnage and the quotations in many cases are larger, though the largest sale of the week was but for 500 tons Northern iron. The Northern material continues to have by far the greater call, and the outlook is decidedly favorable for this iron in the future. Southern iron sales have been a trifle better, but the combined tonnage foots up a small total when taken into comparison with other years. Prices in both the Northern and Southern material are holding very well, though there is a tendency on the part of the Southern furnaces to get business at any price. Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13.50@$14.50. Lake Superior coke No. 1, $10.25@$10.50; No. 2, $10@$10.25; No. 3, $9.50@$9.75; Jackson County silveries, $14.50 @$15; Southern coke, foundry, No. 1, $11 25@ $11.50; No. 2, $10.50@$10.75; No. 3, $10@$10.25; Southern coke, soft, No. 1, $10.25@$10.50; No. 2, $10.00@ $10.25; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.50@$12; No. 2, $11.50@$12; Tennessee charcoal No. 2, $14@$14.50. Bessemer, $11.25@$11.50; Ohio strong softeners, $13@$13.50.

Structural Material.—Business has not improved any, though there is a considerable more inquiry. Bridge material yet holds sway, with indications of a continued good demand for such iron and steel. Quotations are f. o. b. Chicago: Angles, 1·45@1·50c.; tees, 1·65c.; universal plates, 1·50@1·55c.; beams and channels, 1·50@1·60c.

Plates.—There has been a fair run of orders during the week, some of them having been for good sized quantities. Prices are: Flange steel, 1·65@1·75c.; fire-box steel, 3·50@4·50c.; tank steel, 1·40@1·50c.; boiler tubes, 70 to 75% discount.

Merchant Steel.—There cannot be said that trade in this material has shown any improvement with the week. Inquiries though would indicate an increased business. Some fairly good orders have been booked. Prices are, carload lots: Smooth-finished machinery, 1·75@1·90c.; tire steel, 1·70@1·80c.; Bessemer bars, 1·40@1·50c.; toe calks, 2·10@2·20c.; crucible spring, 3·40@3·65c.; tool steel, 5½@6½c. and upward; specials, 10·50@11·50c.

Galvanized Sheet Iron.—Trade in galvanized sheets is slightly better, with warehouse business showing greater activity. Quotations, mill shipments, are: 75, 10 and 5% off.

Black Sheet Iron.—The mills as a rule are quite behind as yet, but the business in sight will not insure them continuing so for any length of time. Sales of the week have been small and inquiry is light. Prices are f. o. b. Chicago for No. 27: 2·35@ 2·40c.

Bar Iron.—Business has been confined to some few sales of carload lots. Quotations remain 1·05@ 1·10c. Chicago, and steel bars bring 1·25@1·30.

Billets.—Sales of billets for the week have not been large; the steel mill reports having made 27,000 tons during October and orders are yet on hand for 70,000 tons. With 70,000 tons and other sales of the next two months conditions are favorable for the mills running into next year. Quotation on billets, to be exact, would be $17@$17.50.

Steel Rails.—A poor trade is reported and conditions are decidedly unfavorable for the mills running much after the end of the present month Quotations are $25@$27.

Old Rails and Wheels.—Sales of old iron rails and wheels have been made during the week, for delivery east of Chicago, at prices equal to $11 Chicago.

Scrap.—Small sales still constitute the scrap business of Chicago, though the business of the week has shown up well. Quotations are: Forge, $8.50@$9; cast iron borings, $3.50; wrought iron turnings, $4@$4.50; axle turnings, $6.50; mixed steel, $5.50; tires, $12.50@$13; iron axles, $12.

Philadelphia. Nov. 9.

(From our Special Correspondent.)

Pig Iron.—Within 24 hours quite a number of small sales of foundry and Bessemer iron have been made in unexpected quarters. A few large users of foundry stated to-day that they expected to increase their holdings in a few days. Mill owners are doing nothing in market, and agents who returned from short trips last Saturday said there were small stocks at most mills. Forge is quoted at $10.50, No. 1 at $12.50.

Steel Billets.—Western agents have made offers by wire for December deliveries, but the terms cannot be obtained. Buyers are willing to risk the possibility of an advance rather than cover even at a shading from $18. An intimation comes from the western part of the State that prices will be higher next week.

Merchant Iron.—Bars are 1·20. Western deliveries are made at 1·15. Common iron sold here at 1·10 and Western makers offer to-day to shade this.

Skelp.—Two inquiries are on the market for skelp. Large lots are wanted. Bidders decline to give prices quoted. The disposition is still to scramble for business. The mills are comfortably well off.

Sheet.—Store deliveries are active, but all orders are for small lots. It is too soon to note any change in the situation since Tuesday, but the manufacturing interests in and out of the iron trade are all elated.

Merchant Steel.—This week's orders from stores are very satisfactory.

Plate and Tank.—The plate iron and steel manufacturers all say there will be an improvement in orders very soon. Enterprises under way or supplied only as material is needed. Large orders have not been placed for some months, but manufacturers said yesterday that they know it is the intention of builders now to put out large contracts sufficient to see them through on work in hand.

Structural Material.—Representatives of mills stated to-day in substance that if the purposes of Eastern railway managers were carried out there would be sufficient business placed in the next 60 days to make it possible to ask better prices on small lots for early delivery. Besides this they say indications point to an early improvement of 50 to 100 ton lots.

Steel Rails.—The rail makers say girder rails will be in good demand for some time to come, that a good deal of track is being rapidly made ready, and that the outlook is favorable.

Old Rails.—Several large blocks of old rails can be had, but buyers are disinclined to negotiate just now.

Pittsburg. Nov. 8.

(From our Special Correspondent.)

Raw Iron and Steel.—The past week has been a very eventful one; between the preparation for the State election and the election itself, business was a secondary consideration. The volume of trading was light compared with preceding weeks. The election being over, business men must accept the situation and prepare for the business of 1895. Consumers generally have only a limited stock on hand, sufficient only to last a short time, when an additional supply will be required to keep the various works in operation. There is very little difference between consumption and production; that being the situation we may soon look for some liberal contracts for next year's delivery. Dealers generally will find sufficient employment in settling up the affairs of the old year before the new one arrives. In regard to iron and steel, as usual on such occasions, there is a wide difference of opinion in regard to values; prices are certainly down to an extremely low figure. With Bessemer pig selling at $10.75@$11, steel billets and slabs at $15.65@$16 it looks as if a decline from these figures was out of the question, but then this is the age of surprises, and no one can predict what is going to happen in the near future. The steel rail syndicate agreement expires December 31st; unless a new one is found that will include some of the rail mills that remained idle the past year (for a consideration), prices will certainly suffer a decline, as the difference between the price of steel rails and billets is out of all proportion. Again, the new mammoth steel works at Youngstown may have something to say about values. October production of steel rails: Pennsylvania Steel Works, Steelton, 27,000 tons; the Edgar Thomson works, for the same month, 36,000 tons. The general tone of the markets throughout the country has been conservative. Manufacturers, while conceding that the market has not met their anticipations of what the trade ought to be at the present season of the year, are nevertheless confident of an expanding demand that will raise prices from their present level.

COKE SMELTED LAKE AND NATIVE ORE.	
Tons.	Cash.
2,000 Bessemer, Nov.	$11.00
2,000 Bessemer, Nov., Dec.	10.65
1,003 Bessemer, prompt	10.90
1,000 Bessemer, Nov.	10.75
1,000 Bessemer, Nov.	10.80
1,000 Gray Forge, Nov.	9.85
1,000 Mill Iron, Nov	9.80
500 Bessemer, spot	11.00
500 Bessemer,	10.85
500 Bessemer	10.75
500 Mill Iron	9.95
500 Bessemer	10.90
300 Gray Forge	9.85
300 No 1 Foundry	11 75
250 Mill Iron	9.85
200 Mill Iron	9.85
200 No. 2 Foundry	10.75
200 Bessemer	10.90
100 No. 1 Silvery	13.80
100 No. 2 Silvery	12.30
CHARCOAL.	
100 Cold Blast	23.00
100 No. 2 Foundry	16.00
100 Warm Blast	16.00
50 No. 1 Foundry	17.00
25 No. 2 Foundry	16.00
BLOOMS, BILLETS AND SLABS.	
2,000 Billets, Nov., Dec. at mill	$16.00
2,000 Billets, Nov., at mill	15.75
2,000 Billets, Nov., at mill	15.65
1,000 Billets, prompt, at mill	15 75
1,000 Billets, prompt, at mill	15.70
500 Billets, spot, at mill	16.00
500 Billets, at mill	15.65
200 Billets, spot, at mill	16.00
IRON SKELP.	
500 Sheared	1.25 4 m.
400 Wide gr'ved	1.15 4 m.
380 Nar. gr'ved.	1.15 4 m.
STEEL SKELP.	
600 Sheared	1.15 4 m.
400 Wide gr'ved	1.02½ 4 m.
365 Nar'w gr'v'd	1.02½ 4 m.
MUCK BAR.	
600 Neutral, Nov.	18 85
200 Neutral, Nov.	19.00
100 Neutral, Nov.	19.00
BLOOMS, BILLETS, BAR ENDS.	
500 Billet and bloom ends	11.00
STEEL WIRE RODS.	
500 American fives at mill	22.40
SHEET BARS.	
375 At maker's mill.	22.00
FERRO-MANGANESE.	
125 80%, delivered	50.60
SPELTER.	
150 New December	3.35
OLD RAILS.	
400 Short pieces steel rails	10.50
300 Iron rails	12.75
100 Iron rails	12.50
SCRAP MATERIAL.	
350 Cast scrap, gross	9.25
300 No. 1 wrought net	10.00
250 Old car wheels, gross	9.00
75 Car wheels, gross	9.00
75 Hammered axles, net	20.00

METAL MARKET.

NEW YORK, Friday Evening, Nov. 9, 1894.

Gold and Silver.

Prices of Silver per Ounce Troy.

November.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. to $1.	November.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
3	4.87½	29¼	63¾	.493	7	4.87½	29⅛	63½	.491
5	4.87½	29⅛	63¾	.493	8	4.87½	29⅛	63½	.491
6	.....	29⅛	.....	.....	9	4.87½	29¼	63½	.491

While the demand for silver has simply been the usual one, the success attendant on the negotiation of the Chinese loan has a tendency to strengthen the position of the white metal. There are no other new features in the market.

The United States Assay Office at New York reports the total receipts of silver at 219,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States Ports, September, 1894, and Nine Months, 1894 and 1893.

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Sept.	$240,829	$704,130	$4,003,184	$1,527,452	E. $2,012,431
1894..	90,521,825	16,918,206	35,365,706	9,784,117	E. 99,185,208
1893..	76,278,514	65,960,63.	33,419,714	15,006,254	E. 28,731 342

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York.

For the week ending November 3d, 1891, and for Years from January 1st, 1894, 1893 and 1892.

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$26,920	$16,555	$573,072	$73,882	E. $509,455
1894..	85,346,266	15,225,995	29,178,240	1,519,067	E. 97,779,444
1893..	70,159,547	58,374,395	26,669,138	3,063,371	E. 35,190,919
1892..	59,161,503	7,712,368	18,093,170	2,691,333	E. 66,855,972

The gold exported for the week went chiefly to Cuba; the silver to London. The imports of gold were from the West Indies; the silver was from the West Indies and Central America.

During the five days ending November 8th the imports and exports of gold and silver from the port of New York were as follows: Imports, gold, $28,747; silver, $23,549. Exports, gold, $28,700; silver, $390,400. The silver exported went to London and the gold to the West Indies.

FINANCIAL NOTES OF THE WEEK.

The elections, of course, have been the great event of the week, and have occupied such general attention that business has been somewhat neglected. With the result, the overwhelming success of the Republican party, our readers are already familiar. To some extent, these results had been anticipated, though probably few expected such a complete overturn as has taken place. In New York and one or two other States local issues of government played an important part. Perhaps the most substantial gain is that the next House of Representatives will have a clear party majority, and that the Populists, while they have shown as much strength in the voting as was looked for, have not been able to secure the balance of power for which they hoped, and which would have compelled a hearing for their financial vagaries, which they cannot now command. Their complete overthrow in Kansas and Colorado, where their power was most strongly established, is a special source of gratification and will greatly promote the return of confidence and prosperity in those States.

It may be noted that the present elections have been no exception to the historical rule that a panic or period of business depression in this country is invariably followed by a defeat of the party in power at the time, and a reversal of the majority in Congress. "Hard times" have always been followed by a change, and probably always will be. We may add that the present year is only another proof of the extent to which the influence of mere party names has been weakened and the growing power of the independent vote, which holds parties as they should be, to be simply tools to accomplish certain ends, not ends in themselves; tools to be thrown aside when they do not do their work as they ought. The so-called party leaders, who are slow to recognize this, will have to give way to better guides. The New York uprising in favor of better government is a gratifying proof of this fact.

From a business point of view two things are to be considered. The first is that the tariff cannot longer be considered a present issue. The present Congress will not, under the circumstances, undertake any further tariff legislation. The new Congress will not meet for over a year, and is not likely then to attempt any change which would bring an executive veto. In any event manufacturers and merchants may regard present rates of duty as fixed for three years to come, and before that period expires other issues will most probably occupy public attention. Meantime all reason for attempting to delay or decry the revival of business which has been in progress for the past two months has been removed, and all parties can join in helping forward the return to prosperity and in building up our industries in all their branches.

The first and most important business in hand at present is the reform of our present complicated and unsatisfactory currency system. There is every reason to believe that this will be urged at the short session of Congress which will begin next month. The Baltimore plan for the reorganization of the national bank issues will be brought forward and the appointment of a currency commission to consider the whole subject will also be urged. It is, of course, impossible to predict what will be the result at this session; most probably no decisive action will be taken, but the commission plan seems to have fair chances of success, and the appointment of such a body would be a desirable result, giving some promise, at least, of improvement and a definite settlement. The currency question is one which comes home to all of us, and is certainly by far the most important issue now before the country.

One shipment of gold is noted which will be made to-morrow (Saturday). It is of $100,000 in Spanish coin and is a special transaction, having no bearing on the general market.

The statement of the New York banks for the week ending November 3d shows increases of $1,129,300 in loans and $809,700 in deposits; decreases of $660,625 in reserve, $171,000 in specie, $287,200 in legal tenders and $101,900 in deposits. The total reserve was $211,989,500, being $63,204,275 in excess of the legal requirements. The amounts of deposits and loans compare as below with the corresponding dates in 1893 and 1892:

	1892.	1893.	1894.
Deposits	$455,841,500	$447,412,600	$595,104,900
Loans and discounts	449,019,100	402,383,300	500,822,000

The banks are especially strong in legal tenders, reporting $118,224,900, against $66,750,100 a year ago. The specie shows but little change.

The statement of the Comptroller of the Currency shows that the total amount of national bank notes outstanding on October 31st was $207,472,603. During the month there was only a small change, an increase of $1,002. As compared with October 31st, 1893, there was a decrease of $1,741,563 in the total amount of circulation outstanding.

