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CONTENTS.

Subscribers will receive with this number the Index to Volume LXVII of the "Engineering and Mining Journal." Those whom it does not reach are requested to report the omission to this office. The fact that this Index contains some 9,000 titles and nearly three times that number of page references, shows the care and labor required to compile it; as well as the number and variety of topics concerning which information is given in the columns of the "Journal."

Some of the mining companies on the Witwatersrand have instituted a very desirable reform by reporting their monthly production in fine ounces of gold. Heretofore the reports have been made in ounces of bullion, which is chiefly gold, but is from 810 to 825 fine only as a rule. It is reported as gold, however, and makes the apparent production much larger than the real. In this country it is usual to make the reports in fine ounces, and it ought to be the rule everywhere. When we have reports of production of other metals, they are comprehended at once; a ton of pig iron, of steel, of copper or lead is a fixed quantity of metal, and we know what is meant. An ounce of gold, however, may be anywhere from half or two-thirds of an ounce up, and it requires a good deal of experience and calculation to determine its value. The reform, we hope, will be adopted by all the Transvaal mines.

The consolidation of the coal operators on the Monongahela River above Pittsburg into a single company may have some important results in the coal trade of Western Pennsylvania. These river mines have been worked generally to serve the local demand of the trade to points on the Ohio and the lower Mississippi. They have not, as a rule, shipped coal by railroad either to near-by points or to the lake ports. As we have often pointed out, the trade down the Ohio, of which Pittsburg once had practically a monopoly, has been much disturbed in recent years by competition from the West Virginia mines, and, to a smaller extent, from those of Ohio and Kentucky; while within the past year or two Alabama coal has also made its appearance in New Orleans and the other cities on the lower Mississippi. The natural consequences have been overstocked markets and low prices, which have largely increased the risks of what was once a very profitable trade. The local business of the mines has increased, but their river trade is no longer what it has been, though it is still an important business. It is understood that the new combination will consolidate workings and introduce many improvements, with a view to decreasing the cost of coal and enabling it to meet competition. Like most of the recent consolidations, however, it will be hampered by excessive capitalization.

Although we have been proud of the progress made in the United States in electrical railroad work, and have advanced so far in that direction that we have furnished not only plans, but machinery for a number of European lines, it looks very much as if Great Britain would be in advance of us in the construction of the first high speed railroad operated by electric power. The building of a railroad on the system devised by Mr. F. B. Behr, a well-known electrician, between Liverpool and Manchester, is under consideration, and it is stated that there will be little difficulty in raising the capital needed. A committee of the Liverpool Chamber of Commerce has reported favorably on the project, and contractors of high standing have put in estimates and bids for the construction of the line. It is claimed that the distance of 30 miles can be covered in 20 minutes, and there seems to be no reason to doubt it. It will be quite possible to operate the road at such speeds quite as safely as steam roads are now run at ordinary speed. It is also claimed that the cost of motive power will be less than with steam locomotives, but this is still to be proved.

The fact is that we have probably approached quite closely the limit of speed which can be safely and economically attained with a steam locomotive. Any considerable increase is impossible without bringing the power and consequently the weight of the locomotive up to a point beyond the ability of our present road-beds and superstructures to carry. The use of electric power and the substitution of continuous for reciprocating action in the motor make possible a much higher speed than we have been able to attain heretofore without any increase in weight. Electricity therefore opens new possibilities, which the projected Liverpool & Manchester road may be the first to demonstrate on a practical scale.

The strike of the smelter employees in Colorado continues without substantial change, the reports of a settlement of differences having been contradicted. Both parties are now apparently keeping quiet and waiting for the decision of the court on the test case made up for the purpose of determining the constitutionality of the eight-hour law. The briefs have been submitted and the case taken under consideration by the court, whose decision, it is expected, will be rendered next week. Upon its nature probably depends the action which will be taken by the contending parties.

This Colorado strike and the shut-down of the American Tin-Plate

Company's different works, which is expected on July 1st, draw attention to one point in the present movement of industrial consolidation, which has not, we think, been considered by the public, though the managers of the combinations may have taken it into account. The union of the manufacturers in any special line of trade serves also to consolidate the interests of the employees. On the one hand it may be said that the power of the corporation is increased by its control of all the mills of a certain class; but on the other hand the opportunities for close union and for effective action on the part of the men are very much increased also. In case of a contest over wages or any other point of difference a single head on one side deals with a single one on the other; and there are none of the varying conditions and opposing interests which have caused the failure of a good many strikes. We believe that this will be made quite clearly apparent later.

In these remarks we must not be taken as expressing any opinion on the merits of the Colorado strike, which has, indeed, appeared to us, on the face of the matter, to have been somwhat hasty and ill-judged. There is still, we think, an opportunity for an equitable settlement of the trouble, which we hope will be reached before long, since a continuation of the strike will be against the interests of both parties.

ZINC PRODUCTION IN 1898.

In common with the miners and smelters of all the other useful metals, the producers of zinc in 1898 had an active and prosperous year. The demand for the metal was large, and there was an increase in output, which did not quite meet that in consumption. In previous years there has been talk of agrements to restrict production and limit the quantity of metal to be put on the market; but in 1898 there was no need of any convention of this kind, since supplies were absorbed as fast as furnished.

According to the revised figures of production as collected for "The Mineral Industry," Volume VII, the output of spelter or metallic zinc in the United States in 1898 was as follows, in short tons of 2,000 pounds.

Zinc Production in the United States, in Short Tons.

	—1897.—		—1898.—		Changes,
	Tons.	Per ct.	Tons.	Per ct.	Tons.
Eastern and Southern	9,900	9.8	7,805	6.8	D. 2,095
Illinois and Indiana	38,680	38.6	46,693	41.0	I. 8,013
Missouri	18,412	18.3	21,063	18.4	I. 2,651
Kansas	33,395	33.3	38,543	33.8	I. 5,148
Totals, short tons	100,387	100.0	114,104	100.0	I. 13,717
Totals, metric tons	91,071	.....	103,515	.....	I. 12,444

The Eastern and Southern producers were the only ones showing a decrease, and this falling off was chiefly in the Southern mines. The Illinois and Indiana smelters had the largest proportional increase, 17.1 per cent., while the Missouri producers gained 12.9 per cent., and those of Kansas 13.2 per cent. The Missouri and Kansas smelters, who draw their ores from what is known generally as the Joplin Region, made in 1898 in all 52.2 per cent. of the spelter produced in the country, against 51.6 per cent. in 1897. This region is actively growing, and will probably again increase its proportion during the current year.

In addition to the spelter above reported there was a production of zinc white, or zinc oxide, direct from the ore—chiefly in the East—amounting to 32,747 short tons. This compares with 26,262 tons in 1897, showing an increase of 6,485 tons, or 24.9 per cent.

The spelter production of the world for two years past is given in the table below, in metric tons, the world's measure. The figures for 1897 are from "The Mineral Industry," Volume VI. Those for 1898 are from Volume VII of the same work, some of the statements for foreign countries being due to the valuable circular of Messrs. Henry R. Merton & Company, of London:

World's Production of Zinc, in Metric Tons.

	—1899.—		—1898.—	
	Tons.	Per ct.	Tons.	Per ct.
Rhine, Belgium and Holland	187,406	42.0	191,836	40.8
Silisia	95,550	21.4	99,233	21.3
France and Spain	32,634	7.3	32,649	7.0
Great Britain	23,805	5.4	27,635	5.9
Austria	9,332	2.1	7,229	1.6
Russia	5,852	1.4	5,664	1.3
Total outside of U. S.	354,579	79.6	364,246	78.9
United States	91,071	20.4	103,515	22.1
Total	445,650	100.0	467,761	100.0

The total production outside of the United States shows an increase of only 9,667 tons, or 3 per cent. The United States output, however, shows a much higher proportion of gain—12,444 tons, or 13.7 per cent.; so that the total increase reported was 22,111 tons, or 4.9 per cent. This gain was—outside of the United States—somewhat unevenly distributed. In France and Spain and in Poland there was no appreciable change, while in Austria there was a decrease of 2,103 tons, or 22 per cent. Great Britain increased its output by 3,830 tons, or 16 per cent. The two chief producing groups—the Rhine, Belgium and Holland and Silesia—show advances of 2.3 and 4.1 per cent., respectively. It will be seen that the increase in production in the United States was greater than that reported for all the European producers.

The increase in the supply of spelter was, as noted above, hardly equal to that in demand, and a steady rise in prices was the result. At opening of 1898 good ordinary brands sold at $89.60 in New York and £18 1s. 3d. in London per long ton. At the beginning of 1899 the quotations were $117.60 and £24 15s. respectively. Since the first of the year there has been a still further rise. This increase has been due entirely to demand, as little or no speculative element entered into the market.

The United States furnished a considerable quantity of spelter to the European market, the exports in 1898 amounting to 9,374 short tons of metal and 10,520 tons of ore; the latter being equivalent to about 6,300 tons of metal.

LEAD SMELTING IN BRITISH COLUMBIA.—II.

A recent editorial in the "Rossland Miner," of British Columbia, attacks my article on the conditions of the lead-smelting business in that Province, printed in the "Engineering and Mining Journal" of June 3d, which it calls "a misleading article."

I had the pleasure of meeting in Rossland, not long ago, the editor of the paper referred to, who is doubtless the author of this editorial. I found him a very intelligent and agreeable gentleman, and I notice in his article a tone of personal courtesy towards myself which confirms my impression of him. That he accuses me of ignorance of the subject of my article, says that my opinions cannot be impartial, because I am a lawyer, and declares that to publish such an article as mine is "not honest," is not intentional discourtesy; it is simply "journalism"; and I have no desire to take offense at such perfunctory expressions, which, if uttered in any but a Pickwickian sense, might be deemed insulting. He is a fool who accepts as an insult what is not meant as such; and I am too well acquainted with the ownership of the "Rossland Miner" and the influence which controls its editorial columns to blame its genial editor for obeying orders. Any personal aspect of the controversy he has raised may therefore be neglected. The only point worth discussion is the question whether my article told the truth as to the present situation of the business of lead smelting in British Columbia.

1. The reader of that article will notice that I confined myself very carefully and plainly to the effect of the management of the smelting works of the Canadian Pacific Company at the present time. And I now repeat what I then said, that it is a great advantage to the mining industry of British Columbia. I purposely avoided any characterization of the history of the Canadian Pacific Company, or its previous policy, because I am not familiar with the details of that history. What I do know, as an observer of the transcontinental railroad building of the last thirty-odd years, is that the American innovation of building railroads through undeveloped territory for the purpose of building up the business which will make the railroads pay (as opposed to the previously universal system of waiting until the business was great enough to demand and warrant the railroads) has involved, in the United States, and, I have no doubt, in Canada also, much unreasonable discontent and demagogical denunciation of the railroad companies. In particular, after a railroad has been built, at high cost, through a frontier wilderness, and its operation has reduced the cost of labor and supplies, it is popularly deemed an outrage for that concern to oppose the construction of rival roads, constructed at lower cost. The question is by no means simple. The original road may have been capitalized at more than it really cost, and individual fortunes may have been realized out of the difference. The people may be perfectly right in demanding franchises for rival lines. But the phenomenon I noted in my article, namely, the blind denunciation of a railroad company in a community which it really created, is universal, independent of the merits of the case; and the indiscriminate character of this denunciation deprives it of influence upon candid minds. The conditions of lead smelting in British Columbia furnish a case directly in point. The "Rossland Miner" and the constituency it professes to represent are cutting their own throats in flourishing the "machete" against an alleged "grasping corporation."

2. The "Rossland Miner" thinks it would not be unfair to ask me my authority for my statement that the Canadian Pacific Railway appears to be willing to reduce smelting rates to figures involving little or no profit. That question is certainly not unfair; and I will answer it frankly. My authority is the rates themselves, judged by my personal knowledge of the cost of smelting in the United States. I have been, for many years, and am at this time, heavily interested in the latter business. The works in which I am a large owner, and of which I have been an officer, have imported and smelted at considerable profit large quantities of lead ore from British Columbia. The smelting works of the Canadian Pacific Railway Company are our commercial rivals. If the "Rossland Miner" can succeed in hindering their success, it will

put money in our pockets. Mr. Aldridge, the manager of those works, was formerly employed by an American company of which I was an officer. When he left us and went to British Columbia, I confess that I was somewhat worried as to the effect of the skillful competition which he might be able to establish. Since my recent visit to British Columbia, I have ceased to feel any anxiety; and I set up no claim to disinterestedness for having pointed out, in my recent article, the way in which lead smelting at Trail and Boundary can be kept alive. For the utmost success of these enterprises, on the developments of producing mines thus far, would not affect the general smelting business in the United States to any serious extent. Such a success might, it is true, stimulate new discoveries and developments to the advantage of British Columbia. If the "Rossland Miner" succeeds in preventing it, all the better for us in the United States.

3. Apart from my general sympathy with my friend Aldridge, who is fighting an up-hill fight against human foolishness as well as natural obstacles, I do not care an atom how the battle turns out. When Mr. Aldridge gets tired of it, we shall be very glad to have him back in his own country. Meanwhile, the whole Canada market for lead, which he is modestly trying to secure, amounts to a very few hundred tons a month. We can afford to be generous about a trifle like that. Whether the miners in British Columbia can afford it, is for them to decide.

4. Now I deem it "not unfair" to ask the "Rossland Miner" to produce its authority and give the figures on which its opinion is based, naming at the same time the persons who are "better acquainted with the conditions, and more competent to judge" than I am. If they should turn out to be inventors of new processes, promoters of stock companies, or even proprietors of the "Rossland Miner," I must decline to discuss the subject with them. But if they are practical lead smelters of recognized standing, I will receive their statements with respect, and answer them with frankness. Meanwhile, I beg to assure my highly esteemed acquaintance, the editor of that journal, that I happen to know a good deal about this particular matter, and that he may find it advisable not to "monkey with a buzz-saw," even in a complimentary and purely journalistic way.

R. W. R.

NEW PUBLICATIONS.

"Ueber Magnetische Erzlagerstaetten und deren Untersuchung durch Magnetische Messungen" ("On Magnetic Iron Ore Deposits and Prospecting for them with Magnetic Instruments"). By M. Dahlblom. Freiberg, Germany; Craz & Gerlach. Pages, 68; illustrated.

Swedish engineers have given close attention to the prospecting for iron ore by magnetic instruments, and some of the results of their work are here presented. There is a brief introduction setting forth the general considerations affecting magnetic ore deposits and the earth-magnetism. The theory of these currents and their effect on the magnetic needle are worked out mathematically with a great deal of care in the second section of the book. Other sections describe the construction and use of the magnetometer, which is illustrated; while further on other instruments are described. All through the book mathematics are freely used and there are a number of carefully constructed diagrams on the accompanying plate. We must protest, however, against the practice, which is very common in French and German books, of putting all the illustrations and diagrams on one or more large plates which are set in at the end of the volume. It is an economy in printing, but it does not conduce to the comfort or convenience of the reader, who is obliged, in the first place, to hunt up the plate, and then to spread it out while he follows the text. The illustrations should always be printed in the text, where they belong, and where the reader can refer to them without trouble. The monograph is an interesting one to those who wish to follow up the subject, which has not had very much systematic study outside of Sweden; though the use of the magnetic needle in prospecting for iron ore is by no means unknown in this country.

"Annual Report of the Mine Inspector for the Indian Territory to the Secretary of the Interior; for the Fiscal Year 1898." Luke W. Bryan, Inspector. Washington; Government Printer. Pages, 48; illustrated.

The Indian Territory has coal deposits of considerable value, which are worked by a number of companies and individual operators, located along the railroad lines which pass through the Territory. Most of the companies, in fact, are controlled by the railroads, and the coal is either taken for use or sold at places on their lines in Kansas and Texas. In 1898 there were 20 operators, who employed in all 3,529 men and turned out 1,458,098 tons of coal, the largest quantity ever reported in a single year. The period covered by the report is, of course, the Government fiscal year, ending June 30th. The two leading operators are the Choctaw, Oklahoma & Gulf and the Southwestern Coal and Improvement Company, which together produced 55.6 per cent. of the total. The coal is generally of good quality. There are two coke plants, one owned by the Osage Coal Mining Company and the other by the Choctaw Coke Company, which made in all 34,810 tons of coke. The mines are generally well equipped and are closely inspected, the rules for safety being generally well enforced. The use of mining machinery, electric haulage and other improvements is making much progress. It is worthy of note that while the production has increased 50 per cent. in a few years, the number of mines has changed very little. The coal mined per man employed per year has risen from 296 tons in 1894 to 413 tons in 1898; a result due partly to improved appliances, but chiefly to steadier work. The number of fatal accidents in 1898 was 17—or 5 less than in 1897—the resulting averages being 85,770 tons mined for each life lost, and 4.8 deaths per 1,000 men employed. The inspection of the mines seems to have been thoroughly carried out and the regulating laws well enforced.

"Eighth Annual Report of the Bureau of Labor, Statistics and Mines of the State of Tennessee: 1898." A. D. Hargis, Commissioner, Nashville, Tenn.; State Printer. Pages, 248.

The chief mineral products of Tennessee are coal, iron ore and phosphate rock, though there are also mines of copper, zinc, lead and manganese ore. The coal mined in 1898 was 2,340,346 tons; the number of men employed in the coal mines was 7,820 and their average working time was 217 days, or about two-thirds of full time. The total iron ore mined was 595,777 tons. The phosphate rock produced was 272,191 tons. The other minerals mined included 89,721 tons copper ore, 454 tons manganese ore and 1,250 tons managanese ore. The secondary products were 394,545 tons of coke and 263,439 tons of pig iron. In the iron manufacture there are 23 blast furnaces in the State, of which 13 use coke as fuel, and 10 charcoal.

The total number of deaths from accident reported was 20, of which 19 were in coal mines and only 1 in a metal mine. The number injured was 43, of whom 41 were in coal mines and 2 in other mines. Taking the coal mines alone, there were 162,499 tons mined for each fatality; and 1 death to 411 men employed.

The chief part of the report is devoted to the coal mines of the State, and many details are given as to their condition, the nature of workings, appliances used and other particulars. It is the coal mines which chiefly require inspection, as they are the workings conducted on the larger scale, and in need of ventilation and other means for securing the safety of employees. The iron ore mines and the phosphate mines are chiefly open-pit workings, where the operations are comparatively simple. The copper and zinc mines are comparatively few in number. The details given concerning these are of interest, and show that their inspection has not been neglected. The report, generally speaking, is a thorough one, and presents many facts which are of value to all who are interested in Tennessee mines. A commendable feature about it is the early date at which the compilation was completed and the report published; presenting the figures in good season for the use of those who need them.

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.

"Alaska and the Klondike." By Angelo Heilprin. New York; D. Appleton & Company. Pages, 316; illustrated. Price, $1.75.

"Die Grubenbrandgewaltigung." Von Robert Lamprecht. Leipzig, Germany; Arthur Felix. Pages, 144; with 7 lithographed tables. Price (in New York), paper, $1.75.

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 will only be published when so requested.
Letter should be addressed to the MANAGING EDITOR
We do not hold ourselves responsible for the opinions expressed by correspondents

Potash and Soda Salts in Lead Slags.

Sir: The interesting communication of Messrs. Iles and Shelby upon "Potash and Soda Salts in Lead Slags," in the "Engineering and Mining Journal," June 3d last, recalls an occurrence of similar salts in copper matte from the Hall Mine Smelter at Nelson, B. C., which I observed in the Spring of 1895 at the Argentine Works of the Consolidated Kansas City Smelting & Refinery Company.

A number of heaps of matte were piled upon the ore platform. A snow flurry came up—one of those with large, soft flakes, making a covering of wet snow of perhaps half an inch—this being immediately followed by a bright, warm, intense sun which quickly melted and evaporated the snow. In passing, at some distance from the ore platform, I noticed that although the snow had disappeared from all the other matte piles and adjacent objects, one of the matte piles was apparently still white with snow. Returning that way somewhat later, it was still white. I then crossed over to the ore floor and examined this pile of Hall Mine matte, and found the top pieces—it was crushed to about 2-in. ring—were coated quite thickly with a white crust, which had been left upon the evaporation of the snow. I carried a number of the pieces to the laboratory for the chemist to make an examination as to the nature of the salt, and although no such exhaustive analyses were made as those published by Messrs. Iles and Shelby, it was shown to be a similar salt of potash and soda to that given by them. I noticed similar occurrences produced on other lots of Hall Mines matte, by slightly wetting the matte and allowing it to dry, although they were in no case as pronounced as in the one alluded to.

I have felt that possibly the phenomenal tonnage of the Hall Mine smelter might be in a measure due to the fact that ores evidently contain so large a percentage of potash and soda as to be thus apparent even in the matte as it was at that time.

R. C. Canby.

San Luis Potosi, Mex., June 16, 2899.

Wireless Telegraphy and the Wreck of the "Paris."

Sir: Connecting Marconi's experiments with the wireless telegraph, which were conducted between the English and French coasts, with the loss of the steamers "Mohegan" and "Paris," is it not possible that these

vessels were led astray by the deflection of their compasses? Necessarily a current of electricity to pass through space in a direction opposed to the earth's current must exceed the latter in force, and a magnetic needle placed near the stronger current and under its influence will leave the natural position and adjust itself to the induction of the stronger current. If a current of electricity be sent through space across the English Channel the compass of a ship passing below or through this current should adjust itself to the stronger force and be deflected from its proper position, thereby misguiding the navigator. If such is the case it would be interesting to know whether and where Marconi's experiments were being conducted between the time of departure of the steamer "Paris" from Cherbourg and her stranding on the English coast.

Can you inform me if such a possibility has been investigated and if it is known what effect Marconi's current has upon the compass of a ship passing through or across the current? F.

New York, June 27, 1899.

[We have not heard of any investigation of the kind which our correspondent mentions. His theory is plausible, however, and it would be interesting to know whether any observations as to the effect of the telegraphic current had been made. If any of our readers have any facts bearing on this case we should be pleased to hear from them. The question certainly seems important enough to be carefully considered. —Editor E. & M. J.]

The Pneumatic Cyanide Process.

Sir—We notice in your issue of June 17th your reply to a correspondent who asks for information regarding the "Pneumatic Cyanide Process," and we beg leave to add something to the information there given, in order to make the object and aim of our process more clear.

It is true, as you state, that a supply of oxygen can be obtained for the cyanide solution by letting it stand quietly in the vats and absorb it from the atmosphere, provided you let it stand long enough (usually from two to six days), but, by forcing the air upward through the solution and leaching ores, the oxygen required to form the cyanogen is supplied as rapidly as it is needed and the agitation thus produced brings every particle of the ore pulp into immediate contact with the oxygenated solution, thus hastening the process so materially that the extraction is completed in less than one-half the ordinary time.

In an experimental test of the pneumatic process made in public a few weeks ago, by Chas. F. Cuno, the well known assayer here, who has been identified with the cyanide process for nine years and who has no connection whatever with this company, a most remarkable result was obtained, although he made the test in his own way and with a crude apparatus of his own design. The sample consisted of 10 lbs. of crude gold ore containing specks of tellurium and assaying 2.54 oz. per ton. Assays were made from samples of the pulp taken out of the vat every hour, with the following results: After 1 hour's leaching the extraction was 86.1 per cent.; after 3 hours, 92 per cent.; after 6 hours, 96.4 per cent. These are the figures given us by him, and they tell their own story.

If your correspondent has a cyanide mill we will give him written permission to use our process for 30 days free of charge in one of his leaching vats on the same ore and with the same solution that he uses in other vats, and we will guarantee him that with it he will obtain a higher percentage of extraction and will complete the leaching in less than one-half the time required in the other tanks; and this offer is good to any other mill owner in the world who desires to make a practical test of the pneumatic process, and who will write to us to that effect.

Further than this, we claim, and stand ready to demonstrate, that our method of precipitation (which is covered by separate patents) is far superior to any method of precipitation now in use, and that it supplements and makes complete a process for treating ores by cyanide that has no equal in the present state of metallurgy.

The process is not new in the sense that it is a recent invention. The first patent was applied for three years ago this month, and since then the inventor, assisted by one of the best chemists in the United States, has been quietly working to perfect it; but it was not placed before the public until recently, owing to delay in securing the foreign patents.

Other features of merit not mentioned in your reply are the heating of the solution, which hastens the extraction and prevents freezing in winter, special treatment of slimes, the prevention of packing and channeling, and the permission of finer crushing, all of which are set forth in our pamphlet, which we will send to your correspondent on request.

Believing that the "Engineering and Mining Journal" desires to be fair in its treatment of any process or improvement in metallurgy whose sponsors are willing to have its merits thoroughly and publicly tested, we respectfully ask you to give this additional information the same publicity that you gave the reply to your correspondent, and remain, The Pneumatic Cyanide Process Co.,

Per Jean Webb, Inventor.

Denver, Col., June 21, 1899.

THE SAN FRANCISCO MEETING OF THE AMERICAN INSTITUTE OF MINING ENGINEERS.

A circular from Secretary R. W. Raymond gives the following particulars of the arrangements for the Fall meeting of the Institute so far as they have been completed up to date, as follows:

"As already announced, the seventy-seventh meeting of the Institute will be held in San Francisco, Cal. The meeting will begin about September 25th, 1899. Hotel headquarters will be at the Palace Hotel; rates per day, $1.50 to $3 on European plan; $2 extra on American plan.

"An excursion party has been arranged for members from the East, as follows: A special train of sleeping cars will leave Chicago September 16th, and go by St. Paul, Butte and Anaconda, Montana, and Portland, Oregon, to San Francisco. The same special train will convey the party upon an excursion through California, visiting Grass Valley, Nevada City, Oroville, Jamestown, Sonora, Dutch Flat, New Almaden, etc., and will then proceed eastward from Southern California through Arizona. An excursion will be made en route to the copper mines of Bisbee, Arizona; and the special train will then continue eastward to Chicago. There will be also opportunity for a trip to the Yosemite Valley, for which a special rate of $38.50 has been secured, including transportation from and to the railroad and hotel bills for four days. Throughout the trip, except during the meeting at San Francisco, the sleepers of the special train will be available for lodging, and the dining cars for meals.

"It is estimated that the trip, including the meeting and all excursions, will occupy about 34 days, from Chicago back to Chicago, and that the cost for transportation, berth and meals, will be $225 for each person. This does not include expenses in San Francisco, or fees for personal service. This low cost is due to the generous offer of the several railroad companies to haul at a nominal charge over their lines the special train of the Institute party. It is expected that two dining cars will be attached to the train, and also a baggage car. The cost above stated provides for three regular meals daily; and it is necessary to include the cost of these in the estimate above given, because without a guaranty of this item it would be impossible to secure dining-cars at all. Berths in this special train can be secured up to August 15th by members and associates only, each application being accompanied with a deposit of $50. Applications may also be made at the same time for other persons; and after August 15th such applications will be considered in order of priority and places will be assigned, to the extent of the available accommodation, for one guest per member or associate, preference being given to a member of his family. It is quite possible, however, that room will be found for all, even to the extent of additional guests. The purpose of the above statement is to secure the accommodation of all members and associates who apply before August 15th.

"It is not practicable to reserve accommodations for those who desire to join the party en route, unless they secure their berths from Chicago to Chicago, paying the full price, as above specified. Members who cannot conveniently join this party are recommended to purchase the usual excursion tickets to San Francisco. They should, however, promptly notify this office of their intention to attend the meeting (even though they reside in California) in order that the local committee may make arrangements for their participation in excursions within the State.

"The Canadian Institute of Mining Engineers is to hold a meeting in British Columbia during September, in which the members of the Institute are invited to take part. It will be possible for any such, who desire to see under favorable conditions the mining districts of British Columbia, to take part in that meeting, and subsequently reach San Francisco in time for the Institute meeting. According to the provisional programme, the Canadian party from the East will leave Montreal September 1st, or Toronto September 2d, by the Canadian Pacific, proceeding by way of Owen Sound, the Great Lakes, Fort William and Revelstoke, where it will arrive September 8th, after spending September 7th at the Banff Hot Springs. From Revelstoke the party will go to Nelson, where three days will be spent, and to Rossland (September 12th), where it will stay two days. On September 15th the smelting works at Trail will be visited, and the party will proceed to Sandon, and by Slocan Lake and Slocan City to Nelson, which it will leave September 19th on its return trip via Kootenay Landing and the Crow s Nest Pass, spending one day at the mines of the Crow's Nest Pass Coal Company, and arriving at Fernie September 20th. For further information inquiry should be promptly made of Mr. B. T. A. Bell, Secretary, Ottawa, Canada. The trip above described will amply repay in scenic and professional interest those who can afford time for it, as a preliminary to the San Francisco meeting of the Institute.

"Members in Canada or Mexico are requested to notify the secretary by mail at once whether they will attend the meeting, etc. In addition to such notice by mail, due application should be made at the earliest practicable date for berths desired in the special train, as above set forth. Although the time for such application has been extended to August 15th, it should be borne in mind that, within that period, priority of application will govern, in general, the distribution of berths in accordance with individual preferences. These applications, and all correspondence on the subject of the special excursion train should be addressed to Mr. Theodore Dwight, Assistant Treasurer of the Institute, 99 John Street, New York City.

"Correspondence concerning local arrangements and excursions in California should be addressed (by those who do not take part in the special excursion) to Mr. Edward H. Benjamin, Secretary of the Local Committee, 331 Pine Street, San Francisco, Cal.

"Notice of intended papers or contributions should be sent to the secretary as early as possible, with particulars as to their character, length, illustrations, etc. The last general distribution of pamphlets before the date of the meeting will be about the middle of August. Papers to be included in this batch should be in the secretary's hands before the end of July.

COPPER AND BRASS IN JAPAN.—United States Consul General Gowey writes from Yokohama, under date of April 24th, 1899, that the customs returns show that during the year 1898 there were imported into Japan 224,941 lbs. of copper plates, sheets and rods, valued at $29,243, and 93,925 lbs. of yellow metal sheathing, valued at $9,970. What proportion of rods were included in the foregoing the returns do not indicate. Under the heading of exports, copper sheets and plates do not appear; but of refined copper there were shipped abroad during last year 35,709,650 lbs., mostly in the shape of slabs and ingots, valued at $3,553,245. Exports of manufactures of brass, at the same time, were valued at $9,856. The efforts made to produce sheet copper in Japan have not been encouraging, and the press has lately reported the failure of one of the largest concerns in this line of trade at Osaka. Japanese copper, whilst of fine appearance, has produced much dissatisfaction as sheathing on vessels—salt water destroying it in a very short time.

THE COPPER RESOURCES OF CALIFORNIA.

IV.—MINES IN SERPENTINE AND LIMESTONE.

Written for the Engineering and Mining Journal by Herbert Lang.

It has been said, and it is probably true, that there is no county in California which is entirely devoid of deposits of copper ore, unless it may be one or two which are entirely included within the alluvial area of the great interior valleys. North of San Francisco, and stretching along the Coast Range for some hundreds of miles and passing into Oregon, there are extensive exposures of serpentine rocks, which in places carry copper minerals and which constitute a class of deposits fully as distinctive, though far less important commercially, than the porphyry and schist formations to which I have already adverted. The greater part of the copper mining which was carried on in Southwestern Oregon and in Del Norte and other counties in California during the boom days of the later sixties, and which proved very unprofitable indeed, was done on this class of deposits. As a general rule there are no symptoms of a vein in the serpentine, the ore being contained in or forming the whole mass of nodules, which are entirely disconnected with each other and of very limited extent laterally or vertically. In fact most of the masses contain but a few hundredweight of material; and as there are no "indications" by which the miner is led from one nodule to another, the mining becomes uncertain and in nearly every case unremunerative. Copper is not the only ore which is found in this unsatisfactory formation. Chrome iron and magnetic iron likewise exist, and wherever they have been exploited they also are found in isolated and unrelated masses or nodules. As for the copper, some of the nodules weigh but a few pounds; while others reach as many tons and offer chances of successful exploitation. The largest masses of which I have any knowledge are found at Island Mountain, in Trinity County, where a group of them exist in a comparatively restricted space, which, by the action of the elements, have been freed from the serpentine country rock, and now stand as boulders of ore, rising above the general level of the ground. One or two of these masses project fully 50 ft. into the air, and because several such are in a line the observer generally concludes that here is a case of vein formation. The ore is chalcopyrite, and some 10,000 tons of it, scattered around the place, will average, I presume, 10 per cent. copper. Were the region less difficult of access it might be that mining operations would be successful here; but this is very likely the most inaccessible part of the United States, as regards transportation, it being in the heart of the Coast Range, which here attains its most mountainous and impenetrable character.

The serpentine formation yields prevailingly two kinds of ore, cuprite in the majority of cases, and chalcopyrite in the remainder. A little glance is also found, and in some cases the impure mixture of iron and copper oxides which we are so familiar with in surface mines elsewhere. Their oxidation does not seem to produce carbonates, which are very scarce—in fact almost unknown.

The propensity to regard all kinds of ore deposits as manifestations of vein formation has led here, as elsewhere, to curiously ineffective mining. In Colusa County and elsewhere, I have seen moderately extensive exploring work carried on solely under the stimulus of the discovery of a single small nodule of cuprite of not more than 50 lbs. weight, resting on the surface of the earth, and with not the remotest evidence of any subterranean connection with other masses. The old workers generally drifted first from the rich spot about 50 ft., of course without result. Then they came back to the deposit and sunk as far, with the same result. Then followed other horizontal or inclined works, the sum total of so much "gophering" merely proving that there was nothing thereabouts in the nature of ore excepting the little pocket first seen. It was on no other kind of foundation than a half dozen of these pockets that the two smelting furnaces, almost the first in California, were built in Colusa County about 1866, proving, of course, an utter failure. The ores were of extreme purity, containing often over 50 per cent. copper, but were and are too small in amount to ever furnish any important proportion of metal to the trade, and it is only for their historical and mineralogical interest that I include any mention of them here. We have yet to see whether the ores of the serpentine formation of Del Norte County will prove of any more importance in the future than they have in the past. I am inclined to class the deposits of Del Norte with those of Southwestern Oregon, as being too limited ever to cut much figure in the copper output of the country, but still worthy of exploitation when the proper time comes and the work can be undertaken under conditions which will make it feasible. That these conditions will improve as time goes on there is no doubt; but that the serpentine deposits will ever yield much copper I do not believe, for there is small likelihood of the known ore bodies being added to in the future by any system of exploration, their mode of occurrence being such as to make their discovery a matter of chance and accident only. No one will desire to expend money for prospecting in such a risky field. And the known bodies of ore are much too small to found any considerable works upon or to expect any important results from. From these remarks I must except a very few deposits in that region which have something of the nature of veins, and are contained between unlike formations. Such a case is the mine owned and worked by the Siskiyou Mining Company, where the vein, lying between serpentine and a granitic rock, is considered to be a contact deposit, and possesses something of the regularity characteristic of fissure veins.

The southern part of California possesses in climate, topography and mineral resources many of the characteristics of the adjoining territory of Arizona, with which it is also geologically allied. The common class of copper deposits in limestone, with which we are so familiar in Arizona, is met with in several districts here also, although I cannot say that any of them so far discovered seem of much present importance. The best example of this type which has come under my observation in Southern California is the Copper World claim, near the old historic camp of Ivanpah. Its description will serve to characterize a great many copper deposits in the great southwestern carbonate field.

The formation is limestone, which, near the ore body, becomes somewhat silicious. It is much broken up, but in most cases the bedding planes are somewhat preserved. Faults and dislocations are rather numerous, but not extensive. Many dikes and necks of an eruptive rock, which I take to be diorite, are obtruded in the limestone, and it is in the contact of these two formations that the strongest exposures of ore are met with. As a rule the most solid and compact ore is met with precisely at the contact; as we recede from the line of separation the ore becomes less and less solid, and finally gives out entirely at a moderate distance away. Both the limestone and the eruptive rock are more or less shattered at their surfaces of contact, the latter especially, and into the crevices thus formed the ore-carrying solutions have made way and deposited their burden. This infiltrated material forms by far the greater proportion of the ore, but there is quite a quantity of solid ore which contains no trace of country rock. In places it is as if the country, and especially the limestone, had been eaten into by the solutions, forming caves, which have been for the most part filled with solid ore; but the extent of these caves is but small in this mine, bearing no comparison to the great natural openings in such mines as the Copper Queen, the Mina Grande, near Hermosillo, and other localities, in limestone. In the Copper World the ore is exposed on the surface to a width of some 80 ft., and a length of near 300 ft.; but on exploration this space was found to contain many barren spots, and the quality of the ore, by reason of the intimate admixture of country rock, assayed so poorly in copper that all hope of it ever becoming a mine had to be given up. After a little surface work such a deposit becomes cut up into a most irregular and systemless conglomeration of holes which cannot by any stretch of flattery be called a mine. Indeed no good systematic mining can ever be done in such ground.

The ore consists mainly of chrysocolla, with more or less of azurite and the amorphous oxides of which I have spoken in other connections. In a certain part of the claim there is an exposure of ore which consists solely of limestone with infiltrated oxides of iron and copper, slightly silicious, and carrying 6 or 7 per cent. of copper, although its general appearance does not reveal a trace of that metal. Nearly pure chrysocolla in lumps of 100 lbs. or so, have been picked up; limonite pseudomorph after pyrite occurs; and other mineralogical curiosities are found here. The deposit does not differ materially from hundreds and thousands of others which can be and are found in this clime, and some of which are dignified with the name of mines and stocked for sale in the East.

In deposits of this kind the ores are, as a rule, tolerably rich and quite tractable; but there is always the great difficulty of the uncertain and disconnected mode of their occurrence below ground, which prevents economical prospecting and systematic mining. In spite of this drawback some half dozen of the more promising deposits of this sort in Southern California are being developed at the present time.

THE ELECTRO-DEPOSITION OF PALLADIUM.*

By Sherard Cowper-Coles.

Palladium is usually found associated with platinum, and as a rule it does not exceed 1 per cent. It is generally separated from platinum by chemical processes. At the present time the uses for palladium are very limited, the demand being considerably less than the supply, consequently the price is low as compared with some other rare metals. The present price is about double that of platinum, but its specific gravity is about half. Its color is almost as white as that of silver, and it takes a beautiful polish. Palladium is very malleable and ductile, and is harder than platinum. The hardness of electro-deposited palladium as compared to other metals is as follows: Nickel electro-deposited, 10.0; antimony electro-deposited, 9.0; palladium deposited bright, 8.0; cadmium deposited bright, 4.5; silver electro-deposited and burnished, 4.0. The figures give the hardness as represented by the number of grams weight on a diamond point required to produce a scratch.

Palladium fuses at a somewhat higher temperature than platinum. Moissan has found that palladium, like platinum, dissolves carbon at the temperature of the electric furnace, but does not unite with it, the whole of the carbon separating out as graphite on cooling.

The author has recently used palladium as a protective coating and reflecting surface for parabolic reflectors, the whole of the reflector being made by electro-deposition. The palladium can be deposited quite bright on the surface of the mirror, so that it does not need polishing, which would destroy the true parabolic curve. A deposit of 70 to 80 grains per superficial foot is bound to afford a good protective coating. Such a film of palladium is probably transparent, in which case a considerable portion of light would be reflected from the silver surface beneath the protective film of palladium.

Palladium is unchanged by air at ordinary temperatures, but at a moderately high temperature a thin film of oxide is formed, which has a bluish color. At a higher temperature the oxide is decomposed. Palladium alloyed with one-tenth silver is sometimes employed for the graduated scales of astronomical instruments.

Smee devoted some attention to the electro-deposition of palladium, and attempted to deposit metallic palladium from the nitrate, but only succeeded in getting down a black powder. He found ammonio-muriate of palladium dissolved in ammonia to be the best. He also tried iodide of palladium, by adding a solution of iodide of potassium to a solution of palladium, but found it was not a suitable salt for electro-deposition. He also tried palladio-cyanide of potassium. An electrolyte made up of cyanide of potassium is said to take up a considerable quantity of metal and yield the metal freely, so that heavy, reguline deposits can be obtained.

Bertrand has succeeded in obtaining good deposits with a solution formed of the double chloride of palladium and ammonium, made perfectly neutral, a palladium anode was found to dissolve freely. Gore has electrolyzed a solution of chloride of palladium in which a palladium was obtained upon the cathode.

The author has found a solution of palladium ammonium chloride to be one of the best, if not the best, for depositing palladium in a bright

*Note presented before the Institution of Mining and Metallurgy, London, May, 1899.

form. The best proportions are about a 0.62 per cent. solution of palladium ammonium chloride dissolved in about a 1 per cent. solution of ammonium chloride. The solution is worked at a temperature of about 75° F., the current used per square foot being about 0.12 ampere, the E.M.F. at the terminals of the bath being 4 to 5 volts. The anodes can be either palladium foil or carbon.

FERRIFEROUS LIMESTONE IN LYCOMING COUNTY.

Mr. Abraham Meyer writes to the "Bulletin" of the Pennsylvania State College that on the west side of Hogelan Run (Cogan House township) at an elevation of 1,825 ft. above tide, there was dug in the year 1840 and subsequently, a number of exploitation pits in search of coal. A part of this work was done near the Old State Road. Coal was found and worked in a drift 6 ft. 6 in., and at another point 10 ft. 2 in. coal, 6 ft. fireclay, 28 in. shale intervening, were reported by Prof. Rogers and Prof. J. P. Lesley.

In 1889, the observer having discovered the mountain or sub-carboniferous limestone formation at an altitude, since determined by a line of levels to be 1,565 ft. above tide at its base, above Kugler's flats; and noticing its uniform dip to the southwest along an exposure of over 190 rods in length in a bold cliff 45 ft. high was convinced that there must be a basin which as yet had not been noticed and a series of careful levels and search showed up a deep synclinal basin of some 1,500 to 2,000 acres. It was only two years ago when the first trip was made to locate the dip and synclinal basin. On first trial open cut disclosed outcrop which was found under cover 114 ft. from starting point, which is 51 ft. under cover, 24 to 30 in. thick, underlaid by 2 ft. clay shales, lower layer carbonate iron ore, gray sandstone roof 10 to 12 ft. thick containing many plant impressions and coaly matter in streaks. Second pit opened up an intervening ridge of too small area to utilize the coal, but of value for the underlying fireclays, some 9 ft. in aggregate. It was then observed there must be lower coals and a distance of about 1 mile southeast a shaft passed through a series of outcrops different from anything above, and an examination of some old pits northeast disclosed the same outcrop and decided that a test drill hole would disclose something of the true structural condition of the basin. A drill hole 5⅝ in. in diameter was put down, near center of basin. About 85 ft. from the surface a ferruginous brown sand rock, alternating with brown shaly rock was found, 14.5 ft. thick with many calcite crystals through the lower part of the measures. Under this occurred a pebbly rock (buhr stone) some 7 or 8 in. thick, and under this at a depth of 100 ft. from the surface was encountered a ferriferous lime rock, grey and bluish grey alternating with thin bluish iron lining shales much pitted, the whole depth drilled in limestone being 39 ft. 5 in. of a general uniform character, color and texture. Some portions seemed to be more silicious than others, and in some parts clay pockets or seams were met with, very thin lining of bluish iron shales alternating the whole depth with the more massive limestone layers to the bottom of drilled hole, stopping at a depth of 139 ft. 5 in. from the surface and still in the limestone.

If this is "the ferriferous limestone" of Clarion, Beaver and Butler counties, then the proper course to pursue to test the measure and basin for coal will be with a diamond drill, taking out a core, which will give true thickness of all measures passed through from surface. Now as the ferriferous limestone has never been located so far northeast, the further testing of the deposit may develop some new facts bearing upon these interesting measures, as drilled so far they show some 9 ft. 5 in. greater thickness than the thickest exposure in the western part of the State; and will also show up what portion and thickness are agricultural limes, as well any cement layers, if present, as in the western measures along the Pennsylvania and Ohio lines; and prove up the value of the lower series of the lower productive coal measures

FIG. 1.—CHLORATE EXPLOSION AT ST. HELENS, ENGLAND.

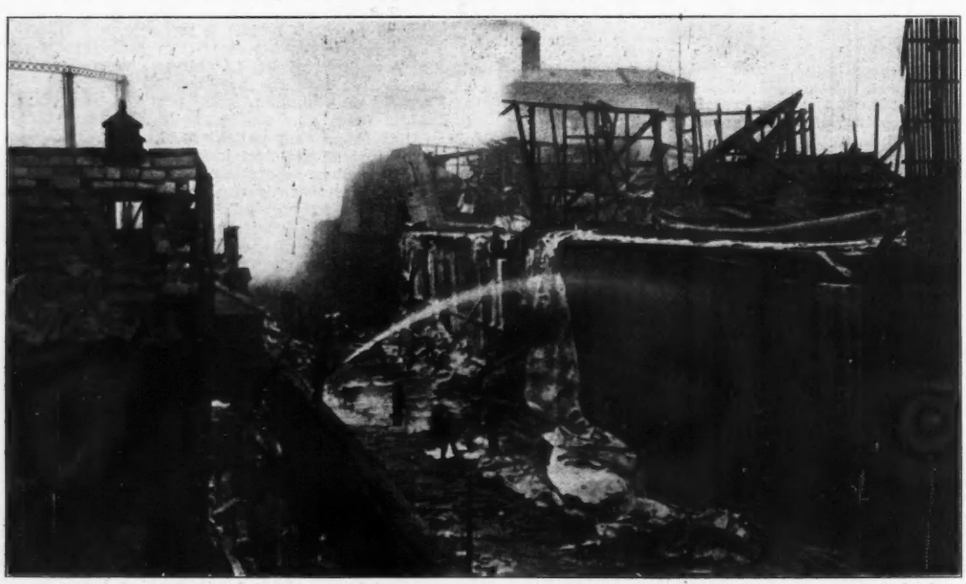


FIG. 2.—CHLORATE EXPLOSION AT ST. HELENS, ENGLAND.

THE CHLORATE EXPLOSION AT ST. HELENS, ENGLAND.

Written for the Engineering and Mining Journal by J. B. C. Kershaw.

On Friday morning, May 12th, the town of St. Helens, one of the chief centers of the English chemical industry, was the scene of an explosion unparallelled in violence in the annals of English manufacturing industry.

At a few minutes to 10 o'clock on the morning named, a fire broke out in the chlorate re-crystallizing-house of one of the United Alkali Company's works in the town, and in 10 minutes the fire had spread to a neighboring store-house in which 141 tons chlorate, in the form of crystals, and 15 tons in the form of powder, were stored, packed in 1-cwt. wooden kegs. The roof of this store burnt with great fierceness, and at 10:12, within 15 minutes of the first outbreak of fire, an explosion of most terrible violence occurred, the shock being felt at a distance of over 20 miles. The best account of the appearance at the moment of explosion is given by Dr. Best, one of the United Alkali Company's chemists, whose evidence before Col. Ford, the Government Inspector, stated that the roof caught fire and then it spread to the top of the kegs, which were piled up in pyramid fashion. Then it gave off a tremendous volume of smoke. The roof came in and the fire spread all over the place. The flames got intensely hot and fierce. There was not a red heat but an absolutely white heat. The explosion followed almost immediately.

The damage caused to property was enormous. The chlorate works in which the fire originated were completely demolished. Fig. 1 shows the appearance after the explosion. At the town gas works, which lie adjacent to the chlorate works, a large gasometer was rent by the force of the explosion, and 250,000 cub. ft. of gas, ignited by burning timber hurled on to the crown of the gasometer, shot up into the air as a pillar of fire. At the Hardshaw Brook Works of the United Alkali Company, 10 vitriol chambers were completely wrecked (see Fig. 2) and 800 tons of vitriol poured into the adjacent public roadway. Houses in this quarter of the town were unroofed and damaged to such extent that their further habitation was unsafe. In the main business street of the town—a quarter of a mile from the scene of the explosion—nearly every plate glass window was broken by the tremendous concussion, and few houses or buildings within half a mile radius of the chlorate store escaped without broken window panes, as evidence of the force of the explosion.

The loss of life was small, considering the great damage to property. Two men engaged at the moment near the chlorate store were killed, and three others succumbed later to their injuries. To this list of five killed must be added about 20 persons who received injuries more or less severe.

The explosion, apart from the devastation caused, is of interest because it shows that under certain conditions chlorate of potash can act as an explosive of terrible violence. Hitherto chlorate—when unmixed with other elements or compounds—has been regarded as a non-explosive by both chemists and manufacturers; and for this reason its manufacture, storage and transit, have been free from the regulations which apply to gunpowder and other explosive compounds. The writer for several years was in charge of a chlorate works, and not once during this period did any fire occur, or did any circumstances arise which could be held at variance with the general idea that chlorate of potash in the pure state was a non-explosive.

The explosion of May 12th, at St. Helens, proves that this comfortable assurance on the part of chemists and manufacturers has been based on incomplete knowledge; and in view of the importance of the question it is of interest to examine the facts relating to the origin of the fire, and to the conditions of the chlorate store at the moment of explosion, more closely.

With regard to the origin of the fire, the evidence at the coroner's inquest seems to show that it was started by a spark which was struck out by a cask which was being rolled into the building.

As to the actual cause of the spark the evidence is not yet complete. Some of the witnesses at the Coroner's inquest inclined to the view that the nails used for the hoops of the casks might account for it; others hinted that the alkali waste upon which the chlorate works were built might have been carried into the crystallizing house on the workers' feet, and that the sulphur which it contained might have provided the conditions for a spark; while a third view was that possibly phosphorus paste had inadvertently got on the exterior of the casks handled, these being returned empties from Messrs. Bryant & May's London match factory. With regard to the second suggestion it may be stated that the chlorate works of which the writer had charge were built on an alkali waste foundation, and not once did any mishap occur through the dirt carried in on the workers' feet. Col. Ford, the Government inspector, is making further inquiries on this point.

Turning now to a consideration of the more important question, as to why the fire should have led to such a disastrous explosion, there are two theories advanced in explanation. According to the first, the explosion was caused by the presence of much charred wood, and free oxygen gas liberated by the heat from the chlorate of potash; according to the second it was caused by ignition of an intimate mixture of the smoke and free oxygen.

It is difficult to conceive that within the space which was the true center of the explosion—the chlorate store after the roof had collapsed—sufficient smoke was present to produce an explosion of such extraordinary violence. While both of these theories have in them some elements of truth, the writer considers that some further cause must have been operative, and he advances the view that the sudden liberation of the oxygen from such a large mass of chlorate may have intensified the effects due to a smoke-laden atmosphere and to the presence of much charred wood.

Potassium chlorate melts at 359° C., and the evolution of oxygen commences at 400° C. The chemical change at this temperature is represented by the following equation:

$$8\,KClO_3 = 5\,KClO_4 + 3\,KCl + 2O_2.$$

If the temperature be increased, the potassium per-chlorate is also decomposed and the whole of the oxygen is liberated.

The evidence stated that the roof of the chlorate store burnt with great fierceness, and that a few minutes after it fell in, and just before the explosion a white heat seemed to be attained inside the store. The whole mass of chlorate was therefore subjected suddenly to a very high temperature, and probably the greater portion of the 156 tons, at the moment of the explosion, was heated well above the point at which oxygen would be liberated. Each keg would act as a restraining force, and the simultaneous bursting of say 2,000 kegs and the liberation of 1,750,000 cub. ft. of oxygen may have caused the roar and upburst of flame. That this estimate of the volume of oxygen gas liberated is not excessive can be proved by a simple calculation.

If this theory, that the oxygen was liberated with explosive violence as a result of the fierceness of the fire in the chlorate store, be adopted, it lends additional emphasis to No. 5 of the recommendations of the Conoer's jury, which are reprinted below.

1. That all buildings of chlorate plant should be fire proof. 2. That all packages should be fire proof. 3. That the cooling tanks should be made of iron instead of wood. 4. That better precautions should be taken for dealing with outbreaks of fire. 5. That the amount of stock in any building should be limited by Government control, and such building should be fire-proof and isolated from the process of manufacture.

In view of the introduction of the manufacture of chlorates of potash and soda into the United States, these recommendations will not be without practical value for American readers. The photographs used for illustration of this article were taken by Messrs. Jordan & Metcalfe of St. Helens during the afternoon of May 12th.

NOTE ON "CHEMICALLY PURE" NITRIC ACID.*

By A. Whitby.

As far back as the latter end of 1897, I had occasion to notice a peculiar pink color which had developed in diluted nitric acid and the formation of a distinct precipitate of a halogen salt of silver in the parting flask, no precipitate, however, being obtained with freshly mixed acid. On further investigation the acid was found to contain iodic acid.

Roscoe and Schorlemmer mention this impurity as arising from the use of Chile saltpetre in the manufacture of nitric acid, the raw salt containing considerable quantities of iodate of soda.

There was, at first, some little difficulty in getting a reliable test, but I find the following method gives good results.

50 c.c. of nitric acid are evaporated to dryness in a porcelain dish, care being taken that the final temperature does not exceed 200° C. The residue is dissolved in water acidulated with hydrochloric acid, a few drops of starch paste added, and then sulphurous acid or solution of sodium sulphite, drop by drop. The reaction is as follows:

$$2\,HIO_3 + 5\,H_2SO_3 = I_2 + 5\,H_2SO_4 + H_2O$$

If the addition of sulphurous acid is carried too far, the iodine, of course, is converted into hydriodic acid according to the equation:

$$I_2 + H_2SO_3 + H_2O = 2\,HI + H_2SO_4$$

These two equations form the basis for a volumetric determination of the iodic acid present, using starch paste as indicator, the disappearance of the blue color marking the end of the reaction.

Two equivalents of iodine as iodic acid require six of sulphurous acid for complete conversion into hydriodic acid. For the titration I used a twentieth normal solution of sodium sulphite, 1c.c. = 0.002116 gram iodine as iodic acid. Results obtained from three samples of acid were as follows:

	No. 1.	No. 2.	No. 3.
Residue at 200° C., per cent.	0.165	0.100	0.033
Iodine, per cent.	0.062	0.050	0.023
Iodine calculated to iodic acid, per cent.	0.086	0.069	0.031

The importance of this matter will be apparent to every assayer. In my own case I have noticed vapors of iodine evolved during the annealing of cornets, and also high surcharges due to the deposition of iodate, or possibly a mixture of iodate and iodide of silver in the fine gold.

In conclusion, I may mention that the mother liquors from the re-crystalization of Chile saltpetre form one of the sources from which the iodine of commerce is obtained, and it is doubtless due to its comparative cheapness that manufacturers have, of late years, adopted the use of this nitre for making nitric acid. This may account for the fact that although text books make frequent mention of the injurious presence of chlorine, few make any reference to the equally injurious effect of iodine in nitric acid.

* From the "Journal" of the Chemical and Metallurgical Society of South Africa.

MATCHES IN SWITZERLAND.—A law was passed in Switzerland in November last prohibiting the manufacture, importation, or sale of lucifer matches in the fabrication of which yellow phosphorus is employed. The cessation of their manufacture is to date from April 1st, 1900, while their importation is only allowed up to June 1st, 1899, as well as that of yellow phosphorous in any form except for scientific or special purposes, with the permission of the proper authorities. Their exportation or sale in the country will be illegal after January 1st, 1901.

AN OLD BRIDGE.—The London "Engineer" notes that one of the oldest bridges in Europe is soon to disappear under the demand for better navigation of the river which it spans. This is the stone bridge, with 15 arches and a total length of 994 ft., built across the Danube at Ratisbon by Duke Henry the Superb in 1135-46. The piers rest on piles protected by stone riprap and heavy ice-breakers; the roadway is very narrow and the footways allow the passage of only one person at a time. Hans Sachs, the poet shoemaker of Nuremberg, sang its praises as one of the wonders of the builders' art and the strongest bridge in Germany.

PROBLEMS IN THE TREATMENT OF BUTTE ORES

Written for the Engineering and Mining Journal by A. H. Wethey.

The principal ore supply of the Butte District, in Montana, consists of low grade sulphide ores, carrying from 3 per cent. to 5 per cent. copper, wet assay, and from 65 per cent. to 75 per cent. silica. It is necessary to separate the silica from the copper by a concentration process, and in doing so from 20 to 40 per cent. of the copper, according to the character of the ore under treatment, is lost by being washed away in the tailings with the silica.

The loss of copper varies greatly, and the loss is occasioned by different causes. In some cases ore having small rich streaks of copper

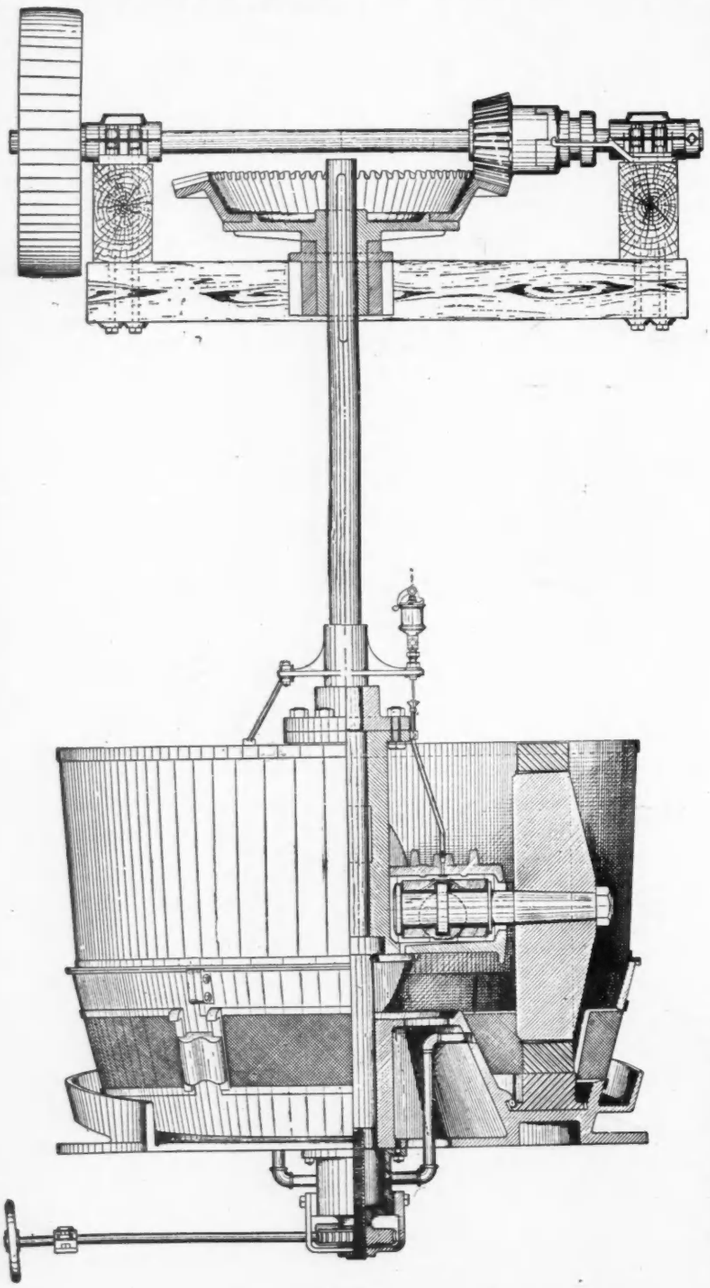


FIG. 1.—TRENT CHILEAN MILL.

glance in mineralized granite is being treated, and in crushing the glance breaks up and pulverizes, and is carried away in so finely divided a state as almost to be in solution. Considerable conglomerate exists in some veins, with pebbles and boulders of rich ore through it. These vary in size from a pea up to 12 or 18 in. in diameter. In crushing and rolling this class of material the rich ore acts as previously described. Other ores, again, when crushed and rolled, show rich particles of mineral frozen to other particles of almost pure white silica or quartz. This material is lost with the tailings, as these rich particles cannot be separated from the useless quartz without being re-ground. The ore from the same mine and from the same vein frequently changes its characteristics, and constant attention is required in order to obtain the best results in concentrating it.

At the Butte Reduction Works experiments were commenced last May with the purpose of ascertaining if it would be profitable to grind the jig tailings, leaving the mill, and concentrate the re-ground material on Wilfley tables.

Two of the tests were as follows:

1. Tailings from 3 mm. jigs, 1.3 per cent. cu., 1.2 oz. Ag., 87.2 SiO_2. These tailings were rolled until fine enough to pass through a 20-mesh screen. The weight of the tailings after being rolled was 1,085 lbs., and this material was fed by hand on to a Wilfley table concentrating machine. From it was saved 80 lbs., dry weight, of concentrates, assaying 8 per cent. Cu., 8.4 oz. Ag., 16.4 per cent. SiO_2. The tailings assayed 0.5 Cu., 0.6 oz. Ag.

2. Tailings from fine jigs, 1.6 per cent. Cu., 1.4 oz. Ag., 85 per cent. SiO_2. Only 135 lbs. dry weight of these tailings were rolled and passed over a Wilfley machine, yielding 13 lbs. of concentrates, assaying 7.6 Cu., 7.6 Ag., 26.8 SiO_2. The tailings assayed 0.6 Cu., 0.6 Ag. The amount treated was almost too small to make a good test.

For some hours we ran the tailings coming from an Evans slime table over a Wilfley machine, but the quantities passing over and collected were not weighed. The tailings from the round table assayed 1.6 Cu., 1.4 Ag., 84.2 SiO_2. The concentrates from the Wilfley machine assayed 9.5 Cu., 9.2 Ag., 21 SiO_2, while the tailings from it assayed 0.8 Cu., 0.8 Ag.

As the result of these and other experiments it was decided to put in a Chilean mill 6 ft. in diameter, and grind the jig tailings, and treat the re-ground material on Wilfley machines. A 6-ft. Bradley Chilean

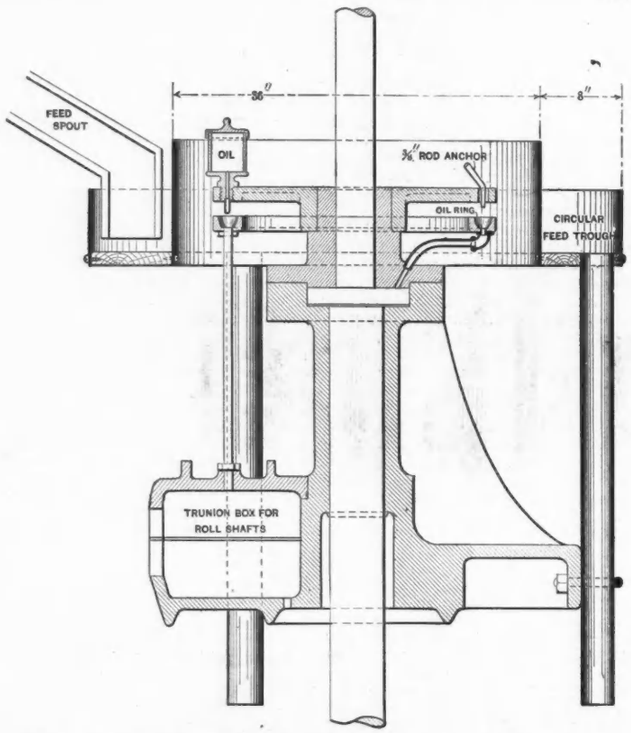


FIG. 2.—DRIVING HEAD AND FEED TROUGH, TRENT CHILEAN MILL.

mill was purchased from Trent, of Salt Lake City. (Fig. 1.) It will be noticed the oiling device consists of a sight feed oil cup, held in a stationary position while pipes having funnel or bell-shape mouths, and connected to the bearing boxes or revolved under the oil cup and touched a piece of candle wicking, having a drop of oil at the end of it. This method was found inefficient and wasteful.

The inlet for feeding the ore into the mill is not shown in the drawing, but it was arranged so that the material all entered at one point, and discharged on the die. In a few weeks the die was worn down nearly 1 in. at this point, the fine ore and water cutting and wearing the steel away rapidly. The rollers in passing over this hollow spot in the die thumped and pounded and worked the machine loose on its foundation.

The way the defects mentioned were overcome is shown in Fig. 2. Instead of funnel-mouthed pipes being connected to each trunnion a grooved ring was connected to the pipes. This ring revolved with the machine, and the oil dropping into it runs down the pipes to the bearings. Since the drawing for Fig. 2 was made the ring and oil cup have been raised higher, and the oil pipes extended. This device has proven so satisfactory that it has been adapted to the other style of roller mill now being tested, and which I will describe later.

To change the feed inlet, so as to avoid having the incoming ore strike the die, a circular trough was made which revolves with the mill. The tailings to be treated are led into this trough from spigots in a tank, and three 4-in. pipes connected to the bottom of the circular trough discharge the feed in front of each of the three rollers. This gives a more uniform feed and the change increased the capacity of the mill from 80 tons daily to 100 tons. The die was taken out and reversed, and the smooth running of the rollers on it is quite striking.

Finding that one regrinding mill was not sufficient for our work we arranged with the Bradley Pulverizer Company to try one of their Grif-

fin three-roll mills, as shown by Fig. 3, they guaranteeing to grind with it 25 tons per day more tailings than any other machine, and with no more expense for repairs. The feed inlet is shown in this cut, and while it discharged the feed over the die so that it was not worn away at this point, still it was deemed advisable to put in a circular feed trough, and divide the feed so that each roller would have a more equal feed.

The method adopted is shown by Fig. 4. Considerable trouble was had at first in keeping the shafts and boxes carrying the rollers properly oiled. Spring compression grease cups were used, but it was necessary to shut the machine down every time the grease cups required

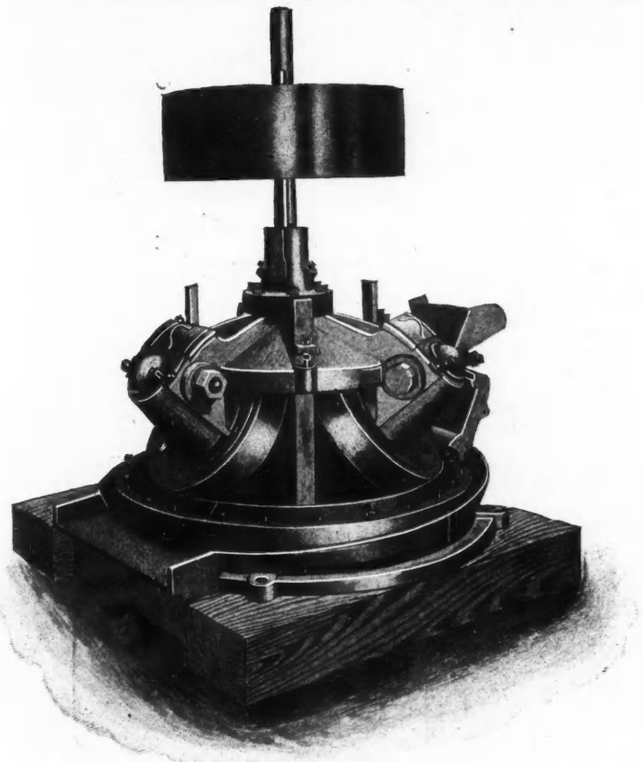


FIG. 3.—THREE-ROLL GRIFFIN MILL.

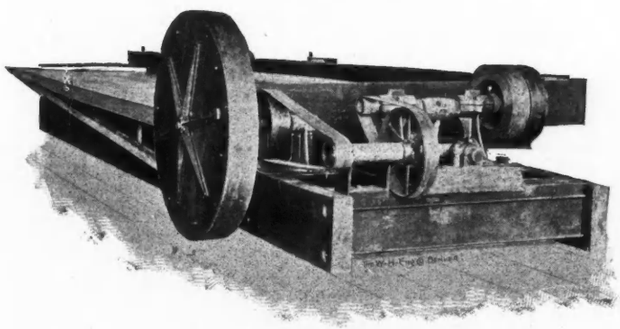


FIG. 5.—WILFLEY CONCENTRATORS.

to be filled, and this caused much delay. A circular oil ring has now been adopted similar to that used for the Chilean mill, and the result has been very satisfactory. The speed of this mill is 70 revolutions per minute, while the Chilean mill only makes 32 revolutions. The capacity of the Griffin mill has not exceeded 105 tons per day of 24 hours.