The statement of the United States Treasury on Thursday, November 8th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Nov. 1.	Nov. 8.	Changes.
Gold	$61,361,826	$61,830,401	I. $468,575
Silver	8,320,731	8,203,250	D. 117,481
Legal tenders	11,881,311	10,408,247	D. 1,473,064
Treasury notes, etc.	28,425,172	28,397,667	D. 27,505
Total	$109,989,040	$108,839,565	D. $1,149,475

Government deposits with national banks on same date amounted to $10,917,471, a decrease of $139,937 during the week.

It may be of interest to compare the Treasury statement at the opening of the present week (November 5th) with the corresponding dates for two years past. The figures are as follows:

	1892.	1893.	1894.
Gold	$124,256,077	$83,865,456	$61,493,666
Silver	3,016,123	8,219,215	8,281,900
Legal tenders	2,823 390	2,833,064	11,825,459
Treas. notes, etc.	2,176,192	2,132,986	28,123,723
Total	$132,271,782	$97,050,721	$109,727,748
Nat. bank deposits	11,026,359	11,333,205	11,118,033
Total cash	$143,298,141	$108,384,016	$120,845,781

While the gold balance is lesst than last year at this date, the general balance has increased, and the legal tenders especially show a large gain.

For the week ending November 3d the Government revenue was as follows, compared with the corresponding weeks in 1893 and 1892:

	1892.	1893.	1894.
Customs	$3,132,521	$2,397,713	$2,500,300
Internal revenue	2,533,854	2,793,516	1,561,450
Miscellaneous	329,287	792,838	305,119
Total	$5,995,662	$5,984,067	$4,366,869

The chief decrease from last year was in internal revenue. The week this year was an exceptionally light one, showing $1,352,000 less receipts than the preceding one.

Coinage at the San Francisco mint for the four months of the fiscal year, from July 1st to October 31st, was as follows:

	1893.	1894.
Gold	$6,110,000	$6,299,500
Standard silver dollars	.....	1,010,600
Subsidiary silver	420,000	408,000
Total value	$6,560,000	$7,717,500

The gold pieces coined this year were 3,010,000 double eagles and 55,900 half eagles. The subsidiary silver pieces were 816,000 half dollars.

The Bank of England on Thursday, November 8th, reported its total gold holdings at £35,152,820, an increase of £9,659,255 over the corresponding date last year. The decrease in bullion for the week was £1,024,658, and the Bank's proportion of reserve has decreased slightly, being 62·12%, against 62·55% a week ago, though it is still high as compared with last year, when it was 46·08%. Gold has continued to go out, chiefly to France, although some has gone to Russia, and some to Holland also, the outflow continuing in spite of the raising of the Bank's price for gold bars to 77s. 10½d. as a precautionary measure.

The Bank of France on Thursday, November 8th, reported its specie holdings at 1,928,212,000 fr. gold and 1,238,395,000 fr. silver; an increase of 226,862,219 fr. gold and a decrease of 25,400,125 fr. silver as compared with the corresponding date last year. Changes during the week were an increase of 24,950,000 fr. gold, and a decrease of 775,000 fr. silver.

Specie holdings of other European banks on Thursday, November 8th; are reported by cable to the "Journal of Commerce" as below:

	Gold.	Silver.	Total.
Imp. Bank of Germany	.....	.....	$242,900,000
Austro-Hungar'n Bank.	$71,555,000	$72,107,000	146,662,000
Netherlands Bank	20,361,000	33,720,000	54,081,000
Belgian National Bank.	.....	.....	24,052,000
Bank of Spain	40,020,000	48,991,000	89,011,000

The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately. No report of so late date is received from the Imperial Bank of Russia.

A loan for £2,250,000 at 3% interest was placed in London last week by the Dominion of Canada at 97. The loan was largely over-subscribed.

It is reported that negotiations are pending for the placing in London of a Mexican loan of £2,500,000 at 6% interest, payable in silver. The issue price, it is said, will be between 65 and 70. This will be about the same price as the Chinese silver loan just placed. The nominal issue price of the Chinese bonds was 98, but the exchange value fixed brought the actual price to about 70 in gold.

The new Chinese loan, which was offered for subscription November 7th, was all taken in London. The loan was for 10,900,000 taels, equal to about $7,850,000. The issue was made at 98 and subscriptions were to be at the exchange rate of 3s. per tael, making the actual price a little over 70 in gold. The interest is 7%, and both interest and principal are payable in silver. The bonds are to run for 20 years. They will be redeemed by annual drawings to begin in November, 1904. Principal and interest are secured by charges on the customs duties of the treaty ports. The customs revenue for 1893 was £3,646,350, and the only charge upon it at present is the annual service of the outstanding loans which amounts to £694,000. The loan will probably make no marked demand for silver, as most of the proceeds will be used in Europe to pay for war material. It may, however, promote a desire on the part of the English to appreciate silver by adopting universal bimetallism.

Shipments of silver from London to the East for the year up to October 26th are given by Messrs. Pixley & Abell's circular as below:

	1893.	1894.	Changes.
India	£5,798,851	£4,253,815	D. £1,545,036
China	1,202,213	2,452,947	I. 1,250,734
The Straits	1,265,913	1,149,646	D. 116,267
Total	£8,266,977	£7,856,408	D. £410,569

Shipments reported for the week included £17,500 to Bombay, £3,000 to Calcutta, £135,369 to China and £20,000 to Japan.

The demand for Indian exchange in London was light this week and only 33 lakhs of Council bills were taken on Wednesday out of the 40 lakhs offered. The price was somewhat lower also ranging about 13 1/16d. per rupee.

The foreign trade of Austria-Hungary for the nine months ending September 30th is reported as follows:

	1893.	1894.
Exports	Fl.577,200,000	Fl.584,100,000
Imports	484,200,000	525,900,000
Excess of exports	Fl.93,000,000	Fl.58 200,000

There was an increase of 6,909,000 florins in exports and of 41,700,000 florins in imports. Gold and silver are not included.

The report of the Imperial Japanese Mint for the fiscal year ending May 31st, 1894, gives the coinage for the year as below:

	Number.	Value—yen.
Gold:		
Five-yen	262,988	1,314,940·00
Silver:		
One-yen	11,790,216	11,790,216·00
Twenty sen	2,001,106	400,221·20
Ten-sen	6,003,307	600,330·70
Total silver	19,794,629	12,790,767 90
Nickel:		
Five-sen	14,402,471	720,123·55
Total	34,460,088	14,825,831·45

The standard gold yen contains 0·44444 momme (25·72 troy grains) of gold ·900 fine. The standard silver yen contains 7·18848 momme (416 grains) of silver ·900 fine. The gold yen, therefore, contains 23·148 grains fine gold, worth at our value 99·68c.; that is, the gold yen is practically a gold dollar. The silver yen contains 374·4 grains fine silver, which at current prices—say 62½c. per oz.—would be worth 48·75c.

From the establishment of the Mint up to the close of the year the total value of coins made was: gold, 66,260,083 yen; silver, 139,105,910·50 yen; nickel, 5,488,501 yen; copper, 12,418,056·74 yen. The use of copper ceased with the fiscal year 1888-89; since then a nickel alloy has been used for subsidiary coins. The total receipts of the mint last year were 2,291,343 yen, and the expenditures 1,795,937 yen, showing a profit of 495,406 yen.

The report, which is prepared and presented by Mr. T. Hasegawa, Director of the Mint, contains much interesting information.

Domestic and Foreign Coins.

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

	Bid.	Asked.
Mexican dollars	$.51	$ .51¾
Peruvian soles and Chilean pesos	.50	.52
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	3.88
Twenty marks	4.74	4.80
Spanish 25 pesetas	4.78	4.83

Other Metals.

Copper.—As very little business has been done during the week now closing, prices are all more or less nominal. The larger of the Lake companies are still out of the market, and the price remains 9½@9⅝, with second hand holders offering ingots in New York at the lower figure. The quotations for electrolytic copper have to be lowered to 9¼@9⅜, price varying according to brand and quantity, and for casting copper to 9·10@9·15, but, as already stated, transactions have been so few and unimportant that no actual prices can be given.

The London market for g. m. b.'s has been rather flat, and touched £39 17s. 6d. during the week, but the close is a little firmer at £40 2s. 6d.@5s. for cash and £40 7s. 6d.@10s. for three months prompt, refined and manufactured being quoted as follows: English tough, £42 15s.@£43; best selected, £43 5s.@£43 10s.; strong sheets, £50 10s.@£51; India sheets, £47 10s.@£48; yellow metal, 4⅝d.

The demand for fine or consumers' copper is very limited in Europe and it is reported that every order is eagerly competed for.

Copper Exports.—The exports of copper from the port of New York during the week ending November 8th, as reported by the New York Metal Exchange, were as follows:

London—Mississippi	Pigs	25	tons
Rotterdam—Edam	Bars	50	"
" Rotterdam	Plates	75	"
Hamburg—Spree	Ingots	15	"
" "	Plates	10	"
Bordeaux—Chateau Lafitte	Pigs	175	"
Liverpool—Runic	Pigs	125	"
Antwerp—Westernland	Cakes	10	"
London—Manitoba	Pigs	25	"
Swansea—Boston City	Bars	100	"
" "	Ingots	25	"

New York Imports and Exports of Metals.—Imports of metals into this port for the week ending November 1st are reported by the New York Metal Exchange as follows: 35 tons Banca tin from Holland; 2 tons English tin from Bristol; 333 tons tin, 100 tons English lead, duty paid, and 50 tons English lead, bonded, from London; 100 tons English lead, duty paid, from Swansea; 70 tons nickel matte from Canada.

Exports of metals (other than copper) from this port for the week ending November 1st are reported by the New York Metal Exchange as follows: 10 tons zinc skimmings, 29 tons old brass, 22 tons wire nails to Liverpool; 15 tons tin scrap to Antwerp; 22 tons tin scrap to Rotterdam.

Exports of copper from Baltimore for the week ending November 8th are reported by our special correspondent as follows:

Hamburg—Barmen	540 casks	112,634	lbs.
" "	898 bars	171,148	"
" "	3,520 plates	67,200	"
" California	385 cakes	90,459	"
" "	1,454 bars	202,179	"
Liverpool—Rossmore	1,436 cakes	455,525	"

No exports of other metals are reported for the week.

Tin.—The deliveries continue at a very satisfactory rate and new orders come in quite regularly at fair prices, 14⅝@¾ for spot and November. Futures, that is, December to May deliveries, at buyer's option, continue to be offered at 14½. In the main our market is closely following that in London, where prices have been irregular, opening at £66 7s. 6d., advancing to £67, and closing rather flat at £66 5s.@10s. for spot and £67@£67 2s. 6d. for futures. The statistical position abroad is not very favorable.

Lead.—A large business has been done this week at somewhat irregular prices, and in New York, where spot metal has been scarce, a premium has been paid. Metal for prompt shipment from the West has been freely sold at 3⅛, however, and at this figure December shipment also is to be had.

The foreign market has eased off slightly, and now Spanish lead is quotable at £9 15s.@£9 17s. 6d., and English at £9 17s. 6d.@£10.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "Lead quiet at 2·92½c. Transactions are limited owing to an indisposition on part of buyers to allow themselves to be supplied at prices asked by sellers.

Spelter.—Continues dull and producers have more freely met the market. The quotation must be lowered to 3·35@3·40 New York. Consumption seems to be rather small just at present.

The foreign market is flat at £14 15s. for ordinaries and at £14 17s. 6d. for specials.

Quicksilver.—This market continues quiet and prices show no change. We quote: New York, $37; London, £6 10s.@£6 15s.

Antimony.—Is dull, Cookson's selling at 8½c.; L. X., at 8½c.; Hallett's at 7¼c.; U. S. French Star 9½c.

Aluminum.—Current quotations are unchanged as follows, No. 1 being over 98% pure metal, and No. 2 over 94% pure: No. 1 in rolling ingots, 63c. per lb. for small lots at factory; 60c. in 100 lb. lots; 58c. in ton lots. No. 1 in ingots for remelting, 60c. for small lots, 55c. for 100 lb. lots, and 53c. in ton lots. No. 2 in ingots for remelting, 55c., 53c. and 50c. per lb., according to size of order. Sheets, 80c. @$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Castings, 90c. per lb. up, according to number, weight, patterns, etc. Tubes, from 20c. to $3.15 per foot, according to thickness and diameter.

Abroad quotations for 99% pure metal in Paris are 5·75@7·50 fr. per kilo. for ingots; 7·25@11·50 fr. for sheets; 9·00@17·50 fr. for wire, and 15@22 fr. for tubes. The Neuhausen Company quotes No. 1 (guaranteed 98% pure, and in fact 99·75%) at 5 fr. per kilo. for ingots in small lots; for large lots a considerable discount is allowed. This price is at the works in Switzerland.

Bismuth.—Recent sales in New York are lacking and quotations are nominal at $2@$2.50 per lb., according to quantity.

Magnesium.—No quotations are to be found for this metal in New York, where sales are seldom made. Prices in Germany are, for lots of over 10 kilos.: Ingots, $6.75 per kilo.; bars, $6.50; powder, $9; ribbon and wire, $9.50. For orders of less than 10 kilos., 25 cents per kilo. must be added for ingots or bars, and 50 cents for ribbon, wire or powder. These prices are delivered at works; the Aluminum und Magnesium Fabrik, Hemelingen, Germany, is the only maker of the metal in commercial quantities.

Nickel.—No sales are reported here; quotations are nominal at 40@45c. London quotations are 17@18d. per lb., with small sales.

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

Platinum.—Abroad the prices are still firm, with no recent change.

For chemical ware, hammered metal, Messrs. Eimer & Amend, New York, quote crucibles and dishes 41c. per gram for orders of over 250 grams; 43c. for orders of 100 grams or over, and 45c. for small lots. Wire and foil are 40c., 41c. and 42c. per gram, respectively, for orders of the quantities named. Current retail prices for crucibles are 50c. per gram.

Sodium.—In England and Germany makers quote 90@$1 per lb. Sales in this market are too small to furnish quotations.

Monazite.—This mineral has attracted some attention recently, and we are informed that considerable quantities of it have been collected and brought to market. The mineral contains from 60 to 79% of the oxides of cerium and other rare metals of the cerium group—thorium, lanthanium and didymium—combined with phosphoric acid and silica. It is found in western North Carolina and South Carolina in the gravel of the mountain streams, usually in the form of small brown or yellowish brown crystals. It has been found in the gold placers of the region named, but was thrown aside as of no value, or at least as having no market. It is frequently associated with titanic iron ores in small quantities. Since it has become understood that a market existed the search for it has extended, and one account says that as much as 65 tons were collected in August, with probably a larger amount in September and October. The new use for the mineral is in the making of the incandescent gas lamps, manufactured under the patents owned by the Welsbach Incandescent Light Company. As the Welsbach company is the only customer and can fix its own price, no market quotations can be given, but it is stated that by judiciously spreading reports and working up the production, the price, which was formerly 20@25c. per pound., has been brought down to about 6@6½c. at the present time.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Nov. 9.

Heavy Chemicals.—There is very little change to report of this market. Caustic soda has been in slightly better demand for 1895 delivery. Alkali and carbonated soda ash are stronger and rather more active, though prices are not yet much higher. Bleaching powder has also been in better request, and several fair sales, both for prompt and for future delivery, are reported. Prices are practically unchanged. We quote this week: Caustic soda, 60%, 2·15@2·25c.; 70%, 74%, 2·05@2·10c.; 76%, 2·27½c. Carbonated soda ash, 48%, ·95@1c.; 58%, ·87½@·90c. Alkali, 48%, 90·95c.; 58%, ·85@·90c. Bleaching powder, English, 1·75@1·80c.; German, French or Belgian, 1·50@1·62½. Sal soda, ·72½@·75c.

Acids.—A better feeling is reported in this market, and the volume of business has increased somewhat, although it is chiefly of a jobbing nature. Prices are unchanged, and we quote: Acids, per 100 lbs. in New York and vicinity, in lots of 50 carboys or more, Acetic, in barrels, $1.40@$1.60; 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, $6 per ton. Mixed acids according to mixture, oxalic, $6.50@$7.50 per 100 lbs. Blue vitriol is quoted at $3.50@$3.62½; glycerine for nitro-glycerine 11½@12½c., according to quality and quantity.

Brimstone.—The market for Sicilian brimstone is very firm although it continues quiet. Quotations, both for spot and for shipments, are $17 for best unmixed seconds, and $1 less for thirds.

Fertilizing Chemicals.—The past week has been a very quiet one in the fertilizer market and only a few small sales are reported. Prices show no change of importance and we quote this week: Sulphate of ammonia gas liquor, $3.60@$3.65; bone, $3.50@$3.55. Dried blood, high grade, $2.45@$2.50; low grade, $2.35@$2.40. Azotine, $2.40@$2.45. 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 bone black,

17% to 18%, P_2O_5, 90c. per unit. Acidulated fish scrap, $14@$15, and dried scrap nominally $25 f. o. b. fish factory. Tankage, high grade, $23@24; low grade, $22@$22.50. Bone tankage, $22.50; 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.—Quotations at Charleston, S. C., are: $4@4.25 for standard land, kiln dried rock; ground rock, in buyer's bags $5.50@$5.60, in seller's bags $1 higher. Acid phosphate remains at $6.25@$6.50.

Muriate of Potash.—Arrivals during the past week aggregate 4,875 bags, of which 2,500 bags went to Philadelphia and the rest to this port. 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.—This market continues quiet. Quotations are: Spot, $2.07½; near-by arrivals, $2.07½; shipments next year, $1.90.

Liverpool. Oct. 30.

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

There is nothing very encouraging to report in the position of chemicals, dullness being still the prevailing feature.

Soda ash.—There is little business reported in Leblanc makes, and nominal spot range is about: Caustic ash, 48%, £3 15s.@£4 per ton; 57 and 58%, £4 10s.@£4 15s. per ton. Carb. ash, 48%, £3 5s.@£3 15s. per ton; 58%, £3 15s.@£4 per ton, net cash.

Ammonia ash, 58%, in request, and in some cases makers are asking higher prices, the quotations ranging from £3 10s. to £3 15s. per ton, net cash, for tierces, and 5s. less for bags.

Soda crystals inactive, at nominally £2 10s. per ton, less 5%.

Causti soda is slow of sale, quotations vary according to export market, and range is about: 60%, £6 15s.@£7 10s. per ton; 70%, £7 15s.@£8 10s. per ton; 74%, £8 15s.@£9 10s. per ton; 76%, £9 15s.@£10 10s. per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder is dull, without change in quotations, which range from £7 5s. to £7 15s. per ton net cash for hardwood packages, according to destination.

Chlorate of potash is offered by resellers for prompt delivery at 5½d., but no buyers. For 1895 delivery there is a firmer feeling, and 5½d. is nearest value, while the short sellers seem to have mostly withdrawn.

Bicarb. soda in fair demand at £6 5s. per ton, less 2½% for 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia has taken a turn for the better and is about 7s. 6d. dearer on the week, £12 15s.@£12 17s. 6d. per ton, less 2½%, being now nearest values for good gray 24-25% in double bags f. o. b. here, and a fair business reported.

Nitrate of soda keeps steady at £9 2s. 6d.@£9 5s. per ton, less 2½% for double bags f. o. b. here.

Carb. Ammonia.—Lump, 3¾d. per lb.; powdered, 4d. per lb., less 2¼%.

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 454 and 456.]

NEW YORK, Friday Evening, Nov. 9.

The excitement incident to the elections has been reflected in the mining stock market in the shape of light transactions, although there has been a freer inquiry for mining shares generally than has been experienced for quite a little time. The brokers at the Consolidated Stock and Petroleum Exchange are more hopeful than ever that there is to be a revival in stock speculation of all sorts which cannot fail to affect their business favorably.

The Comstocks have been steady but quiet. Consolidated California & Virginia was in but little demand, and only 75 shares were sold at $4.50@$4.90. Of Ophir 300 shares changed hands at $3@$3.20, and of Savage, 150 shares at 55c.@68c.

Transactions in Best & Belcher aggregated 350 shares at $1.10@$1.25. There was a sale of a $1,000 Comstock Tunnel bond at 8%. Of Comstock Tunnel stock 5,800 shares are reported sold at 5c.@6c. Other sales were as follows: 100 shares of Hale & Norcross at $1.20, 100 shares of Cholar at 70c., 100 shares of Mexican at $1.30, and 200 shares Union Consolidated at 60c.@65c.

Of the California stocks the only one to show any transactions this week was Standard Consolidated, of which 100 shares were sold at $1.25. The earnings of the Standard Consolidated Mining Company for October amounted to $23,000, and the expenses for the same period to $16,500. The comparatively heavy expenses last month are accounted for by the fact that a part of them was paid for permanent improvement.

Of the Colorado stocks the most active was Lacrosse, of which 2,000 shares was sold at 6@7c. American Flag was also quite active, 1,500 shares having been sold at 3c. Leadville Consolidated was stationary at 10c, with sales of 800 shares.

Phœnix of Arizona was in fair demand, and 1,100 shares were traded in at 15c.@16c., an advance of 2c. from last week.

The president of the Horn Silver Mining Company informs us that the concentrating plant is working well. For the week ending November 1st the mill shipped 312,210 lbs. of concentrates, of the gross average value of $45.30 per ton, which after deducting the expenses of working averaged, net, $21.79, thus returning $2,817 for the week's run.

NOTES OF THE WEEK.

The directors of the Colorado Mining Exchange at Denver last week struck off the list a number of stocks which had not paid the listing and calling fees. Among the stocks thus dropped from the call were: Alamo, Aola, Bushwhacker, Calumet, Creede & Cripple Creek, Fanny Rawlins, Golden Dale, Golden Treasure, Gold Standard, Isabelle, Jack Pot, Lottie Gibson, Mount Rosa, Pharmacist, Summit, Union Gold, Western Milling, World, Work.

This action of the Board of Directors has met with the approval of brokers and mining men generally on the Denver Exchange. We have repeatedly advised our own Consolidated Stock and Petroleum Exchange to drop from its long list two-thirds of the stocks which now encumber it. Why the committee on mining securities has not done so remains a mystery to this day.

Boston. Nov. 8.

(From our Special Correspondent.)

There is no special change to note in copper stocks for the week past. Extreme dullness continues the feature, and there is nothing in the outlook to base a hope of improvement in the near future. The dealings in Boston & Montana were the largest in any one stock, and they were less than 1,000 shares, but the price was well maintained and reached $29 ex-dividend, a gain of $½ over last week. Butte & Boston was almost entirely neglected, only one sale of 50 shares reported at $10@$10¼.

The sales of Calumet & Hecla consisted of 8 shares at $293@$295, and Tamarack sold only in a small way at $150@$148. Quincy gained $2 to $95 for 15 shares, losing $¼ in later sales for the same amount. The scrip sold at $35, same as last sale. Osceola advanced $¼ to $22½ for a 100 share lot, with a later sale of 25 shares at $22. Franklin sold only in small lots at $11¼@$11½. Atlantic sold at $10. At this price there seems to be ready purchasers, but only small lots come cut. Kearsarge sold at $7 for 15 shares only; and Centennial at 50c. for 100 shares. Wolverine advanced from $2¼ (Oct. 24th) to $2 1/8 for 200 shares.

There was no gossip in copper circles indicating any advance in the market at present. The Lake Superior companies are generally increasing their output, and should the metal advance they will be in condition to avail themselves of any demand which may arise. The market closes without any change worthy of notice.

San Francisco.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Nov. 9.—The market during the week has ruled fairly steady, and prices, with a few exceptions, have been quite strong, although no marked advance has taken place. Opening quotations to-day are as follows: Best & Belcher, $1.15; Bodie, 87c.; Bulwer, 10c.; Challar, 72c.; Consolidated California & Virginia, $4.60; Gould & Curry, 63c.; Hale & Norcross, $1.05; Mexican, $1.30; Mono, 16c.; Navajo, 15c.; Ophir, $3.35; Savage, 60c.; Sierra Nevada, 86c.; Union Consolidated, 65c.; Yellow Jacket, 68c.

London. Oct. 24.

(From our Special Correspondent.)

The great boom in West Australian mining promotion has to a large extent died down, for the public has at last found out that though there is certainly gold in the colony there is no promise of any for the shareholders. It is pretty well known now that distrust is almost universal, and many companies that were ready for issue are being held back. Those speculators who took stock, in the hope of selling at a premium are likely to be caught with a lot on hand. Owing to this dullness in West Australians miscellaneous mines have had much more attention given to them. Among Americans the most noticeable feature is the rise in New Gustons to par. There is now no doubt that the new discoveries in this mine are sure to bring this company back among the dividend payers, as the new veins of gold and silver bearing copper ores appear exceedingly profitable. Jay Hawks have continued to fall and now stand at about 3s. 6d. The explanation is that a large holder has recently died and his holdings are being sold out, while there is very little chance of finding new investors in purely silver properties. The sudden and smart rise in De Lamars, the cause of which was explained last week, has been fairly well sustained, though those who were caught have got over the first shock. The price will probably settle down again to about par, for another block of stock will come on the market in a month or two.

The Madison Gold Mining Company, Limited, is the name of a company which has just been registered, with a capital of £85,000. The object is to work the Remington group of mines in the Rochester mining district, Madison County, Mont. There are six claims, viz.: Golden Pacific, Southern Cross, Conductor, Engineer, Young Montana, and Black Oak. This property has been brought over by Mr. W. A. G. Birkin, and he and Mr. Claude Vautin will be the moving spirits.

There have been many rumors floating round relating to the exhaustion of the oxidized ores at Broken Hill. They obtained such general acceptance that the Broken Hill Proprietary Company thought proper to issue a special report contradicting them. The directors state that there is absolutely no cause for alarm, but at the same time they say that special reports are being prepared for presentation with the next half-yearly accounts. These special reports will, without doubt, be of the very greatest interest.

It is a perfect mystery how any one can continue to put his trust in Col. McLaughlin, manager of the Golden Feather, Oroville, Cal. It has been repeatedly pointed out in these columns that he never intends to work the property, but to have an alteration of glowing reports and destructive floods. These things happen year after year with such regularity that they can be easily predicted. For instance, I wrote in my letter which appeared in the "Journal" September 29th last: "Col. McLaughlin is commencing his usual summer campaign in Golden Feather and Golden Gates. His cables announce that he is now in the cream of the claim. Of course, the events of this summer may be the same as those of previous ones; and just as he is beginning to make returns the dam may burst or the frost set in." Now comes the fulfilment in the form of a cable from the Colonel announcing that a heavy storm of wind and rain has drowned out the claim. It happens that after his cable about the cream of the claim, a director and an official of the company went out to view the property and tof east their eyes on the extracted gold. By one of those extraordinary coincidences for which the Colonel is noted, the claim was swamped just a few days before these gentlemen were due, so that all they saw was the commencement of the pumping operation.

Paris. Oct. 29.

(From our Special Correspondent.)

The market has been much slower this week, chiefly from political causes, and speculation has been comparatively light. There is really very little that is new to report. The metallurgical shares and the coal and iron stocks continue heavy, with few changes and none of importance.

The copper stocks are dull on the lower prices of the metal, but, somewhat unexpectedly, the changes have been generally upward; Rio Tinto and Tharsis have both gained slightly. Nickel continues to fluctuate, without great changes.

In silver, Huanchaca has gained a little. The Transvaal gold stocks are still strong and active, and the speculation in them finds favor here more and more. Beyond these notes there is but little to say of our special mining market.

For September and the nine months ending September 30th French imports and exports of gold were as follows:

	September.	Nine mos.
Imports	Fr. 24,900,790	Fr. 256,089,490
Exports	5,552,382	69,795,322
Excess of imports	Fr. 19,348,408	Fr. 186,294,168

The Bank of France continues to increase its gold, as you have doubtless seen from your telegraphic reports.

International politics continue to have a great effect upon the market. First is still the great question of how long the Czar's life will be prolonged. Every one expects that he will die soon; but he may live long enough for some definite political arrangement to be made. How greatly this matter affects us you may realize when I tell you that good judges estimate the amount of Russian securities held in France at eight milliards of francs. Besides the loans placed here directly, our good neighbors of London and Berlin have been quietly unloading Russians upon us for years. The latest advices from Livadia indicate that Alexander cannot live much longer, possibly a few days only. The end has been so fully discounted, however, that it will probably have but little immediate effect on the Bourse.

As to the Eastern war it begins to be seen that there will be no intervention. It is now generally understood that Lord Rosebery proposed intervention to all the European governments, only to be quietly snubbed and given to understand that if England wanted China preserved from harm for her own purposes, she must do it at her own risk and charge. No one else would share the responsibility. But England will not, and we have had thus a new proof of English hypocrisy and of the imbecility of English diplomacy. Truly a spectacle most deplorable.

AZOTE.

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

Name of Company.	Par val.	Nov. 3. H.	Nov. 3. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8. H.	Nov. 8. L.	Nov. 9. H.	Nov. 9. L.	Sales
Belcher, Nev.														
Belle Isle, Nev.														
Bodie Cons., Cal.														
Bulwer, Cal.														
Chrysolite, Colo.														
Comstock T. bonds, Nev.												.08		1,000
" scrip., Nev.														
Cons. Cal. & Va., Nev.		4.90								4 50				75
Crown Point, Nev.														
Deadwood, Dak.														
Eureka Cons., Nev.														
Father de Smet, Dak.														
Gould & Curry, Nev.												1.20		100
Hale & Norcross, Nev.														
Homestake, Dak.														
Horn-Silver, Utah.														
Kentuck, Nev.														
Leadville Cons., Colo.										.10				800
Little Chief														
Mono, Cal														
N. Belle Isle, Nev.														
Ontario, Utah.														
Ophir, Nev.										3.20	3.00			200
Plymouth, Cal.														
Quicksilver, Pref., Cal.														
" Com., Cal.														
Savage, Nev.		.68								.35				150
Sierra Nevada, Nev.														
Silver King, Ariz.														
Standard Cons., Cal.								1.25						100
Victor, Colo.														
Yellow Jacket, Nev.														

NON-DIVIDEND-PAYING MINES.