A third mill now being tried is the Montgomery ore granulator. This mill consists of three balls, about 30 in. diameter, filled with lead and weighing about 2 tons each. Since first starting it up at the Butte Reduction Works improvements have been made on it. The die as at first arranged was too low, and the speed of the balls was too great. At 40 revolutions per minute the balls mowed the side screens completely down all around, and ran over on to the floor. The pan die now used is higher than the center of the balls. The balls are made to travel by means of pushers suspended from a triangular casting which revolves, carrying with it also the feed inlet. The feed is evenly distributed in front of each ball. This machine has not been in operation long enough to determine its worth, but it appears to possess points of considerable merit.

The material from these roller mills is all treated on Wilfley tables. Each Wilfley machine will handle from 30 to 40 tons of tailings per day of 24 hours. We have found the machine does better work running at 240 revolutions per minute than at any other speed. The machines as furnished have the feed-box and water distributing trough all in one, and we found this trough would warp badly out of shape.

The trough or launder is carried by brackets, and we attempted to hold it in place by blocks placed under the brackets, but without avail, as it would in some cases lift the table completely off its bearings. The feed-box and launder were stationary and we found the box would fill up with mineral and required considerable attention to keep it discharging properly. To overcome these difficulties we attached the feed-box itself to the table, so that it shakes with it, and always keeps itself

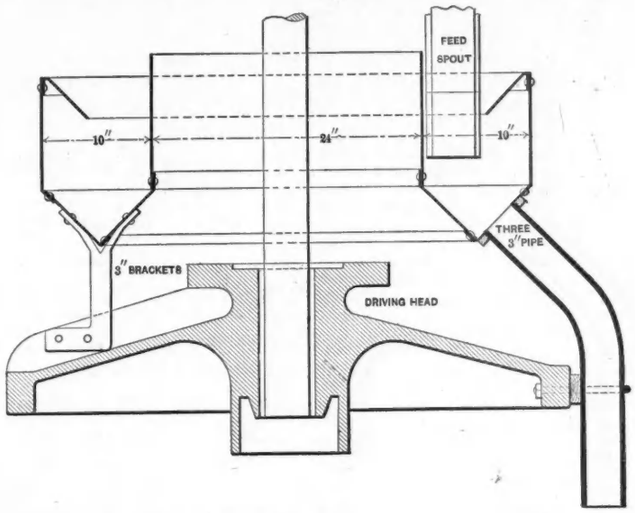


FIG. 4.—DRIVING HEAD AND FEED TROUGH, GRIFFIN MILL.

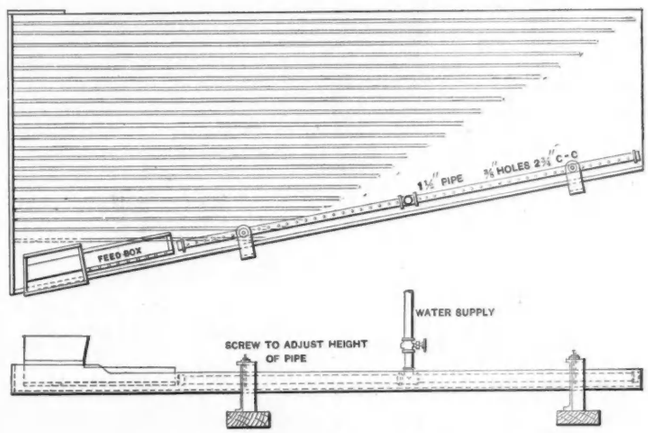


FIG. 6.—IMPROVEMENTS ON WILFLEY CONCENTRATOR.

clear. We did away with the wooden launder for distributing the wash water, and instead use 1½-inch pipe, having perforations in the upper side of it. This pipe is stationary. The two changes described have proved of great advantage, and are shown by Fig. 6. A cut of the Wilfley table is shown by Fig. 5. In a little over three months there has been saved from this material that was formerly going to waste 872,882 lbs. dry weight of concentrates, containing 61,627 lbs. of fine copper, and 3,543 oz. of silver. When the necessary plant for re-treating all the tailings from the main mill is completed it is expected that the results will be still more satisfactory.

BELGIAN BRIQUETTES.—The exports of briquettes from Belgium in April amounted to 39,724 tons, as compared with 50,534 tons in April, 1898, and 44,810 tons in April, 1897. The aggregate exports in the first four months of this year were 167,289 tons, as compared with 165,139 tons in the corresponding period of 1898, and 158,379 tons in the corresponding period of 1897. In these latter totals the exports to France figured for 79,694 tons, 74,877 tons, and 62,490 tons respectively.

STEEL FRAMED CARS.—Steel framed coal cars of 100,000 lbs. capacity are being built at the shops of the Norfolk & Western Railroad at Roanoke, Va., to the designs of Mr. W. H. Lewis, superintendent of motive power. There are four sills of 13-in. channels, with steel plates for the transoms, bolsters and ends, wooden end sills being bolted to the end plates. Diagonal plates are used to stiffen the corners of the frame. The body is of wood, with vertical sides, sloping ends and a flat bottom formed by three sets of drop doors. The cars are mounted on diamond-frame trucks, with 13-in. I-beam bolsters and 12-in. channel spring planks. The axles have journals 5¼x9 in. The weight of the car, empty, is about 38,000 lbs.

THE MANUFACTURE OF GRAPHITE.*

By E. G. Acheson.

As the result of my investigations and deductions, I think the only commercial way to make graphite is by breaking up a carbide by the action of heat. The carbon should be freed from chemical combination by what might be termed the evaporation of its associated elementary substances. I have secured patents covering this method, and these have been made the basis for the organization of the Acheson Graphite Company. The company has now under way the erection of works at Niagara Falls, where the necessary electric current will be obtained from the Niagara Falls Power Company.

Several distinct forms of the product will be produced. One consists of forms or articles, made out of amorphous carbon, with the desired amount of impurity added thereto, which will afterwards be heated in an electric furnace and converted, more or less, into graphite. I have been carrying on this line of manufacture for a year or more, using the furnaces of the Carborundum Company to produce the graphitization, the articles having first been made by the arc-light carbon manufacturers. Over 200,000 carbon electrodes, measuring 15 in. in length, with about 1 in. cross-sectional area, were made for use in the Castner alkali process, nearly one-half of them having been shipped to Europe, to be used for this work in England and Germany. The life or efficiency of these graphitized electrodes is many times that of the same electrodes ungraphitized. I have also graphitized some tons of carbon plates, to be used in making dynamo and motor brushes, and a large variety of odd forms and sizes for divers purposes.

Another product—the one which will probably be of greatest importance—is an intimate mixture of pure amorphous carbon and graphite in fine powder. This will be put on the market for paint and foundry facing, and, as it has been formed at an extremely high temperature, it is quite pure and possesses all of the qualities desirable for the purposes for which it is intended.

It is not the present intention of the company to enter into the manufacture of this product into finished form for the general market, but rather to encourage those who are now engaged in making up the natural graphite into articles of commerce to become buyers of their material, substituting it for that now used.

The company's plans, now being carried out, provide for the erection of a brick and iron building, 100 by 50 ft., on the Niagara Falls Power Company's lands (adjoining the works of the Carborundum Company). Therein it will erect machinery for reducing coke to grains of the desired size, an electric furnace through which the prepared grains will pass in a continuous stream, a pulverizer for reducing the grains as received from the furnace, and a scalping sieve through which the product from the pulverizer will pass, that particles exceeding the 1/200 of an inch diameter may be removed. The final flour or powder will contain an amount of pure graphite proportionate to the percentage of impurities in the original coke. It is quite possible that, instead of using high-grade, marketable coke, the fine refuse from the coke ovens, which is at present a waste material, will be utilized in the manufacture of this product.

In this connection I would call attention to the need of a specific name for the new product. Artificial, as applied to a product, chemically and physically identical with that made by nature, is not pleasing; it conveys the impression that, failing to produce the real thing, a cheap imitation, a sham, is being palmed off as the genuine article. The same objections may be made to the expression artificial manufacture of graphite, which would be quite appropriate were it not for the fact that it is popularly applied to articles made of graphite.

It may not detract from the general interest in this subject to call attention, in closing, to the fact that graphite, first shown to be an elementary body, an allotropic form of carbon, in the first year of the nineteenth century, is in this, the last year, made to order in great quantities, and that it will, before the close of the century, become an article of ordinary commerce in its new form. Perhaps it will take its place as the primitive form of carbon—the one it assumes under normal conditions.

*Abstract from lecture delivered before the Franklin Institute, Philadelphia.

LEAD SMELTING IN BRITISH COLUMBIA.

In the "Rossland Miner," published at Rossland, B. C., June 13th, we find some comments on Dr. R. W. Raymond's article under this caption, which we published June 3d. From the "Miner's" article we take the following extracts, to which Dr. Raymond's reply will be found on another page:

"In the last issue of the 'Engineering and Mining Journal' of New York, an article on the Trail smelter appeared, from the pen of Dr. R. W. Raymond, the well-known mining counsel who was recently in Rossland, where he was engaged as one of the experts in the Iron Mask-Centre Star suit. In the course of his article Dr. Raymond ventures on statements which would have been better unwritten, as they lack that quality of fairness and truth which we naturally expect to find in any public utterances made by a man of his reputation and recognized ability. Nor is it fair to the journal in which the article appears—a journal with a continental reputation for the accuracy of its statements—that it should be made the medium by which false and misleading impressions are conveyed to the public mind.

"In the opening sentence of his article Dr. Raymond pays a deserved compliment to Mr. W. H. Aldridge, the manager of the smelter, whom he speaks of 'as among the first of the younger generation of American metallurgical experts and managers.' . . .

"It would not be unfair to ask Dr. Raymond who his authority is for the statement that the Canadian Pacific Railway appears to be willing to reduce smelting rates to figures involving little or no profit. Surely this conclusion was arrived at by him on the strength of representations made by those interested in having the world believe this to be the case. Had he consulted any but Canadian Pacific officials he might have hesitated before venturing to publish as his own an opinion which is diametrically opposed to that held by mining men in British Columbia. It is true that the smelter authorities at Trail reduced their price for treatment to the War Eagle Company, but they did so to obtain a long contract involving an immense quantity of ore; and only through dread that it would go elsewhere. While, too, the price as thus reduced was certainly low as compared with what it had been, the inference drawn by Dr. Raymond that little or no profit was obtained from the treatment is regarded as unsound by those who are better acquainted with the conditions and more competent to judge in such a matter than is Dr. Raymond.

"The sweeping charge made by Dr. Raymond against local newspapers for attacking the Canadian Pacific Corporation might have come from an official of the company, paid to defend his employers. Dr. Raymond knows nothing of the history of the Canadian Pacific in Southern British Columbia or surely a man of his reputation would not have been guilty of so misrepresenting the situation. No inducements were held out to the company to construct its lines through the Kootenays and had they never come into this country we would have been better off and further advanced in the development of our properties, because men of genuine enterprise who seek a return for their invested capital from legitimate sources, who do not hamper the growth of one section for the benefit of another section in which they have a larger interest would then have constructed our roads. Such men as these took the initiative in building railways and opening up the country and it was only when they had proved that the district was very rich that the Canadian Pacific magnates decided to invest their capital. Of course, with the immense wealth at their disposal and their great influence at Ottawa they were able as soon as they had so decided, to practically capture a monopoly in the district. This they did, crowding out all rivals and killing competition.

"The people of the Kootenays, therefore, have never obtained any real benefit from the Canadian Pacific Railway, and the ruinous transportation rates which they are charged on their goods are a serious drawback to the settlement of the country.

"The Canadian Pacific Company has not been denounced on 'general principles,' as Dr. Raymond says, but specific charges of extortion, and worse even than extortion, have been brought and substantiated. . . .

"Dr. Raymond is a lawyer—a mining counsel—and is always awaiting a brief of importance such as his abilities naturally command. His opinions, therefore, are always ex parte; they cannot be impartial. This is very well in court, where he is known to have a retainer for the side he supports. His auditors then place their own construction on what he may say. When, however, he speaks through the columns of a great journal and professes to give conclusions arrived at after investigation, he should be careful, for the sake of the paper's reputation, of what he says. To publish an article like that which now appears under his initials is not honest."

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

ABUSE OF INJUNCTION IN MINING SUIT.—It was an abuse of discretion to grant a temporary injunction in a mining suit, where the defendant was working veins within his own ground, and there was a mere chance that their apexes were within the ground of complainant. —Montana Ore-Purchasing Company vs. Boston & Montana Consolidated Copper & Silver Mining Company (56 Pacific Reporter, 120); Supreme Court of Montana.

WHEN STATUTE OF LIMITATIONS DOES NOT APPLY TO MINING RIGHTS.—Where the owner of a coal mine, as lessee, is only claiming the right to mine and remove the coal and other underlying minerals through a shaft sunk on his own premises—adjacent property, and not asserting any right to enter upon the surface, the statute of limitations, providing that no person shall have a right of entry within 20 years after such right accrues, does not apply.—Henderson vs. Virden Coal Company (78 Illinois Appellate Court Reporter, 437); Appellate Court of Illinois.

RIGHT OF CONSUMER TO NATURAL GAS.—Where a natural gas company in Pennsylvania was authorized to furnish, and did furnish, such gas to consumers for heating and illuminating purposes, a consumer may restrain it from shutting off his supply, unless he desists from using it for illuminating purposes, because such company has been illegally notified to desist from selling gas for illuminating purposes by another company, subsequently organized, under the laws of that State, giving it the exclusive privilege of selling "artificial" gas for illuminating purposes, since such company acquired no exclusive rights under such act of selling "natural" gas for illuminating purposes. —Hagan vs. Fayette Gas-Fuel Company (29 Pittsburg Legal Journal, 229); County Court of Pennsylvania.

CITIZENS MAY ACQUIRE RIGHTS THROUGH WORK DONE BY ALIENS.—Where a mining claim is located by an alien on unappropriated government land and all the acts necessary to a valid location are performed by him and he and his representatives, claiming to be the owners of same, perform the work necessary to keep the claim good until it is conveyed to a citizen, and no rights of third parties have attached prior to the conveyance, as between private citizens, the conveyance vests the title in the citizen, although the original locator was an alien. A qualified elector may relocate a mining claim in the possession of an alien who has not declared his intention to become a citizen, if relocation be made without force or violence, and prior to declaration of intention or conveyance to a citizen. Since the question whether the locator of a mining claim is a citizen of the United States can only be raised by the government, it cannot be raised in an action of ejectment in a contest between individuals.—Wilson vs. Triumph Consolidated Mining Company (56 Pacific Reporter, 300); Supreme Court of Utah.

AN INDUCED-DRAFT BOILER PLANT.

The Buffalo Forge Company, in Buffalo, N. Y., has lately completed the equipment of an induced-draft boiler plant for Sheriff, Swingley & Co., of Johannesburg, South African Republic. The accompanying cuts will show the style of machinery shipped.

The boiler plant originally consisted of two Heine boilers of 300 H. P. each and one of 400 H. P. It was enlarged, however, when the induced-draft system was installed by adding two more 300 H. P. boilers. The plant will be capable of handling and consuming 9,000 lbs. of coal per hour, but the actual indicated horse power developed by the plant is probably 2,000 H. P. The engines used are Reynolds-Corliss cross-compound condensing engines, whose water consumption is about 15 lbs. per H. P. hour. This would require 5,000 to 6,000 lbs. of coal per hour. The steam pressure is 130 lbs. The average evaporation was formerly 6 lbs. of water per pound of coal. For the induced draft two 130-in. Buffalo steam fans are used. These fans are supplied with full housing and both the housing and fans are made of steel plate. One of the fans is right hand and the other left hand. Each is up-blast and has one inlet. Each of them is supplied with Buffalo oil ring bearings which are quite simple in construction and entirely automatic in action. Each fan is driven by a 6 by 7-in. double vertical direct-connected Buffalo engine. In this style of engine the cranks are set at 180° and the two cylinders are supplied with a single steam chest, valve, eccentric, eccentric rod, etc. The cylinders of these engines are below the shaft. On the shaft is a hand-wheel to use in starting the engine in case it is on dead center. The Buffalo Forge Company also makes the same style engine with cranks at 90°, each cylinder having its individual steam chest, valve, eccentric, etc., so that there are really two separate engines on the same shaft. The desirable feature of the latter arrangement is that if one of the engines should be disabled the other could run the fan at an average speed until repairs were made. The bearings nearest the fans are water-capped to prevent the hot smoke and gases in the fans from heating them. The fans have extended shafts and out-board bearings which are also water-capped. Fig. 1 is a general view of the fans and the method of connecting them to the stack and smoke chamber.

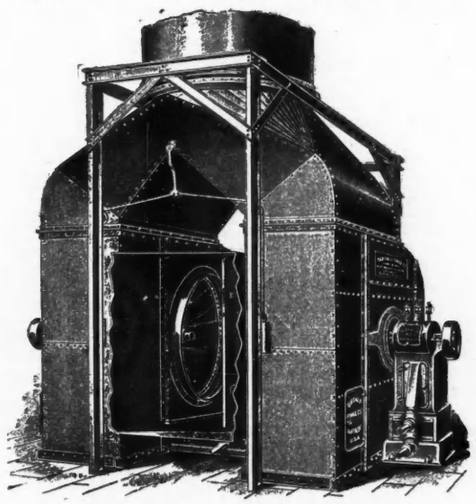


FIG. 1.

The smoke enters the chamber by the opening shown in the front. This, like the other connections, is made of sheet steel, and leads from the apartment in which the fuel economizer (when one is used) is located. When no fuel economizer is used it leads from the smoke header which connects with each of the boilers. By means of two dampers, one of which is located in the smoke chamber, the other at the intersection of the two flues leading to the stack, the smoke can be made to pass through either or both fans, as the occasion requires. In this way either of the fans may be stopped for repairs at any time with little inconvenience to the plant, the fan being entirely free from smoke while the repairs are being made. The two flues from the fans unite in a steel smoke stack 40 ft. high and 5 ft. in diameter.

Fig. 2 is a view of the boiler plant complete, using, in addition to induced draft, mechanical stokers and fuel economizers. By placing the fans and fuel economizer on a platform, as shown, much valuable floor space is sometimes saved. The fuel economizer is shown in section. The pipes in it soon become coated with soot, and as soot is a non-conductor of heat, the water is not heated as it should be. This difficulty is overcome by using scrapers, which, by suitable mechanism, are kept moving slowly backward and forward the full length of the pipes. A fuel economizer is not only a money saver, but when induced draft is used it is useful in another way, for it cools the gases so that the heat is never great enough to injure the fan, and reduces the volume of air which the fan has to handle. But it is really the fan that makes the economizer possible, for where economizers are placed in chimneys they cool the smoke to such an extent that the natural draft is interfered with.

The speed at which the fans run in a plant of this kind is generally automatically controlled by a special valve which responds to variations in the steam pressure. The mechanical stokers are operated by a small engine, as shown in the cut. Each separate stoker is fed from the overhead coal supply.

When induced draft and fuel economizers are used in connection the saving in the heat which would otherwise be lost in the flue gases is remarkable. The inferior quality of coal which can be burned with good effect is another point in regard to the economy of the system. If it becomes necessary to work the boilers to their full capacity it can easily be done when induced draft is used by simply running the fans at a higher speed. This is a great advantage over the chimney draft. The indifference to changes of weather, the labor saved, and many other advantages, too numerous and well known to mention, might also be enumerated in this connection. But even though induced draft had no other advantages over chimney draft, the difference in first cost alone would be sufficient reason to justify its use.

THE SLATE TRADE IN THE SOUTH OF FRANCE.

According to a recent consular report slate is used in the south of France for window shelves and window tops, steps of indoor and outdoor staircases, kitchen trimmings, and finishing. The slate used for this purpose in Nice is brought from Lavagna, on the Ligurian Riviera, and is a dark gray article of what is considered a remarkably inferior quality. Our American consul made a number of inquiries among architects and others touching this slate, and ascertained that it is not durable and very soon goes to pieces. Along the Ligurian Riviera slate is used for roofing purposes, of such a thickness that it seems to the traveler to consist of slabs of dark gray stone. Our consul has not been able to ascertain the price at Lavagna, but the charges upon this slate are as follows per metric ton of 2,204 lbs.: Cost of transportation by sea to Nice, 11 fr. ($2.12); duties, 40 fr. ($7.72); octroi (municipal duty), 3 fr. (58c.); cartage from dock, 2.50 fr. (48c.); total cost, 56.50 fr. ($10.90) per metric ton. As far as can be ascertained slate in the rough is sold as follows: 15 mm. (0.59 in.) thick, 1.80 fr. (35c.) per square meter (1.19 sq. yds.) at Lavagna, or 4.35 fr. (84c.) at Nice; 25 mm. (0.98 in.) thick, 3 fr. (58c.) at Lavagna, or 7.80 fr. ($1.51) at Nice.

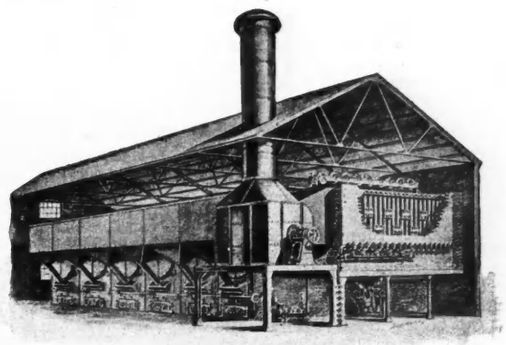


FIG. 2.

BUFFALO INDUCED DRAFT BOILER PLANT.

Roofing slates from Angers, France, are coming into more general employment in Nice, although up to the present the large and heavy terra-cotta tiles have been in universal use. Of late slate tiles have been used upon several large villas. Roofing tiles from Angers, machine cut, cost 52 fr. ($10.04) per thousand; with side rounded, 62 fr. ($11.97) per thousand.

The Lavagna slate is sold as follows: For balconies, 35.4x37 in., 10.50 fr. ($2.03) per lineal meter; 37.4x46.4 in., 12 fr. ($2.32) per square meter. Window shelves, with cut step window shutter in closing, 47.2x7.8 to 9.8 in., 2.40 fr. (46c.) each. Window tops with molding 47.2x7.8 in., sell for 1.40 fr. (27c.) each, or less, according to size.

The following are the customs duties upon slate entering into any port in France: Slabs all kinds, cut or sawn, rough or polished, 4 fr. (77c.) per metric ton; slate tiles for roofs, 1.40 fr. (27c.); framed or unframed slates for school purposes or blackboards, 5 fr. (96.5c.) per metric ton.

It is generally known that at Saint Sauveur, a hamlet about 6 or 7 kilometers distant from La Tinee, a station on the Southern Railway, there are strong surface indications of the existence of dark purple slate. Nothing is being done to develop it. Even if the quality were good the very expensive transportation would prevent its use.

As regards the importation of American slates our consul advises quarrymen to forward samples to F. Repossi, Commission, Rue d'Amerique and Place Washington, Nice. This gentleman is working hard to create a direct importation of the American product, and if encouraged sufficiently he intends to open a large sample room for the introduction of our goods exclusively.

MINERALS IN SWEDEN.—According to the London "Engineering," the wealth of minerals in North Sweden does not yet by any means seem to have been fully ascertained, and fresh discoveries of deposits are of no uncommon occurrence. In some instances such deposits have been known, and perhaps even worked in days gone by, but the working has from some cause or other been discontinued. This is understood to be the case with some iron ore deposits at Grufberget, close to Boden, North Sweden, in spite of the ore being right at the surface, as is the case with some of the vast deposits in that part of Sweden, and perhaps also with some copper ore deposits at Snarloken, close by which are also said to promise well. Claims have now been lodged in both these deposits, where rational exploitation is likely to soon commence.

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to matters within the special province of this periodical, such as mining, metallurgy, chemistry, geology, mineralogy, machinery, supplies, etc. As it is manifestly impossible to devote space to all the questions and notes constantly received, preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation and which should be obtained from a consulting expert. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers should send their names and addresses. Anonymous questions will not be answered.—Editor E. & M. J.)

Chlorination Works in California.—Is there any list in existence of mills in California which treat gold ores by chlorination?—G. C. B.

Answer.—You can probably obtain a list by writing to A. S. Cooper, the State Mineralogist of California. Chlorination is in use on the Mother Lode and at other places, the most important plant being that at the Utica Mine in Calaveras County. An account of this plant was given in the "Engineering and Mining Journal," April 22d, 1899, page 467.

Santa Fe Copper and Gold Mining Company.—Where are the mines of this company located? Where can I get any information about the company?—A. G. G.

Answer.—The property of the Santa Fe Company is in Santa Fe County, in New Mexico. You will find a statement of the condition of the company and its property in the "Engineering and Mining Journal," January 21st, 1899, page 80. This was written by a correspondent who is thoroughly familiar with the property and its history. It is a good property.

Gypsum.—I have a white sand, that is, it is called so, but it is not ordinary sand, but when heated makes a cement like plaster of Paris. Is it gypsum?—G. J.

Answer.—We cannot tell just what your "white sand" is without an analysis. Your best way, if you believe it to be gypsum, is to submit a sample to an expert in the gypsum business. We might suggest Prof. G. P. Grinsley, of Washburn College, Topeka, Kansas. Should it prove to be gypsum its value will depend very largely upon your transportation facilities and your local market.

Manganese Ore.—I am thinking of opening up a manganese mine and would like to know the market price of manganese, and what grade of ore can be handled at a profit, not considering cost of mining and transportation. The ore is Mn O_2. I notice that you quote 50 per cent. ore at 21c. a unit; what unit do you refer to? What is the lowest grade ore that can be marketed readily? Who are the buyers?—T. B. J.

Answer.—1. The quotation per unit refers to the unit of metallic manganese; the price of the ore per ton will be the price per unit multiplied by the percentage of manganese. Thus, at 21 cents per unit, 50 per cent. ore would bring $10.50 a ton; 60 per cent. ore $12.60. It is usual to reduce the price with the grade; thus the price per unit for 40 per cent. ore would be 4 or 5 cents less than for 50 per cent. Buyers also make deductions for anything in excess of 8 per cent. silica, or 0.1 per cent. phosphorus. The prices quoted are for ore delivered at furnace.

2. The chief buyers of manganese ores are the large steel companies; especially the Carnegie Steel Company in Pittsburg and the Illinois Steel Company (now the Federal Steel Company), in Chicago.

Nitrate of Soda.—Can you tell me what proportion in a crude rock is considered worth mining? Is it much used in this country aside from the manufacture of powder and in fertilizers? Would a large deposit in an out-of-the-way place pay? What is the current price of crude and refined?—R. B. G.

Answer.—1. In Chile crude rock running 15 to 20 per cent. nitrate is thrown aside and is not worked Competent chemists who have examined the Chilean deposits believe that this rock could be made to pay if properly worked; but with the crude and wasteful methods now in use it does not.

2. There is no considerable or important use for nitrate in this country outside of those you mention—powder making and the manufacture of fertilizers.

3. The answer to this question would depend partly on the extent and the grade of the deposit; largely on the cost of transportation. The Chilean deposits are "out-of-the-way" enough; but they have the advantage of a short railroad haul and of cheap sea transportation from the railroad terminus.

4. The quotations are given in the "Engineering and Mining Journal" each week. The latest (June 16th) is $1.60 to $1.65 per 100 pounds in New York.

Zinc Ores.—1. What percentage of zinc per ton is contained in the crude ores of the mines in the Joplin District, and what percentage of lead?

2. What is the usual percentage of the above minerals when concentrated?—A. M. S.

Answer.—The crude ores of the Joplin District vary in their zinc contents from 5 or 6 up to about 18 per cent. It is often claimed that some ores run higher than the last named proportion. The average of all the zinc ores mined in the district will be between 8 and 10 per cent. zinc. The concentrates as prepared according to the practice prevailing in the dressing works, will run from 55 to 62 per cent. zinc. The standard adopted by the Missouri & Kansas Zinc Miners' Association is 60 per cent.; concentrates running below that proportion bringing a lower price than the standard, while those above it bring a higher price. The object in concentrating is to get rid of the silica and other impurities and bring the product up as nearly to pure blende as possible.

The lead ore in the Joplin District is found only near the surface. There are no positive data as to the average yield in lead. The galena concentrates in the district generally run over 70 per cent. lead.

THE OLDEST BRICK IN EXISTENCE.—At one of the recent meetings of the Academy des Inscriptions et Belles-Lettres, in Paris, the keeper of the Louvre, Mr. Henzey, showed a brick which is undoubtedly the oldest in existence, dating, it is estimated, from the fortieth century, B. C., says "Stone." The brick in question was discovered by the French savant and antiquarian, de Sarzee, during recent excavations at Tello, the ancient Sirpulo in Chaldea. The brick was somewhat curved and had been baked, but was of such crude form that it evidently had neither been put in a press nor moulded. The mark of the maker was simply the imprint of the thumb. It was clearly made very soon after the discovery of the art of brickmaking, which art, as is universally admitted, marks the dawn of civilization. Other bricks of a much more recent date were shown. Some of them bore the mark of the coat of arms of Sirpulo, an eagle with the head of a lion. Others again were inscribed with the name of the reigning monarch.

ELECTRICITY AT A FRENCH COLLIERY.—Owing to the rapid extension given to mechanical appliances in the underground workings of the Blanzy Colliery, in France, the compressed air plant, put down between 1874 and 1892, was soon found insufficient, although giving out 2,500 horse power, when the question arose whether it would be preferable to increase the compressed air plant by the addition of new compressors, or to have recourse to another agent for transmitting power that might afford a better yield with different idiosyncrasies. Various installations utilizing electricity for transmitting power were already in current operation; and, as the result of a visit by its engineers to Great Britain and the United States the Blanzy Company decided, at the end of 1894, on founding an electric generating station for supplying motive power throughout its concession, concurrently with compressed air. A few applications of electricity for motive power had previously been made at Montceau—chiefly by M. L. Graillot in 1881—for driving a fan at the Saint-Claude pit and a pump at that of Saint-Louis; and at a more recent date M. Goichot (who communicated these particulars to the Societe de l'Industrie Minerale) put up plant (branched off the old installations for lighting with continuous current) comprising a centrifugal pump with 10 H. P. electromotor, a 10-ton overhead traveling crane of 30 m. span for serving the timber department, with a number of other machines.

PREVENTING INFILTRATION OF WATER IN MINES.—The territory of the Roche-la-Moliere et Firminy concession, in France, is cut up by numerous water courses, most of which traverse the outcrops of the coal seams that were more or less driven into by the old men, while often flowing over a soil fissured by the underground workings. The gauging of several streams has shown that a great deal of water passes off by the fissures; and as regards some of these streams the water disappears entirely in summer, after having traversed some of the outcrops. In order to reduce these infiltrations as much as possible, and therefore the quantity of water to be pumped, a great deal of canalisation work has been carried out since 1884, the total length being 5,843 m. while the expense has amounted to about 400,000 fr. The operations may be divided into two different types: (1) canalisation by means of a water-tight bed over the whole surface, and (2) canalisation by means of water-tight dams for preventing lateral infiltration. The former consists essentially in the formation of an artificial bed, made of concrete lined with cement, resting on a layer of punned clay, for preventing infiltration in the event of the concrete cracking. The first of these works was a canalisation of the Pechier at Roche, while all the others are modifications thereof according to the circumstances of each case, what have been found by experience to be mistakes being corrected. The canalisation of the Ondaine consisted in the construction of two earth dikes, or dams, faced with rubble masonry, and of clay banks for preventing lateral infiltration, a water-tight bottom having only been provided for a length of 132 m. These particulars were given by M. Garand, chief engineer of the Roche-la-Moliere et Firminy Colliery, to the Saint-Etienne Section of the Societe de l'Industrie Minerale.

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

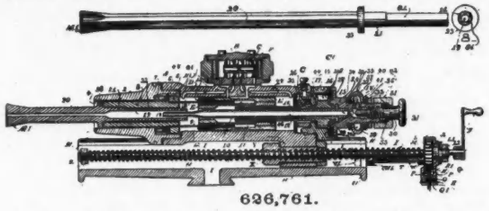
The following is a list of the patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending June 13th, 1899.

626,729. PROCESS OF AND APPARATUS FOR DEHYDRATING GAS. Jacob C. Smith, Chicago, Ill. The method consists in subjecting gas to a pressure precipitating vapors suspended therein, then separating the resultant precipitations from the gas and finally expanding the gas to its normal pressure.

626,761. ROCK DRILLING ENGINE. John G. Leyner, Denver, Colo. A rock drilling engine provided with a drill bit arranged to project into

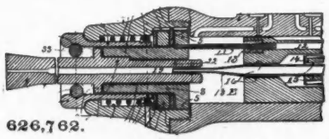
the cylinder of the drilling-engine and arranged to be operatively struck upon its end by the reciprocal movements of the engine's piston and containing a passage or conduit from said engine's cylin-



626,761.

der to or adjacent to said drill-bit's cutting point and a water passage or tube or conduit and a suitable water-supply through said drilling-engine to said passage in said drill-bit whereby a commingled supply of the cylinder's actuating fluid and water is conveyed from said drilling-engine through said drill-bit to its cutting-point and to the bottom of holes in rock while drilling them.

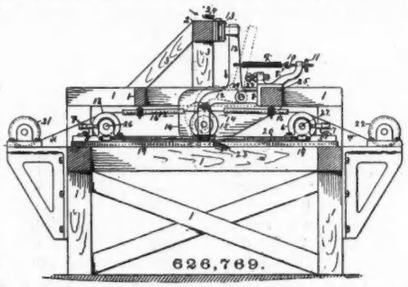
626,762. DRILL HOLDING DEVICE FOR ROCK-DRILLING ENGINES. John G. Leyner, Denver Colo. The combination of the cylinder, the piston and the front cylinder-head with the sleeve supported



626,762.

therein, a drill-bit operatively supported by said sleeve; a collet surrounding said sleeve, means for holding said collet resiliently in operative position in said cylinder relative to said drill-bit and sleeve and a suitable pin or key removably arranged in said collet to operatively confine said drill-bit to said sleeve.

626,769. APPARATUS FOR ELECTRICALLY ANNEALING WIRE OR RODS. James H. Preston, Joliet, Ill. The combination of sheave-wheels, means for electrically connecting said wheels, and the



626,769.

means for opening and closing the switch, said sheave-wheels being adapted to have electric contact with the wire or rod to be annealed and thus form an electric circuit over said wire flowing in each direction.

626,817. MINER'S CANDLESTICK. Allen W. Powell, Lead City, So. Dakota, assignor of one-half to Eugene McPhee, same place. A one-piece

626,817.

miner's candlestick, consisting of the end-pointed straight arm A, arm B bent to form socket b, hook b^1 and b^2, and the handle-loop C, the said arm B being provided with a catch-groove b^3.

626,847. MANUFACTURE OF SHEET METAL. William M. Theobald, Wellsville, Ohio. In combination with a pair of sheet-rolls having working faces of substantially even diameter throughout, an air-jet mechanism located on the entrance side of the rolls, and an air-jet mechanism on the delivery side of the rolls, each air-jet mechanism being arranged for projecting a supply of cold air midway only of the length of the rolls and upon the sheets as they pass through the same.

626,866. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. Robert H. Laird, Boston, Mass., assignor to Retta R. Quackenbush, Watertown, Mass. The process consists in burning carbonaceous fuel, supplying air, from which a portion of the nitrogen has been extracted, beneath said fuel and superheated steam and free hydrogen into the above said fuel, in the form of spray.

626,883. AIR COMPRESSING AND COOLING APPARATUS. Rudolf Berg, Pittsburg, Pa., assignor of one-half to Ferdinand Wenig, same place. The combination of a compression-chamber and a piston operating therein; rods suitably mounted in the walls of said compression-chamber and a series of heat-absorbing disks mounted upon and suitably spaced apart on said rods; an air-chamber and suction-valves operating therein; a discharge-chamber and valves connecting said discharge-chamber with the compression-chamber; an expansion-chamber and a pipe connecting said expansion-chamber with the discharge-chamber; a piston operating in said expansion-chamber; means for operating the pistons and connections between the operating means of the pistons and the suction-valves of the air-chamber whereby said valves are operated simultaneously with the operating of the pistons.

626,887. CLAY-CUTTING MACHINE. Horace B. Camp, Akron, Ohio. The combination with an expressing-machine having a plunger, and a cutting-table, of a cutter movable transversely of the table, and means for actuating said cutter by the reciprocating plunger of the clay-machine.

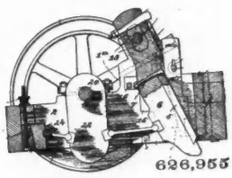
626,933. APPARATUS FOR DRILLING WELLS. Joseph Reid, Oil City, Pa. In combination with a well-drilling rig, a constantly-running explosive-engine, means whereby said engine may be at will connected, disconnected, or reversed in its connections with the drilling-rig.

626,949. DEVICE FOR INCREASING FLOW IN OIL-WELLS. Judson B. Wheeler, Mannington, W. Va. The combination with the barrel and reciprocating valve therein, a cylindrical open-ended strainer, a collar connecting the latter with the lower end of said barrel, a communicating aperture between said barrel and strainer, a standing valve-chamber connected to the lower end of said strainer, a perforated barrel connected to the lower end of said standing valve-chamber, and communicating therewith, the external leader-pipes having communication between the space about the circumference of the strainer and the interior of the perforated barrel.

626,955. ROCK OR ORE CRUSHER. George W. Wright, Webb City, Mo. A crusher combrising a crusher-bed having a longitudinal compartment and inclined extensions, the adjustable boxes shiftable on the inclined extensions, the shaft mounted in the movable boxes, a bearing surrounding the shaft, a jaw-bumper, keys extending through the bumper whereby the bearing is held in place on the shaft, an eccentric drive-shaft, an eccentric bumper depending from the eccentric drive-shaft, a toggle connecting the jaw-bumper with the ecentric bumper, a wedge-block, a toggle connecting the wedge-block with the eccentric bumper, and means for adjusting the wedge-block.

626,956. APPARATUS FOR DISCHARGING COAL INTO SHIPS' HOLDS. Thomas Wrightson, Neasham, England. The combination with a pivotally-suspended frame, of an endless conveyor running over drums journaled in said frame; trays hinged freely upon said conveyor; rollers on the swinging ends of said trays and guides in said frame within which said rollers run.

626,972. ELECTROLYTIC APPARATUS FOR DEPOSITION OF METALS FROM SOLUTION. Thomas Craney, Bay City, Mich. The combination of the outer tank, an overflow-pipe therefrom, a hollow open-ended feed-pipe in the center of the tank, and an anode and cathodes mechanically combined therewith and forming with it a removable unit of the apparatus.



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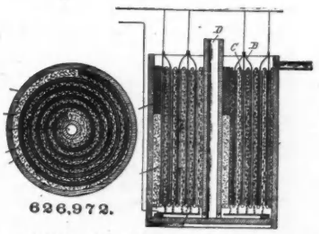

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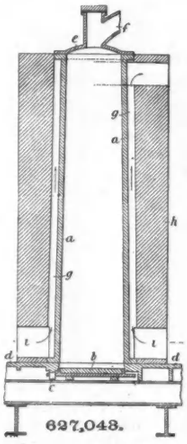

627,048.

626,994. PROCESS OF MAKING SHEET METAL. Evan J. Francis, New Kensington, Pa. The process consists in coating an iron or steel body with nickel, heating the body as coated and reducing it to sheet metal.

627,000. PROCESS OF MAKING OXYHALOGEN SALTS. Paul Imhoff, Liverpool, England, assignor to the United Alkali Company, same place. The process of making exyhalogen salts of the alkali metals consists in passing an electric current through a bath consisting of a solution of an alkali-metal chloride in which is suspended a metallic oxide which can act both as a basic and as an acid radical, thereby forming chlorine and an alkali-metal compound wherein said metallic oxide acts as the acid radical, and causing the chlorine to react upon such compound to form oxyhalogen salts of the alkali metal and to regenerate the metallic oxide.

627,002. PROCESS OF PRODUCING WHITE LEAD BY MEANS OF ELECTROLYSIS. Carl Luckow, Cologne-Deutz, Germany. The process consists in using in connection with anodes of lead an aqueous solution as electrolyte containing from 0.3 to 3 per cent. of the sodium potassium or ammonium salts of chloric acid in mixture with the sodium, potassium or ammonium salts of carbonic acid, passing the current through the electrolyte and continuously adding carbon dioxide and water.

627,008. COMPOSITION OF MATTER. George Olney, New York, N. Y., assignor to James B. Olney and R. Napier Anderson, same place. An improved composition of matter, consisting of sodium silicate, paper-pulp and powdered glass.

627,009. STORAGE BATTERY AND METHOD OF PREPARING ELECTRODES THEREFOR. Leonard Paget, New York, N. Y., assignor Knickerbocker Trust Company, trustee, same place. A storage-battery electrode in which finely-divided active material forms the sole conducting connection between the opposite sides of the electrode, the opposite sides of said active material consisting of oxidized and oxidizable material.

627,021, 627,022, 627,023. PROCESS OF FINISHING METAL SHEETS OR PLATES. William M. Theobald, Wellsville, Ohio. The process consists in subjecting sheets or plates to an annealing degree of heat without contact with atmospheric air, then cooling the sheets or plates under the same conditions as to a temperature of about 900° to 1,400° F., then exposing said sheets or plates to the atmosphere until they have obtained the proper degree of oxidation, then charging said sheets or plates into a suitable furnace to raise the temperature of the sheets above the point to which it has fallen while the sheets were exposed for oxidation, then allowing the sheets to cool off in said furnace, and protecting them from outside influences until they have reached the normal or outside temperature.

627,024. METHOD OF TREATING FLUE-DUST AND FUMES OBTAINED FROM SULPHIDE ORES. Richard Threlfall, Preston, England. The separation of the zinc from the lead constituents by leaching out the former by means of a solution of alkali metal hydrogen sulphate.

627,043. PROCESS OF AND APPARATUS FOR COKING. John Bowing, Tilbury, England. The process consists in placing the coal in a finely-divided and wet condition in a closed retort, raising the temperature rapidly until the coking temperature is reached and maintaining the temperature of the coal without fluctuations until the coking is completed.

627,063. MANUFACTURE OF O¼YHALOGEN SALTS. Paul Imhoff, Liverpool, England, assignor to the United States Alkali Company, Limited, same place. The electrolysis of alkaline chloride, alkaline-earth chlorides and chloride of magnesium without a diaphragm, in neutral or in alkaline solution for the production of oxyhalogen salts, the improvement consisting in adding to the bath inorganic oxidizing-salts of the oxygen acids, thereby effecting a diminution in the reduction brought about by nascent hydrogen and a diminution of the decomposition of water and passing through such bath in electric current.

PERSONAL.

Mr. A. F. Holden, managing director of the United States Mining Company, has left Utah, eastward bound.

Mr. J. L. Parker of Rossland has been making a careful examination of the Similkameen country of British Columbia.

Mr. L. H. Webber of the Bullion Extracting Company of Silica, B. C., has returned to Rossland after an extended visit to England.

Capt. J. R. De La Mar is expected to arrive in New York City July 1st, or early next week, and will probably be in Utah by July 10th.

Mr. Anson Phelps Stokes has been in Salt Lake City for a fortnight on a Nevada mining suit, involving the purchase of property by an agent.

Col. Nicholas Treweek, after a prolonged sojourn in Boston and New York, has gone West to look after his Utah and Idaho mining interests.

Mr. Thomas Weir arrived in Salt Lake City a week ago from a 6 weeks' outing in the East. He has numerous mining enterprises in hand for this season.

Mr. George H. Robinson, who is chiefly occupied with important special work in Butte, Mont., devoted the first half of the week to his Utah mining interests.

Mr. T. R. Jones, the Utah representative of the American Smelting and Refining Company, has been spending 10 days in Denver conferring with the Colorado smelter managers.

Mr. Daniel C. Jackling, Metallurgical Engineer and superintendent of mill at the Mercur, Utah, mines of Capt. J. R. De La Mar, has been on a short visit to New York City.

Mr. Thomas J. Hurley, treasurer, of the Exploration Syndicate, left New York June 28th to look over the company's interests in Colorado and Mexico. He will return late in July.

Mr. J. B. Hastings, general manager of the War Eagle Mine, recently made an examination of some properties in East Kootenay District, B. C., owned by the Gooderman Syndicate.

Mr. David Keith has returned to Utah from Boulder, Colo., where he inaugurated work on the Yellow Pine, recently bonded by him, Mr. Thomas Kearns and Mr. C. K. McCormick.

Mr. Walter B. Wilson, superintendent of the Elkton Consolidated Mining and Milling Company, of Cripple Creek, Colo., returned recently from Scotland, where he has been making a short visit.

Mr. B. F. Taylor has resigned the position of manager of the Advertising Department of "The Engineering and Mining Journal," in which he had gained the esteem of the officers of the company and had been very successful. He has accepted a position with a prominent New York daily.

Captain Peter H. Scott and Mr. Conrad Hansen, of Denver, Colo., are superintending the erection of plants built by the Edward P. Allis Company. Captain Scott has gone to Dahlonega, Ga., to put up a 120-stamp mill and Mr. Hansen to Southeastern North Carolina to put up a smaller mill of the same type.

Mr. G. E. Price, mining engineer, of Helena, Mont., has been in New York this week. He has just returned from a trip to the French Soudan, which he entered from the west coast of Africa. Mr. Price spent nearly a year in that country, making a thorough examination of some mining properties for a French syndicate.

INDUSTRIAL NOTES

The Republic Iron and Steel Company has, it is stated, acquired the Peoria, Ill., Iron and Steel Company at a price of about $1,250,000.

The firm of Siemens & Halske, of Berlin and Chicago, has been awarded by the Chinese government contracts for an electric lighting plant and an electric railroad at Pekin.

The Carnegie Steel Company of Pittsburg, Pa., is to build 4 more 50-ton basic open hearth furnaces at the Homestead Steel Works, and very important improvements and additions are to be made to the Carrie Furnace.

The Slingluff Chemical Company, of Baltimore, Md., has been absorbed by the American Agricultural Chemical Company, of Connecticut. The purchase price is said to be $40,000. The machinery and stock was sold for 50,000 shares of common stock and 50,000 shares of preferred stock of the American Chemical Company.

The American Impulse Wheel Company of New York City has shipped to Norway 16 water wheels per steamer "Hekla," of the Scandinavian-American Line. This machinery is for an electric transmission plant. Five carloads constitute the shipment. Other orders which this concern has on hand for foreign countries are being filled as fast as possible.

The Berlin Iron Bridge Company, of East Berlin, Conn., is erecting at Bridgeport, Conn., for the Armstrong Manufacturing Company, a fireproof storehouse 40 ft. wide and 60 ft. long. The framework is of steel, and the covering is of corrugated iron, lined with the Berlin Company's anti-condensation fireproof roof lining. The building is absolutely fireproof.

The Tennessee Coal, Coke and By-Product Company has been organized at Harriman, Tenn., to introduce the Kenival coking process. General John O. Wilder, of Knoxville, is president; A. H. Gillingham, Philadelphia, vice-president; E. O. Thorndike, Harriman, secretary and treasurer; assistant secretary, G. A. Dreutzer, Chicago; solicitor, Hon. Jerome Templeton, Knoxville.

The United States Tube Company has filed an amended charter in New Jersey, changing its name to the National Tube Company and increasing its capital stock from $75,000,000 to $80,000,000. Half of this amount is to be in 7% cumulative preferred. The incorporators are: Wm. P. Chapman, Jr., Clifton Wharton, Jr., and C. A. Lamont. W. P. Chapman is president and Albert S. Ridley secretary.

The Coatesville Boiler Works of Coatesville, Pa., has closed a contract with M. Guggenheim's Sons for a steel stack, 130 by 14 ft., to be erected at the Pueblo, Colo., smelting works, and will furnish 3 large Scotch boilers to be installed in the Monterey, Mexico, plant. The Coatsville Boiler Works has shipped to the West Indies 38 steel tanks for a new sugar plant, and recently shipped 2 steel stand pipes to Asbury Park, N. J., and Conshohocken, Pa.

It is reported that the New York Steel and Wire Company, incorporated recently with $200,000 capital and a bonded indebtedness of $100,000, will at once begin the erection of a steel plant at Astoria, L. I. The company proposes to make a specialty of the manufacture of wire rope, and will also make open-hearth steel, wire nails and merchant iron and steel. The $300,000 capitalization may be increased. The president is James M. Waterbury and the treasurer A. Van Horne Ellis. The office of the company is in Long Island City.

The directors of the Tennessee Coal, Iron and Railroad Company in New York, June 22d, ratified the contract by which certain sales of its railway property in Alabama were made to the Louisville & Nashville and the Southern Railway companies for $1,100,000 cash. The railroads named, in addition to the cash payment agree to reduce by 30% their charges for carrying ore, coal, coke and lime rock to the plants of the selling company. The directors also ratified the purchase of the Sheffield Coal, Iron & Steel Company, located in Sheffield, Ala., on the Tennessee River. E. C. Benedict was chosen a member of the Board to succeed Col. C. M. McGhee, resigned.

On June 26th the Bethlehem Steel Company formally took over the property, etc., of the Bethlehem Iron Company, which latter company has leased its works, etc., to the former company. The officers of the Bethlehem Steel Company are: Robert P. Linderman, president; Edward M. McIlvain, vice-president; Abraham S. Schropp, secretary; C. O. Brunner, treasurer; R. W. Davenport, general superintendent; Owen F. Leibert, chief engineer; Charles P. Coleman, purchasing agent. The Bethlehem Steel Company states that its experience in Government work has peculiarly fitted it for the manufacture of steel castings. It has every facility for this class of work, and can turn out steel castings of the largest dimensions and of the highest quality. While the firm have been producing these castings for a long while in the Government service, it has not made a specialty of supplying the general trade, but is now ready to take up this class of work.

The Colorado Iron Works Company of Denver, Colo., has booked a rush order for a complete 2-stack smelter to be erected for the Guggenheims at Aguas Calientes, Mexico. The stacks are to be 44 by 144, lower jacket of cast-iron and upper jacket of steel. The company has also orders booked for a set of crusher rolls for the Union Iron Works Company of San Francisco, Cal.; a concentrating plant, consisting of rolls, elevators, screens, dryer and special pan, to be used with a special concentrator process for the Detroit Reduction Company of Cripple Creek; 6 rolling side dump ore cars for the United Verde smelter at Jerome, Arizona; 20 special ore cars for the Ibex Mining Company at Leadville; 3 double compartment roasting furnaces for the De La Mar Mill Company at De La Mar, Nev.; a roasting furnace for the Eldora Mining and Milling Company at Eldora, Colorado, and a 10-stamp mill for the Planet Saturn Gold Mining Company at Bisbee, Ariz.

The Atlantic Clay Company, recently incorporated under New Jersey laws, has completed its organization by the election of officers and directors, as follows: President, Henry B. McDowell, New York; vice-president, Percy C. Hamilton, of Pittsburg; treasurer, Geo. L. Studwell, New York, and secretary, E. D. Luxton. The directors include Messrs. McDowell, Hamilton and Studwell, and in addition T. Reginald Horley and J. V. Clark, of New York. The company is capitalized at $3,000,000, of which $1,000,000 is in non-cumulative 7% preferred stock and $2,000,000 common stock. The company is a consolidation of the Union Fire Clay and Stone Company, the Keystone Fire Clay Works and the W. & H. A. Thompson Fire Clay Company, all of Ohio. In addition, the company has purchased about 700 acres of clay lands on the Raritan River, at South Amboy, N. J., where it proposes to erect a two-press sewer pipe plant, a conduit plant, and fire-proofing and washing plants. One object in locating in New Jersey is to effect economies in freight rates, which are about $3.50 per ton from Ohio to the seaboard. It is intended to use fuel gas at the New Jersey plant, and the company will make its gas, selling the by-products. The company has no connection with the Federal Sewer Pipe Company now in process of orgnaization.

The Acker Process Company is building new works for the manufacture of caustic soda, bleaching powder and other chemicals at Niagara Falls, N. Y. The buildings will cover a space of about 100 ft. by 440 ft. long. One of these buildings, to be entirely of brick, is in the hands of the contractors. The company, composed of New York and New Jersey men, states that it proposes to build the works to turn out a very large proportion of the bleaching powder consumed in the United States and a considerable proportion of the caustic soda. The company says it owns patents covering the important features of its process and has a number of patents pending. A contract has been made with the Niagara Falls Hydraulic Power and Manufacturing Company for over 3,000 electrical H. P., to be delivered in the form of a direct current of over 8,000 amperes, at 300 volts pressure. This current is about 15 times as great as is used in any works of similar character and will be used in a single series of decomposers, each one of which will therefore have about 15 times the output of the units so far successfully employed. The actual dimensions of the apparatus are but slightly greater. A current of this volume, it is said, can be employed in such small space because a molten electrolyte is used. The conductivity of molten salt, compared with brine, is very large, and as no water is present no secondary reactions are possible. The electromotive force required is somewhat higher than where brine is decomposed, as the electrolyte is kept molten by the current which also decomposes it. But the slightly additional cost is stated to be more than offset by the fact that caustic soda is obtained directly in an anhydrous state ready for packing, thus obviating evaporation. Concentration and finishing in the brine processes for each ton of caustic soda requires, it is said, the consumption of about 2½ tons of coal, which is saved in the Acker process. The chlorine is given off in the usual way, except that it is dry, a fact of importance when the gas is to be absorbed by lime in the manufacture of bleaching powder or chloride of lime.

TRADE CATALOGUES.

The Sturtevant roll jaw rock breaker and fine crusher is described in a 4-page circular issued by the Sturtevant Mill Company, of Boston, Mass. The circular sets forth concisely the merits of this crusher. The rolling movement of the reciprocating jaw, it is stated, breaks down the ore at a very low cost. The crusher is made in various sizes, the 6 by 24 weighing 22,000 lbs. and doing good work when crushing as fine ¼ in., while it requires but about 15 H. P. It is especially recommended for fine crushing hard rock.

The Boston & Maine Railroad publishes a series of pamphlets well worth looking over by any one in doubts of where to spend his vacation. The pamphlets are all neatly illustrated and have excellent maps showing many beautiful nooks and corners of New England from Lake Memphremagog, in northern New Hampshire, to the trout streams and big game woods of Maine and the rocky north shore of Massachusetts Bay. The variety of scenery—mountain or ocean—that is shown by these pamphlets should satisfy the most diverse tastes.

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GENERAL MINING NEWS.

Coal Miners' Strike in the Southwest.—The situation in the coal fields of Arkansas, Kansas and Indian Territory, where a strike has been on for several months, is becoming critical. The Indian Territory operators have secured injunctions from the Federal Court forbidding the striking miners to interfere in any way with the operators of the mines, and have started to bring in negro miners from Alabama. This action brings the whole matter to a crisis. Some of the coal miners on the southwestern field resumed work some weeks since, after compromising matters with their employers. The strike may come to an end any time.

Federal Copper Company.—This company has been incorporated at El Paso with $500,000 capital to do a general mining and smelting business, including the erection of a copper smelter at El Paso. The company is stated to own some rich copper properties in Mexico, at one of which is $100,000 worth of copper ore on the dump. The incorporators are Lee C. Dessar, Pierre De Peyster Ricketts, James W. Toppin and George W. Jacocks, of New York City, and George E. Fitzgerald, Leigh Clark and H. B. Hamilton, of El Paso.

ALASKA.

Douglass Island.

Alaska Mexican.—The report of June 9th, with 120 stamps for 30 days shows 13,826 tons ore reduced of the ascertained value of $21,546, and 270 tons sulphurets of a value of $10,820, making a total product for the month of $32,366. The ore averaged $2.70 per ton. Expenses for the month were $20,456.

Alaska-United.—The mine for the 35 days ending June 7th, with 220 stamps, reports 31,177 tons ore crushed, of the ascertained value of $34,480, and 517 tons sulphurets of the value of $19,530, making the product $58,010 for the period covered. The ore averaged $1.87 per ton. The expenses are not given.

ARIZONA.

Mohave County.

Tennessee.—A new hoist for the main shaft of this mine, near Kingman, has arrived and is being installed. It will be used entirely for hoisting ore. The main shaft is down 300 ft., where another level is to be started. The 120-ton concentrator is turning out a steady stream of concentrates.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Argonaut.—This mine, 1 mile northwest of Jackson is still paying large monthly dividends. The 40-stamp mill erected 2 years ago has seen many idle days. The ore is not very high grade, but there is a large amount in sight.

Balliol.—At this mine, ¾ of a mile from Sutter Creek, the management intend to run a diamond drill east and west from the 300-ft. Superintendent S. R. Porter reports that a fine 40-in. vein has been uncovered and that the mill is running steadily with good results. Sinking will be resumed.

Central Eureka.—The shaft at this mine, just south from Sutter Creek, is now down 1,400 ft., and a contract has been let for running 500 ft. of tunnel north on the 1,350 level. Sinking will be continued down to the 1,600-ft. level. Some fine rock was found recently, but its extent is not known, as the vein has not yet been crosscut, though the shaft has gone down along it for 300 ft. W. R. Thomas is superintendent.

Hepburn.—The shaft at this mine, at Jackson, is down over 325 ft. A crosscut run at the 300-ft. is said to have shown a large body of low-grade ore. Sinking will be continued to the 500-ft., when another crosscut will be run. C. E. Knapp is manager.

Mutual Mining Company.—This company, lately incorporated, is reported to have purchased the Fernando Ranch, near Amador City, consisting of 60 acres, for the sum of $60,000. Some years ago a shaft was sunk on this property and several veins were opened up, but work was abandoned for want of means to equip the mine with the necessary machinery. This company will probably sink to depth and put in a modern hoisting and pumping plant. S. R. Porter will act as superintendent.

Calaveras County.

(From Our Special Correspondent.)

Gwinn.—The concrete foundation for the new mortar blocks is completed, and building the new 40-stamp mill has been begun. The shaft is being sunk and ore is stoped to keep the present 40-stamp mill employed. At the 1,400-ft. an air hoist will relieve the main hoist. This hoist weighs 2,000 lbs., and is on a movable car which can be placed in any part of the mine. The property is 4 miles southwest of Mokelumne Hill. F. F. Thomas is superintendent.

Colusa County.

(From Our Special Correspondent.)

Mammoth Copper Company.—This company has been incorporated, with a capital stock of $200,000. Directors are C. E. Waite, D. M. Cooper, G. Fair, J. M. Crabbe, J. B. Atwood, C. H. Tottman, J. L. Burton and H. Smith. The company will develop claims owned by them in the Coast Range.

Kern County.

(From Our Special Correspondent.)

The Randsburg Railway is to be continued from Randsburg north a distance of 65 miles, to tap the Ballarat District. Large shipments of ore have been guaranteed by mine owners.

Nevada County.

(From Our Special Correspondent.)

Empire.—Stoping is in progress on the 2,200-ft. level at this mine, east of Grass Valley. The entire plant, including the hoist, mill, etc., has been rebuilt and is now modern in every respect. About 200 men are employed. T. H. Simmonds is superintendent.

Plumas County.

(From Our Special Correspondent.)

The copper belt near Taylorville, about 20 miles long by 8 miles wide, is being prospected.

Centennial.—This quartz mine, on Ward Creek, on the south side of Genesee Valley, 10 miles southeast of Taylorville, is probably being worked cheaper than any mine in California. The ledge, 6 ft. wide, is stoped so as to fall directly into the car, and is run to the mill. The ore, being soft, is run through a grizzly only and then to patent feeders. The total cost is said to be 50c. per ton. The mill is run by water power.

Jamison.—The new 20-stamp mill in course of erection to replace the one burnt down in May is almost completed. The mine, located at Johnsville, has been opened up by incline shafts and tunnels, the greatest depth being 400 ft. The buildings are also being rebuilt. Geo. S. Redstreake, assistant superintendent, is in charge.

San Diego County.

(From Our Special Correspondent.)

El Dorado Group.—This property, which comprises 11 claims, besides several mill sites, located in the foothills of the San Jacinto Mountains, in the Grapevine Mining District, is to be developed on a large scale by the Great California Company. This company has been incorporated with a capital stock of $3,000,000. The officers are C. H. Atkins, president; G. M. Atkins, vice-president; G. W. Ingils, second vice-president; A. C. Meyer, secretary, and W. L. Rose, treasurer. All are Eastern men except the secretary. The property is said to be rich in gold.

Santa Cruz County.

(From Our Special Correspondent.)

Cowell Lime Ranch.—On this property, 4 miles from Santa Cruz, a small vein of very rich gold ore is said to have been discovered. Several tons are to be milled as a test.

Shasta County.

(From Our Special Correspondent.)

Friday & Lowden, near Kennet, are continuing their 120-ft. tunnel in copper ore.

A. G. Myers has bonded 14 copper claims from Geo. Graves and is doing development work.

C. D. Galvin is developing a number of claims near Copley.

Snyder & Stephenson are opening 5 copper claims a few miles from Copley.

Bully Hill.—This copper property, about 3 miles north of Copper City, is now owned by James Salee, who has purchased the ½ interest owned by F. H. McCormick. The ½ interest in the Popejoy & Jennie June has also been purchased by the same party. The bond held by representatives of foreign capital is said to expire July 1st.

Golinsky.—On these copper claims, 4 miles from Kennet, Lewisohn Brothers, of New York, continue development. Their main tunnel is in 300 ft. and 2 crosscut tunnels are 28 and 60 ft., with promising new indications. The company has 9 claims under bond and employs 18 men.

Golinsky-Ferguson.—On this group of 6 copper claims work continues in a conservative manner. The gossan croppings are bold and the ore body carries considerable gold.

Ballakaleha and Windy Camp.—These properties are pending a sale. They comprise 45 claims and development work is being pushed.

Hearn.—This copper property has an 80-ft. tunnel in sulphide ore said to yield 6% copper.

Sierra County.

(From Our Special Correspondent.)

Gold Bluff.—At this mine, 2 miles northeast of Downieville, the big Worthington pump is at the No. 3 level, and a smaller one has also been put in which will be used for sinking, and discharging its water into the tank which supplies the large one. Sinking will be resumed as soon as the mine is pumped out.

North Fork Company.—This company has resumed operations under the management of J. A. Jones. This drift property, near Forest City, comprising 1,200 acres of ground, prospects well. It is opened up by a long tunnel.

Trinity County.

(From Our Special Correspondent.)

Bloss & McCleary.—This hydraulic mine, near Trinity Center, is now working with a force of 18 men. They are using a No. 5 Giant. A new flume is to be built, when the force will be increased. There is a large amount of pay gravel on the property.

Fortune.—This placer mine, in Hall's Gulch, on the East Fork of the Trinity River, has been purchased by San Francisco parties. The claims, which comprise 40 acres, prospect well. Active work will begin at once.

Lucky May.—It is reported that a rich strike has been made on this property, on Coffee Creek about 10 miles from the mouth of the stream, on the mountain side of the creek. The vein matter, which lies between walls of porphyry and serpentine, is said to be 12 in. wide. The shaft is down 30 ft. Crofton & Frakes, the owners, have been working the claim alone.

North Star.—At this mine, on Coffee Creek, development work continues with a force of 8 men under Superintendent W. B. Frue. It is rumored that the mine has been sold for a large sum.

Tuolumne County.

(From Our Special Correspondent.)

Bown.—Seventy tons of rich concentrates from this mine have been shipped to the smelter. Additional air compressors have been put in and everything goes on as usual, except that the mill is shut down temporarily.

Jumper Gold Mining Syndicate.—It is reported that this company will erect a 24-table concentrating plant, also a 20-ton cyanide plant, work to begin at once. The property is just south of Stent.

Sugarman.—The last clean-up at this pocket mine, 1 mile northeast from Sonora, was $2,000, with more gold in sight. Smith & Brady, who are now working the claim, pay a royalty to the owner.. The ore is crystallized gold of great beauty.

COLORADO.

Smelter Strike.—It now looks as if there might be no general resumption of work until the Supreme Court of the State has passed an opinion on the constitutionality of the 8-hour law; but as neither employers nor employees have shown an overbearing or dictatorial spirit a working compromise may be reached any day. The American Smelting & Refining Company has offered to give the scale temporarily accepted by the workmen at the Boston & Colorado plant. The question of recognizing the Federation of Labor is unsettled.

Boulder County.

Belcher.—Three 8-hour shifts are pushing development on this claim at Caribou.

B. & M.—This mine, at Ward, has laid off 20 men, pending the smelter strike, and is confining operations to development. A body of pyritic iron ore running $50 gold and 10% copper, 30 in. thick, is reported opened in the 600-ft. level. The mine has been shiping 150 tons of smelting ore and 200 tons of mill ore per month.

Gold Nugget.—This mine at Rowena, idle for some years, was recently leased to L. H. Denison, who has made a good strike during the first two weeks of his lease.

India.—This claim at Magnolia has a 50 ft. shaft and has produced enough ore to pay for it. A recent discovery is said to run high in gold. The vein is on the extension of the Kekionga, recently sold to the Venture Corporation of London.

El Paso County.

Colorado-Philadelphia Reduction Company.—This company has acquired sole control of the concentrating plant that has treated ores for its chlorination plant in Colorado City. The concentrating plant is fitted with 20 Wilfley tables and has a capacity of 275 tons of tailings.

Gilpin County.

(From Our Special Correspondent.)

The 8-hour law has generally been in effect here since June 1st. The usual day's working hours never really exceeded 8 hours and the

miners now go up and down the mine on their own time and they find they are really working more time now than they ever did. At the mills there was some talk of a threatened walk-out, the men asking $2.50 for 8 hours' work, whereas they had always worked 12 hours for $3. There was no trouble, however, and the mills are working the same as ever pending the constitutionality of the 8-hour law. The shut down of some of the smelters has not interfered with operations in this county. For a few days there was some doubt among the mining men, in 2 or 3 cases, the working forces being lessened, but as there is a market for smelting ores and tailings, everything is going along as usual.

Mining Deals and Transfers.—J. H. Reilly, of Denver, to A. S. Carter, of Denver, the Marks Lode, in Russell District. V. R. Kent to the Boston Seaton Gold Mining Company the east half of southwest quarter section 30, T. 3, R. 72. Rockdale Mining Company to American Uranium Mining Company the Wood Lode, in Russell District. King Gold Mining Company to E. W. Williams and D. J. McKay, the Golden Wedge Claim, in Russell District, consideration $10,000. John Hilton to J. B. Moffatt, of Denver, one-quarter interest in Isabella Lode, Independent District. Frank C. Young to Gunnell Gold Mining and Milling Company, Gunnell; Gunnell No. 2, Grand Army, Marine, Wheller and Whiting lodes, also Polar Star, Mead and Fullerton Mills, consideration being $750,000. A. S. Carter to Hidee Mining Company, Marks Lode, in Russell District.

Americus.—Newell & Newell are going to start this mine up on July 1st, after an idleness of 2½ years. The property is 800 ft. deep and the operators will sink 200 or 300 ft. deeper. The property is credited with a good production. S. V. Newell is manager.

American Uranium Mining Company.—This company has filed articles of paid-up stock of $100,000 with G. M. Harris and A. P. W. Seaman as a majority of board of directors. The company has been formed to operate the Wood Mine.

Gilpin & Boston Gold Mining Company.—A new shaft house 18 x 36 ft. is being built on the Gladstone Claim and a Fairbanks, Morse & Company's gasoline engine of 22 H. P. is to be put up. The shaft is down 85 ft. and is to be sunk 100 ft. E. S. Moulton has been appointed manager.

Gunnell Gold Mining and Milling Company.—Incorporation papers were filed this week, this company having a capitalization of $1,000,000, the owners being largely New York and New England capitalists. The company owns the Gunnell-Whiting property, comprising 7,350 ft. on the Gunnell Lode, the properties being credited with a past production of $5,000,000, besides the Polar Star, Fullerton and Mead mills, of a capacity of 120 tons per day. Mr. Frank C. Young, of Denver, has been appointed president and financial manager of the new company. It is intended to clean out the lower levels of the shaft down 1,150 ft., increase the working force to 100 men and work the mines and mills to their fullest capacity. Joe Niedemeyer has been retained as superintendent and Theodore Nelson in charge of the mills.