Name of Company.	Par val.	Nov. 3. H.	Nov. 3. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8. H.	Nov. 8. L.	Nov. 9. H.	Nov. 9. L.	Sales
Am. Flag											.03		03	1,500
Alpha, Nev.														
Alta, Nev.														
Barcelona, Nev.														
Belmont, Cal.														
Best & Belcher, Nev		1 15	1.10	1.25	1.10									350
Brunswick, Cal.														
Castle Creek.														
Chollar, Nev.		.70												100
Comstock T., Nev.		05											.06	5,800
Con. Imperial, Nev.														
El Cristo, Rep. of Co														
Exchequer, Nev.														
Independence, Nev.														
Julia, Nev.														
Justice, Nev														
King & Pembr, Ont.														
Lacrosse, Colo.				.06				.06		.07		06		2,000
Mexican, Nev.										1.30				100
Nevada Queen, Nev														
N. Standard, Cal.														
N. Commonw'th, Nev														
Overman, Nev.														
Oriental & Miller, Nev.														
Phœnix of Ariz.								.15		.16				1,100
Potosi, Nev.														
Scorpion, Nev														
Seg. Belcher, Nev.														
Union Cons., Nev.										.65	.60			200
Utah, Nev.														

*Ex-Dividend; †Dealt in at New York Stock Ex. Unlisted securities. ‡Assessment paid. §Assessment unpaid. Dividend shares sold, 2,425. Non-dividend, 11,150. Total, 13,575.

BOSTON MINING STOCK QUOTATIONS.

Name of Company.	Par val.	Nov. 2.	Nov. 3.	Nov. 5.	Nov. 6.	Nov. 7.	Nov. 8.	Sales
Atlantic, Mich.		10.00		10 00		10.50		97
Breece, Colo								
Bost. & Mont., Mont.		28.50	28.25	28 50		28.63	28.38	926
Calumet & Hecla, Mich.				288		295	293	8
Central, Mich.								
Cœur d'Alene, Id.								
Franklin, Mich.				11.25	11 13			20
Honorine, Utah.								
Horn Silver, Utah.								
Kearsarge, Mich.		7.00						15
Lake Superior, Iron.								
Minnesota Iron, Minn.								
Napa, Cal.								
Ontario, Utah								
Osceola, Mich.				22.50		22 00		122
Quincy, Mich.						95.00	94.75	30
" script.						35.00		20
Silver King, Ariz.								
Tamarack, Mich.		150		149		148		17
Tecumseh, Mich.								

Name of Company.	Par val.	Nov. 2.	Nov. 3.	Nov. 5.	Nov. 6.	Nov. 7.	Nov. 8.	Sales
Alloues, Mich.								
Arnold, Mich.								
Astec, Mich.								
Brunswick, Cal.								
Butte & Boston, Mont				10.25	10 00			55
Catalpa, Colo.								
Centennial, Mich.		.50					.50	200
Copper Falls, Mich.								
Hanover, Mich.								
Humboldt, Mich.								
Huron, Mich.								
Mesnard, Mich.								
National, Mich.								
Native, Mich.								
Phœnix, Ariz.								
Pontiac, Mich.								
Tamarack, Jr., Mich.								
Washington, Mich.								
Wolverine, Mich.							2 81	200

Dividend shares sold, 1,255. Non-dividend shares sold, 455. Total shares sold, 1,710.

COAL AND COAL RAILROAD STOCKS.

Name of Company.	Par value.	Nov. 3. H.	Nov. 3. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8. H.	Nov. 8. L.	Nov. 9. H.	Nov. 9. L.	Sales
Am. Coal.								67¾	67	67¾		69⅛	68	700
Balt. & Ohio.														
do. pref.														
Buff., R. & P.														
do. pref.														
Ches. & Ohio.		18⅜		19	18⅝			19½		19⅝	19¼	19⅝	19⅜	1,415
do. 1st pref.														
Col. C. & I.														
Col. Coal.														
Col. Fuel.								23¾		25	24			700
do. pref.														
Col., H. V. & Tol		18		19¾	19			19¼						325
do. pfd.														
Col. & H. Coal														
do. pfd.														
Cons. Coal.														
Del. & Hud. C.		126¾	124	124¾	124			126	124½	127¾	125½	127¼	127	5,335
Del., L. & W.		159½		157⅝	156			160	158	161¾	150	162	161	5,565
*Hunt. & Br. T.														
*do. pref.								51						48
Lake Erie & W				16⅞	16¾			17⅛	17	18	17⅝	18⅛	17⅞	2,550
do. pref.								71		73½	71½	73½		1,893
*Lehigh C. & N.		51¼	51	51½	49⅝			49	48¾	48¾	48⅝			366
*Lehigh Val.		35⅜	35⅛	35⅜	35½			35⅛	34¾	35½	35⅛			1,029
Mary'l'd Coal.														
do. pref.														
Morris & Es'x.				161						161¾	161			40
New Ct. Coal.														
N. J. Central.		94⅛	92	92⅛	91			93	89¾	94⅝	91	96½	93¾	69 101
N. Y., L. & W.		1.5⅝												10
N. Y., L. E. & W				14	13⅜			14¼	14	14¼		14		1,500
do. pref.												28¾		100
N. Y., Susq. & W				14⅛				15⅜				16		210
do. pref.				44¼	43¾			44⅝	44	45	44½	44⅝	44¼	2,550
N. & West.								7		7¾				210
do. pref.				22⅜				23¼	23¾					325
Penn. Coal.								275						31
*Penn. R. R.		50¾	50	51⅛	50⅛			51	50¾	51¼	51			3,326
Phil. & Read.		18¾	17¾	18	17⅜			18⅜	17⅝	18¼		18		7,165
Tenn. C. & I.								17	16¾	17		17		525
do. pref.														
Wheel. & L. E.		41⅛	40¾	42¼	41¾			44⅛	42⅝	41¾				740
do. pref.														916

*Philadelphia quotations for week commencing Nov. 2 to Nov. 8. Total shares sold, 100,775.

INDUSTRIAL AND TRUST STOCKS.

Name of Company.	Par value.	Nov. 3. H.	Nov. 3. L.	Nov. 5. H.	Nov. 5. L.	Nov. 6. H.	Nov. 6. L.	Nov. 7. H.	Nov. 7. L.	Nov. 8 H.	Nov. 8. L.	Nov. 9. H.	Nov. 9. L.	Sales.
Adams Exp.														
Am. Cot Oil.		26⅛		23¾				27¾	27¼	27⅝	27⅜	28¼	17½	2,831
do. pref.		72¾		74				74	73½			76¾	76½	830
Am. Dist. T.														
Am. Expr.		110¾		110⅛				111¾						300
Am. Sug. Rf.		86⅝	85¾	88	86¼			90	87⅛	89⅝	87⅛	92⅛	88¾	214,989
do. pref.				93¾	92			92¾		93½	93⅜	95	94	1,499
†dis. E. I. Co.				100¾				101						200
Edis Gen. El		35¼		36⅛	35⅜			37¼	36¾	36¾	37¾	36⅝	36⅜	18,620
Nat. Lead Co		40		41	40¾			41½	41⅜	41⅝	41	42⅛	41⅝	5,860
do. pref.		87½		88	87½			88⅞	88¼	89⅜	89⅛	89⅝	89	586
Nat. Lins. Oil.														
U. S. Cord. Co.		13¼	13	13¾	13⅝			14	13⅝	13¾	13⅜	13¼	13	11,063
do. pref.								23		24	22			2,352
U. S. Expr'ss														
U. S. Rubber		40¾	40¼	41				41¼	40¾			42¼	41⅝	2,600
do. pref.		95¾		95¾										250
Wells, Fa. Ex														
West. Union		87¾		87⅞	87⅜			88⅛	87	87⅝	87¾	89¼	87¾	24,328
*Westingh'se Brake Co														
*Westingh'se Air Brake				4125				4125	4129					

* Pittsburg quotations. † Bid. ‡ Asked. Total shares sold, 386,598.

San Francisco, Cal.

Name of Company.	Par value.	Closing Quotations. Nov. 2	Nov. 3.	Nov. 5	Nov. 6	Nov 7	Nov 8.
Alpha.							
Alta.			.18	.17		.19	
Belcher.			.80	.78		.81	
Belle Isle.							
B. & Belch			1.05	1.05		1.05	
Bodie.			1.20	.95		.88	
Bulwer			.10	.09			
Chollar.			.70	.67		.68	
Com'w'lth							
Con. C. & V.			4.60	4.30		4.40	
Con. Pac.							
Crown Pt.			.58	.52		.55	
Del Monte							
E'reka Con							
G'ld & C'y			.60	.58		.60	
Hale & N.			.91	.90		.93	
M. White.							
Mexican.			1.15	1.15		1.20	
Mono.				.17		.17	
Mt. Diablo							
Navajo.							
Nev. Qu'n.							
N. B'll'sle							
N. Co'w'th							
Ophir.			2.90	2.85		3.30	
Potosi.			.60	.60		.63	
Savage.			.56	.56		.54	
Sierra Nev			.82	.81		.80	
Uni'n Con			.59	.59		.66	
Utah			.08	.08		.09	
Yel. Jack.			.64	.64		.66	

Baltimore, Md. Nov. 8.

	Par val.	Latest actual selling price.	Bid.	Asked.
Atl. Coal, W. Va.	$10	....	....	$0.80
Blt. & N. C., N. C.	5	$0.02	....	.02
B'lt. M. & S., N. C.		....	....	.02
Big Vein C., Md.	10	1.00	....	....
Conr. Hill, N. C.	5	.04	....	.04
Con. G. & C., N. C.	5	....	....	02
Cons. Coal, Md.	100	30.00	$30.00	32.00
Ga. C. Coal, Md.	100	106.00	104.00	108.00
Gt. Rep'b., Colo.	5	.02	....	.02
How. C. & C., Md.	5	1.15	....	1.20
Lake Chr., Md.	5	.05	....	.10
Newb. O. C'l, Md.	25	....	....	....
N. State (Balt.), N. C.	5	.05	....	.10
Ore Knob, Md.	10	.02	....	.05
Silv. Val., N. C.	5	.25	....	.25
Ver. M. Co., Md.	5	....	....	.10

Philadelphia, Pa. Nov. 8.

	Par val.	Bid.	Asked.
Blooming. C. & C. Co.	$50	....	....
Cambria Iron Co	50	$47	$65
Connellsville Gas Co.	10	....	....
Central C. & C. Co	100	....	....
do. pref.	100	....	85
Locust Mt. C. & I. Co.	50	....	....
North Liberties Gas.	25	....	35
Penn. Nat. Gas	..	*12	*11½
Penn. Salt Co.	50	....	100
Penn. Steel Co.	100	*23	....
Penn. Gas Coal Co.	50	....	47½
Westmoreland Coal.	50	50	51½
Wyoming Valley Co.	100	...	....

*Actual selling price.

London, England.

(From our Special Correspondent.)

	Par value. £	s.	d.	Oct. 31, 1894. Buyer. £	s.	d.	Seller. £	s.	d.
Al'ska Mex., Al.	1	0	0	1	3	9	1	6	3
Al'ka-Tr'dwell, Alaska.	5	0	0	3	12	6	3	17	6
Alma, & T., Mex		2	6			1½			7½
Am. Belle, Col.	1	0	0		1	9		2	3
Bon'za G'd, Cal					5	0		6	0
De Lamar, Id.	1	0	0	1	3	6	1	4	0
E. K'tenay Ex., B. C.					12	6		15	0
Elkhorn, Mont	1	0	0		12	9		13	3
Emma, Utah		5	0			3			6
G. Feather, Cal	1	0	0		2	6		3	0
Golden G, Cal.	1	0	0		2	6		3	6
G Leaf, Mont. & N. M.	1	0	0		3	0		3	6
Harqua H., Ari	1	0	0		5	0		6	0
Holc'b Val., Cal		5	0			7½			10½
Jay H'k & Lone Pine, Mont.	1	0	0		3	6		4	6
La Yesca, Mex	1	0	0			6		1	0
N. Guston, Col	1	0	0		15	0		17	6
N. Mont., Mont	1	0	0		13	9		14	3
Palm'rejo, Mex	1	0	0		1	3		1	6
Pin. Alt., Mex.	1	0	0		4	6		5	6
Pi. Alt., Mex., P	1	0	0		12	6		17	6
Pl. Eureka, Cal					11	3		13	9
Poorman C., Id		5	0		1	3		1	9
Rich. C., Nev.	5	0	0		9	0		11	0
Sier. But., Cal	2	6	0		8	0		10	0
Springd. G. Col		4	0		1	3		1	9
Un. Mex., Mex.	1	0	0		1	3		1	9

Denver, Colo. Nov. 5.

	Par value.	High.	Low.	Sales.
Adele.		.00⅞		2,000
Alamo		.01⅜		4,000
Amity		.00⅞		6,000
Anaconda.		.19½		6,100
Aola.				
Argentum		1.10	1.09	900
Bankers.				
Bangkok				
Big Six		.08	.07¾	4,100
Boston-Id.		.13	.12⅛	6,100
Bushwhacker.				
Calumet				
Cr. & Cr. Cr'k				
Fannie R.				
Garfield-Gr'se.				
Golden D.		.00⅞		15,000
Golden E.		.01		5,000
Golden T.				
Gold S.				
Isabella.				
Jack Pot				
Justice.				
Lottie Gibson.				
Mollie Gibson		1.92½		700
Mt. Rosa.		.05	.04½	12,200
Pharma.		.06¾		3,500
Portland.				
Summit				100
Union Gold.		.10		3,000
Western M.		.00⅞		
Work.				
World.				
Total shares sold				68,700