Notaway Gold and Copper Mining Company.—A shaft house 25 x 30 ft. has been erected and the company intends installing a hoisting plant. A. J. Vivian is in charge.

Topeka.—The free gold shoot has been opened again in the 800 west level, the streak being 12 in. wide, along which lies a 3-ft. body of good milling ore. A heavier hoisting plant is to be installed soon. Henry P. Lowe is manager.

Lake County.

(From Our Special Correspondent.)

Smelter Shut-down.—Nothing new has developed, and most of the employees are on a vacation pending the decision of the constitutionality of the 8-hour law. Briefs have been filed by both sides in the Supereme Court in Denver, and arguments completed, and it is expected that a decision will be rendered by July 3d. The Mab and the Mahala are shipping 50 tons each per day to the Gugenheim plant, at Pueblo, and a few Carbonate Hill lessees also. The new work on several important enterprises is carried ahead while pumping goes on. A conservative estimate shows at present a loss of $7,500 a day by the smelter shut-down.

Foreign Zinc Shipments.—A trial shipment of 2,000 tons of zinc ore is to go to the Vielle Montague plant, in Belgium. The contract has been secured by R. R. Moore, local representative of the St. Louis Smelting and Refining Company. Mr. Moore is securing 25 tons daily from the Moyer.

Chippewa Consolidation.—This new project, headed by the Esteys, Leadville, has begun work on its claims between the Banker and the Lady Alice, on Breece Hill. A new shaft and engine houses, with heavy machinery, are in place.

Ibex Mining Company.—While compelled to cut down shipments of 350 tons per day to nothing, more men have been added to the developing force. A great amount of ore is being blocked out and prospecting work is pushed. When shipments resume they will be run up to 500 tons daily.

M. A. W.—This is the title of the new company headed by S. D Nicholson which is arranging to start up the Maid-Adams-Wolftone combination. The Wolftone shaft will be sunk deeper and the entire territory prospected.

Mike & Starr.—Manager McAllister has opened up a rich streak which promises a good-sized ore body. The stuff runs about 200 oz. silver, with a small assay in copper and gold.

New Monarch Gold Mining Company.—Manager Goodwin is opening up new territory by a shaft on the Winnie Claim to cut oxidized ore at 150 to 200 ft. The Monarch shaft, now down a little over 500 ft., is to go 200 ft. further, to cut the sulphide contact.

The Mahala Mining Company.—The interior shaft is down 280 ft. from the 900-ft level, or a total depth of 1,180 ft., into the rich lower contacts. It is said that the showing is remarkable. It is expected that shipments of 50 tons daily will start to the Gugenheim plant, at Pueblo, and as soon as possible the mine will be shipping 150 tons daily.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

The second half of the year begins very promisingly for the mining industry. The tonnage during the first 5 months shows a fair increase over the corresponding months of last year. The increase has been in milling ore, the smelting ore showing a decrease. So far the month of February has shown the smallest output of the year, and May the largest. The May tonnage was the largest of any month in the history of the district.

The Isabella has resumed the payment of dividends, having so far paid out 8c. per share, the last dividend being 2c.

The Moon-Anchor has passed into the control of the Venture Corporation, and has of late devoted its energies to putting the mine in shape. The Independence has started shipping in good style since passing to the English company. The Jack Pot has kept up its record. The famous Johnson lease, on the Half Moon of the Matoa Company, has been given up, and some work is now being done by the company. Great activity has been noticeable in mining on the north slope of Bull Hill, and also on Tenderfoot Hill. On the whole the situation has been excellent, and except for the smelter strike the outlook is bright.

Smelter Situation.—Only one of the Cripple Creek mills is closed because of the strike, that being the Gillette, near the town of Gillette, which had some difficulty with its men about wages. The mill of the Colorado Reduction Company, at Arequa, is closed while new waterworks are being put in. The mills at Colorado City and Florence are running full blast, and it is understood that they are making contracts for some of the ore formerly treated by the smelters. So far the strike has made very little difference in working the mines.

Anchoria-Leland Mining and Milling Company.—Notwithstanding reports, this mine is still running. As much development work is done as usual, but little ore is taken out.

Galena.—Work on this property, on Red Mt., north of Cripple Creek, is suspended, and all the machinery is removed. A large amount of work has been done by the Smith-Moffat people, who had a lease and bond which expires early in July. The property is located in virgin territory, and proceedings were eagerly watched by mining men, who hoped that the development might show up some good ore.

Lexington Gold Mining Company.—This company has bought the lease on its Clara D. claim on Gold Hill and is working it. Quite a little ore has been taken out, and it is said that the ground is showing up well.

Los Angeles.—It is reported that this property has been leased by a Butte, Mont., syndicate, of whom Mr. De Putron Gliddon, of Colorado, is representative. It is understood that the lease calls for considerable development work. The property is situated between Bull Hill and Battle Mountain, near the Last Dollar Mine.

FLORIDA.

Citrus County.

A new phosphate plant, to employ 130 men, is to be erected at once at McCulloch Creek.

IDAHO.

Shoshone County.

Mining Conditions.—The state and military authorities continue to act together to restore law and order in the Coeur d'Alene and break forever the rule of assassins and dynamiters. Eight leaders of the strikers are now on trial at Wallace charged with murder and arson and conspiracy on April 29th. By mistating the facts and representing that military rule is endeavoring to break up trade unions, sympathizers with or members of the Coeur d'Alene Miners' Union have secured a considerable fund to defend the prisoners, and Col. Reddy of San Francisco, who took part in the trial of 1892, is counsel for them. There is likely to be no withdrawal of martial law in the district for some time. Many of the miners connected with the miners' union have left the region, realizing that so long as they refused to renounce their allegiance to that body of law-breakers there was no chance of employment. Considerable non-union labor has come into the district, including 115 men from Joplin, Mo. Whether the State will secure conviction in its charges is doubtful, but there will remain charges brought by the Government, and in any event an influx of non-union men, a temporary reign of law and order, and consolidations of several properties are likely to strengthen greatly the operators and greatly reduce the influence of the more violent among the union men.

Standard.—This mine near Wallace has started work with a force of over 100 men, many of them from Missouri. Most of the new miners are native Americans, while at the time of the strike it is said over 80% were foreign born.

MAINE.

Washington County.

Electrolytic Marine Salts Company.—The shareholders' committee of the Electrolytic Marine Salts Co. has declared a dividend of 10% in liquidation, payable July 5th, making 30% paid to that date. There will be a third and final dividend, bringing the total payments to about 35%. There are several suits pending against the company which, it is stated, will soon be settled. When these are out of the way, the Rev. A. P. Jernegan, it is stated, will return to this country.

MICHIGAN.

Copper.

Quincy Copper.—It is expected that shaft No. 7, started in December, 1897, will be finished within 30 days. The work of sinking and raising the shaft was divided into 3 sections, and the first section to the 13th level has been completed.

Baltic.—The Atlantic mill began crushing Baltic rock on June 27th, with 1 head, which will continue to handle Baltic ore until permanent arrangements are made. During the first 3 hours' run it is stated that 33 tons of rock yielded 1,185 lbs. of mineral, or an average of 1.8%.

Isle Royale.—Development on a large scale continues at this mine near Houghton, there being 22 air drills at work.

Iron—Gogebic Range.

Ashland.—This property, at the east end of the Gogebic Range, is about worked out. About 125 men are taking out the shaft pillars, the amount recovered being larger than expected. In the lower levels, now under water, the ore was much cut up by dykes. The Penokee & Gogebic Development Company works the mine and W. J. Olcott, of Duluth, Minn., is general manager.

Aurora.—This mine, near Ironwood, is owned by the Penokee & Gogebic Development Company and shipped 133,000 tons of ore in 1898. It was formerly worked on the rooming plan with square sets, but ore is now wrought by the caving system and this change of systems has interfered with production. According to the Ishpeming "Iron Ore," No. 1 shaft is down 720 ft., where a heavy flow of water has stopped work for the present. Recently a new body of ore 18 to 20 ft. thick has been opened by a cross and drift at 258 ft. down. At No. 2 shaft the shaft pillars are being taken out. Work was interrupted recently by a bad cave from the 7th to the 9th. No. 3 shaft is down to the 11th level. No. 5 shaft, the hanging 850 north of the other shafts, is 3 compartments and has a steel head frame erected by a Cleveland, O., firm. The shaft is down 800 ft. and will continue to 1,200 ft. The shaft is rather wet. W. J. Olcott, of Duluth, is general manager.

Colby.—This mine near Bessemer, now in charge of Corrigan, McKinney & Company, is employing 175 men and will make a good output this year.

Davis.—This property is being opened by the Davis Mining Company, of which J. C. Moore, of Ironwood, is president, and L. C. Walker, of Ironwood, secretary. A considerable area of ore has been stripped and a shaft started.

Palms.—This mine, east of the Tilden, now employs about 250 men.

Newport.—This mine, near Bessemer, is owned by the Newport Iron Company and is worked by Ferdinand Schlesinger. It is stated that the ore lenses in the "North" and "South" veins are much more regular than formerly, necessitating increased dead work. Between shafts 1 and 2 pillars of ore are being removed. K shaft, at the east end of the "South" vein, is down to the 11th level at 775 ft. On the 10th level the ore body is 16 ft. wide. The output is 150 tons daily. It is thought that the main dyke of the Maine Mine may be struck 400 ft. below the bottom of K shaft. At A shaft pillars are being removed

and at F shaft considerable exploration work is going on. The total output is about 19,000 tons monthly, and 325 men are employed under Superintendent J. R. Thompson.

Tilden.—The Oliver Iron Mining Company has now 475 men at work at this mine near Bessemer, and is getting out a large tonnage. Three shafts, about 600 ft. deep, are worked—Nos. 7, 9 and 10—and the cost of production is low. The ore lens is 50 to 100 ft. wide.

Iron—Marquette Range.

Imperial.—M. M. Duncan, agent of the Cleveland-Cliffs Company, has been inspecting this mine, near Michigamme, and has started to reopen it at once. Capt. John Peters is now on the ground getting the mine in shape.

Lake Superior.—The big Gates crusher at the Hard Ore Mine, a duplicate of the one at Section 16, is at work.

Iron—Menominee Range.

Cuff.—This mine near Iron Mountain is now controlled by the American Mining Company—the mining department of the American Steel & Wire Company. Amos Shepard is manager, and about 50 men are to be put to work developing the property.

Pewabic.—Owing, it is stated, to a scarcity of labor, the company has closed its concentrating works near Iron Mountain for the season, not being able to furnish the tonnage required to run the plant to advantage.

Bay County.

Valley Coal Company.—This company has been formed in West Bay City, with $50,000 capital, to sink a shaft and mine coal from land near Brooks Station. The shaft will be ½ mile west of Brooks and 1 mile south of the Central Mine in Monitor Township. The company claims to have coal with a slate roof of 20 ft., which the West Bay City Company failed to find in its shaft in Frankenlust Township.

Kent County.

Gypsum Quarries.—The quarries of the Grand Rapids Plaster Company and of the Grand Rapids Gypsum Works are situated about 2 miles south of Grand Rapids. The two companies are virtually under one management and their combined production in 1898 was 30,000 tons. The Grand Rapids Plaster Company's mine, of which A. H. Apted is superintendent, covers about 16 acres and has been worked since 1852. The bed is about 21 ft. thick and the rock is a very pure sulphate of lime. Other gypsum quarries south of Grand Rapids are those of F. Godfrey & Brother, the Alabastine Company and the Makalite Plaster Company. The deepest mine is worked by a shaft 95 ft. deep, near the edge of Grand Rapids, in the center of the manufacturing district of the city. This mine is owned by the Gypsum Products Manufacturing Company, of which W. T. Powers is president and J. W. Hayward manager. The shaft was sunk in 1897, but the price of plaster fell and mining did not begin till recently. Now both mine and mill are running full time. All the Grand Rapids mines and quarries are on the same bed, the extent of which is undetermined. The total output in 1898 was about 60,000 tons. The crude rock is ground and then calcined in iron kettles.

MINNESOTA.

(From Our Special Correspondent.)

As probably the largest carrier to enter the lake trade this or next year, the barge "John Smeaton," launched at Superior last week, for the Bessemer Company, is of interest. The ship is 446 ft. keel, 50 ft. beam and 29½ ft. deep, and has no machinery except a pony engine for handling pumps, steam windlass, patent towing machine, etc. The vessel has a double bottom, with 8 water-tight ballast tanks, with collision bulkheads forward and aft, and 3 intermediate bulkheads dividing the cargo space and strengthening the ship, which is of the heaviest construction throughout. The deck is cut by 15 cargo hatches, each 33 x 8 ft. and 24 ft. between centers, thereby making the deck lengths only 16 ft. between hatches, a feature necessary for quick loading, requiring extra strength elsewhere. The ship is fitted with steam steering gear, and with special towing machines that keep the tow lines always at proper tension. The cables are of steel wire and very heavy. There are rapid ballast pumps and a complete electric light system, besides a steam windlass for the 4 anchors, weighing in all 20,000 lbs. The boat will have 3 steel masts and is schooner rigged, with steel deck houses and quarters. It is expected that she will carry 10,000 tons of ore on a draft of 20 ft. Her keel was laid in December, and the cost of the ship has been something under $200,000.

The largest cargo yet for a steamship on the lakes was carried recently by the Wilson liner "Henry W. Oliver," 7,539 net tons on 17 ft. 9 in. draft. This is only about 100 tons short of the deep-draft cargo taken out of Escanaba last year by the "Superior City," and only 200 to 300 tons short of the largest cargoes carried by the biggest barges of the Rockefeller fleet, which have no engines nor coal. Freights are strong, and probably any amount of tonnage would advance them. From the Duluth & Iron Range road last week there were 38 cargoes, amounting to 173,000 gross tons, an average of 5,250 net tons per cargo. This is the biggest average by any dock on the lakes, or anywhere else, for every load taken out in any continuous week. During one 24 hours 57,000 net tons were loaded.

The Duluth & Iron Range is a little over 100,000 tons ahead of last year's figures, though the season has been 2 weeks later in opening. The Duluth, Missabe & Northern is about 150,000 ahead of last year, and the Eastern Minnesota is about even.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Mahoning.—The company is shipping about 6,000 tons a day. The company steadily refuses to sell ore, or even make a price, desiring to hold its great natural stockpiles for the furnaces directly interested.

Republic Iron and Steel Company.—The company's mines, Victoria and Bessemer, of the Franklin group, have resumed with day shifts. When night crews go on some 700 men will be employed.

Sauntry.—This mine of the American Steel and Wire Company is being rapidly stripped, and an enormous amount of ore is shown above water level. The lease of the adjoining Alpena property has been filed, and the company will at once strip and mine it as part of the Sauntry. The company pays $25,000 in advance royalties for the lease, with a minimum output of 100,000 tons a year at 15c., the $25,000 being applied on the first 166,666 tons. Three shovels, 3 locomotives and some 300 or more men are working now on the Sauntry proper. The mine will not ship over the new Eastern Railway line till September, and possibly not then.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—The company is beginning work on its Lee Mine, the most westerly of its hard ore properties at Tower, which has been idle a number of years. Diamond drilling is under way.

Oliver Iron Mining Company.—This company is satisfied with the explorations on the Sibley & Bearinger lands, 80 acres, east of Savoy, and will take up its option. The lands are said to contain a large body of fine ore. The fee-ownership is the same as Chandler. At the company's Pioneer Mine, at Ely, a crew of miners from the Pennsylvania coal-fields has been at work a few days. The company has just completed a water tank of 73,000 gals. Two electric motors underground at Pioneer pull 12½-ton cars up a 1% grade. The mine has shipped to date about 135,000 tons, and is sending out 3,000 tons a day. At Zenith a steam shovel is loading the stockpile. The company is to explore what is known as the Roy claim, close to Tower. The Minnesota Company's oldest mines are near this claim, and that a new competitor can come in and explore a promising property shows how big the range is after all.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Mining Land Sales.—A one-quarter interest in the "Flying Light" mine, at Galena, was sold June 22d for $2,500. George W. Layne has sold a 20-acre lease which he owned near Lehigh to W. P. Buchanan for $3,000. Eastern capitalists purchased 1,500 acres of land near Mt. Vernon last week for $30,000. The property was sold by S. E. Roberts, John B. Roberts, W. K. Gibson and Wm. Fairburn. The plant of the South Carthage Mining Company was sold at mortgagee's sale to Rudolph Finke, of Carthage, for $1,500. The Prairie Dog Mine, on the Ajax Lease, of the Dixon land, at Tuckahoe, was sold to Munser & Morrical, of Illinois, for $25,000. The mine and lease were owned by C. A. Blair, of Carthage; John Sandy and W. G. Easley, of Joplin. A. H. Rogers, of Joplin, and E. R. Williams, of Aurora, have purchased the 80-acre Purdy tract at Aurora adjoining the famous Minor & Rogers tract, recently sold to Colley & Company for $500,000. They paid $10,000 for the 80 acres and will develop it with a drill. The Brinker land at Aurora, comprising 87 acres, has been sold to New York and Boston capitalists for $100,000. Some of the biggest producers at Aurora are located on this land. Brinkerhoff & Herrin, of Carthage, have sold their 100-acre tract near the State line in Kansas to Boston parties for $38,000. The Missouri, Kansas & Texas Trust Company, through their Joplin agents, Canterbury Brothers, have purchased the Stark & Ralston mill and lease of 19 lots in Leadville Hollow for $30,000.

Joplin Ore Market.—One lot of ore belonging to Meredith Brothers, at Galena, sold for $42.50 this week, but outside of that the best offer for top grade was $42 per ton, or $2 per ton under the scale price of the Missouri & Kansas Zinc Miners' Association. Members of the association who produce top grade zinc ore refused to sell at the price offered and the large shipment was mostly of lower grade ores accumulated for several weeks past, for which the buyers paid the scale price. Over 800 tons of fancy grade ore is held in the bins at Oronogo alone and will be purchased by the association and shipped abroad unless the buyers conclude to take it at the scale price before the shipment is made up. Lead remained at $26 per 1,000 as for weeks past. During the corresponding week of 1898 top grade zinc ore sold for $28 per ton and lead at $23.75 per 1,000; the lead sales were greater than for this week by 119,320 lbs., but the zinc sales were less by 1,510,420 lbs., and the value was less by $69,522. For the corresponding 25 weeks of last year the lead sales were greater by 4,626,440 lbs., the zinc sales were less by 54,830,780 lbs. and the value was less by $2,585,892. As compared with the previous week, the lead shipments were less by 66,930 lbs, the zinc sales were greater by 818,650 lbs. and the value was greater by $1,498. Following is the turn-in by camps:

	Zinc, pounds.	Lead, pounds.	Value.
Joplin	1,697,700	269,740	$40,118
Webb City	563,900	37,230	11,862
Carterville	1,278,920	274,120	31,427
Oronogo	490,970	3,140	7,821
Duenweg	362,300	66,780	8,620
Galena-Empire	3,467,840	240,000	65,193
Aurora	1,395,000	15,000	21,852
Stotts City	40,420	33,130	1,670
Central City	342,160	6,020	6,658
Belleville	362,590	4,230	7,099
Hells Neck	.....	52,510	1,371
Reeds	132,000	.....	2,640
Wentworth	40,860	.....	776
Granby	260,000	20,000	4,420
Springfield	176,000	.....	3,520
Total for week	10,610,670	1,021,900	$214,867
Total 25 weeks	256,612,360	23,214,190	$5,570,055

The turn-in from Springfield is the first since last November, when one car was sold, and prior to that there had ben no turn-in since June, 1898, when 4 cars were shipped.

Aikensville, which reported the sale of a car of zinc ore for the first time last week, is the shipping point of a new camp in Morgan County.

The sensational event of the week is the opening of the great fight between the Missouri & Kansas Zinc Miners' Association and the smelting interests. The smelting interests seem to underestimate the strength of the producers' association. At the meeting on June 15th it was decided to increase the assessment levied on the members for purchasing ore and at a meeting on June 21st the directors of the association ordered a shut-down of all mills in the control of the association from June 24th to July 10th. All members of the association have signified their intention of obeying the order and a number of producers outside of the association have signed the membership roll and will join in the shut-down. The association has a representative in New York making arrangements for the immediate shipment of 5,000 tons of ore abroad and future shipments will be arranged for. The producers seem determined to have a voice in fixing the price of their own product and preventing a return to the methods prevailing in the district up to when the association was formed.

State Mine Inspector Quinby is preparing a new map of the entire district for his next annual report. The map will show the exact location of each mining company in the district, giving the township, section and range lines in red ink and will be valuable to all interested in the phenominal growth of the mining industry here.

Ash Grove.—Eastern capitalists have invested quite heavily in mineral lands at this new camp in Greene County, 7 miles northwest of Springfield, and if the statements made are true, it will add largely to the district turn-in in the next few weeks. Capt. George Dennison, of Chicago, who is developing 50 acres for his company, has been in Joplin purchasing machinery. He states that he has a good run of extremely rich ore and will be cleaning up from 50 to 60 tons of ore weekly inside of 30 days.

Reeds.—A large amount of work has been done at this camp and some extensive ore runs have been developed by Hannum & Bennett, of Carthage. There were a few small shipments of lead and silicate from surface workings during 1898, but no extensive prospect work was undertaken until this year. Reeds is 27 miles north and east of Joplin on the main line of the Frisco Road.

MONTANA.

Carbon County.

Carbonado Coal Mines.—The coal mine at Carbonado owned by the Anaconda Copper Company has shut down. It is not known when operations will be resumed.

Fergus County.

(From Our Special Correspondent.)

Maginnis.—On this free-milling property a mill was built nearly 20 years ago, that has not been worked since some time in the '80s. W. A. Strain has secured the property from stockholders, and is repairing the mill, and will add cyanide tanks

for the tailings, which are known to be rich, and extend for miles down the Creek.

New Year.—This property, under the management of Messrs. Wright & Purmort, is having its milling department enlarged.

Jefferson County.

Carbonate Chief.—T. Jones and M. Nelligan, of Clancy, and John Steinbrenner, of Helena, have purchased from the O'Brien Brothers, consideration not stated, the claims immediately adjoining the Bell Mine, on the east. These claims are the Carbonate Chief, Hummingbird and another comprising about 60 acres. Work will begin without delay.

(From Our Special Correspondent.)

Alta & Comet.—The Helena & Livingston Smelting and Reduction Company is getting these properties ready for work again.

Bell.—The first shipment of 17½ tons netted $998, with 2 ft. of solid ore in the bottom of the 35-ft. shaft.

Bonanza Chief.—Wm. Brown has a contract for a new shaft, to be 400 ft. deep. The new mill will probably be built by the time the shaft is completed.

Consolidated B. & G.—Nothing more than keeping the water out is done pending Supt. Gable's return from the East.

Free Coinage.—Howard & Company are shipping the ninth car of ore. The shaft is to be continued for another 100 ft.

Homestake.—W. W. Kidd, who is sole owner of this property, has bonded it to Helena people.

Kennedy.—T. Cruze has given a bond on this property to Butte people, who are now unwatering the workings.

Little Alma.—Work has been suspended on this property pending an adjustment among the partners in the lease and bond.

Minah.—The new cyanide mill just completed to work tailings from the old leaching plant will not start, as the company is involved in litigation over the title.

Rose.—The tunnel is now in 500 ft. Ketch & Reber find by survey that it will take 150 ft. yet to reach the ore shoot encountered above.

Lewis and Clark County.

(From Our Special Correspondent.)

Buckeye.—The company has resumed work. Capt. Wm. Thompson, the foreman in charge, was badly crushed recently by a car of ore.

Enterprise.—This property, near the Buckeye, above Rimini, is under bond for $50,000 to Helena people.

Helena & Livingston Smelting and Reduction Company.—A meeting of the stockholders called for June 20th to consider a proposition to reduce the capital stock from $5,000,000 to $3,000,000 was postponed to July 19th, to enable all holders of stock to be represented. The sale of the East Helena Works to the American Smelting Company leaves the Helena & Livingston in a very flourishing condition.

Union Dredging and Mining Company.—Owing to exceedingly high water, this company has not been able to start the machinery on the new dredge at French Bar. Six feet of water is flowing over the spillway of the dam.

Madison County.

Madisonian.—Frank Turner and J. H. Conrad have given a bond on this property to the Nevada & Utah Exploration Company, of Salt Lake, Utah.

The Madisonian extension, called the Mayflower, shows up well. The plant for treating the tailings from the Madisonian is completed and will be running in a very few days. It has a capacity of 40 tons per day. Plans for a new cyanide mill for the ore are being drawn in Denver. The new mill will have a capacity of 50 tons per day.

Snowflake.—This claim and the Glenwood, in Bear Gulch, near Sheridan, have been bonded for 1 year to D. O'Rourke, of Butte, and T. A. Copland, of England. The ovens show copper carbonate at surface, which changes to sulphide deeper.

(From Our Special Correspondent.)

Pole Creek Placers.—A. W. Tanner, who has spent some 8 years in opening up this ground, has disposed of it to L. H. Taylor, of Philadelphia, Pa.

Park County.

(From Our Special Correspondent.)

Bear Gulch Mining Company.—Work on the new mill is progressing under the superintendency of Mr. James. The McCauly Mill will be in shape to run by July 1st.

Montana Coal and Coke Company.—The company's mines at Horr and Aldridge are running full capacity.

St. Julian.—It is rumored that the management of the Bear Gulch Company has secured this Emigrant Gulch property.

NEVADA.

Lyon County.

Cuyahoga Mining and Milling Company.—This company was organized under the laws of West Virginia in 1898. It owns 6 claims 65 miles south of Carson and 15 miles north of Pine Grove. A shaft is down on the little Bonanza Claim and a mill is to be erected to treat the ore. The officers of the company are: F. W. Smith, president; V. H. Rogers, vice-president; H. M. Strong, treasurer, and D. W. Jones, secretary, all of Cleveland, O. Frank C. Everett is superintendent at the mines.

NEW MEXICO.

Socorro County.

Last Chance.—This mill in Mogollon District is said to have given satisfactory results on a trial run for intending purchasers. An electric hoist has been installed at the mine.

NORTH CAROLINA.

Buncombe County.

Mica Mines.—Of the mica mines about Biltmore the Clarrissa has been worked to a depth of 467 ft. The vein is about 3 ft. wide and has been worked about 200 ft. in length. The mine has not been worked for several years. The Hawk, also idle, has been worked down 150 ft. It produces a greenish mica, often in large sizes. The Cloudland, another idle property, has been worked down nearly 300 ft. The "vein" is 6 to 8 ft. wide and 450 ft. long. It yields a ruby colored mica. The Sink Hole, the first mica mine opened in North Carolina, has a "vein" 15 to 20 ft. wide, which has been worked to a depth of 150 ft. It produces good ruby colored mica.

Cabarrus County.

(From Our Special Correspondent.)

MacMacken.—This mine is down over 200 ft. and is putting in a 7-drill compressor plant.

Reed.—This mine is operating a 10-stamp mill on ore from its quartz vein. Several good copper prospects have been opened up in the county recently and one of them bids fair to be a producer.

Mecklenburg County.

(From Our Special Correspondent.)

At the United States Assay Office, Charlotte, N. C., the gold bullion receipts from June 1st to 12th were over $17,000.

Clear Creek.—These mines, near the Cabarrus County line, are erecting new machinery and producing ore that shows well in gold and sulphurets. C. B. Geissenhainer, of Charlotte, is in charge. Several shafts are being sunk.

Grier.—This gold mine is in operation and producing good ore under the management of Mr. C. A. Ames, of New York.

Montgomery County.

(From Our Special Correspondent.)

A large company is contemplating the purchase of several large low-grade gold mines in the vicinity of the Russell. All the mines will send their ore to a large mill driven by electric power from the Yadkin River.

Beaver Dam.—Ex-Senator Benj. Wilson, of West Virginia, is inspecting the three gold mines in which he is interested.

Rutherford County.

(From Our Special Correspondent.)

Ellwood.—At this gold mine, 5 miles from Rutherforton, a shaft is sunk 125 ft. on a 3-ft. quartz vein carrying gold in sulphurets. The management erected some sort of furnace called a "disintergrating chamber," whereby the ore is supposed to be reduced to fines after which it is amalgamated. Mr. Warne is the inventor. J. W. Johnson, of Itom, N. C., is superintendent. The gold product is said to be satisfactory.

OHIO.

Perry County.

(From Our Special Correspondent.)

W. P. Rend & Co., of Chicago, have their mine No. 3, at Rendville, in shape to run, after an idleness of a few months.

OREGON.

Baker County.

Eureka & Excelsior.—John Vass, superintendent, acting for Receiver P. Basche, has turned over possession of the property to J. S. Wyatt, representative of Jonathan Bourne. It is understood that negotiations looking to a transfer are in progress.

Maiden's Dream.—A 10-stamp mill for this mine, near Sumpter, has been ordered by W. L. Vinson. W. H. Potter, the builder of the Red Boy mill, has received the contract.

Granite County.

Red Boy.—The company has had plans prepared by William Potter, of Baker City, for a cyanide plant to treat the tailings from its 20-ton mill.

PENNSYLVANIA.

Anthracite Coal.

Cross Creek Coal Company.—The No. 3 workings at Leviston near Beaver Meadow, which have been abandoned for 33 years, have been drained and will be worked again.

Bituminous Coal.

The Monongahela River Consolidated Coal & Coke Company, which is to consolidate all of the mining interests of the Monongahela Valley, has issued a prospectus setting forth the objects of the new corporation. According to this prospectus it is proposed to issue $30,000,000 of stock and $10,000,000 in bonds. The bonds are to bear interest at the rate of 6%. Nothing is said in the prospectus of the firms and corporations which are to be taken into the consolidation nor of the manner of payment for the plants.

Slate.

(From Our Special Correspondent.)

Several operators advanced prices on roofing slate 10 to 25c. per square independently of the Association schedule. There is a brisk demand, and quarries are working extra time.

Ætna.—This new Pen Argyl quarry, which has started with 1 hoist, is about adding another rope hoist, and engine of 50 H. P.

Albion.—The production of the Albion and Stephens, Jackson & Company quarries, and the quarries on the Blair properties, all in Pen Argyl, aggregates over 16,000 squares a month.

Bangor Superior Slate Company.—The difficulties among the stockholders have been settled by reorganizing the company. The officers of the new company are: David Stoddard, president; Lorenzo Pearson, secretary, and Solomon Flory, treasurer. Resolutions were adopted declaring the lease and property forfeited by the present holders, Keenan Brothers, and starting legal proceedings to disposess. Keenan Brothers' mill is making 10,000 ft. of stock monthly. The Superior slate is excellent for structural work.

Bangor Union.—Four derricks on the west side of this quarry are stripping a new top piece 50 by 150 ft., in addition to uncovering the big bed on the southeast corner.

Blue Valley Slate Company.—At the annual meeting, at Slatington, directors were elected as follows: Thomas Johnston, Frank D. Bittner, James F. Hunsicker, L. H. Yeager, Reuben Helfrich, Robert F. Muschlitz and James L. Foote. The company has a yearly output of 600,000 school slates, 50,000 blackboards and 7,000 squares of roofing slate.

Champion Quarry.—A 16-acre tract on the Bangor vein, near Delabole, has been purchased by W. E. Lloyd, of Bangor. It contains the old Champion quarry, abandoned in 1893 by Winsboro & Keck.

East Bangor Princess.—Prospectors are testing on a promising ledge on the R. P. Jones farm. Workable rock lies about 10 ft. below surface, and operations will be carried on without hoisting machinery for the present.

Golden Rule.—On July 1st G. K. Snook, a Bangor operator, acquires ¼ interest in this fine Pen Argyl property.

SOUTH DAKOTA.

Custer County.

(From Our Special Correspondent.).

New Free Gold Strike.—Another strike of gold ore was made this week 3 miles southeast of Custer, on the Wild Rose group of 6 claims, owned by George L. Millhouse. The vein has been stripped about 100 ft. and shows 10 in. to 3 ft. wide. The pan tests go from $30 to $100 a ton gold. The walls of the vein are of micaceous slate. The ore is a bluish quartz, heavily charged with hematite. A shaft will be sunk.

Lawrence County.

(From Our Special Correspondent.)

New Cyanide Plants.—B. C. Cook, part owner of the Omega Mine, at Terraville, and the Hildebrand stamp mill, at the mouth of Blacktail Gulch, is planning to erect a cyanide plant to treat the cement ores. The plan is to stamp the ore and treat the pulp while wet. This is the same process that R. M. Maloney is using at the Deadbroke mine and mill.

Gilt Edge.—The litigation between stockholders has been settled and the mine, in Strawberry Gulch, and the chlorination works, at Rapid City, will start up. The plant is being improved by a dust collector, and a small cyanide plant is being erected to treat several thousand tons of low-grade ore left by former operators. A winze has been sunk to the 300-ft. level on a vertical of ore.

Double Standard.—Henry Schnitzel, of Lead, will work this mine, at Terry, under lease.

Golden Reward.—The company has taken possession of all the property of the Deadwood & Delaware Company.

Detroit & Deadwood.—This company is employing 2 shifts of men on the City Creek copper property, near Deadwood, running a tunnel and sinking a shaft. The gold claim in Two Bit District has been supplied with air drills and drifting on quartzite is being pushed.

Squaw Creek Mining Company.—C. C. Pamerlie, of Plattsmouth, Neb., general manager of this company, is here and will push the develop-

ment of the property, on Squaw Creek. There are 11 claims on the phonolite belt.

Stewart.—The Golden Reward Company has started work in this mine, in the Bald Mountain District.

Welcome.—The Horseshoe Mining Company has started work on this claim in the Blade Mountain District.

Pennington County.

(From Our Special Correspondent.).

Consolidated Holy Terror & Keystone Mine.—The mine has started work again after getting a supply of wood for fuel. John S. George, of Milwaukee, president of the company, has been visiting Keystone. The experiments with the cyanide process on the concentrates from Holy Terror ore have not been altogether satisfactory, and it is believed that some other process will be necessary. It is the intention to add 10 more stamps to the Holy Terror Mill and 20 more to the Keystone Mill, making 60 stamps in all.

Harney Peak Tin Company.—E. C. Johnson, of Hill City, has obtained possession of a number of this company's claims.

TENNESSEE.