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	*				$637,500	Jan.	1892	.05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25					2,050,000	July.	1894	.75
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	*				31,250	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		*				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	710,000	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	*				900,000	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					87,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	*				295,000	Oct.	1894	.05
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	230,271	Sept	1893	.10	300,000	Dec..	1879	.25
16	Belcher, s. g.	Nev..	10,400,000	104,000	100	3,262,900	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	1,626,572	Oct..	1894	.25
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..	10,000,000	100,000	100	505,000	May.	1888	.15	192,000	Oct.	1890	.08½
27	Calumet & Hecla c	Mich..	2,500,000	100,000	25	1,200,000				40,850,000	Aug.	1894	5.00
28	Centen'l-Eureka, s.l.	Utah.	1,500,000	30,000	50	30,000	Mar..	1888	1.00	870,000	Oct	1894	.50
29	Central, c.	Mich..	500,000	20,000	25	100,000	Oct..	1861	.65	1,970,000	Feb..	1891	1.00
30	Champion, g	Cali	340,000	34,000	10	150,000				183,900	July.	1894	.10
31	Chrysolite, s. l.	Colo..	10,000,000	200,000	50	*				1,650,000	Dec..	1884	.25
32	Cœur D'Alene, s. l.	Idaho	5,000,000	500,000	10					310,000	June	1893	.03
33	Colorado Central, s.l.	Colo..	2,750,000	275,000	10	*				502,661	April	1893	.05
34	Commonwealth, s.	Nev..	10,000,000	100,000	100	200,000	Nov.	1893	.10	20,000	Nov..	1890	.20
35	Confidence, s. l.	Nev...	2,496,000	24,960	100	1,589,550	Aug..	1892	.50	199,680	April	1889	1.00
36	‡Cons. Cal. & Va., s.g	Nev...	21,600,000	216,000	100	216,000	Dec..	1892	.50	3,682,800	Aug.	1891	.50
37	Contention, s.	Ariz..	12,500,000	250,000	50					2,637,500	Aug.	1892	.20
38	Cook's Peak, s.	N. M..	2,000,000	200,000	10					119,532	Nov.	1892	.05
39	‖Cop. Queen Con., c.	Ariz.	2,000,000	200,000	10					1,710,000	Aug..	1894	.25
40	Coptis	Nev.	10,000,000	100,000	100					67,000	July..	1892	.12
41	Cortes, s.	Nev.	1,500,000	300,000	05	*				687,000	Mar..	1892	.50
42	Crescent, s. l. g.	Utah.	15,000,000	600,000	25	60,000	Oct	1892	.10	238,000	Oct..	1888	.03
43	Crown Point, g. s.	Nev.	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan..	1875	.00
44	Daly, s. l.	Utah.	3,000,000	150,000	20					2,850,000	May..	1893	.25
45	†Deadwood-Terra, g.	Dak..	5,000,000	200,000	25	*				1,140,000	Sept	1892	.05
46	DeLamar, g. s.	Idaho	2,000,000	400,000	25					1,450,000	July..	1894	.25
47	Derbec B. Grav., g.	Cal...	10,000,000	100,000	100	100,000	Sept.	1892	.10	265,000	Mar	1894	.05
48	Dexter, g. s.	Nev..	1,000,000	100,000	10					105,000	July	1893	.25
49	Elkhorn, s.	Mont.	1,000,000	200,000	5	*				1,337,363	Sept.	1894	.25
50	Elkton	Colo.	500,000	500,000	1					40,000	Aug.	1894	.01
51	Enterprise, s.	Colo.	2,500,000	500,000	5	*				650,000	June.	1893	.25
52	Eureka Con., s. l. g.	Nev...	1,000,000	50,000	100	550,000	June	1889	.50	5,112,500	Jan	1892	.25
53	Evening Star, s. l.	Colo..	500,000	50,000	10	*				1,437,500	Dec.	1889	.25
54	Father de Smet, g.	Dak..	10,000,000	100,000	100	200,000	Nov..	1878	1.00	1,125,000	Dec..	1885	.20
55	Franklin, c.	Mich..	1,000,000	40,000	25	220,000	June	1871		1,245,000	Dec..	1893	2.00
56	Glengarry	Mont.	1,000,000	100,000	10					10,000	June.	1891	.10
57	Golden Reward	S.Dak	1,250,000	250,000	5					100,000	July..	1894	.05
58	Gould & Curry, s. g.	Nev..	10,800,000	108,000	100	4,688,400	Oct..	1893	.10	3,826,800	Oct..	1870	10.00
59	Grand Prize, s.	Nev...	10,000,000	100,000	100	785,000	Jan..	1890	.30	495,000	Mar.	1884	.25
60	Granite Mountain, s.	Mont.	10,000,000	400,000	25					12,120,000	July.	1892	.20
61	Great Western, l. q.	Cal...	5,000,000	50,000	100					388,366	Nov.	1893	.25
62	Hale & Norcross, g. s.	Nev...	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug	1888	.50
63	Hecla Con., s. g. l. c.	Mont.	1,500,000	30,000	50					1,950,000	Oct	1894	.01
64	Hel'a Mg.& Red, s.l.g.	Mont.	3,315,000	663,000	5	*				197,970	July.	1886	.06
65	Helena & Frisco, s.l.	Idaho	2,500,000	500,000	5					170,000	July.	1891	.02
66	Helena & Victor	Mont.	1,000,000	200,000	5					80,000	May.	1892	.05
67	¶Holmes, s.	Nev...	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr.	1892	.25
68	Homestake, g.	Dak..	12,500,000	125,000	100	200,000	July.	1878	1.00	5,237,500	Aug..	1894	.20
69	Hope, s.	Mont.	1,000,000	100,000	10	*				583,250	Oct...	1894	.25
70	Horn-Silver, s. l.	Utah	10,000,000	400,000	25	*				4,930,000	July.	1894	.12½
71	Idaho, g.	Cal..	310,000	3,100	100					5,489,000	Sept.	1893	2.50
72	Illinois, s.	N. M..	100,000	100,000	1	*				45,000	April	1889	.20
73	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*				265,000	Feb..	1891	.02
74	Iron-Silver, s. l.	Colo..	10,000,000	500,000	20	*				2,500,000	April	1889	.20
75	Jackson, g. s.	Nev..	5,000,000	50,000	100	247,500	Mar..	1893	.20	60,000	Jan.	1891	.10
76	Kearsarge, c.	Mich..	1,000,000	40,000	25	190,000	Oct..	1887	1.00	80,000	Jan	1890	2.00
77	Kennedy	Cal...	10,000,000	100,000	100					1,410,000	July..	1894	.45
78	Kentuck, s. g.	Nev..	3,000,000	30,000	100	454,180	Oct..	1891	.15	1,350,000	Dec.	1886	.10
79	Leadville Con., s. l.	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
80	Lexington, g. s.	Mont.	4,000,000	40,000	100	*				652,200	July.	1893	.90
81	Little Chief, s. l.	Colo..	10,000,000	200,000	50	*				820,000	Dec.	1890	.05
82	Maid of Erin	Colo..	3,000,000	600,000	5					708,900	April	1893	.25
83	Mammoth, s. l. c.	Utah	10,000,000	400,000	50	110,000		1882	.25	1,040,000	Dec..	1891	.10
84	Maxfield	Utah	3,000,000	300,000	10					117,000	April	1892	.03
85	Mayflower, d. gravel	Cal..	1,200,000	60,000	20					208,000	July..	1894	.10
86	Minas Prietas, g. s.	Mex..	1,000,000	100,000	10					350,000	Dec...	1890	.50
87	Minnesota, c.	Mich..	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar	1876	
88	Minnesota Iron, i.	Minn.	16,500,000	165,000	100					2,745,000	April	1893	1.50
89	Mollie Gibson, s.	Colo..	5,000,000	1,000,000		*				3,930,000	Dec..	1893	.05
90	Monitor, g.	S.Dak	2,500,000	250,000	10					45,000	Oct.	1890	.03
91	Mono, g.	Cal..	5,000,000	50,000	100	797,500	Feb.	1893	.25	12,500	Mar	1886	.25
92	Montana, Lt., g. s.	Mont.	3,300,000	660,000	5	*				2,619,075	June.	1891	.12½
93	Moose	Colo..	600,000	600,000	1					48,000	July.	1894	.02
94	Morning Star, s. l.	Colo..	1,000,000	100,000	10					1,025,000	Dec...	1891	.25
95	Morning Star Drift, g	Cal..	240,000	2,400	100					242,400	July..	1894	4.00
96	Moulton, s. g.	Mont	2,000,000	400,000	5	*				410,000	Nov.	1892	.07½
97	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	137,500	June	1880	2.00	725,000	Nov.	1893	.30
98	Napa, q.	Cal..	700,000	100,000	7					630,000	July.	1894	.10
99	Navajo, g. s.	Nev..	10,000,000	100,000	100	538,714	Sept.	1893	.10	226,111	April	1889	.10
100	New Guston, s.	Colo..	550,000	110,000	5					1,877,500	April	1892	.75
101	North Banner Con	Cal..	1,000,000	100,000	10					20,000	July..	1891	.05
102	North Commonw'th	Nev..	10,000,000	100,000	10	90,000	Jan..	1893	.10	25,000	June.	1891	.25
103	N. Hoover Hill, g. s.	N. C.	300,000	120,000	2½	*				30,000	Dec..	1885	.06¼
104	North Belle Isle, s.	Nev..	10,000,000	100,000	100	513,075	April	1893	.10	230,000	May.	1888	.50
105	North Star, g.	Cal..	1,000,000	100,000	10	20,000		1885	.02	450,000	June	1893	.50
106	Omaha Cons., g.	Cal...	2,400,000	24,000	100					97,200	July..	1894	.15
107	Ontario, s. l.	Utah	15,000,000	150,000	100					13,175,000	Oct..	1892	.50
108	Ophir, g. s.	Nev..	10,000,000	100,000	100	4,391,040	July	1893	.25	1,595,800	Jan..	1880	1.00
109	Osceola, c.	Mich..	1,250,000	50,000	25	480,000	April	1876	1.00	1,847,500	Dec..	1893	1.00
110	Pacific Coast, b.	Cal..	1,500,000	15,000	100					422,500	July.	1893	1.00
111	Parrot, c.	Mont.	1,800,000	180,000	10					1,569,000	June	1893	.10
112	Petro	Utah.	10,000,000	10,025	100					17,500	July..	1891	.75
113	Plumas Eureka, g.	Cal..	1,406,250	140,600	10					2,696,295	Oct...	1893	.18
114	Plymouth Con., g.	Cal..	5,000,000	100,000	50	*				2,280,000	Feb.	1888	.40
115	Poorman, g. s.	Idaho	375,000	300,000	125	*				68,260	Sept.	1892	
116	Portland	Colo..	3,000,000	3,000,000	1					90,000	July.	1894	.03
117	Quicksilver, pref., q.	Cal..	4,300,000	43,000	100					1,823,911	June	1891	1.25
118	" com., q	Cal..	5,700,000	57,000	100					643,867	July	1882	.40
119	Quincy, c.	Mich..	1,250,000	50,000	25	200,000	Dec..	1862		7,070,000	Aug..	1894	4.00
120	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec	1892	.10
121	Retriever, l.	S.Dak	1,250,000	250,000	5					20,000	Aug..	1891	.03
122	Rialto, g.	Colo..	300,000	300,000	1	*				50,250	April	1892	.01½
123	Richmond, s. l.	Nev..	1,350,000	54,000	25	*				4,359,887	Oct..	1893	.25
124	Rico-Aspen	Colo..	5,000,000	1,000,000	5					325,000	Nov..	1894	.02½
125	Ridge, c.	Mich..	1,250,000	50,000	25	219,939	Mar.	1886	.50	99,785	Feb..	1880	.50
126	Robinson Con., s. l.	Colo..	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
127	Savage, s.	Nev..	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
128	Sierra Buttes, g.	Cal..	2,225,000	122,500	10					1,559,933	Oct...	1893	.12½
129	Sierra Nevada, s. g.	Nev..	10,000,000	100,000	100	6,521,910	Aug	1893	.20	102,000	Jan..	1871	1.00
130	Silver Cord, s. l. g.	Colo..	4,500,000	450,000	10					265,000	April	1889	.10
131	Silver King, s.	Ariz..	10,000,000	100,000	100	97,479	Aug..	1892	.25	1,950,000	July	1887	.25
132	Silver Mg. of L.V., s.l.	N. M..	500,000	500,000	1					300,000	Dec..	1891	4.05
133	Small Hopes Con., s.	Colo..	5,000,000	250,000	20	*				3,225,000	Oct...	1893	.10
134	Standard, g. s.	Cal..	10,000,000	100,000	100	100,000	June	1890	.50	3,741,159	July	1894	.10
135	Swansea, g. s.	Colo..	600,000	60,000	10					39,000	Sept.	1893	.10
136	Tamarack, c.	Mich..	1,250,000	50,000	25	520,000	April	1885	3.00	3,870,000	June	1894	4.00
137	Trinity Riv'r Hydr., g	Colo..	500,000	500,000	1	*				37,500	Apr..	1891	.00½
138	Union	Colo..	1,250,000	1,250,000	1					25,000	Aug..	1894	.00½
139	United Verde, c.	Ariz.	3,000,000	300,000	10	*				207,500	Jan	1892	.10
140	Victor, g	Colo.	1,000,000	200,000	5					170,000	Sept.	1894	.10
141	Ward Con., s.	Colo..	2,000,000	200,000	10					20,000	Dec..	1889	.05
142	W. Y. O. D.	Cal..	60,000	30,000	2	22,500	May.	1891	.10	78,000	July.	1894	.10
143	Yankee Girl, s	Colo.	1,300,000	260,000	5					1,405,000	Sept.	1893	1.50
144	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	
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	1886	.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	
17	Calaveras, g.	Cal..	500,000	500,000	5				
18	Calaveras Con., g	Cal..	800,000	160,000	10				
19	California, g.	Cal..	1,000,000	100,000	5	9,000	Mar..	1892	
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.	1892	.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 FeatherCo., 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	.00¼
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	Oct.	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..	1889	.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, s.	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	Phœnix, g.	Ariz..	500,000	500,000	1	*			
101	Phœnix 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.	V...	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	288,154	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..	1883	.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	.01¼
134	Telegraph, g. s.	Cal..	325,000	65,000	5	3,575	Mar.	1892	.01¼
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 SPRINGS, COLO.*

Name of Company.	Par value.	Oct. 29. H.	Oct. 29. L.	Oct. 30. H.	Oct. 30. L.	Oct. 31. H.	Oct. 31. L.	Nov 1. H.	Nov 1. L.	Nov. 2 H.	Nov. 2 L.	Nov. 3. H.	Nov. 3. L.	Sales.
Alamo	$1	.....	.....	.03⅝	.....	.01⅝	.....	.....	.....	.....	.....	.01½	.....	27,000
Anaconda	5	.20	.....	.....	.....	.....	.....	.19	.....	.19½	.19	.....	.....	5,600
Argent'm,J	...	1.18	1.15	1.10	1.07½	1.09	1.07½	1.08½	1.08	1.07½	.....	1.03½	.....	2,317
C. O. D.	1	.....	.....	.....	.....	.03	.....	.03	.....	.....	.....	.....	.....	1,500
Cr. & C. C.	1	.01⅝	.01⅝	.....	.....	.01⅝	.....	.....	.....	.01⅝	.01⅜	.....	.....	15,300
Cripple C	1	.01⅝	.....	.01⅝	.....	.01⅝	.....	.....	.....	.01½	.....	.01⅝	.....	18,000
Fanny R.	1	.....	.....	.....	.....	.....	.....	.....	.....	.07⅛	.....	.....	.....	1,000
Golden Age	1	.00⅝	.....	.00⅝	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000
Gold & Gl.	1	.04¼	.03⅝	.04⅝	.04	.....	.....	.03⅝	.03¾	.....	.....	.....	.....	17,750
Isabella	1	.0⅝	.....	.11	.....	.....	.....	.10¾	.....	.10⅝	.....	.....	.....	7,200
Mollie G.	5	2.02½	1.97½	2.00	1.95	1.97½	.....	1.95	.....	1.95	1.9 ⅜	.....	.....	9,100
Mt. Rosa	1	.05¼	.05	.05	.....	.04¾	.04¾	.04	.....	.04¾	.04	.04¾	.....	49,350
Pharma	1	.06¼	.06	.06¼	.06	.06¾	.06	.....	.....	.06¾	.....	.....	.....	39,000
Portland	1	3.3⅜	.....	3.3⅜	3.1⅛	3.1⅛	.3.1⅛	.....	.....	.....	.....	.....	.....	2,500
Specimen	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Summit	1	.11⅛	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Work	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Official quotations of the Colorado Mining Stock Association. Total shares sold, 217,117.

Aspen, Colo

(Per Telegraphic Dispatch, Nov. 8.)