Bradley County.

Barytes Mining.—Extensive beds of barytes have been opened near Cleveland and a considerable amount of the mineral is being shipped from this and other Eastern Tennessee mines. The substance is said to be used largely as an adulterant in flour, sugar, candy and other food products, and there is considerable curiosity to know who are the ultimate users of the shipments from Tennessee. The mineral is also used as a paint to adulterate white lead and in the manufacture of pottery.

Polk County.

Tennessee Copper Company.—This company has been sinking 2 shafts 20 ft. by 14 ft. at Ducktown, one at the Burra Burra Mine and the other at the London. The shafts will be well equipped.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending June 24th, the bullion and ore consignments sent East from the different smelters and camps of the State were 25 cars, or 1,016,350 lbs. lead-silver bullion; 3 cars, or 125,743 lbs. copper bullion; 32 cars, or 1,265,220 lbs. lead-silver ore. The first shipment of copper by the Utah Consolidated Smelter was made June 14th of 4 cars, or 236,880 lbs. Another shipment will be made soon. As yet the plant is only partly in commission; it is expected that by July 1st 200 tons of ore will be treated daily.

Cyanide Products.—Consignments of products from cyanide mills, marketed at Salt Lake City, are more than double in value those of June, 1898. For the first ½ year this proportion will hold true.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week ending June 24th there were sent forward from the 3 railroad points of the district 110 cars of ore, 15 cars of concentrates and 2 bars of bullion, contributed as follows: Centennial Eureka, 19 cars of ore; Grand Central, 12 cars; Bullion-Beck, 10 cars; Humbug and Uncle Sam, 7 cars; South Swansea, 6 cars; Ajax, 6 cars; Godiva, 5 cars; Star Consolidated, 5 cars; Gemini, 3 cars; Joe Bowers, 1 car; Sioux Consolidated, 1 car; Dragon Iron, 35 cars hematite for flux. The Bullion-Beck shipped 10 cars of concentrates and Mammoth 5 cars concentrates and 2 bars of bullion.

Centennial-Eureka.—It is said the examination under an option for $3,000,000 is completed.

Mammoth.—On June 20th Samuel McIntyre purchased 113,000 shares from William McIntyre, paying $250,000 therefor, which gave him control. He has made himself president and declared a dividend of $80,000. Hereafter no ore carrying above $14 per ton will be sent to the mill, and as there is not sufficient $14 ore mined to keep the mill supplied it is believed the mill will soon be closed.

Swansea.—As expected, the old directorate and officers were re-elected at the annual meeting. During the past year the net earnings were $94,451, from which $65,000 in dividends were paid; operating expenses, $62,867, and ore marketed realized $153,089.

Salt Lake County.

(From Our Special Correspondent.)

United States.—A copper shoot of excellent smelting grade is being developed.

New Mammoth.—It is decided to accept the $250,000 proposition for the property. The would-be purchasers are said to be Lake Superior men.

Petro.—Shipments will begin this week, to be maintained at 250 to 300 tons per month.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—During the week ending June 24th, the smelter products sent forward through the Mackintosh sampler made a total of 4,324,570 lbs., the best week of the year. Daly West leads with crude, 1,774,310 lbs.; Silver King, concentrates, 1,006,230 lbs.; crude, 705,080 lbs; Ontario, crude, 615,920 lbs.; Anchor, concentrates, 202,340 lbs.; Osborne, concentrates, 20,690 lbs.

Daly West vs. Anchor.—A suit is brought by Daly West to recover $200,000, estimated value of 10,000 tons of ore, alleged to have been taken by the Anchor from Daly West territory. It caused a sensation both in the camp and at Salt Lake City.

Morgan.—An amendment to incorporation articles, just adopted, reduces capitalization from $1,500,000 to $15,000, and par value of shares from $10 to 10c. The purchase of company's holdings by Daly West, for $100,000, is partially consummated.

Mackintosh Sampler.—Ore receipts are so heavy that a night shift has been put on.

VERMONT.

Slate.

Thomas Edwards Quarry.—The Edwards & Williams interest in this quarry, at Poultney, has been acquired by Auld & Conger, of Cleveland, O.

WASHINGTON.

Ferry County—Republic.

(From Our Special Correspondent.)

Belleville Gold Mining and Milling Company.—The Buffalo Claim shows a vein of stained quartz 25 ft. wide on the east side of a gulch, and an exposure of white quartz. Assays run from a trace to $4.14 in gold per ton. A trench has crosscut the vein 75 ft., but the values are low. The property adjoins the Lorna Doone.

Black Tail.—The drift from the tunnel, in 80 ft., has cut a 10 in. stringer of rich ore. Prospecting on the Surprise vein, on Black Tail ground, continues. A 12 ft. shaft showing the vein 11 ft. wide and samples of quartz from wall to wall assay from $14 to $50 per ton. The highest ran $47 in gold and 6 oz. of silver. Another small shaft produces ore that runs $30 per ton.

Bodie.—The shaft is down 190 ft.

El Capitan.—This claim south of the Independent is opened by a tunnel showing a lot of low grade quartz. Further south a surface cut and pits about 80 ft. across the vein, show low grade white and blue quartz.

Gold Ledge.—The ore now coming out of the shaft is said to assay $180 per ton.

Horace Gold Mining Company.—The claim adjoins the Lorna Doone on the north. Too little work has been done on it to show the value of the vein.

Lone Pine.—The main tunnel is running north. Work has been resumed on the west drift after a year's idleness. The uprise from the tunnel level is completed, and the Insurgent Company will take up the work on the east drift.

Lorna Doone.—A vertical shaft is down 100 ft. on the east wall of the vein. The quartz at the top assays $4.14 in gold per ton. The last 25 ft. is in quartz that assays $14.40 in gold and $3.13 silver. A crosscut showed the vein 43 ft. wide at 60 ft.; the first 17 ft. of quartz passed through being very low grade and the 26 ft. next the west wall assaying from $6 to $18.60 per ton.

North San Poil.—Work has been suspended for lack of funds.

Palo Alto.—A small surface shaft, down 10 ft., shows a quartz vein 4 or 5 ft. wide that runs $3 per ton. The tunnel is in 374 ft. and going ahead.

Railroader Mine.—An incline shaft follows a vein about 30 in. wide, showing 20 in. of clean quartz, which carries 6.4 oz. silver and $8.84 in gold per ton.

Rebate.—A vertical working shaft has started above the hanging wall, 50 ft. south of the north end line and 150 ft. east of the vein cropping. It will strike the vein at about 100 ft.

San Poil.—The north and south drifts on the No. 2 tunnel level are being driven ahead. The former is now in 200 ft., and the face is in 2 ft. of clean ore. The south drift is in 250 ft.

Standard-Snowshoe.—Two men are crosscutting and sinking on the vein. Its width is not determined well. The Standard-Snowshoe group embraces 3 full claims. The president of the company recently stated that development would be active. The business headquarters are at Spokane Wash.

Tom Thumb.—The discovery shaft is to be unwatered and a winze on the vein in the crosscut is to connect with the west crosscut on the 150 ft. level from No. 2 shaft. There is where the best values were found. The crosscut from No. 2 shaft is in 80 ft.

Trade Dollar Gold Mining Company.—Patrick Clark, of Spokane, has taken a 90 days' option on 60% of the stock for 16c. per share. Work has been resumed under his direction. Men are sinking the winze on the vein, from the tunnel level, in 8 hour shifts.

Okanogan County.

(From Our Special Correspondent.)

Palmer Mountain Gold Mining and Tunnel Company.—At 1,952 ft. in length and 950 ft. depth vertical the 12th vein has been cut and shows over 7 ft of free milling ore. For the past 60 days considerable drifting has been done on the 11 veins so far crosscut, with satisfactory results, the most marked improvement being in No. 2 and No. 7. In No. 2, at 500 ft. vertical depth, the vein is 6 ft. wide with 3½ ft. of ore showing free gold. In No. 7 the vein is 7 ft. wide at 800 ft. depth, showing 3 ft. of free milling ore. In all these veins the walls are well defined and the dip is generally about 60 ft. The general width is from 5 to 16 ft.

Q. S.—At 335 ft. in the prospecting tunnel has cut the vein foot wall at 600 ft. depth and the first 2½ ft. are in high grade copper ore. This vein shows on the surface from 200 to 300 ft. wide and the ore encountered holds its values well. Cross-cutting will be pushed as rapidly as possible; 18 claims and 6 mill sites are now being patented.

FOREIGN MINING NEWS.

AFRICA.

Rhodesia.

The gold output in May is reported by the Chamber of Mines at 4,938 oz., making a total of 30,100 oz. for the five months ending May 30th. In 1898 no production was reported until September.

AUSTRALASIA.

Victoria.

The output of gold in April is reported at 64,968 oz., a considerable drop from the March production. For the four months ending April 30th the total was 249,876 oz., as against 240,149 oz. in 1898, showing an increase of 9,727 oz., or 4%, this year.

Western Australia.

The Western Australia Chamber of Mines reports the gold output in May at 112,206 oz., or 28,457 oz. more than in April. For the 5 months ending May 31st the return is as follows, in crude ounces: From mills and smelting works, 354,447; tailings treated, 38,293; slimes treated, 8,118; concentrates, 22,442 oz.; total, 423,300 oz.

CANADA.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

Rossland Ore Shipments.—The ore shipments from Rossland to June 22d amount to 60,000 tons.

Eight Hour Law.—The latest reports from the various mining divisions are that the mine owners are yielding in various ways to the demands of the miners. In Rossland mines there are no indications of any trouble.

Brandon and Golden Crown.—Sinking is going on from the 150 ft. to the 200 ft. level at this property in Boundary Division.

British America Corporation.—At the East Le Roi, Nickel Plate, W. S. Haskins, superintendent, is sinking a shaft northwest of the old workings to meet an upraise. Work on the Great Western has not been resumed.

Center Star.—This Rossland company is now making regular shipments of 40 tons daily from the new workings to the Trail Smelter.

Iron Horse.—Drifting continues at this Rossland mine from the 300-ft. level south toward the old workings. Considerable low grade ore has been cut.

Lily May.—The tunnel at this Rossland property is in 236 ft. and drifting on the 200 ft. level continues.

Mascot.—The management of this Rossland mine is connecting the 2 tunnels by a crosscut.

Poorman.—This Nelson company has arranged to resume work. The work will be done on a contract basis, thus avoiding labor problems.

Slocan Star.—Recently the miners at this Slocan mine struck work. It is believed that the management will concede the scale of wages asked by the union.

Sunset No. 2.—Sinking continues in No. 1 and No. 3 shafts. No. 1 shaft is down 450 ft. No. 3, 70 ft. About 25 men are employed.

Velvet.—Drifting on the 260-ft. level continues and considerable progress has been made on the main tunnel. The ore indications are said to continue favorable.

War Eagle.—The new hoist is working satisfactorily and shipments from this mine are rapidly increasing.

Winnipeg.—The shaft is said to be the deepest in Boundary Division. About 900 ft. of drifting has been done.

White Bear.—Skids have been placed in the shaft to the 250-ft. level and deepening has begun.

Nova Scotia—Cape Breton.

Dominion Steel and Smelting Company.—This company, with a capital stock of $20,000,000, was formed at Montreal, June 22d, the following officers being elected: President, H. M. Whitney, Boston; vice-president, R. B. Agnus, Montreal; secretary, J. S. McLennan, Montreal; treasurer, B. F. Pearson, Halifax. George Cox, Toronto; Sir William C. Van Horne, Montreal; David Mc-

Kean, Cape Breton; James Ross and Robert Mackay, Montreal; J. Paget, England, and M. F. Dwyer, Halifax, are among the stockholders. The works will be situated near Sydney, Cape Breton, and it is stated that construction will begin at once. Julian Kennedy, of Pittsburg Pa., has charge of the plans for the plant. The undertaking is to have 4 blast furnaces. Contracts for equipment have already been placed. A steel plant is to be erected also, but for these works no orders have been as yet placed. Each blast furnace will have 4 Kennedy-Cowper stoves and a capacity of 300 tons of pig iron daily.

Nova Scotia—Guysboro County.

(From Our Special Correspondent.)

Blue Nose.—This mine, of Goldenville, returned 418 oz. from 1,173 tons in May.

Guysboro Gold Mining Company.—This Mine Harbor company returned for May 90 oz. from 192 tons of ore.

Modstock.—The Forest Hill mine returns for March, April and May, from 1,547 tons of ore, 1,020 oz. of gold; and F. M. Lowe returns 141 oz. from 30 tons of ore.

Richardson.—This mine, in Isaac's Harbor District, returned for May 212 oz. from 2,045 tons of rock. The company is doing a good deal of development work at present.

Nova Scotia—Halifax County.

(From Our Special Correspondent.)

Tributors on the Golden Group, in Montague District, return 148 oz. from 183 tons of rock. A trial lot of quartz from the Bonanza, at Oldham, for T. B. Neily, of Boston, gave from 10 tons 21 ozs.

Montreal & London.—This company, Salmon River District, returns 217 oz. from 2,716 tons of rock. While these returns may seem disappointing, the company is increasing the present 30-stamp mill with 30 more stamps.

Nova Scotia—Lunerburg County.

(From Our Special Correspondent.)

The general interest in mining is increasing throughout the province. Large blocks of areas are being taken every day, and there are many prospectors in the field.

Black Horse.—The clean up at this mine by M. F. Foster for May is 168 oz. from 80 tons.

Nova Scotia—Queens County.

(From Our Special Correspondent.)

W. L. Libbey, of Brookfield, has for some months past, in sinking his main shaft, been in rather a poor zone of rock; last month's work showed a decided improvement. At 750 ft. very rich ore has been struck; the returns for May are 426 oz. from 590 tons.

Ontario—Rainy Lake District.

(From Our Special Correspondent.)

Boulder Mining Company of Ontario, Ltd.—Work has been continued for the last 10 months under the management of Capt. Gifford. It is intended to continue sinking, run crosscuts to parallel veins 300 ft. and make estimates of the milling ore in sight. The full width of the shaft is now in vein matter and the values have increased considerably. There is a 6 drill duplex air compressor, steam hoist and saw mill on the property. Thirty men are employed.

Chemical Gold Mining Company.—This company is continuing work in Witch Bay and has 3 shafts sunk. The veins carry from 8 to 9 oz. in gold per ton.

Gold Hill.—Work is to be resumed by Mr. Upton on this and the Black Jack properties.

Gold Reef.—This company is developing its properties under the management of R. H. Ahn. At present work is being pushed on the Victory in Witch Bay, where good results are obtained. The company's quarters are in Toronto, and owns 26 properties in the Lake of the Woods, Manitou and Sine River Districts.

Treasure.—Work has stopped until machinery can be obtained. The property was first opened in 1892. The vein, from a few inches to 3 ft. wide, carries rich ore on the surface. A shaft is down 100 ft. and 300 ft. of drifting are done on the vein, which shows ore 39 ft. wide, carrying free gold in places and averaging the whole width .44 oz. gold.

Virginia.—This claim, on Elizabeth Lake, 20 miles east of Regina Bay, has been worked during the last 10 months. The quartz vein is in a band of oxidized schist about 100 ft. wide, in which gold comes in paying quantities. A compressor is being installed.

Yukon District.

Mining Conditions.—A recent report of United States Consul McCook at Dawson states that the bench claims showed up very well during last winter. The most noted benches are on Shookum Hill, adjoining Skookum Gulch; Gold Hill, opposite the mouth of Eldorado Creek; and French Hill, on the left bank of French Gulch, and the benches on Dominion, Hunker and Quartz may prove equally as rich. Recently, strikes have been made on the benches of Last Chance, a tributary of Hunker Creek. The creek claims that have come into prominence are those of Sulphur, Dominion and Gold Run, all tributaries of Indian River. The pay streak on Sulphur has been found to be 125 ft. wide at some points on the creek. Dominion Creek property is booming, pay having been struck on the benches on both sides. Gold Run Creek is parallel with Dominion and Sulphur, and has a formation similar to the latter. Claims on this creek that sold last summer for $32 now range in value from $20,000 to $50,000.

MEXICO.

Chihuahua.

(From Our Special Correspondent.)

Buena Vista Copper Mines, Limited.—This company was regularly registered in London on May 24th with a capital of £50,000, in shares of £1 each, to acquire certain copper mines in this State, to work same and erect necessary reduction works. The signatories were Messrs. T. Burnham, H. K. Walker, P. R. E. Erwood, A. T. Palace, P. E. Miller, H. A. Taylor and V. Collier, all of London.

Guanajuato.

(From Our Special Correspondent.)

Guanajuato Consolidated Mining and Milling Company.—The new mill and tramway connecting with the Sirena Mine will be ready very shortly. It is the intention of the company to do all its work on the Sirena for the present. This is the richest of the group and is known to have yielded $10,000,000 since it was first opened. A depth has been reached 344 ft. below the apex of the vein. The underground workings aggregate 25,000 ft. The capacity of the new mill will be 75 tons daily. The company has accumulated $30,000 worth of fresh ores, while $250,000 has been expended on the surface and $500,000 underground. The assets of the company on May 4th are stated to be $1,156,633, of which $150,000 is for new equipment.

Nuevo Leon.

(From Our Special Correspondent.)

Milmo Iron Properties.—The iron mines owned by the estate of Patricio Milmo, on the Golondrinas Ranch, near the line of the Mexican National Railroad, are to be extensively worked. A company, capitalized at $10,000,000, has recently been formed in Mexico to erect and operate a foundry in Monterey, in connection with the mines. The company consists of Eugene Kelly, of New York, and a son-in-law of the late Patricio Milmo; Vicente Ferrars, of Monterey; Manuel Basagoiti and Leon Signoret, of Mexico. Francisco E. Reyes, of Monterey, is attorney for the company. The mines are 4 miles from Golondrinas Station and 100 miles north of Monterey. A cable line will be built to the railroad for handling the ore. The mines are the richest in Mexico, and the ore is easily worked, the veins being exposed on the side of the mountains. The foundry will be modern, with a large capacity for turning out all kinds of castings and machinery. One thousand men will be employed at the mines and the same number at the foundry. It is expected that this enterprise will give a great impetus to the iron mining industry in Mexico.

COAL TRADE REVIEW.

Anthracite.

New York June 30.

The situation in the anthracite coal trade just now is a waiting one. Oil and gas stoves are more generally used every summer for domestic purposes and the consumption of anthracite at this season is largely for steam production. Some of the collieries in the Hazleton region have been very busy the last few weeks, but this is largely because the Reading's fiscal year ends June 30th. In the Wyoming Valley the collieries are working short time, but the great demand for labor at many points in the West has led to a considerable movement of the floating population of the anthracite country and those miners who remain are likely to find their services in much steadier demand this year than last. With a continuation of this demand, particularly from the Lake Superior country, for another year, much of the surplus labor that has been such a potent factor in keeping down the total earnings of the anthracite miner will be out of the way and while the miner may not receive higher wages, he will be sure of much steadier employment.

There is little of interest in the Western trade. The high freights up the lakes have kept down receipts at Superior and Duluth, while both buyers and sellers are waiting till the regular buying season shall begin. Much the same conditions prevail in Chicago territory, where prices seem well maintained. In the East a considerable amount of coal has gone into storage during the month at the tidewater shipping ports. At Boston retail prices continue low, with some selling. At Philadelphia and New York the promised advance on July 1st has had little further effect and now the trade waits to see just how the advance will be maintained. Prices show no especial change and we continue to quote free burning anthracite f. o. b. New York as follows: Broken, $3.20; egg, $3.40; stove and nut, $3.75; pea, $2.40; buckwheat, $2.10; rice, $1.50.

Notes of the Week.

The statement of the Philadelphia & Reading Coal and Iron Company for May and the 11 months of the fiscal year from July 1st to May 31st is as follows:

	May.	Year.
Earnings	$1,449,570	$21,408,526
Expenses	1,431,675	20,428,648
Net earnings	$17,895	$979,878

For the 11 months there was an increase of $94,077 in earnings, and a decrease of $316,389 in expenses, leaving an increase of $410,466, or 17.1%, in the net earnings.

Bituminous.

The soft coal trade along the Atlantic seaboard continues active. The labor troubles in the Clearfield region seem likely to come to a sudden end at any time. The operators are not in a position to increase wages with most of their output covered by contracts; on the other hand, the movement from the collieries is heavy and miners have little trouble securing work. The labor agitators who have precipitated the strike may not wish to call it off, but it looks as if they would be obliged to. If the agitators seek to have miners' wages increased next winter when the contract season is at hand, then we may see higher wages and higher prices.

The demand from the all line trade remains brisk and a good tonnage is going forward to points beyond Cape Cod. Vessel freights hold up well with little prospect of being materially lower this year. The supply of vessels at the shipping ports just now is not up to the demand. Car supply has not improved much, though transportation from mines to tide continues good.

We quote concentrates of freight from Philadelphia as follows: Boston, Salem and Portland, 85@90c.; Providence, New Bedford and the Sound, 70@75c.

Prices continue unchanged on a basis of $1.60 @$1.65 for best grades at Philadelphia and the Chesapeake Bay ports.

Chicago. June 28.

(From Ous Special Correspondent.)

Anthracite coal has been rather quiet during the past week because of the near approach of July 1st and the fact that prices are uncertain. The situation is a waiting one and should prices not appreciate there will doubtless be a heavy buying, but should there be an increase in the cost it is doubtful if much coal will move for some time to come. There continues to be a good volume of coal coming to this port by the lakes, with much more activity in sight should July conditions be favorable.

Bituminous coal supply is very heavy and buying is large; but supply greatly exceeds demand, in consequence of which prices have sagged somewhat and the market looks decidedly less favorable than for some months past. Big bargains are to be had in soft coal because of the glut, consumers taking advantage of the present condition, and from this point there is a great deal of coal being sold. The same condition is likely to prevail for some weeks to come.

Coke sales are fair with prices steady.

Pittsburg. June 28.

(From Our Special Correspondent.)

Coal.—Negotiations for the consolidation of all the coal mines and interests of the Monongahela River District are said to be completed and a formal organization will be effected before July 1st. The company will have a capital of $30,000,000, divided into 400,000 shares of common stock at a par value of $50 a share, and 200,000 shares of preferred stock at a par of $50 a share; in addition, $10,000,000 worth of 50-year 6% gold bonds will be issued. The property that the company will absorb will lie principally in the Pittsburg District and in Pennsylvania, but large interests will also be secured in Ohio, West Virginia, Kentucky, Tennessee and Louisiana. A fund will be provided for the purchase of such firms and properties as the new combination is now unwilling or unable to secure. The temporary directors of the company are J. B. Finley, George I. Whitney, A. W. Herron, M. D. Ullery and John McBride.

The coal market remains firm, with a good local demand; there is between 5,000,000 and 6,000,000 bushels loaded for shipment the first rise; the June rise will be late this year.

Connellsville Coke.—The trade made the highest record last week in the history of the coke business in the Connellsville Region. Two large Western furnaces and a couple of good-sized Eastern furnaces started up in the last two weeks and are receiving large consignments of fuel that has added quite a boom to the demand for coke. Production last week reached the high mark of 183,744 tons, an increase of nearly 10,000 tons over the week previous, and the largest weekly production the region has ever made. The extraordinary demand for coke was attended with a better car supply during the week

and a record-breaker in shipments is reported. The sudden withdrawal of the steel cars from the coke trade by the Baltimore & Ohio and the Pennsylvania railroads came as a shock to the operators. Many protests were sent in calling for the return of the steel cars; the supply has been increased. The region has now 93% of the ovens in blast; repairs are being rushed on all the available ovens not in blast; the active list will soon exceed 18,000 ovens. Prices are advancing. Sales for early delivery, $2.15@$2.25. The shipments were: Pittsburg, 3,383 cars; sent West, 5,180 cars; sent East, 1,645 cars; total, 10,208 cars.

SLATE TRADE REVIEW.

New York. June 30.

Business is good, and prices are advancing. Some of the large dealers in roofing slate are issuing new price lists. Therefore the quotations given below are nominal.

At the quarries stocks are still small, and we are told that orders for immediate shipment are being slowly filled. One large order for sea green roofing slate has been rejected on the ground that the purchasers asked the May schedule, which the dealers refused, anticipating higher prices.

Export trade has been interfered with, owing to the shrinkage in supplies of slate at quarry. It is claimed that prices on export account are in some instances 75c. less per square for roofing slate than is obtainable in the home market. Of the exports from this port so far this month, the largest single shipment of roofing slate was 33 carloads (about 1,650 squares), valued at $8,620, to London. There have also been several fairly large shipments to Australia, particularly of roofing slate to Melbourne. Small exports of school slates to South America are reported.

Freight rates from New York are nominally as follows: To London, 12s. 6d. ($3), or about 86c. per square roofing slate; Liverpool, 12s. 6d.; Manchester, Bristol, Leithe and Glasgow, 15s. ($3.60), or $1 per square; Hamburg, 12s. 6d. prompt, and 15s. near future; Copenhagen, 16s. 3d. ($3.90), or $1.11 per square; Newcastle and Hull, 17s. 6d. ($4.08), or $1.17 per square; Denmark, Stettin, 17s. 6d., all with a 5% primage per ton weight. To Bremen the rate is 15s. net ($3.60), or $1 per square. To Sydney, New South Wales, 15s. net is asked for roofing slate in cases or in bulk.

During the week ending June 22d shipments of roofing slate from Slatington, Pa., amounted to 4,477 squares, a decrease of 305 squares as compared with the previous week, but school slates and blackboards showed a large increase. Walnutport, Pa., moved 184 squares of roofing slate in the week of June 22d, showing an increase of 59 squares. Danielsville shipped during the week of June 22d 1,195 squares roofing slate, 111 crates blackboards and 158 pieces and 58 crates flagging. In the previous week Danielsville moved 875 squares roofing slate, 22 crates blackboards and 261 pieces and 4 crates flagging.

The list of prices per square for No. 1 slate standard brand f. o. b. at quarries is given below.

Prices of Roofing Slate.

Size, inches	Monson or Br'n ville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	
	$	$	$	$	$	$	$	$	$
24 x 14...	6.10	3.40	3.00	3.50	3.50	4.85	2.65	3.50	.....
24 x 12...	6.60	3.40	3.00	3.50	3.50	5.00	2.75	3.50	.....
22 x 14...	6.10	.....	.....	.....	.....	5.00	2.60	3.50	.....
22 x 12...	6.60	3.40	3.00	3.50	3 50	5.00	2.75	3.50	.....
22 x 11...	6.50	3.60	3.25	3.50	3.75	5.00	2.75	3.75	.....
20 x 14...	6.40	.....	.....	.....	.....	.....	2.60	3.50	.....
20 x 12...	6 90	3.60	3.25	3 50	3.75	5.00	2.75	3.75	.....
20 x 11.	6.80	.....	.....	3 75	.....	5.00	2.75	3.75	.....
20 x 10...	6 80	4 25	3.25	3.75	3.80	5.10	2.90	4.00	10.50
18 x 12...	6.80	3.60	.....	3.50	.....	5.00	2.75	3.50	.....
18 x 11...	7.00	.....	.....	.....	.....	5.00	2.75	3.75	.....
18 x 10..	7.20	4.25	3.25	3.75	3.80	5.10	2.90	4.00	10.50
18 x 9...	7.10	4.25	3.25	3.75	3.80	5.10	2.75	4 00	10.50
16 x 12...	6.80	3 60	.....	3.50	.....	.....	2.60	3.50	.....
16 x 10...	7.10	4.00	3.25	.....	3.80	.....	2.60	4.00	10.50
16 x 9...	7.00	4.00	.....	3.75	3.80	5.10	2.60	4.00	10.50
16 x 8...	7.20	4 25	3.25	3.75	3.80	5.10	2.60	4 00	10.50
14 x 10...	6 60	3.60	3.25	3.35	3 75	5 00	2.50	3 75	10.50
14 x 9...	6.50	.....	.....	.....	3.40	4.85	2.50	3.75	10.50
14 x 8...	6 60	3.60	3.25	3.35	3.40	4.85	2.50	4.00	10.50
14 x 7...	6.40	3.60	3.25	3 35	3.40	4.85	2.40	4.00	10.50
12 x 10...	5.80	.....	.....	.....	.....	4.60	2.40	3.25	.....
12 x 9...	5.60	.....	.....	.....	.....	4.60	2.40	3 25	.....
12 x 8...	5.50	3.25	.....	3.35	3.25	4 60	2.40	3.25	9.00
12 x 7...	5.00	3.25	.....	3.35	3.25	4.60	2.40	3.25	9.00
12 x 6..	4.80	3 25	.....	3 35	3.25	4.60	.....	3 25	8.50

A square of slate is 100 sq ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in. thick, and Peach Bottom 25c. extra per square. Purple sizes run 24x12 and 14x7, and vary from $3.75 to $4 per square. Variegated purple, $2.25@$2.90 per square, according to size. Intermediate red, 14x7 and larger, $6; 12x7 and 12x8 in., $5 per square, net. Intermediate sea green, $2.15@$2.35 per square, according to size.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 782.)

New York. June 30.

Heavy Chemicals.—Domestic alkali, caustic soda and sal soda are higher, owing to a scarcity in spot goods. Crystal carbonate has been booked in a large way for shipment during the next two months at about present quotations. Bleaching powder is in better request, though prices are still low. Of this article only 217 casks and 126 bbls. were imported this week. Receipts of domestic goods included 830 sacks, 497 bbls., 500 kegs, and 50 drums soda ash, 81 casks and 18 kegs potash.

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York	In New York.
Alkali, in bags.	67½@70c.	85@90c.	80@85c.
Caustic Soda, high test....	$1.55@$1.65	$1.65@$1.75	$1.60@$1.70
98% powd....	$2.90	.....	.....
Sal Soda	55c.	.....	60@62½c.
" conc.	1.00@1.35	.....	1.60@1.65
Bicarb. Soda..	1.12½@1.25	.....	2.12½@2.25
" " extra	3.25@3.50	.....	
Bleach. Pdr., Eng. prime.	.....	.....	1.42½@1.50
" other br'nds.	.....	.....	1.25@1.35
Chl. Pot cryst	.....	9.00@9.25	9.25@9.50
" powd.	.....	9.50@9 75	10.00@10.25

Prices are generally for large quantities, and in many cases depend upon make, test and package.

Acids.—Sales of oxalic are being made speculatively at 6½c., while first hands continue to quote 6¼c. per lb. Sulphuric acid is well contracted for the remainder of 1899, and blue vitriol is easy, owing to the lower cost of raw material. Recently 20 tons of blue vitriol were exported from this port to Rotterdam. Chamber acid is finding a good market among fertilizer manufacturers. The production of this acid last year is estimated at 1,679,203 short tons, showing an increase of 581,432 tons over 1897, used principally in fertilizer plants, and in the chemical trade for oil refining, pickling iron, etc.

Quotations are in large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified.

Acetic, com. No 8.	$1.50	Nitric, 38°.....	$3.75@ 3.80
Blue Vitriol, best	5.25	Nitric, 40°	4.00@ 4.05
Chamber, 50°, ton.	11.50@12.00	Nitric, 42°.....	4.62@ 4.65
Muriatic, 15°.	1.10@ 1.15	Oxalic	6.25
Muriatic, 20°.	1.20@ 1.25	Sulphuric, 66° ...	1.10@ 1.15
Muriatic, 22°.....	1.35@ 1.40	Sulphurous, 100%	
Nitric, 36°	3.50@ 3.55	SO_3 anhydrous.	8.00@10.00

Brimstone.—We note arrivals at this port aggregating 2,000 tons. A charter was recently taken for a British steamer of 1,000 tons from Pomaron to Charleston, Savannah, Port Royal or Newport News at 10s. 3d. ($2.46), August-September sailing. Rumors of the early dissolution of the Anglo-Sicilian Sulphur Trust are said to be untrue, as the combine's five-year compact will not expire for two years. Best unmixed seconds are quoted $21.75@$22 per ton ex-store, and shipments at $20.50@$20.75, while best thirds are $2 less per ton.

Pyrites.—It is estimated that out of 75 fertilizer works making sulphuric acid south of Maryland only 9 or 10 small plants burn brimstone. The pyrites used in 1898 were chiefly domestic, as the imports of foreign pyrites were about 34% less than 1897. We note three British steamers were recently chartered to carry pyrites from Huelva, Spain, to the United States at 11s. 3d.@12s. An importation of 7,343 tons copper pyrites from Huelva was made this week by the Pennsylvania Salt Manufacturing Company. We quote American pyrites as follows: Mineral City, Va., lump ores, $3.25 per long ton (basis 42%), and fines, $3; Charlemont, Mass., lump, $5.50, and fines, $4.75; Pilley's Island, lump, $6.50, and fine, $4.50 per long ton, delivered in New York. Spanish pyrites, 12@14c. per unit, according to percentage, delivered ex-ship New York or other Atlantic ports. Spanish pyrites contain from 46% to 51% sulphur, the American from 42% to 44% and Pilley's Island, N. F., 50%.

Fertilizing Chemicals.—Market is firm and should the strike in the Western packing houses continue higher prices for the leading animal ammoniates may be expected. Sulphate of ammonia, gas liquor, on spot is scarce, notwithstanding the importation of 516 double bags from Liverpool this week. Some dealers continue to ask $3.50 per 100 lbs. for foreign sulphate of ammonia on spot, while it is reported purchases can be made from speculators at about $3.25 for spot and $3.15@$3.20 for July-August shipment. The domestic article, it is said, has been sold up around $3.10@$3.12½ per 100 lbs. for gas liquor. The exports of sulphate of ammonia from the United Kingdom to the United States in 1898 amounted to only 4,659 long tons, valued at £44,248 ($215,045), showing a decrease in quantity of about 48% as compared with the previous year, and 61% less than 1895, owing chiefly to an increased production in America. The largest consumer of British sulphate of ammonia in 1898 was Spain, which took 31,488 long tons, and Germany holds second place with 26,574 tons. The total exports from the United Kingdom to all countries in 1898 amounted to 137,604 long tons, valued at £1,290,031 ($6,269,551), showing a falling off of 15,397 tons in quantity and £70,291 in value, as compared with 1897. Imports at New York this week include 250 tons manure salt.