	Par val.	Clos'g.
Argentum-Juniata, Colo	$2.00	$1.12
Aspen Contact, Co'o	5.00	.35
Aspen Deep Mining, Colo.	...	.05
Best Friend, Colo	...	.05
Bi-Metallic, Colo.	1.00	.04
Bushwhacker, Colo	1.00	.07
Caverhill Cons., Colo	....	.10
Della S, Colo	....	.....
Gold Valley Placer, Colo.	....	.10
Little Annie, Colo	1.00	.04
Mollie Gibson Colo.	5.00	2.10
Old Colony, Colo	....	.75
Pontiac, Colo	....	.04
Sheep Mt. T & M. Co., Colo.	....	.25
Smuggler, Colo	5.00	2.10
St. Joe & Min. Farm, Colo.	....	.04
West Aspen Mount., Colo	....	.10

Salt Lake City, Utah.

Nov. 3.

Special Report by James A. Pollock.

	Par val.	Bid.	Asked.	Actual selling price.
Alliance	$1	....	$2.00	$0.75
Anchor	20	$3.60	4.00	3.65
Bull-B. and Champ'n.	10	8	10	10
Cent. E'reka	50	37½	42	37
Cleve., Con.	1	...	0.50	0.35
Comstock	25	....	0.30	0.28
Crescent	25	0.02	0.04	0 02
Dalton	5	0.01	0.03	0.03
Daly	20	5.00	6 50	5½
Daly West	$20	$5	$6.50	$7½
Horn Silver	25	$2½	3	2½
Little Pittsb	5	....	0.25	.10
Mammoth	25	1	1¼	1.15
Mecars	25	....	1	.75
Mercur	25	2.50	3.50	2¾
Ontario	100	7	8	8
Silver King	20	12½	14	12¾
Silver Spar.	5	....	1	1
Tetro	1	....	0.25	.10
Utah	1	....	1	.75

* All the above companies are located in Utah.

Helena, Mont. Nov. 2.

(Special Report by S. K. Davis.)

	Par value.	Bid.	Ask'd.
Amer. Develop. Co, Mont	....	.....	$3.00
Bald Butte (Mont.)	...	$4.00	4.25
Benton Gro'p (Neihart), Mont	....	.15	.25
Combination (Phillipsburg), Mont	...	.60	.75
Double Eage (Spotted Horse) Maiden	...	1 00	1.50
Helena & Frisco	...	....	1.25
Iron Mountain (Missoula), Mont	....	.15	.50
Ontario (Deer Lodge Co.)	....	1.10	1.25
Piegan (Marysville), Mont	....	.07½	.15
Poorman (Cœur d'Alene, Idaho	....	.30	.45

Pittsburg, Pa. Nov. 5.

Name and Location of Company.	Par val.	Actual selling price.	Bid.	Asked.
GAS STOCKS:				
Allegheny	$100	$18½	$49	$50
Bridgewater	10	....	....	....
Chartiers Val.	100	....	....	8
Kittanning C	50	....	....	....
Manufactur's	50	....	....	....
Nat. G. W. Va.	100	....	....	....
Ohio Valley	50	35½	....	....
People's Nat.	50	....	....	29
" N. G. & P.	25	14¾	14½	14¾
Pennsylvania	50	....	12	12⅜
Phila. Co.	50	19⅜	19¼	19⅜
Union	50	....	....	....
West. & Cam.	50	....	....	....
Wheeling	50	....	20½	....
OIL CO. STOCKS:				
Columbia	50	..	....	....
Fisher	50	....	....	....
Forest	100	....	....	....
Hazelwood	50	....	....	....
Tuna	50	....	....	....
Washington	50	....	....	....
COAL STOCKS.				
Chartiers Bl'k	50	....	....	....
Mansf. C. & C.	50	....	....	....
N. Y. & Cl. G. C.	50	....	....	46
Stanard	50	....	....	....
MINING STOCKS:				
Charlotte	25	....	....	....
Enterprise	5	....	....	....
Hidalgo	10	....	....	....
Lustre	10	....	....	16
Red Cloud	5	....	....	....
Silverton	10	....	....	....
Sterling Silv.	5	....	....	....
Yankee Girl	10	....	....	....

FOREIGN QUOTATIONS.

Paris, France. Oct. 29

	Par val.	Fr'cs.
Acieries de Creusot	2,000	2.025.00
" de Firminy	500	1,725.00
" Fives-Lille	500	680 00
" de la Marine	500	850.00
Anzin (coal)	.....	4,400.00
Boleo	.....	505.00
Callao	125	15.00
Cape Copper	50	40.00
Champ d'Or	.....	67.50
De Beers Consolidated	125	435.00
Dombrowa	500	480.00
Huanchaca	.....	180.00
Jerez-Lanteira	.....	7.00
" " parts	.....	3.00
Langlaagte Estate	125	115.00
Laurium, Greece	500	574.00
Lexington, Mont.	.....	28.00
" parts	.....	0 75
Malfidano (new shares)	500	1,060 00
Mines et Usines de Borax	.....	476.50
Mokta-el-Hadid	500	800.00
Nickel, New Caledonia	.....	355.00
Pontgibaud	.....	235.00
Rio Tinto Spain	270	380.00
Robinson (Transvaal.)	125	181.00
Sud-Africaine	.....	18.75
Tharsis, Spain	.....	122.00
Uruguay	.....	23.00
Vieille-Montagne, Belg'm.	80	490.00

Shangbai, China. Oct. 5.

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

	Par val.	T'ls
Jelebu Mg. & Trad. Co., Ltd.	$5.00	4.38
Punjom Mining Co., Ltd	4.00	4.56
" " pref.	1.00	1.39
Raub A'lian G. Mg Co., Ltd.	5.00	4.02
Sheridan Con. Mg. Co., Colo.	*100	1.00

*Taels.

ASSESSMENTS.

Company.	No.	Dlnqt. in office.	Day of sale.	Amt. per sh're.
Alpha Cons., Nev	13	Dec. 2	Dec. 21	.10
Chall'ge Cons., Nev.	17	Dec. 4	Dec. 27	.05
Lady Washing. Con., Nev.	10	Nov. 9	Nov. 30	.05
N. Banner Con. T. Co., Cal.	32	Nov. 6	Nov. 27	.03
N. Basil Con., Cal.	27	Nov. 19	Dec. 10	.05
So. Eureka Mg. Co., Cal.	14	Oct. 29	Nov. 26	.01
Starlight Mg. Co., Cal.	3	Nov. 19	Dec. 10	.10
Utah Con. M. Co., Nev.	20	Nov. 1	Nov. 20	.05
Welcome, So. Dak	2	Nov. 19	Dec. 8	.50
West. Con. Va. & Cal., Nev	3	Oct. 30	Nov. 27	.25

CURRENT PRICES.

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

Acid—Acetic, chem. pure .17@.19
Commercial, in bbls. and cbys. .01¾@.02
Carbonic, liquefied, ₩ lb. .18@.25
Chromic, chem pure, ₩ lb 1.00
for batteries .40
Hydrobromic, dilute, U. S. P. .25@.30
Hydrocyanic, U. S. P. .45@.50
Hydrofluoric .20@.30
Alcohol—95%, ₩ gall. $2.30@$2.40
Absolute $3.80
Ammoniated $2.80
Alum—Lump, ₩ cwt. $1.75@$1.85
Ground, ₩ cwt. $1.85@$1.90
Powdered, ₩ lb. .04½@.05
Lump ₩ ton, Liverpool £5
Aluminum Chloride—Pure, ₩ lb. $1.25
Amalgamating solution, ₩ lb. .60
Sulphate, ₩ cwt $1.90@$2.50
Ammonia—Sal., in bbl. lots, ₩ lb. .07½@.08
Carbonate, ₩ lb., English and German, .07½@.08
Muriate, white, in bbls., ₩ lb. .08½
Aqua Ammonia—(in cbys) .8° ₩ lb. .03@.04
20°, ₩ lb. .04@.05
26°, ₩ lb. .04¾@.05
Antimony—Oxymur, ₩ lb. .04@.06
Regulus, ₩ lb. .10@.11½
Argols—Red, powdered, ₩ lb. .15
Arsenic—White, powdered ₩ lb. .03@.03¾
Red ₩ lb. .065@.07
Yellow .08@.09
White at Plymouth, ₩ ton £12 2 6
Asbestos—Canadian, ₩ ton .$15@$120
Italian, ₩ ton, c. i. f. L'pool .£18@£60
Ashes—Pot, 1st sorts, ₩ lb. 4.75@5
Pearl .05¾@.06¼
Asphaltum—
Prime Cuban, ₩ lb. .04@.05
Hard Cuban, ₩ ton .$28.00@$30.00
Trinidad, refined, ₩ ton .$30.00@$35.00
Egyptian and Syrian, ₩ lb. .05@.07½
Californian, at mine, ₩ ton $12.00@$26.00
at San Francisco, ₩ ton, $15.00@$29.00
Barium—Carbonate, pure, ₩ lb. .45
Carbonate, commercial, ₩ lb. .05@.10
Chlorate, crystal, ₩ lb. .75
Chloride, commercial, ₩ lb. .05@.10
pure, ₩ lb. .16
Iodide, ₩ oz. .40
Nitrate, ₩ lb. .06½@.07
Sulph., Am. prime white, ₩ ton $17.50@$19
Sulph., foreign, floated, ₩ ton .$21@$24
Sulph., off color, ₩ ton .$11.50@$15.00
Carb., lump, f. o. b. L'pool, ₩ ton £6
No. 1, Casks, Runcorn, " " £4 10 0
No. 2, bags, Runcorn, " " £3 15 0
Baurite—₩ ton .$5 @ $6
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@.09½
Concentrated, in car lots .07½@.08
Refined, Liverpool ₩ ton £6
Bromine—₩ lb. .35@.35
Cadmium Bimion—₩ 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
Cyanide, Potassium—85 to 90%, ₩ lb. .50
No. 0, 67%, ₩ lb. .40
No. 1, 52 to 55%, ₩ lb. .36
No. 2, 40 to 45%, " .30
No. 3, Mining cyanide, per lb .28
No. 4, " " 30 to 35%, ₩ lb. .22
Emery—Grain, ₩ lb. (₩ kg.) .04½@.05
Flour, ₩ lb. .02½@.04
Epsom Salt—₩ lb. .01@.01½
Feldspar—Ground, ₩ ton .$6.00@$10.00
Crude .$2.00@$3.00
Fluorspar—Powdrd, No. 1, ₩ ton .$20@$30
Lump, at mine .$6@$8
French Chalk—
Fuller's Earth—Lump, ₩ ton. $16@$20
Glauber's Salt—in bbls., ₩ lb. .01@.01¼
Glass—Ground, ₩ lb .03@.10
Gold—Chloride, pure, crystals, ₩ oz. $12.00
pure, 15 gr., c. v., ₩ doz. $5.40
liquid, 15 gr., g. s. v., ₩ doz $5.50
Chloride and sodium, ₩ oz $6.00
15 gr., c. v., ₩ doz. $2.75
Oxide, ₩ oz. $27.25
Gypsum—Calcined, ₩ bbl. $1.25@$1.50
Land Plaster
Iodine—Resublimed, ₩ oz. .30@.33
Iridium—Oxide ₩ lb. $90
Iron—Nitrate, 40°, ₩ lb. .01@.01½
47°, ₩ lb. .02@.02½
Kaolin—*See China Clay.*
Kieserite—₩ ton .$9@$10
Lead—Red, American, ₩ lb .06¾@.07½
White, American, in oil, ₩ lb. .06½@.07½
White, English, ₩ lb., in oil .08½@.08¾
Acetate, or sugar of, white .06@.06½
Granulated
Nitrate .09@.12
Lime Acetate—Am. Brown .90@.95
" Gray .$1.75@$1.87½
Litharge—Powdered, ₩ 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. .25@.28
Oxide, ground, ₩ lb. .02½@.06¾
Mercuric Chloride—(*Corrosive Sublimate*) ₩ lb. .63@.66
Powdered ₩ lb. .65
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 .01½
Ordinary rock .02½
Ground, ₩ ton
Naphtha—Black
Nitre Cake—₩ ton .$10.00
Ochre—Rochelle, ₩ lb. .01¼@01¾
Washed Nat Oxf'rd, Lump, ₩ lb. .06¼@.06¾
Washed Nat Oxf'rd, Powder, ₩ lb. .07@.07½
Golden, ₩ lb. .03@.05
Domestic, ₩ ton .$12@$20
Oils, Mineral—
Cylinder, light filtered, ₩ gal. .14@.16
Dark filtered, ₩ gal. .10@.13
Extra cold test, ₩ gal. .20@.24
Dark steam refined, ₩ gal. .07½@.12
Phosphorus—₩ lb. .50@.55
Precip., red, ₩ lb. .80@.85
white, ₩ lb. .85@.90
Platinic Chloride—Dry, ₩ oz $7
Plumbago—Ceylon, ₩ lb. .04@.06
American, ₩ lb. .05@ 07
Potassium—Cyanide, ₩ lb., C. P. 65%, ₩ lb. .52 .40
mining .28@.30
Bromide, domestic, ₩ lb. .28@.32
Chlorate, English, ₩ lb. .18@.18¼
Chlorate, powdered, English, ₩ lb. .18½@.19
Carbonate, ₩ lb., by casks, 82% .04½@.05
Caustic, ₩ lb., pure slick .05½@.06
Iodide, ₩ lb. $2.58@$2.80
Nitrate, refined, ₩ lb. .06@.08
Bichromate, ₩ lb. .10@.11½
Yellow Prussiate, ₩ lb., 24½c. contr., 25c. single casks.
Red Prussiate, ₩ lb. .39@.45
Pumice Stone—Select lumps, lb .03½@.15
Original cks., ₩ lb. .01½@.02
Powdered, pure, ₩ lb. .01½@.01¾
Pyrites—Non-cupreous, p. units. 10@.11
Quartz—Ground, ₩ ton .$6.00@$10.00
Rotten Stone, Powdered, ₩ lb. .03¼@.03½
Lump, ₩ lb. .06@.07
Original cks, ₩ lb. .04½@.05½
Rubbing stone, ₩ lb. .03½@.04
Sal Ammoniac—lump, in bbls., ₩ lb. .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. .03¾@.04
Soapstone—Ground, ₩ ton .$6@$9
Block and slab according to size.
Sodium—Prussiate, ₩ lb. .22@.24
Phosphate, ₩ lb. .04@.05
Stannate, ₩ lb. .06@.12
Tungstate, ₩ lb. .30@.35
Hyposulphite, ₩ cwt., in casks $1.70@$1.80
Strontium—Nitrate, ₩ lb. .08½@.09
Sulphur—Roll, ₩ lb. .01½@.02½
Flour, ₩ lb. .01¾@.02
Sylvinit, 27@30%, S.O.P., per unit, $.75
Talc—Ground French, ₩ lb. .01¼@.01¾
American No. 1, ₩ lb. .01¼@.01¾
American No. 2 .00@
Terra Alba—French, ₩ lb. .65@.80
English, ₩ lb. .65@.80
American, No. 1, ₩ lb. .60@.80
American, No. 2 ₩ lb. .40@.60
Tin—Crystals, in kegs or bbls. .14@.15
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. .06½@.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)	22½
Thallium	.03¾
Titanium	1.13
Tungsten (pure)	.06
Uranium	1.00
" fusum	4.00

RAILROAD MATTERS.