Articles.	F. o. b. Wks.	In N. Y.
Potash, muriate, 80@85% 100 lbs.	.....	$1.78
" " 95% "	.....	1.81
" sulphate, 90% "	.....	1 98¼
" " 95% "	.....	2.10½
" d'ble m're salt, 48@53% 100 lbs	.....	66c.
" " " 30% "	.....	89c.
" kainit, 12.4% long ton.	.....	8.70@8.95
" sylvanit.. per unit.	.....	37@38c.
Sulph. Am, gas (25%)... 100 lbs.	.....	3.45@3.50
" " bone ..... "	.....	3.00
Blood, dried, h-gr, Chi. per unit	$1.82½@1.85	.....
" " N.Y., "	.....	1 85@1.90
Azotine..... "	.....	1.85@ 1.95
Bone black, diss., 17@ 8%...ton	.....	16.00@16.50
Fish scrap, acid ..... "	10.50@11.00	12 50
" " dried "	19 50@20	21 50
Tankage h. gr., Chicago.... "	17@17.50	21.00
" concentrated.. unit.	1.60@1.65	1.90@1.95
" bone.. ton.	.....	20.00@21.00
Bone, ground ..... "	.....	23.50@25.00

The quotations on potash are on the basis of foreign invoice weights, tares and analysis, in quantities of not less than 500 tons bulk salts or 50 tons concentrated salts.

Nitrate of Soda.—Demand limited, while prices are $1.62½ per 100 lbs. for all positions. Reports from the west coast state that nitrate of soda producers are experiencing a scarcity of laborers owing to the increased activity in the copper mines of Chile, where higher wages are being paid.

Phosphates.—Deliveries are principally on contract. Shipments of phosphate rock from Charleston, S. C., in May are reported at 11,233 long tons, as against 8,172 tons in the same month last year. For the five months ending May 30th, 1899, Charleston shipped 49,305 long tons. Florida and Tennessee rock are finding a good market abroad. A charter is reported of a British steamer of 1,201 tons from Brunswick to Hamburg at 16s. 6d., July sailing. Latest quotations for American phosphates, delivered c. i. f. United Kingdom or North Sea ports, per unit, are as follows: Florida, hard rock, 77@80%, 9¼d. (about $14 per long ton), for all positions up to and including 1901; Florida, land pebble, 68@73%, 7¾d. ($10.50 per ton); Tennessee, 78@80%, 7¾d. $11.85 per ton); while Algerian, 63@70%, is quoted at 7¼d. ($8.40 per ton).

We quote: Florida high grade, 75@80% rock, $10 per long ton f. o. b. Fernandina. The freight rate to New York is about $2 per ton. Florida land pebble, 68@73%, quoted at $7@$7.50 per ton delivered in New York. Florida Peace River rock, 58@63%, $4.50 per ton, f. o. b. Punta Gorda. South Carolina ground rock, $6 per short ton, delivered in New York; sun dried, 3 per 2,240 lbs. f. o. b. Ashley River; hot-air dried, $3.25 f. o. b. same place, and $4.50 f. o. b. Charleston, S. C. Tennessee phosphate rock, $3.50@$4, f. o. b. mines for export, guaranteed 78% bone phosphate of lime and 3@4% iron and alumina, ex-vessel New York $9@$10 and $3@$3.50 for domestic brown, and $1.90@$2 f. o. b. for blue or Hickman County rock. Domestic Tennessee rock averages 75%, while for export it runs as high as 83% bone phosphate. The difference in the price of this phosphate and Florida high grade is owing to the higher percentage of iron and alumina in the Tennessee rock. Concentrated phosphates, 13@15% av. P_2O_5, 60@62½c. per unit at sellers' works. Acid phosphates, 60c. per unit at sellers' works in bulk.

Liverpool. June 20.

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

Trade in heavy chemicals is rather brisk at present, and buyers are finding an increased difficulty in placing prompt business.

Soda ash continues in request and is very firm at varying prices, according to market. The maximum ranges for tierces is about as follows: Leblanc ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s. per ton, net cash. Ammonia ash, 48%, £4@£4 5s.; 58%, £4 5s.@£4 10s. per ton, net cash. Soda crystals are brisk, as usual at this season of the year, and firm at £2 17s. 6d. per ton, less 5% for barrels, except for a few favored quarters which are on a special footing. Bags are 7s. per ton under price for barrels. Caustic soda is active, and some makers are refusing orders, owing to being fully booked for prompt delivery. Quotations are nominally unchanged, but the tendency is toward a higher range. We quote spot prices as follows: 60%, £6; 70%, £7; 74%, £7 10s.; 76%, £7 15s.@£7 17s. 6d. per ton, net cash.

Bleaching powder is in light supply as regards outside makes, for which £4 15s. per ton, net cash, is asked for harwood packages. The principal makers are shipping largely, mostly to markets which they bar to buyers here.

Chlorate of potash is selling to a fair extent for some markets, principally Russia, and prices are steady at 3½d.@3¾d. per lb. for crystals and 3⅝d.@3¾d. per lb. for powdered, as to quantity.

Bicarb. soda is moving off at varying prices, according to destination, ranging from £5 5s.@ £6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia continues quiet, and £12 7s. 6d.@£12 10s. per ton, less 2½%, is about nearest range for good gray 24@25% in double bags f. o. b. here, as to quality.

Nitrate of soda is in moderate request, at £8 5s.@£8 10s. per ton, less 2½% for double bags f. o. b. here, as to quality and quantity.

IRON MARKET REVIEW.

NEW YORK, June 30, 1899.

Pig Iron Production and Furnaces in Blast

Fuel used	Week ending July 1, 1898		Week ending June 30, 1899.		From Jan., '98.	From Jan., '99.
	F'ces.	Tons.	F'ces	Tons	Tons	Tons
An' racite	26	15,084	38	34,150	635,209	753,549
Coke.....	144	173,334	166	218,075	5,127,491	5,444,945
Charcoal.	20	5,934	16	5,225	147,003	133,408
Totals..	190	194.352	220	257,450	5,909,703	6,331,902

The iron market is more quiet, so far as excitement is concerned, but prices remain on a high level and are still rising. The demand for material is less pressing, since most important contracts have been settled for the remainder of the year, and few mills are in a position to take more business except for very late deliveries.

At the same time the cry of scarcity is not at all a reasonable one. Parties anxious for early deliveries may be unable to get them; but there is no doubt that all ordinary demands can be met.

The demand for pig iron continues good. Among contracts lately placed Southern iron is prominent, the orders including a lot of gray forge for Pittsburg delivery, and several blocks of basic iron.

The demand for structural iron continues large, and some heavy contracts are being placed in spite of high prices. This is the most noticeable movement at present in finished material. The structural orders are for Eastern cities chiefly, though Chicago is doing some business. For bridge material there is also a good demand from all quarters.

There is some anxiety over the settlement of the Amalgamated Association scales, but the general belief is that compromises will be made. The exception is the tin-plate scale, over which a contest seems quite probable. Increases of wages are noted in many places, and are, in fact, a general feature of the trade just now.

Export inquiries continue in sufficient number to indicate a good demand even at present prices. An important contract for 180,000 tons of steel rails for the Russian Government is understood to have been taken by the Carnegie Steel Company, though some details are still to be arranged.

Notes of the Week.

The South Chicago Furnace is to be started up on July 4th. This furnace has been idle for five years, and has a capacity of 6,000 or 7,000 tons of pig iron a month. It is stated that the iron is contracted for up to the end of the year.

The British iron market, like our own, has a strong upward tendency, and the prices reported are higher than for a long time past. This last week Scotch pig warrants sold for $15.95; Cleveland foundry and forge for $15.20, and West Coast Bessemer pig for $16.88. On small transactions prices were from 25 to 50c. above these figures.

Buffalo, N. Y. June 27.

(Special Report of Rogers, Brown & Co.)

The price of $20 for iron at the furnace has been the goal toward which Northern producers have looked for years. Until recently it seemed out of reach for the present age; but this price basis has now been reached, and for some kind of irons actually passed, and passed without hardly a comment. There has been a more general inquiry in this territory for 1900 iron. It is becoming more evident that lots of work laid out for this year cannot be finished on time and will have to be carried over into the early months of next year. Contracts for work requiring iron and steel are being held up by various causes, such as strikes, inability to get material and in some lines lack of competent molders and experienced iron workers. This, together with the increasing evidence that the additional furnaces put into blast are not affecting the market as was contemplated, has caused many foundries to feel it wise to look forward into the future further for their iron supplies than in times past. We quote for cash, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $20@$21; No. 2 strong foundry coke iron, Lake Superior ore, $19@$20; Ohio strong softener No. 1, $19.50@$20.50; Ohio strong softener No. 2, $19@$19.50; Jackson County silvery No. 1, $24; Southern soft No. 1, $20; Southern soft No. 2, $19.50; Lake Superior charcoal, $22; coke malleable, $21.

Chicago. June 28.

(From Ous Special Correspondent.)

Pig Iron.—Sales of pig iron continue large, business with a number of the furnaces never having been larger than the past few weeks. There is a considerable buying for delivery ahead as far as the coming year, and some orders are booked for delivery into the next year. Consumers are coming to the idea that the present prices have come to stay and are accordingly not adverse to contracting for delivery ahead. About every week brings with it a small advance in prices, the quotations for the week being as follows: Lake Superior Charcoal, $21@$23; Local Coke Foundry, No. 1, $18.50@$19.50; No. 2, $18@$18.50; No. 3, $17.50@18; Ohio Strong Softeners, No. 1, $20@$21; Southern Coke, No. 1, $18.50@$19.50; No. 2, $17.75@18.25; No. 3, $17.25@17.50; No. 1 Soft, $18.50@$19; No. 2 Soft, $17.75@$18.25; Foundry Forge, $17.15@$17.40; Southern Charcoal Softeners, $18@$20; Alabama Car Wheel, $20.50@$21.50; Malleable Bessemer, $19@$20.

Bar Iron.—The buying of bar iron continues heavy, implement and car manufacturers still taking large quantities of iron and soft steel bars. There is a splendid demand from smaller consumers and the market presents a very lively aspect. Present prices are likely to remain for some time, the bar iron manufacturers' policy being to retain prevailing quotations until a change is made absolutely necessary. Common iron is 1.80c.; soft steel bars are quoted 1.90c.@2.10c.

Steel Rails.—There is but little business being booked in standard sections of rails, buying being confined to small sales and quick delivery being absolutely impossible. Standard sections are now quoted $29@$30. The lighter sections of rails are in better demand, sales aggregating several thousand tons having been closed each week for some weeks past; $30 is the present quotation of lighter sections.

Structural Material.—Small lot sales are quite heavy, though larger business is scarce. Buying is mostly in bridge material for small railroad bridges. Quotations are as follows: Beams, 15 in. and under, 1.90c.; 18 in. and above, 2.00c.; universal plates, 2.65c.; angles, 1.90@2.00c.; tees, 1.95c.

Cleveland, O. June 27.

(From Our Special Correspondent.)

Iron Ore.—Sales of ore during the past week were very few. There remains, however, a very active interest in the general outlook of the business and about what may be expected in the near future. No active efforts will be made to make more sales until agents of the ore companies have a clearer idea of how much more they can safely offer this year with reasonable certainties that they can make the deliveries. Ores already sold are being rushed down the lakes as fast as possible, and they are also being vigorously sent forward to the furnaces. Many cargoes are being unloaded directly from the vessels into cars for forward shipment at once. Carrying rates from the upper lakes have slightly advanced during the week, the price paid from Escanaba being 70c. instead of 65c. The rate from the head of Lake Superior remains 75c.

The quotations are as follows: Specular and magnetic ores, Bessemer quality, $4@$4.25; specular and magnetic ores, non-Bessemer, $3.25@$3.75; red hematite ores, Bessemer quality, $3.75@$4.25; red hematite ores, non-Bessemer quality, $2.75@$3.25.

Pig Iron.—The pig iron market continues as strong and active as ever. Consumption is very large, and, although production is everywhere being pushed to full capacity, it is scarcely keeping pace with wants. It is scarcely necessary therefore to add that the market for everything is very firm and that the tendency of prices continues upward. No marked advance, however, is noted this week.

The following are the quotations for iron f. o. b. Cleveland: Lake Superior charcoal, $20; Bessemer, $18.65; No. 1 foundry, $18.65; No. 2, $18.15; No. 1 Ohio Scotch, $18.65; No. 2, $18.15; gray forge, $16.15.

Philadelphia, June 29.

(From Our Special Correspondent.)

Pig Iron.—Another advance has been made in pig iron since Monday. There is very little actual business. Everything is cleaned up. Pig iron people want to keep clear of further contracts. The upward rush of prices has also dissuaded some buyers from rashness. No one has a clear idea of the future course of the market. Quotations are nominal. In a general way prices are, for No. 1 X foundry, $20; No. 2 X foundry, $19@$19.50; No. 2 plain, $18; gray forge, $17@$17.50. Many small buyers are greatly disturbed. Vigorous efforts are being made to increase the ore supply in Virginia and Kentucky ore mines to keep the production capacity of the furnaces contributory to the Norfolk & Western system well supplied with ore. Seven or eight furnaces are being put in better shape there, and iron will be shipped from three of them by August 1st. The others will follow soon.

Billets.—Billets are wanted by several buyers here and offers are made frequently, but apart from the question of prices mill people do not want to sell for future delivery. Buyers are unable to map out any plan. Quotations are given to-day at $34, but billets cannot be had.

Bars.—The high level of prices reached last week continue. Refined iron in retail lots commands 2c. and steel bars 2.10@2.20c. It is regarded as quite probable that forge iron will go higher, and hence the unwillingness to book orders for future delivery at to-day's prices.

Sheet Iron.—No large business has been booked for several days, but it is to be had. Manufacturers are anxious to get their books cleaned up. They all agree that the summer lull will be welcome. The advances recently made are not questioned; in fact, higher than 3.60c. for No. 28 has been offered for accommodations.

Pipes and Tubes.—The combination assumes control July 1st and virtually no business is being done in consequence. A great deal of work accumulated at mills in view of the change of management.

Merchant Steel.—Agents report a quiet market but quiet only because consumers in many instances have promises which they regard almost as good as contracts for autumn and early winter necessities. The advances in raw material are crowding up prices in finished products and mills are altogether indifferent to business.

Nails.—Nails are moving freely in retail lots to actual consumers and dealers are for the present pretty well supplied.

Plates.—Managers and mill representatives have nothing, that is not known, to add. Nominally all quotations are fractionally higher. Very little new business has been heard of. Small consumers are running short and will have to cover in July, no matter what prices may be. Tank plates are hard to get at 2.75c. All others in proportion. Mill owners are hoping for a lull that will enable them to get in sight of the end of their orders.

Structural Material.—Bridge iron is badly needed. All structural material is quoted between 1.88 and 2c. Prices will move a notch higher before mid-summer, according to office predictions.

Steel Rails.—The statement given out to-day reaffirms merely what has been said for weeks. No reply can be had relative to a rumor that rails would be advanced to $30.

Old Rails.—Offers are submitted at $19.50 asking price $20.50.

Scrap.—Iron axles are quoted at $24 and steel at $16.50. Old car wheels are $17, and heavy steel scrap $15@$16. Wrought turnings bring $12 and cast borings $11.

Pittsburg. June 28.

(From Our Special Correspondent.)

There seems to be little disposition to question the high prices that now govern the market for raw material, as well as for all descriptions of iron and steel products; the continued upward movement in prices does not seem to have any effect on the demand. The principal object is to obtain the material and settle the prices afterward; there seems to be little doubt that there will be no decline in prices the balance of the year, but as less and less new material is needed for this year's wants, a disposition is manifest in some quarters to put some dependence in the sentiment widely entertained that the advance may be stoped. On the other hand, predictions are not wanting of a continued advance, particularly toward the close of the year. The situation, from a statistical standpoint, is certainly the most extraordinary one that has ever been presented, as it not only shows that we have reached the highest figures ever recorded as regards production and consumption, but the surplus on hand is relatively smaller than at any former period.

This no doubt fully accounts for the rapid advance in prices, but it makes the situation a most perplexing one as regards the near future. With such scarcity of material it would be absurd to talk of lower prices; but on the other hand some people contend the rise has gone far enough to be healthy.

Finished Material.—The general situation is much the same as it was a week ago; prices are still working their way to a higher level, and although manufacturers would prefer to see a less excited market, in justice to themselves, if business is forced on them, they must make prices accordingly. Mills are all crowded with work, and there is not the slightset sign of any falling off. Prices all through the list are very firm.

Ferro-manganese.—Very firm, with sales of 80% delivered at $87.50.

Muck Bar.—Firm, with an active inquiry and sales of neutral delivered at $34.50@$34.75.

Pipes and Tubes.—Market very firm. Mills have sufficient orders booked to last for a long time.

Steel Rails.—Firm, with a good demand, at $30 for heavy sections.

Old Rails and Scrap.—There is a continued good demand at full prices.

Latest.—There is still a good inquiry for both raw and finished material; sales, however, are somewhat restricted, because of the scarcity of material. There seems to be trouble brewing with some of the plants in regard to wages. The tin-plate workers ask 20% advance; the proprietors offer 10%. How it will terminate will be learned later. Unless settled this week, the old contract expires on Saturday.

The highest price paid for Bessemer in Pittsburg is $19.75. Only a limited number of plants will close for the holidays; repairs will be attended to later.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
6,000 B., J. to J., V.	$19.00
5,000 B., A. to S., V.	18.50
4,000 Mill, J., A., S., P.	16.25
3,000 B., S. to O., V.	18.50
3,000 B., A. to S., V.	19.00
2,000 B., J. to J., P.	19.75
2,000 B., J. to A., V.	19.00
1,000 Mill, Aug., P.	16.40
1,000 Mill, J., A., P.	16.40
1,000 Mill, July., P.	16.50
1,000 B., J. to A., V.	19.00
1,000 B., July, V.	18.75
1,000 B., J. to A., V.	19.00
750 B., J. to A., V.	18.75
500 Mill, prompt, P.	16.40
500 B., July, V.	19.00
500 B., Sept., P.	19.65
500 Mill, July, P.	16.50
300 B., A. to Sept., P.	19.00
200 No. 2 F'dry, P.	17.00
100 No. 2 F'dry, P.	17.00
100 No. 3 F'dry, P.	16.75
100 No. 3 F'dry, P.	16.80

BLOOMS, BILLETS, SLABS.

2,000 Billets, P.	32.00
1,000 Billets, P.	33.50
1,200 Billets, P.	31.00
800 Billets, P.	31.20
500 Billets, P.	31.50
500 O. H. Billets, P.	38.50

MUCK BAR.

Tons	Cash
1,500 Neutral, P.	34.50
1,000 Neutral, P.	34.00

SHEET BARS.

3,000 at Mill P.	$34.00
3,000 at Mill P.	33.50
800 at Mill P.	32.80
500 at Mill P.	32.60

OLD RAILS.

2,000 Iron Rails, gr., P.	21.00
1,000 Steel Rails, gr., P.	15.00
1,000 Iron Rails, gr., P.	22.00
500 Steel Rails, gr., P.	16.50

CHARCOAL.

150 Cold Blast, P.	22.00
100 Cold Blast, P.	22.50
100 Cold Blast, P.	23.00
100 No. 2 F'dry, P.	17.25
100 No. 2 F'dry, P.	17.25
60 Cold Blast, P.	22.00
30 No. 2, W. B., P.	19.60

SCRAP MATERIAL.

800 H. S., gr., P.	16.00
800 No. 1 W., net, P.	16.50
600 No. 1, W., net, P.	17.00
500 Bus. Scrp., net, P.	14.00
500 Cast Scrap, gr., P	16.50
300 Cast, gr., P.	15.00
300 Cast Bgs., gr., P.	10.00
300 W't Bgs, net, P.	11.00
200 Car Whls, gr., P.	17.00
100 Cast Bgs., net, P.	10 00
100 Wrt., net, P.	16.50

New York. June 26.

With a firm market and in many cases higher prices business continues good. In foreign trade we note shipments of about $150,000 worth of machinery, including machine tools, pumps, etc., to Germany. The movement to Germany seems little affected by prices.

Pig Iron.—The market continues very strong; buyers are taking iron at the higher figures. In spite of these prices there is considerable iron going abroad. We now have to quote: Northern brands, tide-water delivery: No. 1 X foundry, $19.75; No. 2 X foundry, $19.25; No. 2 plain, $17.75; Southern brands, New York delivery: No. 1 foundry, $19.50; No. 2 foundry, $18.50; No. 1 soft, $18.25; No. 2 soft, $17.50; No. 3, $17; basic, $16.50.

All grades of warrant irons rose during the week. No. 2 Alabama has varied from $13¾ to $14; No. 3 from $12¼ to $12½; No. 4 from $11½ to $11¾; gray forge, $11½ to $11¾.

Bar Iron.—The demand continues strong and prices are firm. We quote refined iron 2.08c. in large lots on dock, and common 1.75c.

Plate.—The local demand remains but fair, but prices continue firm, with mills very busy. Large lots at tide-water are quoted: Tank, ¼-in. and heavier, 2.65@2.75c.; tank, 3-16-in., 2.75@2.85c.; shell, 2.75@2.85c.; flange, 2.85@2.95c.; marine, 2.95@3c.; firebox, 3@3.10c.; universals, 2.60c.

Structural Material.—Demand continues very fair, even good considering the high range of prices and orders aggregating 2,000 tons have been taken. The market is very firm, and we quote for large lots at tide-water: Beams, 15-in., 1.95c.; tees, 2c.; channels, 2c.; angles, 1.95c.

Steel Rails and Rail Fastenings.—Prices remain nominally somewhere around $28 for standard sections f. o. b. mills. There have been numerous inquiries from abroad, many of which the mills cannot notice at terms offered. Small rails are nominally quoted: 12-lb., $34; 16-lb., $34; 20-lb., $34; 30-lb., $32; 40-lb. to standard, $30, with the usual advance for small orders, but actual prices depend on size of order and how badly rails are wanted. Angle bars are 1.80c., spikes, 1.95c., and bolts, 2.25c.

Nails.—The market is firm enough, while demand holds up fairly well. Cut nails are $2.30@$2.35 for large lots on dock, and wire nails are $2.60@$2.65.

METAL MARKET.

NEW YORK, June 30, 1899.

Gold and Silver.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars	$ .48½	$ 50
Peruvian soles and Chilean pesos	.43½	.46
Victoria sovereigns	4.86	4.89
Twenty francs	3.88	3.92
Twenty marks	4.78	4.83
Spanish 25 pesetas	4.78	4.84

Gold and Silver Exports and Imports
At all United States p orts in May and year.

	May.		Year.	
	1898.	1899.	1898.	1899.
GOLD.				
Exports	$109,157	$2,049,255	$5,850,663	$6,976,927
Imports	13,332,111	3,070,265	89,266,384	19.944,949
Excess	I. $13,212,954	I. $1,021,010	I. $83,315,721	I. $12,968,022
SILVER.				
Exports	4.184,432	4,436,549	20,441,347	23,726,819
Imports	1,574,479	3,010,353	10,864,236	12,004,188
Excess	E. $2,609,953	E. $1,426,196	E. $9,577,111	E.$11,722,631

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending June 29th, 1899, and for years from January 1st, 1899, 1898, 1897, 1896.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$3,068,942	$46,930	$580.649	$114,125	E. $3,488,536
1899..	11,141.612	7,145,671	13,889,536	1,655,874	E. 16,232,603
1898..	4,495,054	68,960,935	16,904,195	1,798,609	I. 49,360,297
1897..	14,147,961	1,850,425	20,507,258	1,370,790	E. 31,434,004
1896..	33,802,052	17,206,930	18,248,446	1,151,438	E. 33,692,130

Exports of gold were chiefly to London and Berlin; of silver to London. Imports of gold were from the West Indies; of silver from Central America.

The United States Assay Office in New York reports the total receipts of silver at 64,000 oz. for the week.

Average Prices of Silver per oz. Troy.

Month.	1899.		1898.		1897.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January	27.42	59.36	28.29	56.77	29.74	64.79
February	27.44	59.42	25.89	56.07	29.68	64.67
March	27.48	59.64	25.47	54.90	28.96	63.06
April	27 65	60.10	25.95	56.02	28.36	61.85
May	28.15	61.23	26.31	56.98	27.86	60.42
June			27.09	58.61	27.58	60.10
July			27.32	59.06	27.36	59.61
August			27.48	59.54	24.93	54.19
September			28.05	60.68	25.66	55.24
October			27.90	60.42	26.77	57.57
November			27.93	60.60	26.87	57.93
December			27.45	59.42	26.83	58.01
Year			26.76	58.26	27.55	59.79

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1899.	1898.	1899.	1898.	1899.	1898.	1899.	1898.
Jan.	14.75	10.99	22.48	13.87	4.18	3 65	5.34	3.96
Feb.	18.00	11.28	24 20	14 08	4.49	3.71	6.28	4.04
March	17.54	11.98	23.82	14.38	4.37	3.72	6.31	4.25
April	18.43	12.14	24.98	14.60	4.31	3.63	6.67	4.26
May	18.25	12 00	25.76	14.52	4.44	3.64	6.88	4.27
June		11.89		15.22		3.82		4.77
July		11.63		15.60		3.95		4.66
August		11 89		16.23		4.00		4.58
Sept.		12.31		16.03		3.99		4.67
October		12.41		17.42		3.78		4.98
Nov.		12.86		18.20		3.70		5.29
Dec.		12.93		18.30		3.76		5.10
Year		12.03		15 70		3.78		4.57

The price given in the table is for Lake Copper. The average price of electrolytic copper in January was 14.26c.; in February it was 17.02c.; in March, 16.35c.; in April, 17.13c; in May, 17. 20 c.

Financial Notes of the Week.

The silver market has been characterized by extreme dullness, ruling at unchanged quotations during the week. The supply continues limited owing to the strike situation in the West.

The speculative markets have a stronger tone, and there has been a recovery in prices of securities. As before, general trade has been little affected and continues very active. Much interest is now felt in the crops, the promise of which is fair, though it is now certain that the grain crops will not equal those of last year. The general tendency to increase wages, and abundant employment for labor, are recognized as important factors in the condition of trade.

The gold movement continues in a moderate way, and further shipments have been made this week, though the profit on these transactions must be very small. There has been some heavy buying of American securities lately on London account, which may put a stop for the time to gold shipments.

Tte London "Statist" of recent date says: "We draw attention to the large purchases of silver by Russia, which have exceeded the shipments to

Imports and Exports of Metals.

Port.	Week, June 28.		Year, 1899.	
	Expts.	Impts.	Expts.	Impts.
***New York.**				
Aluminum, long tons	.....	.....	262	10
Antimony ore, " "	.....	.....	.....	773
" regulus, " "	.....	.....	.....	501
" oxide, " "	.....	.....	.....	11
Brass, " "	.....	.....	55	.....
Chrome ore, " "	.....	‡500	.....	1,988
Copper, fine, " "	1,278	947	25,598	9,440
" matte, ore, " "	2	.....	556	465
" ash, " "	.....	‡10	20	139
" sulphate, " "	20	.....	11,293	.....
" other, " "	.....	.....	.....	30
Cop-nickel matte, " "	.....	.....	.....	53
Ferro-mangan'se, " "	.....	.....	.....	51
Iron ore, " "	.....	.....	5	50
" pig, bar, rod, " "	304	‡228	3,427	1,007
" pipe, " "	1,329	.....	17,236	.....
" plates, sheets, " "	.....	.....	589	.....
" other, " "	.....	.....	1,015	.....
Lead, " "	1,375	1,700	27,697	25,237
Manganese, ore, " "	.....	115	.....	3,281
Metals, old scrap, " "	35	160	2,504	1,398
Composition, " "	.....	144	4,298	44
Nails, " "	109	.....	9,328	.....
Nickel, " "	50	‡10	962	708
" Ore, " "	.....	.....	.....	4,001
§Railr'd material, " "	252	‡145	5,758	2,023
Rails, old, " "	20	.....	10,842	.....
Spiegeleisen, " "	.....	.....	.....	292
Steel bars, plates, " "	.....	‡464	28,464	8,755
" rails, " "	2,631	.....	32,497	155
" hoops, " "	.....	.....	486	.....
" wire, " "	874	.....	19,515	54
" not specif'd, " "	489	156	6,687	1,342
Tin, " "	.....	805	.....	13,613
" dross or ashes, " "	.....	.....	60	.....
" and black plates, " "	.....	‡148	.....	16,671
Zinc, " "	.....	14	272	252
" dross, " "	29	.....	591	.....
" ashes, skim, " "	28	.....	1,517	75
" ore, " "	.....	.....	1,492	.....
" oxide, " "	111	‡34	2,111	278
†Baltimore.				
Alumina, bags	.....	.....	.....	3,479
Antimony regulus, casks	.....	.....	.....	175
Chrome Ore, long tons	11	.....	11	.....
Copper, fine, " "	569	.....	18,647	.....
" matte, " "	.....	.....	.....	.....
" sulphate, " "	35	.....	1,412	.....
" pipe, " "	.....	.....	100	.....
Ferro-manganese, " "	.....	.....	.....	1,737
Ferro-silicon, " "	.....	.....	184	.....
Iron pig, bar, etc., " "	.....	148	808	3,883
" ore, " "	.....	7,381	.....	66,948
" pipe, " "	115	.....	2,550	.....
" pyrites, " "	.....	.....	.....	25,231
" other, " "	.....	.....	637	15
Lead, " "	.....	.....	.....	.....
Manganese ore, " "	.....	.....	.....	18,790
Metals, scrap, " "	.....	.....	4,235	14
Nails, " "	.....	.....	413	.....
Spiegeleisen, " "	.....	.....	.....	843
Steel, bars, pl'es, " "	560	.....	24,143	56
" wire, " "	.....	.....	564	231
" rails, " "	1,000	.....	27,768	.....
" pipe, " "	.....	.....	573	.....
not specified, " "	18	.....	1,761	.....
Tin, " "	.....	.....	.....	4
" dross, " "	.....	.....	.....	512
" and blackplates, " "	.....	163	.....	1,108
Zinc, " "	.....	.....	25	5
" dross, " "	.....	.....	152	.....
" skimmings, " "	.....	.....	131	.....
" oxide, " "	.....	.....	.....	1
***Philadelphia.**				
Antimony, long tons	.....	.....	.....	10
Chrome ore, " "	.....	.....	.....	1,370
Copper ore, " "	.....	13,170	.....	24,354
" old, " "	.....	.....	.....	11
Ferro-manganese, " "	.....	.....	.....	717
Iron, pig, " "	.....	‡200	.....	675
" ore, " "	.....	13,851	.....	66,888
" old, " "	.....	.....	.....	732
Manganese ore, " "	.....	.....	.....	31,153
Spiegeleisen, " "	.....	‡75	.....	1,150
Tin, " "	.....	.....	.....	620
" and black plates, " "	.....	.....	.....	831
Zinc dust, " "	.....	.....	.....	15
" ore, " "	.....	.....	3,093	.....
***Galveston, Tex.**				
Lead, long tons	.....	.....	725	.....
Zinc, " "	.....	.....	1,900	.....
" ore, " "	.....	.....	118	.....
***Boston.**				
Tin, long tons	.....	100	.....	690
***Newport News, Va.**				
Copper, long tons	.....	.....	3,124	.....
***Norfolk, Va.**				
Copper, fine, long tons	.....	.....	1,447	.....
Iron, pig, " "	.....	.....	19,194	.....
" pipe, " "	.....	.....	410	.....
Spelter, " "	.....	.....	20	.....
Steel, bars, billets, " "	.....	.....	3,886	.....
" not specified, " "	.....	.....	477	.....
***New Orleans, La.**				
Copper, fine, long tons	.....	.....	1,549	.....
" matte, " "	.....	.....	1,271	.....
Zinc, " "	.....	.....	2,235	.....
" ore, " "	.....	.....	345	.....
***San Francisco, Cal.**				
Tin, long tons	.....	.....	.....	513

*New York Metal Exchange returns. †By our Special Correspondent. §Not specified. ‡Week ending June 23d.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c per lb. on pigs, bars etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. in pigs and bars; 2c. on sheets, etc. Copper, tin and platinum are free of duty.

India in the present year. The buying on account of the Russia Government is done very quietly and skilfully. When India is not a purchaser Russian buyers also keep out of the market, but as soon as India gives the slightest indication of purchasing the buying for Russia commences and the price advances. The reason for the advance in the price, however, it attributed to the Indian demand, whereas, in reality, it is caused by the Russian buying. This explains the reason for the frequent advance in the price when India is only a very moderate buyer, and when its relatively small purchases would be insufficient to cause the upward movement in the price. We may remind our readers that in the first five months of this year the purchase of silver for India have been less than £2,000,000, while those for Russia have been nearly £2,200,000."

According to a Japanese native paper, the Government of Japan has been taking advantage of the recent rise in the price of silver to dispose of a portion of its demonetized silver coinage. Some of the old silver yen were converted into subsidiary coins, and some were sent as currency to Formosa. A certain quantity, however, appears to have been melted, and a portion of the bullion was sold last year in Hong Kong. It is now stated that recently about 5,000,000 yen worth was sold in the London market for gold, and that such sales there have since continued from time to time. The total amount sold up to date of the mail advices from Yokohama is stated as 10,000,000 yen.