Mr. W. P. Emerson, who was secretary of the New Orleans Traffic Association for four years, has been appointed chief clerk to General Agent Barnett, of the Queen & Crescent, at New Orleans.

Mr. James S. Eaton has been appointed traveling auditor of the Southern Railway, with headquarters at Washington, D. C., to succeed Mr. W. O. Knight, who is transferred to the western system. Mr. Eaton was formerly connected with the Cincinnati Southern.

Mr. W. I. Robinson has been appointed general baggage agent of the Baltimore & Ohio Southwestern, with headquarters in St. Louis. The position of general baggage agent, which was abolished by Mr. McCarty when consolidation took place, has been restored by Mr. Chesbrough.

The Department of Public Works of Mexico has just approved the location of the line of the Mexico, Cuernavaca & Pacific Railroad from Cuernavaca to the port of Acapulco, on the Pacific Coast, a distance of 175 miles. The route of the road is through the towns of Puente de Ixtla, Iguala, Taxco, Chilpancingo and the richest agricultural section in tropical Mexico. Col. J. H. Hamson, of Kansas City, is president and general manager.

Following is a circular issued by President and General Manager George C. Smith, of the Atlanta & West Point Railroad, and the Western Railway of Alabama: "Atlanta & West Point Railroad and the Western Railway of Alabama, Atlanta, Ga., October 15th, 1894—Mr. Joseph Herrin is hereby appointed superintendent of the railways of these companies, with headquarters at Montgomery, Ala. He will have charge, under direction of the undersigned, of conducting transportation, station and yard service, and maintenance of roadway, bridges and buildings. He will also have general supervision over the locomotive and car departments. All reports required by the superintendent will be made to him by officers and employes in the departments named, who will be governed by his orders." This is a newly created office. Mr. Herrin was, for several years, superintendent of the Iron Mountain branch of the Missouri Pacific.

An important meeting of the Central Traffic Association was held in Cleveland, O., October 23d. There were 60 members present at the opening of the meeting, the largest on any occasion since the organization of the association. The meeting was one of great importance, not only to railroad men, but to shippers all over the United States and Canada. The following subjects were acted upon before the meeting adjourned:

First.—Through freight rates, including export rates, and their manipulation by use of fictious destinations.

Second.—Through passenger fares, including the differential fares.

Third.—Freight rates and passenger fares, local to the territory of the Central Traffic Association.

Fourth.—Passenger commissions.

Fifth.—The consideration of divisions of passenger traffic.

Sixth.—Special freight rate contracts and their continuance or discontinuance.

Seventh.—Rules to govern the issuance of annual passes.

Eigth.—Mileage upon varions classes of cars.

Ninth.—The apportionment of freight tonnage

Tenth.—Pending and proposed legislation as to traffic agreements and their proposed enactments.

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ALPHABETICAL INDEX TO ADVERTISERS.

(–) Indicates every other week or monthly advertisements.

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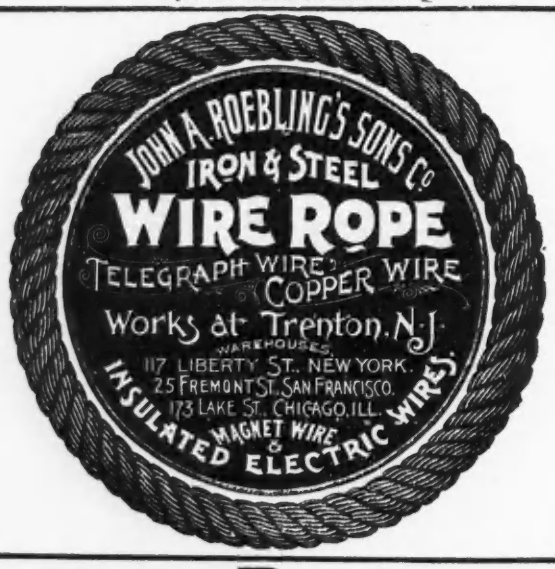

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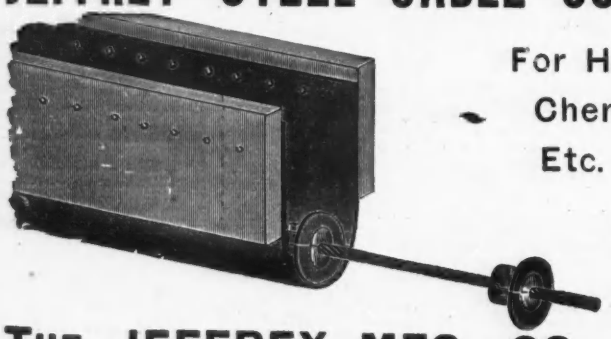

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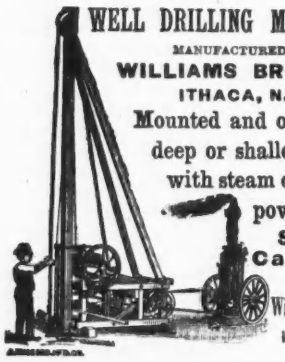

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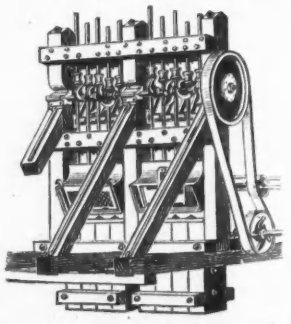

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Ætna Powder Co.
Laflin & Rand Powder Co.
Lau, J. H., & Co.
Repauno Chem. Co.

Publications
Allison Coupon Co.
Arms & Explosives.
Australian Mining Standard.
Bullionist.
El Minero Mexicano.
Electrical Plant & Electrical Industry
Financial Times.
Ir'n & Coal Trades Rev.
Jour. of Assoc of Engineering Societies.
Mining Journal.
Poor, H. V. & H. W.
Zeitschrift fur Praktische Geologie.

Pulleys
Poole, R., & Son Co.

Pumps
Ætna Fdy. & Mach. Co.
Allen, Chas. A.
Blake, Geo F. Mfg. Co.
Cameron A. S., Steam Pump Works.
Epping, Carp'ter & Co.
Fraser & Chalmers.
Gould's Mfg. Co.
Groetzinger A., & Sons
Jeanesville Iron Wks.
Knowles Steam Pump Works.
McGowan, John H., & Co.
Palsometer Steam Pump Co.
Quad'ple Steam Pump Co.
Stilwell-Bierce & Smith-Vaile Co.
Worthington, Henry.

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

Quicksilver Eureka Co.

Railroads
Denv. & Rio Gr. R. R.
Midland R. R. of Ky.

Railroad Supplies and Equipment
Carp'ter, Geo. R., & Co.
Garden City Sand Co.
Hunt, C. W., Co.
Porter, H. K., & Co.
Robinson & Orr
(See Machinery)

Regulators, Damper, Heat, Etc.
De Este & Seeley Co.
Eddy Valve Co.
Hine & Robertson.
Jenkins Bros.
Lunkenheimer Co.
Mason Regulator Co.

Rock Drills. (See Air Compressor.)

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

Roofing
Berlin Iron Bridge Co.
Pencoyd Bridge and Const. Co.
Pittsburg Bridge 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
Altcheson, R., Perf. metal Co.
Exeter Machine Works Co.
Fraser & Chalmers.
Harrington & King Perforating Co.
Hendrick Mfg. Co.
(See Machinery.)

Screen Plates
Harrington & King Perforating Co.
Hendrick Mfg. Co.

Second Hand Machinery
Cook & Co.
Robinson & Orr.
Toomey, Frank.

Separators
D'Este & Seeley Co.
Harrison Safety Boiler Works.

Shafting
Poole, R., & Son Co.

Shoes and Dies
Chrome Steel Works.
Fraser & Chalmers.
Crescent Steel Co.

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

Smelting and Refining Works
Balbach S. & Ref. Co.
Baltimore Cop'r Wks.
Donaldson, A. M., & Co.
Kan. City Sm. & Ref. Co.
Mathison Smelting Co.
Orford Copper Co.
Penna. Salt Mfg. Co.
Penn Smelting and Refining Works.
Phosphor-Bronze Smelt. Co.

Steam Fans
Cole, Wm E.

Steel Rails, Castings, Rolls, Drill Steel
Abbott, Wheelock & Co.
Bethlehem Iron Co.
Chester Steel Cast Co.
Chrome Steel Works.
Crescent Steel Co.
Exeter Machine W. Co.
Garrison, A., Fdry. Co.
Jessop Wm., & Sons Ltd.
Moore, S. L., & Sons Co
Roberts, A. & P., & Co.
Robinson & Orr.
Whitney, A., & Sons.
(See Metal Dealers.)

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.

Testing Batteries Nassau Elec. Co.

Tin Plate Rolling Machinery
Poole, R., & Son Co.

Tools Pratt & Whitney Co.

Traps, Steam
De Este & Seeley 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.
Stilwell-Bierce & Smith Vaile Co.

Valves
De Este & Seeley Co.
Eddy Valve Co.
Jenkins Bros.
Lunkenheimer Co.
Mason Regulator Co.
Powell, Wm, Co.

Ventilators
Bullock, M. C. Mfg. Co
Fraser & Chalmers.

Vulcanite Emery Wheels
New York Belting and Packing Co., Ltd.

Washers ..... Milton Mfg. Co.

Water Pressure Reducers
Mueller Mfg Co.

Water-Wheels
Leffel, James, & Co.
Midland Foundry & Machine Co,
Poole, R., & Son Co.
Stilwell-Bierce & Smith-Vaile Co.

Well Drilling Machinery
Bostelmann, L. F.
Sullivan Machinery Co.
Williams Bros.

Wheels, Car
Sheffield Car Co.

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

Wire Cloth
Altcheson, R., Perf. Metal Co.
Harrington & King Perforating Co.

Wire Rope & Wire
Abbott, Wheelock & Co.
Broderick & Bascom Rope Co.
California Wire Wks
Carp'ter, Geo. R., & Co.
Cooper, Hewitt & Co.
Hunt, C. W., Co.
Leschen, A., & Sons Rope Co.
Phelps, Dodge & Co.
Roebling, J. A., Sons & Co.
Ropeways Synd., Ltd.
Trenton Iron Co
Williamsport Wire Rope Co.

Wire Rope Tramway
Brown Hoist. & Conv. Machine Co
California Wire Wks.
Colorado Iron Works.
Cooper, Hewitt & Co.
Fraser & Chalmers.
Hunt, C. W., Co.
Roebling, J. A., Sons & Co
Ropeways Synd., Ltd.
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 ubscribers 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.

1363 WANTED—A MAN WHO UNDERstands the smelting and refining of jewelers' sweeps. Address "SMELTER," ENGINEERING AND MINING JOURNAL.

1364 WANTED—A PRACTICAL FOREman fully qualified to take charge of a gold and silver property, developed and situated in Southern Nevada. References required. Address SOUTH NEVADA.

1365 WANTED—SUPERINTENDENT IN New York City—A bright, energetic, all round man; must be familiar with fixing buildings for gas, water, etc., and capable of handling men, pay rolls, etc. A permanent position to the right sort of man. Address C. J. W., ENGINEERING AND MINING JOURNAL.

1366 WANTED — FIRST-CLASS MINE superintendent experienced in drawing up plans, making estimates and designs for new plant for extensive metal mining interests. Must understand thoroughly how to extend the development of mines, etc., and be able to mine as cheaply as at the large mines in the Lake Superior district, the conditions being equal. Must be capable to lay out work in advance, and advise as to all new plants, etc. Address N. S., ENGINEERING AND MINING JOURNAL.

1367 WANTED—AN ASSAYER HAVING had experience with low-grade lead-silver ores, for a mine and concentrating mill in the Northwest. State age, experience and salary expected. Address SIDERITE, ENGINEERING AND MINING JOURNAL.

1368 WANTED—A MAN THOROUGHLY experienced in erecting and operating amalgamators. Preference given to one having had practical supervision of Bennett or Bucyrus apparatus. Permanent position assured a first-class man. Address, in fullest confidence, stating experience, PLACER, ENGINEERING AND MINING JOURNAL.

Situations Wanted.

Advertisements for SITUATIONS WANTED will be Charged only 10 cents a line.

WANTED.—A METALLURGICAL CHEMist of 13 years' experience desires a position as superintendent or assistant with copper or lead and silver reduction works. Best of references furnished. Address H. S., ENGINEERING AND MINING JOURNAL. No. 17,017, Dec. 29.

A GRADUATE AND ONE-YEAR POSTgraduate of Kansas State University desires a position as chemist. At present engaged in large works, but will be free in about two months. Contributor to the "American Chemical Journal." Will work very reasonably if there is a chance of permanency. Address VARSITY, ENGINEERING AND MINING JOURNAL. No. 17,021, Nov. 17.

A CIVIL AND MINING ENGINEER FROM the Royal Military College of Canada, and of six years' practical experience in railroad, city and mining work, would like to get any kind of position that would pay decently. Mexico or Central America preferred. Address M., ENGINEERING AND MINING JOURNAL. No. 17,020, Nov. 17.

WANTED—POSITION AS SUPERINTENdent, by a thoroughly trained chemist, with 12 years' experience as manager of prominent chemical works making sulphuric, nitric, muriatic and nitric acids, alum, Glaubers' salt, etc; age 36. Address W. P., ENGINEERING AND MINING JOURNAL. No. 17,030, nov. 17.

MECHANICAL ENGINEER (GRADUATE) experienced in shop and field work, in designing and building mining machinery and metallurgical works, etc, desires suitable position. Address M. E. H., ENGINEERING AND MINING JOURNAL. No. 17,032, Nov. 10.

WANTED — POSITION AS ASSISTANT chemist or assayer. University graduate. Four years' chemical course; thorough knowledge of German; best of references. Address BEN ZENE, ENGINEERING AND MINING JOURNAL. No. 17,034, Nov. 17.

A GRADUATE OF THE COLUMBIA COLlege School of Mines would like position as assistant to superintendent in charge of mines or reduction works. Address MINING, ENGINEERING AND MINING JOURNAL. No. 17,033. Dec. 29.

SITUATION BY A PRACTICAL CONCENtrator Superintendent and Millwright. Has had six years' experience in the building and operation of concentrating works; also experienced with roasting, matteing and lead smelting furnaces; is an assayer, and understands handling electric machinery; speaks English and Spanish; has first-class recommendations, and will go anywhere. Address CONCENTRATOR, ENGINEERING AND MINING JOURNAL. No. 17,028. Dec. 1.

MINING ENGINEER AND SUPERINTENdent, 20 years' experience in gold, silver, copper and coal, is open to engagement. Address INTEGRITY, ENGINEERING AND MINING JOURNAL. No. 17,026 tf.

METALLURGIST AND CHEMIST, WITH eight years' practical experience in designing, constructing and operating works for the treatment of copper, lead, gold and silver ores, will be at liberty January 1st, and seeks new engagement for the ensuing year. Plans furnished for copper, lead and pyritic smelting plants, copper, lead and silver refineries, bessemerizing and electrolytic works, concentration works, gold mills, etc. Correspondence solicited with company requiring scientific help in working out ore propositions and in need of capable assistance in planning and erecting new works. Address METALLURGICAL, care ENGINEERING AND MINING JOURNAL. No. 17,031-tf.

Contracts Open.

DISAPPEARING GUN CARRIAGES.—Office of Chief of Ordnance, War Department, Washington, D. C.—Sealed proposals will be received at this office until Nov. 24, 1894, for supplying the Ordnance Department, U. S. Army, with ten 10-inch disappearing gun carriages. Blank forms on which proposals must be made and all information required by bidders can be had upon application to Brig.-Gen. D. W. FLAGLER, Chief of Ordnance.

IMPROVEMENT OF HARBOR AT DELAware Breakwater.—U. S. Engineer Office, 1428 Arch street, Philadelphia, Pa.—Sealed proposals for furnishing and depositing stone in the gap at the Delaware Breakwater, Del., will be received here until November 19th, 1894. All information furnished on application. C. W. RAYMOND, Major Corps of Engineers.

DREDGING.—U. S. Engineer Office, 1428 Arch street, Philadelphia, Pa.—Sealed proposals for Dredging in Salem River, N. J., will be received here until November 20th, 1894. All information furnished on application. C. W. RAYMOND, Major Engineers.

PROPOSALS FOR SUPPLIES FOR THE NEW York Navy Yard, November 1, 1894.—Sealed proposals, indorsed "Proposals for Supplies for the New York Navy Yard, to be Opened November 20, 1894," will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, November 20th, 1894, and publicly opened immediately thereafter, to furnish at the New York Navy Yard a quantity of brooms, cheese cloth, hardware, lamp wick, lumber, mahogany, iron, packing, paints, grease, tools, waste, sponges, enameled cloth, burlap, candles, jackknives, eagle buttons, knife lanyards, safes; also the necessary labor and material for reroofing building No. 8. The articles must conform to the Navy standard and pass the usual naval inspection. Blank proposals will be furnished upon application to the Navy Pay Office, New York. The attention of manufacturers and dealers is invited. Tie bids, all other things being equal, decided by lot. The Department reserves the right to waive defects or to reject any or all bids not deemed advantageous to the Government. EDWIN STEWART, Paymaster-General U. S. N. Orig.

DREDGING.—U. S. Engineer Office, Galveston, Tex.—Sealed proposals for dredging and removal of obstructions in Buffalo Bayou, Tex., will be received here until November 27th, 1894, and then publicly opened. All information furnished on application. A. M. MILLER, Major Engineers.

DREDGING.—U. S. Engineer Office, Galveston, Tex.—Sealed proposals for dredging ship channel in Galveston Bay, Tex., will be received here until November 27th, 1894, and then publicly opened. All information furnished on application. A. M. MILLER, Major Engineers.

DREDGING.—U. S. ENGINEERS OFFICE, Galveston, Tex.—Sealed proposals for dredging in West Galveston Bay, Tex., will be received here until Nov. 27, 1894, and then publicly opened. All information furnished on application. A. M. MILLER, Major Engineers.

WATER-WORKS.—Monroe, Mich.—Sealed proposals are wanted for furnishing water for public purposes for year commencing January 1st, 1895. Bids to be opened November 26th. Security required from successful bidder. Address JOHN STEINER, City Clerk.

BRIDGE.—Houston, Tex.—Sealed proposals, addressed to the city secretary, will be received up to November 28th for the proposed bridge across Buffalo Bayou at the foot of Factory street. Said bridge to be built in accordance with plans and specifications on file with the city engineer. Each bid must be accompanied with a certified check for $5,000 to secure the execution of the contract, and bond will be required in the sum of $10,000, with local sureties for the fulfillment of the contract. JOHN T. BROWNE, Mayor.

DREDGING.—PHILADELPHIA, PA.—SEALed proposals for dredging in Salem River, N. J., will be received until November 20th. All information furnished on application to C. W. RAYMOND, Major of Engineers.

PUMPING-ENGINES. — PITTSBURG, PA.—Bids will be received up to November 28th for three 12,000,000-gall. vertical compound condensing high duty pumping-engines. Address SUPERVISING ENGINEER SWAN for particulars.

WATER-WORKS. — SEALED PROPOSALS will be received by the Water Commissioners of the town of Newton, N. J., until December 3d, 1894, for furnishing materials, and until December 18th, 1894, for the construction of water-works. Summary of work: Wrought iron intake tower, 3½ ft. diameter by 38 ft. height: 2,000 ft. 12-in. wrought iron pipe for laying under water; eight miles 10-in. cast iron delivery main; six miles 4 to 10-in. cast iron distribute mains, with valves, boxes, specials and hydrants; erection of a masonry dam, clearing lands to be overflowed, excavation of one-half mile of small canal, etc. Bids will be received for different portions of the work. A certified check must be sent with each bid. Bonds and sureties will be required of those to whom contracts are awarded. All bids must be upon forms to be obtained from the commission, sealed and indorsed "Proposals for Materials" or "Proposals for Construction," and addressed to Alex Craig, Secretary Board of Water Commissioners, Newton, N. J. Plans and specifications can be seen after November 16, 1894, at the office of the commission in Newton or at the office of the chief engineer, 84 Warren street, New York. LOUIS L. TRIBUS, Chief Engineer; HIRAM C. CLARK, President; H. J. VAN BLARCOM, Treasurer; ALEXANDER CRAIG, Secretary, Commissioners.

WATER-WORKS.—Bids will be received by the city of Salisbury, Chariton County, Mo., until the 25th day of November, 1894, for the construction of a system of water-works and developing a water supply according to plans, specifications and conditions now on file with C. C. Hammond, City Attorney. D. R. PATTERSON, Mayor. C. C. HAMMOND, Salisbury, Mo.

U. S. ENGINEER OFFICE, Nashville, Tenn.—Sealed proposals for supplying stone for building Lock No. 5, Cumberland River, will be received here until December 5th, 1894, and then publicly opened. All information furnished on application. JOHN BIDDLE, Captain Engineers.

U. S. ENGINEER OFFICE, 905½ EAST MAIN Street, Richmond, Va.—Sealed proposals for deepening and widening channel of James River, Virginia, and for revetment of dykes and wing dams will be received here until November 30th, 1894, and then opened. For information apply to Mr. H. D. Whitcomb, at above office. WM. P. CRAIGHILL, Colonel Engineers.

SEWERAGE.—Sealed proposals will be received at the office of the Clerk of the City Council in the City of Portsmouth, Va., until the 20th day of November, 1894, for constructing sewers in the City of Portsmouth, Va. Forms of proposals, copies of specifications and instruction to contractors may be obtained, and the plans and profiles seen, at the Municipal Engineer's office. Each bid must be accompanied by a deposit of $500. A fidelity bond in the sum of $10,000 will be required at the expense of the contractor. E. THOMPSON, JR., Clerk of City Council, Portsmouth, Va.

OFFICE SUPERVISING ARCHITECT, WASHington, D. C., October 27th, 1894.—Sealed proposals will be received at this office until the 27th day of November, 1894, and opened immediately thereafter, for all the labor and materials required for the erection and completion of the U. S. Post Office building at Camden, Ark., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Camden, Ark. 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 or all bids and 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 the Erection and Completion of the U. S. Post Office at Camden, Ark.," and addressed to CHAS. E. KEMPER, Acting Supervising Architect.

TREASURY DEPARTMENT, OFFICE SUPERvising Architect, Washington, D. C.—Sealed proposals will be received at this office until the 30th day of November, 1894, and opened immediately thereafter, for all the labor and materials required for the interior finish, plumbing and approaches for the U. S. Custom House and Post Office Building at St. Albans, Vt., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at St. Albans, Vt. 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 or all bids and 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 Interior Finish, Plumbing, Etc., for the U. S. Custom House and Post Office Building at St. Albans, Vt.," and addressed to CHAS. E. KEMPER, Acting Supervising Architect.

IMPROVEMENT OF HARBOR AT DELAware Breakwater.—U. S. Engineer Office, 1428 Arch street, Philadelphia, Pa.—Sealed proposals for furnishing and depositing stone in the gap at the Delaware Breakwater, Del., will be received here until November 19th, 1894, and then publicly opened. All information furnished on application. C. W. RAYMOND, Major Corps of Engineers.

U. S. ENGINEER OFFICE, 121 FRANKLIN street, Buffalo, N. Y.—Sealed proposals for extension of brakewater at Dunkirk Harbor, N. Y., will be received here until December 10th, 1894, and then publicly opened. Information furnished on application to MAJOR J. H. RUFFNER, Engineers.

MISCELLANEOUS WANTS.

Received Too Late for Classification.

A GOLD MINING SUPERINTENDENT DESIRES position. Has had large experience in mining, milling and assaying, and has employed almost every variety of labor. Address GOLD, ENGINEERING AND MINING JOURNAL. No. 17,035. Dec. 1.

1369 WANTED—FOREMAN TO TAKE charge of yardmen and look after blast furnace during day, also a night foreman for blast furnace. German preferred and one who has had experience with 200-ton blast furnace Address NEW YORK, ENGINEERING AND MINING JOURNAL.

DIVIDENDS.

HOMESTAKE MINING COMPANY,
MILLS BUILDING, 15 Broad St.,
New York, Nov. 15, 1894.

DIVIDEND NO. 196.

The regular monthly dividend, TWENTY (20) CENTS PER SHARE, has been declared for October, payable at the office of the company, San Francisco, or at the transfer agency in New York, on the 25th inst.

Transfer books close on the 20th inst.

LOUNSBERY & CO., Transfer Agents.

THE ENGINEERING AND MINING JOURNAL

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(NONPAREIL MEASUREMENT.)

	Lines.	Inches.	Regular Edition 1 time.	One Month 4 times.	Three Months 13 times.	Six Months 26 times.	Nine Months 39 times.	Twelve Months 52 times.
	6	1/6	$2	$5	$12	$20	$28	$ 34
	9	1/4	.....	6	16	28	38	47
	12	1	3	8	20	35	47	60
	15	1 1/4	.....	9	24	42	57	73
	18	1 1/2	4	11	29	50	68	87
	21	1 3/4	.....	12	33	58	78	100
	24	2	5	14	38	66	89	113
	27	2 1/4	6	16	42	72	98	125
	30	2 1/2	.....	17	46	79	108	137
1/4 Column.	33	2 3/4	7	19	50	86	117	149
	36	3	8	20	54	93	126	161
	39	3 1/4	.....	21	58	99	135	172
	42	3 1/2	9	23	61	106	143	183
	45	3 3/4	.....	24	65	112	151	194
	48	4	10	25	68	118	160	204
	54	4 1/2	11	28	75	129	175	224
	60	5	12	30	81	141	190	242
1/3 Column.	66	5 1/2	13	32	87	151	205	261
	72	6	14	35	93	161	219	279
	78	6 1/2	15	37	99	171	232	296
	84	7	16	39	105	181	242	313
	90	7 1/2	17	41	109	190	258	329
	96	8	.....	43	115	200	271	346
1/2 Page....	102	8 1/2	18	45	121	209	284	362
	108	9	19	47	128	219	296	378
	114	9 1/2	20	49	132	228	309	395
	120	10	.....	51	137	238	322	411
	126	10 1/2	21	53	143	248	336	428
1/4 Page...	135	11 1/4	22	55	149	258	349	446
2/3 Page....	204	17	32	79	218	374	503	634
Full Page.	408	34	61	147	407	706	956	1220

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Inside back cover 25 per cent. above regular rates.

Rates for advertising in **The Engineering and Mining Journal** are somewhat higher than in other technical papers, but the most economical advertising is that which brings the most business for the money invested, and on this basis **The Engineering and Mining Journal** is the cheapest advertising medium in the country.

MACHINERY AND SUPPLIES FOR SALE

MACHINERY AND SUPPLIES FOR SALE.

Contracts Open.

Continued from page 18.

SUPPLIES.—OFFICE OF QUARTERMASTER, Schuylkill Arsenal, Pa.—Sealed proposals, in duplicate, subject to the usual conditions, will be received at this office until November 23d, 1894, at which time and place they will be opened in the presence of bidders, for furnishing and delivering at Schuylkill Arsenal, Pa., 400 ft. felt weather strips, No. 1; 150 ft. do. No. 2; 100 sheets zinc, No. 10, 7 ft. long, 2 ft. wide each; 200 lbs. best bloom galvanized iron, 22 gauge, 8 ft. long 2 in. wide; 5 boxes I. C. Camaret tin, 20 × 28 in. roofing plate; 200 slates, 8 × 14 in., Chapman hard vein; 71 lbs. solder, half-and-half; 10 ft. spiral pipe, galvanized iron, 1½ in.; 40 ft. galvanized conductors, 4 in., corrugated; 25 pieces hemlock, 16 ft. long, 3 × 12 in.; 7 do. 18 ft. long 3 × 10 in.; 18 ft. galvanized spouting, 3 in., corrugated; 10 gallons black varnish, best brand; 10 gallons alchohol, best quality; 50 bush. lime; 20 bush. salt, coarse; 7 electric bells, Varley; 3,000 ft. lead cable, 1 ply, No. 20; 8 batteries, Holpzers 10 wooden push buttons; 2 lbs. staples, small size, for use with cable; 25 zincs for Holpzer's battery; 5 lbs. sal ammonia. Bidders will state the earliest day when delivery will be made. Proposals for delivery at other points will also be entertained. Preference will be given to articles of domestic production or manufacture, condition of quality and price (including in the price of foreign productions and manufactures the duty thereon) being equal. The Government reserves the right to reject any or all bids. Proposals must be signed by the bidder, inclosed in sealed envelopes, addressed to the undersigned and marked "Proposals for Quartermaster's Stores, to be opened November 23d, 1894." CHARLES W. WILLIAMS, Quartermaster, U. S. Army.

MINERAL OIL.—Army Building, Whitehall street, New York City.—Sealed proposals, in triplicate will be received here until December 3d, 1894, and then opened for supplying about 22,000 gallons of mineral oil as per specifications and schedule, which will be furnished on application to the undersigned. Preference will be given to articles of domestic production or manufacture, conditions of quality and price (including in the price of foreign productions or manufactures the duty thereon) being equal. The Government reserves the right to reject any or all proposals. Envelopes containing proposals should be marked "Proposals for Mineral Oil," and addressed to JAMES MOORE, D. Q. M. General, U. S. Army.

IRON LATHING AND AREA GRATINGS.—Office of Building for Library of Congress, 145 East Capitol street, Washington, D. C.—Separate sealed proposals for furnishing, delivering and putting in place complete the iron furring and lathing required for the ceilings, partitions, etc., in the first, second and attic stories and for the iron grating and the lights required for the areas of the Building for Library of Congress, in the city, will be received at this office until November 27th, 1894, and opened immediately thereafter in presence of bidders. Specifications, general instructions and conditions and blank forms of proposals may be obtained on application to this office. BERNARD R. GREEN, Superintendent and Engineer.

LIGHTING.—The City of Millville, N. J., will entertain sealed proposals until December 10th, 1894, for lighting the city with electricity for a period of five years. Address L. H. HOGATE, City Recorder.

PIER WORK.—U. S. Engineer Office, Duluth, Minn.—Sealed proposals for repair of pier at Superior, Wis., will be received here until December 10th, 1894, and then publicly opened. Further information given on application. CLINTON B. SEARS, Major Engrs.

See Page 29.