The statement of the United States Treasury on Thursday, June 29th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date of last week:

	June 22.	June 29.	Changes.
Gold	$235,572,095	$237,693,170	I. $2,121,075
Silver	5,499,593	5,977,085	I. 477,492
Legal tenders	15,094,730	15,129,206	I. 34,476
Treas. notes, etc	991,156	838,562	D. 152,594
Totals	$257,157,574	$259,638,023	I. $2,480,449

Treasury deposits with national banks amounted to $78,932,461, a decrease of $23,693 during the week.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending June 24th, gives the following totals, comparison being made with the corresponding weeks in 1898 and 1897:

	1897.	1898.	1899.
Loans and discounts	$521,681,600	$612,599,100	$778,868,400
Deposits	597,094,600	737,547,800	909,004,800
Circulation	13,870,900	14,668,400	13,586,000
Reserve:			
Specie	90,400,200	184,106,900	194,003,400
Legal tenders	108,112,600	62,486,300	58,945,600
Total reserve	$198,512,800	$246,593,200	$252,949,000
Legal requirements	149,273,650	189,386,950	227,251,200
Balance, surplus	$48,239,150	$57,206,250	$25,697,800

Changes for the week, this year, were increases of $5,558,200 in loans and discounts, and $1,234,800 in deposits; decreases of $1,100 in circulation, $3,154,500 in specie, $842,200 in legal tenders, and $4,305,400 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

	1898.		1899.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assn.	$184,106,900	.....	$194,003,400	.....
England	192,450,665	.....	157,442,905	.....
France	376,183,085	$247,488,335	374,410,440	$244,518,650
Germany	147,755,000	76,115,000	150,090,000	77,315,000
Aus.-Hun	174,345,000	63,035,000	180,930,000	63,690,000
Spain	49,170,000	21,570,000	61,320,000	66,360,000
Neth'lnds	14,325,000	35,005,000	19,025,000	31,715,000
Italy	75,500,000	9,605,000	76,945,000	10,910,000
Russia	559,345,000	22,295,000	477,160,000	25,675,000

The returns for the Associated Banks of New York are of date June 24th and the others are of date June 22d, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold coin only.

Shipments of silver from London to the East for the week ending June 15th, 1899, are reported by Messrs. Pixley & Abell's circular as follows:

	1898.	1899.	Changes.
India	£2,778,440	£2,060,400	D. £718,040
China	310,956	617,761	I. 306,805
The Straits	110,562	24,907	D. 85,655
Totals	£3,199,958	£2,703,068	D. £496,890

Arrivals for the week, this year, were £230,000 in bar silver from New York, £27,000 from Chile, and £9,000 from Australasia; total, £266,000. Shipments were £84,325 in bar silver to Bombay and £17,500 to Calcutta; total, £101,825.

Indian exchange continues strong for the dull export season. The 50 lakhs of Council bills offered in London were all taken at an average of 15.97d. per rupee.

Other Metals.

Daily Prices of Metals in New York.

June.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. P'nce	Copper. Lake cts. ₩ lb.	Copper. Elec-tro-lytic. ₩ lb.	Copper. Lond'n stand-ard £ ₩ ton.	Tin, cts. ₩ lb.	Lead cts. ₩ lb.	Spel-ter, cts. ₩ lb.
24	4.87¾	60¼	27 1/16	17⅞	16⅞	.....	26	4.42½	5.50
26	4.87¾	60¼	27 1/16	17⅞	16⅞	76 5 0	26	4.42½	5.50
27	4.87¾	60¼	27 1/16	18	16⅞	76 0 0	25	4.42½	5.50
28	4.87¾	60¼	27 1/16	18	16⅞	76 5 0	26½	4.42½	5.50
29	4.87⅛	60¼	27 1/16	18	16⅞	76 2 6	26¾	4.42½	5.50
30	4.87½	60¼	27 1/16	18	16⅞	76 15 0	26⅝	4 42½	5.50

The quotations given for electrolytic copper are for cakes, ingots and wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market has been quiet but steady. Somewhat more business is reported, but consumers are very conservative in their purchases. Stocks in the hands of manufacturers appear to be light. There was a meeting of the brass manufacturers this week, and they are all exceedingly busy and advise that the consumption of brass continues to be excellent. We also learn that the wire mills are taxed to their utmost capacity to fill orders. Lake copper is held for 18c., electrolytic in cakes, wirebars and ingots for 16⅞c., and in cathodes for 16⅝c., while casting copper is nominal at 16¾@16⅞c. The end of the week a report was circulated that a fire had broken out in the United Verde Copper Company's mines.

The speculative market in London, which closed last week at £76 5s., has been steady and fluctuations have been within narrow limits. Early in the week the market receded to £76, but quickly recovered to £76 7s. 6d. and closes at £76 15s.@£76 17s. 6d. for spot, and 2s. 6d. lower for three months. There has been a somewhat better inquiry for fine sorts, and some export sales have been consummated.

Refined and manufactured sorts we quote: English tough, £77 15s.@£78 5s.; best selected, £80@£80 5s.; strong sheets, £86@£86 10s.; India sheets, £84@£84 10s.; yellow metal, 6¾@7d.

Tin.—The market has been firm. Some large orders are reported to have been placed and prices have improved somewhat. We have to quote 26⅝c.

The London market opened at £118 17s. 6d., fluctuated but little the beginning of the week, but advanced on Thursday to £119 7s. 6d. and closes at £120 12s. 6d.@£120 15s. for both spot and three months.

Reports are current that the employees of the American Tin Plate Company are about to strike, but definite advices cannot as yet be obtained.

Imports of tin into the United States in May are reported by the Bureau of Statistics at 2,118 long tons, against 5,107 tons in the same month last year. We re-exported 105 tons in May, 1899, against only 33 tons last year.

Exports of tin from the Straits for the four months ending April 30th were, in long tons of 2,240 lbs.:

	1897.	1898.	1899.
United States	4,989	7,687	9,310
Europe	9,006	7,990	5,795
China and India	853	954	263
Totals	14,848	16,631	15,368

The total this year was 1,263 tons, or 7.6%, less than in 1898, but 520 tons, or 3.5%, more than in 1897.

Lead.—The strike in Colorado remains unsettled, and it appears that it may continue for some time. Consumers have not yet depleted their supplies and are holding back with purchases in the hope that they may not have to buy till the strike is over. The New York market has been very languid with hardly any business of consequence doing, and the metal is quoted 4.40@4.45c. In the West the market is comparatively higher, but values are barely steady at 4⅜c. St. Louis, and 4.42½c. Chicago.

The market in Europe is firmer and Spanish lead is quoted £14 8s. 9d. and English lead, £14 13s. 9d.@£14 15s.

Imports of lead in ore and bullion into the United States in May are reported by the Bureau of Statistics at 8,520 long tons, against 4,472 tons last year. Exports in May, 1899, were: Domestic, 71 long tons (4 tons in May, 1898); foreign, 5,339 tons (4,825 tons last year).

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is strong and very quiet. Common metal is worth nominally 4.35c. and corroding lead 4.37½c.

Spelter.—The market has been quiet. The few orders offering are eagerly competed for, and the absence of orders in the main accounts for the slight change in quotations. Reports are to hand that some of the zinc miners have stopped work in the hope of realizing a higher price for the balance of the ore mined. We hear from Pittsburg that the demand for galvanized iron has somewhat decreased. The mills are still busy, but purchases are restricted owing to lack of confidence in present values. The market is irregular, but we understand transactions have taken place at 5.35c. East St. Louis, and even below. We quote 5.50c., New York.

The London market remains unchanged at £25 12s. 6d. for good ordinary brands and 5s. higher for special brands.

Exports of domestic spelter from the United States in May were 453,892 lbs., against 3,086,614 lbs. in May last year. There were no exports of zinc ore in May, 1899, but last year they amounted to 2,345 tons.

Antimony shows no change. Cookson's is quoted 10½c.; Hallett's, "C" and U. S. Star, 10c.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots, 33@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size of order.

Exports of nickel in ore and matte from the United States in May amounted to 383,910 lbs., against 461,684 lbs. in the same month last year.

Platinum.—Demand is active and prices continue high. For large lots $15.50 per ounce is now quoted in New York; for smaller orders, $16@$17. The London quotation is 62@64 s. an ounce.

Quicksilver.—The New York quotation remains $42 per flask. The London price is steady at £8 5s., with the same price quoted from second hands.

The Minor Metals.—Quotations are given below for New York delivery :

Aluminum.	Per lb.		Per lb.
No. 1, 99% ingots	35@37c.	Bismuth	$1.45@$1.50
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	38c up	Phosphorus	40@50c.
Alum.-bronze	20@23c.	Tungsten	70c.
Nickel-alum.	33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

LATE NEWS.

It is announced from Bostor that the Dominion Coal Company has voted to accept the proposition of the Dominion Iron and Steel Company to take control of the Coal Company, to pay a 6% dividend on the common stock and to pay fixed charges.

A Chicago despatch reports that the Chapin Iron Mine at Iron Mountain, Mich., has been leased for a period of 20 years, $4,000,000 being paid for the lease. The name of the lessee was withheld, but it is rumored that the new controlling interests in the property are held by either the National Steel Company of Chicago or the Frick-Carnegie interests of Pittsburg.

The report of the Bethlehem Iron Company for the eleven months ending April 30th, when the company was succeeded by the Bethlehem Steel Company, shows total receipts, $4,200,000; total charges, including taxes, interest, depreciation, etc., $3,150,000; net profit, $1,050,000; cash dividends, (12½%), $600,000; amount to credit of profit and loss, $3,320,000. The excess of current receipts over current liabilities at the same date was $3,645,681.

The Mexican Coal and Coke Company, with an authorized capital of $6,000,000, filed papers of incorporation in Trenton, N. J., June 29th, with the Secretary of State. The company is formed to operate coal mines and oil and gas wells in the Republic of Mexico. The incorporators are: James F. Gardiner, Howard Dutcher and John L. Elliott, of New York; Oscar Bergstrom, of San Antonio; Charles M. Clark, of New Brunswick; James H. Dewey, of Hoboken, and E. V. Frothingham, of Brooklyn.

A despatch from Colorado Springs says: "An English syndicate has bought the Elkton gold mine at Cripple Creek, paying therefor $1.50 a share, on a capitalization of 1,250,000 shares, or $1,875,000. The name of the corporation is withheld. T. A. Rickard, Colorado State Geologist, examined the Elkton, and on his recommendation the deal was made. The Elkton has paid $1,000,000 in dividends, the monthly dividend being $20,000. It has a double compartment shaft 500 ft. deep, employing 175 men. It is well equipped, and wholly operated by electricity. The title to 30 patented acres is transferred with the mine. Elkton stock is $1 a share to-day."

A despatch from Phoenix, Arizona, June 29th, says: "Fire broke out in the United Verde Company's reverberatory furnace last night and is still burning fiercely. The reverberatory is directly under the railroad track. Back of it a few feet are a number of coke bins. To the north is the power house. The fire ate away the support of bins holding 500 tons of coke. This mass of inflammable material fell on the fire and made a most intense heat. Burning coke fell through an open shaft and set the 145 ft. level of the mine afire, but this was controlled after six hours' fighting. The loss is not known. The fire is said to have been caused by the friction of one of the belts on the furnace blower."

MINING STOCKS.

Complete quotations will be found on pages 26, 27 and 28 of mining stocks listed and dealt in at:

Boston.	Philadelphia.	Paris.
Colo. Springs.	Salt Lake.	Rossland.
Denver.	San Francisco.	Shanghai.
New York.	London.	Toronto.
Baltimore,	Mexico.	Valparaiso.
St. Louis,		

New York. June 3.

A better tone characterized the market this week. Anaconda Copper, after selling down to $51½ on June 26th, recovered to $52½@$53, on the 28th, when the London quotations were £10 18s. 9d.@£10 15s. It is rumored that the control of Anaconda by the Amalgamated Copper Company was secured at not more than $45 per share, but no official statement has been given out. Amalgamated Copper was dealt in on the curb in lots of a few hundred shares each at $93@$94¾, a gain of several points over last week. Tennessee Copper was sold at $19@$20. British Columbia Copper was also dealt in on the curb, fluctuating between $11¼@$12. This is not the Boston & British Columbia Copper Mining and Smelting Company, which claims to own mineral land in the Revelstoke Mining District, West Kootenay, British Columbia. The British Columbia Copper Company, Limited, has property in the Deadwood Camp, East Kootenay District, near the town of Greenwood, B. C. Morenci Copper, preferred, of Arizona, dealt in on the Industrial Exchange, sold at $1.50%@$1.50%.

American Smelting and Refining common gained, and on Wednesday it touched $38⅜, while the preferred shares rose to $84¾.

Auction sales were $25,000 New York & Shawnee Coal Company, first mortgage 6% sinking fund bonds at 60; 50 shares Joseph Ladue Gold Mining and Development Company, of Yukon, 6% cumulative preferred stock at $6.25 per share; 200 shares Maryland Coal Company preferred, ex-dividend at $62⅜, and 1,000 shares National Nickel Company at 7c. per share.

Boston. June 29.

(From Our Special Correspondent.)

The dulness in the mining stock market still continues, and it looks very much as if matters had settled down for the summer and we were to expect nothing very lively until the vacation season is over.

In copper stocks the only sensation has been in Baltic, which was in demand on account of reports showing very good stamp mill tests of rock from the mine. The stock sold up to $36½, with only a slight reaction. Of other standard coppers Calumet & Hecla brought $795; Tamarack, $205; Quincy, $160, and Osceola, $84. In the Amalgamated group Boston & Montana sold at $340; Parrot, $52; Arcadian, $53½; while Amalgamated stock was sold at $95. Butte & Boston is out of the dealings altogether.

In the gold stocks there was a little doing, but no special activity. An attempt to make a little boom for Cochiti was a failure, because no one would take it up.

In other stocks Dominion Coal was the special feature of the week, and sales were large. On Wednesday it sold up to $56, but afterwards lost about $1. Many people are now believers in this stock.

The resident manager of the Dominion Coal Company's mines, telegraphs from Glace Bay, Cape Breton: "As far as can be ascertained from careful examination, the fire is out in Caledonia pit. Have ceased putting in water. Government inspectors will examine Thursday. Hope to begin hoisting day or two after."

Salt Lake City, June 24.

(From Our Special Correspondent.)

Several of the better shares gave buoyancy to what was otherwise a week of bear trading. Locally there is an improved tone and confidence of profit in stocks at the ruling prices, though, with few exceptions, there is a dearth of outside orders.

Ajax is lower. Bullion-Beck remains stationary. Centennial-Eureka is higher and in strong favor. Eagle & Blue Bell is recovering lost ground. Four Aces continues to fluctuate. Grand Central spurted to $9.85, doing business at that figure. It softened slightly on the close by profit taking and renewed intimations of a legal battle on apex rights with the Mammoth. Homestake is about stationary. Lower Mammoth is weaker. Mammoth advanced to $2.25 on announcement of the $80,000 dividend and change in the control; later it weakened a little. Star-Consolidated hangs under $1. Swansea and South Swansea show no change. Sunbeam's advance is owing to a reported ore find. Daly-West has furnished the sensation of the week, climbing to $12.60. Dexter recovered most of its lost ground, and is again in favor. The announcement of Galena's assessment of 5c. per share caused a further decline. Horn Silver dropped off several points. Other shares present no features of special interest.

San Francisco. June 24.

(From Our Special Correspondent.)

The market has been quiet and weak, with prices again lower. The rumors that some rich ore had been struck in the Consolidated California & Virginia workings excited only a languid interest. Very little faith is put in the rumors from that section, and the public still refuses to take up the Comstocks. Moreover, the summer vacation season is at hand, when people are not disposed to do more business than they must.

Some quotations noted are: Consolidated California & Virginia, $1.40@$1.45; Confidence, 98c.; Ophir, 95@98c.; Sierra Nevada, 68c.; Mexican, 50c.; Chollar, 33c.; Crown Point, 28c.; Gould & Curry, 27c.

The stockholders of the Nevada Queen Mining Company have voted to diminish the capital stock from $10,000,000, divided into 100,000 shares of the par value of $100 each, to $100,000, divided into 100,000 shares of the par value of $1 each.

London. June 20.

(From Our Special Correspondent.)

The political hitch between the Transvaal and the British Government does not have so much effect on the stock market as one might expect. Though professional bears go in for banging tactics, they do not succeed to any alarming extent. It is generally believed that though the Boer party may be bad and oppressive rulers, they are not such fools as to interrupt the gold production, so the political future is regarded with more or less equanimity.

Generally speaking, the mining market has not been very active in any department during the past week or two. The fact is, summer has come, and the Derby and Ascot race weeks have offered attractions which your average city man cannot withstand. It is one of the maxims of London city life that it is no use attempting new business on such occasions, or a few weeks either side of Christmas, Easter or Whitweek, or during the months of August and September. It is a great deal easier to induce a Britisher than an American to take a holiday.

The only new mining company issued publicly this week is the Kootenay (Perry Creek) Gold Mines, Limited. This company has been formed to acquire the Pearl, Elkhorn and Ruby Fraction claims, situated on the mountains between Perry and Weaver creeks, East Kootenay, B. C. Very little work seems to have been done on them; in fact, one may infer from the prospectus that only sufficient work has been done to obtain the crown grant. The capital of the company is £60,000, of which £7,000 in cash and £28,000 in shares goes as purchase price. The claims appear to have been acquired about two years ago, and some attempt has been made before by the same promoters to float a company to work them, but presumably without success. Messrs. J. W. R. Young, of the Invicta Gold Mines, Wild Horse Creek, B. C., and J. R. Farrell, of Oakland, Cal., have examined the properties and report the occurrence of free-milling gold ore, running about $15 to the ton, but there is nothing in the reports to show permanence or regularity of occurrence. Of course the results obtained at other mines in British Columbia are made the most of, and the dividends of the leading producers are given. But the remarkable thing is that the statistics given are much out of date, as they are only taken up to February, 1898. Surely the directors could have done better than this. This is the first American attempt of this group of promoters. They have tried South Africa and Australia, but with no successful results.

A prospectus of the San Albino Gold Mines, Limited, is being circulated privately by a firm of promoters hailing from Broad Street House. This company has been formed to acquire the mines of that name in the Province of New Segovia, Nicaragua. It is stated that the mine is a going concern; that, with two arrastras, 300 oz. of gold per month are being produced; that there is on the dump 100,000 tons of ore averaging $10 per ton, and that there is any amount of ore in sight. The capital is £85,000, of which £12,000 in cash and £53.000 in shares goes as purchase price, and £10,000 is for working capital, while 10,000 shares are being held in reserve. This sounds all very well, but let us look at the history of the promoters. The promoters formed in 1896 a company called Oficina Gold Syndicate, Limited, with a capital of £15.000, to acquire mines through the agency of G. M. Andrews in Central and South America. The sum of £10,000 in shares was paid for the properties acquired, which were situated in Nicaragua, while 3,987 shares of £1 each were subscribed in cash by various clients of the syndicate. How much of this £3,987 went as additional purchase consideration, and how much was used for development. I am not able to say. In 1898 a group of these properties was floated off separately as the Las Encinas Gold Mines, Limited. This company had a nominal capital of £80,000, of which £60.000 in shares went as purchase price, while £3,000 was subscribed as working capital. There must have been an intermediary vendor between the Oficina and the Las Encinas companies, for while the purchase price paid by the Las Encinas company was £60,000 in shares, the Oficina Company reports that it received only £22,500 in shares, so there was a leakage somewhere. Now comes the flotation of the San Albino Mines with a capital of £85,000, and once again there is an intermediary between the parent company and its offspring. What I cannot understand is how all these valuable gold producers, going concerns, with plenty of ore in sight, should have been obtained so cheaply and then floated at comparatively inflated prices. The mining engineer is George M. Andrews, who used to be mine captain at the Darien Gold Mine, Panama. He acquired the properties as mentioned above, and his report on them is relied on for flotation. The same group of promoters was concerned in the Missouri Mining and Land Company, Limited, which worked some lands in Christian County, Mo., and the Ozark lead and zinc mines, situated on the lands. No doubt your Missouri readers will remember the unsuccess of this company, and perhaps can give you the reason of its failure. I may mention finally that the telegraphic address of this group of promoters is "Shearer," London, which is quite suggestive of the operation performed on innocent lambs.

Paris. June 18.

(From Our Special Correspondent.)

The mining market is comparatively dull in all its sections. Political excitement has drawn attention to other quarters, and speculators are hesitating about the future.

The copper shares have lost ground on account of the falling prices of the metal and reports of diminished consumption. The latter I do not credit, since in a time of very active business like the present high prices never have much effect on the use of material. The buyer of metal expects high rates for his finished product, and can afford to pay well for the raw material. It is in dull times that price affects consumption.

In other stocks there have been few or no incidents worth mention.

The metallurgical shares about hold their own, and have not felt the effects of the political trouble as much as might be expected.

The shares of the Russian group continue very strong; and it is not surprising, since the accounts of profits made last year continue to come in, and show very high returns on the capital. The heavy government contracts for railroad work and the general activity in construction have enabled the Russian works generally to make a great deal of money.

The foreign commerce of France for the five months ending May 31st is reported by the Ministry of Commerce as below:

	1898. Francs.	1899. Francs.
Imports	1,904,283 000	1,821 282,000
Exports	1,372,983,000	1,516,812,000
Excess Imports	531,280,000	304,470,000

The decrease in imports was chiefly in grain. The increase in exports was largely in manufactures.

The movement of gold and silver in France for the four months ending April 30 is reported by the Ministry of Commerce as below:

	Imports, Francs.	Exports, Francs.	Excess, Francs.
Gold.			
1899	103,148,091	52,506,086	Imp. 50,642,005
1898	76,500,856	45,917,776	Imp. 30,583,220
1897	50,609,722	26,249,616	Imp. 24,360,106
Silver.			
1899	56,295,114	67,786,173	Exp. 9,491,059
1898	57,669,248	35,844,028	Imp. 21,825,220
1897	67,456,648	57,199,726	Imp. 10,256,922

Imports of copper and nickel coins, rated at their face or coin value, were 25,200 fr., against 35,100 fr. in 1898 and 35,400 fr. in 1897. Exports were 351,900 fr., against 239,400 fr. in 1898 and $,494,100 fr. in 1897.

M. Paul Leroy-Beaulieu and his clique of followers, who were such ardent advocates of Spain during the late war, are exulting over your present troubles in the Philippines and predicting all sorts of disaster for you. Nevertheless most of the people here who think about the matter believe that present conditions are only temporary and that you will restore order before long to your own ultimate profit. The business is new to you and you have something still to learn; but your people are quick scholars.

The resignation of the Ministry leaves everything in an uncertain state. The Dupuy Ministry is not regretted, but there is doubt as to its successors—they may be even worse. Azote.

Toronto, Ont. June 27.

(From Our Special Correspondent.)

The market during the past week has been rather erratic, but there was considerable business doing. The chief interest centered around Golden Star, which, after advancing about 20 points, began to recede, and sold down almost to the old figures. The reason of this was that all kinds of absurd rumors are afloat about the property. It is rumored that the company will cease paying dividends for a few months to enable the mine to acquire sufficient funds in advance to insure steady and constant development. Hammond Reef stock declined to 20, but advanced again to 25. The remainder of the list is rather inactive, although there is considerable trading in Van Anda, Smuggler and Superior. The latter stock has taken a jump, and is selling up around 20c.

STOCK QUOTATIONS.

NEW YORK.

NAME OF COMPANY.	Location.	Par val.	June 23. H.	June 23. L.	June 24. H.	June 24. L.	June 26. H.	June 26. L.	June 27. H.	June 27. L.	June 28. H.	June 28. L.	June 29. H.	June 29. L.	Sales
Adams Con	Colo.	$10	.06				.08		.07		.05				
Alamo	"	1	.06				.06		.07						
Alice	Mont.	5	.75		.75		.75		.85		.75				
Alliance	Colo.	1											.15	.10	
*Anaconda, c	Mont.	25	51.50	51.25			53.50	51.50	53.25	52.88					12,468
Anaconda Gold	Colo.	5	.49⅝	.49	.49		.49	.48⅝	.47⅝	.47½	.45		.50	.47	1,200
AnchoriaLel	"	1			.87½		.85	.82	.81	.80			.90	.81	700
Argentum-Jun	"	2	.24				.23		.23						
Belcher	Nev.	3	.33						.40		.35				
Best & Belcher	"	3	.41				.40		.70		.53				200
Breece	Colo.	5	1.25		1.35		1.3		1.35		1.40				
Brunswick	Cal.	1	.13		.12		.15		.15		.15				
Bullion	Nev	1													
Challar	"	2	.28		.30		.28		.30		.32				200
Chrysolite	Colo.	50	.10				.10								
Comst'k T .b'ds	Nev.	100	.04		.04				.05		.05				
do. stock	"	100	.05		.05		.06		.06		.06				1,000
do. scrip	"	100	.05		.06		.05		.06		.07				
Con. Cal. & Va	"	2½	1.40		1 40		1.35		2.35		1 80				150
Con. Imperial	"	1			.01		.01		.02						2,200
Cr & Cr. Creek	Colo.	1	.09		.11		.10		.08		.08				1,500
Crescent	"	10	.22		.15		.15				.15				200
Cripple Cr. Con	"	1	.03⅝	.09½	.09½	.09⅜	.10		.10		.10		.11	.10	2,300
Crown Point	Nev.	3	.24		.27		.27								400
Deadw'd Terra	S.Dak	25	.45		.65		.50		.70		.75				1,000
Elkton	Colo.	1	.89	.88½	.88½	.88½	.89		.90		.90		.97	.94	
El Paso	"	1													
Enterprise	"	1													
Father de Smet	Dak.	100	.10		.20		.10		.10						
Findley	Colo	1													
Garf Con	"	1			.12		.11⅞		.12		.12		.13	.12½	700
Gilpin & Linc'n	"	1	.42½	.42½	.42½	.41½	.41	.41½			.42½		.43	.42	2,050
Gold Coin C Clk	"	1					1.90		1.92½						
Gold Coin Glip	"	5					.65						.75	.37	
Golden Fleece	"	1	.32½	.32	.31		.33½		.34½	.34½	.32		.39	.35	1,000
Gould & Curry	Nev	3	.18		.22		.27		.83		.79		.80		700
Gregory Gold	Colo	1	.02½	.02½	.02½	.02½	.02½	.02½	.03	.02½	.03½	.03½	.03½	.03	25,000
Hale&Norcross	"	3	.30		.30		.33		.35		.32				500
High Five	Colo.	1											.32		
Homestake	S.Dak	100	60 00		60.00		60 00		60 00		60.00				200
Horn Silver	Utah.	25	1 35		1.40						1.25				
Iron Silver	Colo.	20	.57		.58		.56		.56		.55				2,6 0
Isabella	"	1	.85		.77		.83		.81½		.79		.80		800
Jefferson	"	1			.07		.07		.07		.07				700
Jennie Blanche	"	1	.52½	.51½	.54½	.5 .½	.53	.52½	.53	.52½	.53½		.55	.53½	4,850
Justine	"	1	.01½		.01½		.01½		.01½		.01½		.02½	.01½	
King & Femb	Ont.	10	.18		.18				.20		.20				
Leadville Con	Colo.	10	.09		.09		.08		.09		.09				
Little Chief	"	50	.20		.20		.20		.20		.20				
Mexican	Nev.	3	.45		.45		.53		.85		.68				1,400
Miami	"														
Mollie Gibson	Colo	5	.25		.26	.25	.27		.26	.25	.26		.30	.25	2,400
Moon Anchor	"	1													
Morenci Cop .pf	Aris.		1.506		1.507	1.502	1.51	1.505	1.507	1.506	1.5	1.506	1.51	1.506	2,625
Mt. Rosa	Colo.	1	.23		.23½		.24½		.23½	.23½	.22		.24½		900
Occidental	Nev.	3	.28		.24		.30		.25						
Ontario	Utah.	100	7 50		7.50		7.50		7.50		7.50				
Ophir	Nev	2	.85		1.00				1.35		1.05				
Pharmacist	Colo	1	.06		.05		.05		.06		.04				1,300
Phoenix	Aris.	1	.08		.08		.09		.08		.08				
Plymouth Con	Cal.	10	.10				.10		.10		.10				
Portland	Colo.	1	1 80		1.80		1.80		1.80		1.85		2.00		
Potosi	Nev.	3	.84		.89				.9		.90				
Quicksilver	Cal.	100	1 90		1.90		1.90		1 90		1 90				
do. pref	"	100	7 50		8.00		8.00		7.50		8.00				210
Rocky Mtn	Colo.	1									.01⅝				
Savage	Nev.	2½	.20		.28		.30		.30		.15				
Sierra Nevada	"	3	.60		.65		.78		.92		.83				800
Small Hopes	Colo.	20	1 10		1.00		1.00		1.10		1.10				
Specimen	"	1	.05		.05		.06		.06						
Standard Con	Cal.	10	2.00		2.00		2.10		2.10		2 00				
Syndicate	"	1									.06				750
Union	Colo.	1	.27½	.27	.27½		.27⅜	.27½	.29				.29	.28½	900
Union Con	Nev.	2½	.32		.31						.40				
Utah Con	"	5	.10				.14		.22						2,000
Vindic ator	Colo.	1													
Work	"	1	23½	.23	.22½		.22		.23½	.22½	.24		.28	.22½	2,700
Yellow Jacket	Nev.	3	.33		.33		.35		.56		.45				300

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.		$100	36⅜	35¼	37	37¼	37½	37	37	36⅝	38	36⅝	37		6,451
" " " pf		100	83⅜	83	84	83	84½	84	84½	83½	84⅝	83¼	84⅜		5,015
Am.S.&W Co n		100	55¼	54⅜	55⅛	53½	54	54⅜	54⅝	53¼	54	53⅜	53⅝		88,189
" " pf'r n		100	96		95⅜		97	96¾	96⅝		95½	95			1,485
Central of N. J.	N. J.	100	116½		116⅜	116	117⅜	117	117¾	117	118¼	117⅜	117½		13,660
Col. Fuel & I.	Colo.	100	44	43⅜	45⅝	44⅛	45⅜	45	45¼	45⅜	45⅜	44⅝	44⅜		3,500
Col. & H.C.&I.	Ohio.	100	11		11		11				12				810
Del. & Hud.	N. Y.	100	119		119		121		119⅝	120⅞	120⅝	12.⅜	121	122½	7,266
Federal Steel		100	58¾	57⅜	59½	58¼	59½	58¾	6.⅜	59⅜	*59⅜	58⅜	58½		47,927
" " pf		100	82½	81⅜	83½	82⅜	82¾	82	82¼	81⅝	81⅞	81⅜	81½		11 653
National Lead	N. Y.	100	26⅜				29⅝				.30		29		1,083
" " pf	Md.	100			112	111¼	114¾	112¾	111½						290
National Salt		100	45	43¾	45	43½	45	43¾	46	44⅜	48¼	47⅜			
" " pf		100	75	72½	75	72½	75	72⅝	77½		80	78¾			
New Central C.			39	37	38	37	39	37	39	37	39	37			
N. Y., Ont. & W.	N. Y.	100	25¾	25⅜	26¼	25⅝	26⅜	26	26⅝	26¼	26¾	26⅜	26⅜		12,375
Phila. & Read	Pa.	100	20⅝	20¼	20⅝	20¼	20	20	20		20⅜		20⅜		2,415
" " 1st pf		100	59⅜	59¼	60	59¼	61	60¼	61	60	61⅝	60¼	60⅜		36,935
Standard Oil		100	469	467	458	466	468	467	469	467½	467	465			
Tenn.C.,I.&R.R.	Ala.	100	64½	62	64	62¾	63¾	63	64⅝	63¾	65	64⅜	63¼		39,035
" " pf	"	100													

* Ex-dividend.

PHILADELPHIA PA.

NAME OF COMPANY.	L'cation.	Par Val.	June 22. H.	June 22. L.	June 23. H.	June 23. L.	June 24. H.	June 24. L.	June 26. H.	June 26. L.	June 27. H.	June 27. L.	June 28. H.	June 28. L.	Sales
Bethlehem I	Pa.	$50	60.13	60.00	60 25	60.13	60 25		60.13	60 0	60.00	59.50	60 00		2,985
Cambria Iron	"	50	44.38	44 00	44 75	44.50	44.75				44.75		44.75		288
*CambriaSteel	"	50	20 75	20.38	20.63	20 50	20 5		20.38	20.24	20 75	20.13	20.25	20.25	8,618
Chocktaw, pref.	I. T.	50	46.50		46.5	46.25	46.25		47.00		47.00		47.50	47.00	1,137
Choc. Tr. ctf.	"	50	37.50	37.00	37.00	36.75			47.00		38.00	36.63	38.75	38.00	3,4 8
Lehigh Val	Pa.	50	26 75	26 50	26.75	26 5	26.25		26.75	26.50	27.50	26.25	27.50	26.75	8,645
Penna. R. R.	"	50	65 38	65.0	65.38	65 13	65 50		66.0	65 5	65.75	65 50	66 63	66 13	4,698
Penna. Steel	"	100	86 50	85.50											210
" " pr'f	"	100	90.00												12
United Gas I	"	50				167⅜							167	166	264
Welsh. of Can	Can.	100			2.50				2.50	2.25	2.00		2.25		750
Welsh. Coml	"	100													
" " pf	"	100			51.25										200
Welsh. Light	"	100	49 00	48.25	42.50	38.00	42.5	42.00	42.50		42.50		42.50		2,892

Total shares sold, 29,065.

VALPARAISO, CHILE.* May 20.

NAME OF COMPANY.	Location.	Capital paid.	Sh.Val. paid up.	Last Div'n. Amt.	Date.	Prices. Bid.	Asked.	Last sal
Arturo Prat, silver	Chile	$3,800,000	$100	4 p. c.	1897	23	25	25
Caracoles, silver	"	315,000	100	10 "	1894			
Huantajaya (mine) silver	"	1,000,000	100	13 "	1894			
Huanchaca, silver	Bolivia	8,000,000	25	4 "	1895	35	38	35
Oruro, silver	Chile	800,000	200			250	29	28
Tofos Santos, silver	"	2,000,000	100	1 "	1895	6	8	6
Agua Santa nitrate	"	5,000,000	50	5 "	1898	145	148	150
Antofagasta, nitrate	"	2,000,000	300	2 "	1898	120	125	125
Soc. Internacional, nitrate	"	900,000	60			3	5	
Union, nitrate	"	3,000,000	200			32	37	35

* Special report of Jackson Bros. Values are in Chilean pesos or dollars.

BOSTON MASS.†

NAME OF COMPANY.	Par val.	No. of shares.	June 22. H.	June 22. L.	June 23. H.	June 23. L.	June 24. H.	June 24. L.	June 26. H.	June 26. L.	June 27. H.	June 27. L.	June 28. H.	June 28. L.	Sales
Aetna, cons. g.	$5	100,000									4.00				100
Adven'u'e,Cons	25	100,000			11 00	10.00			10.00				9.5	9.00	734
Allouez, c	25	80,000	8.50	8.00	8.13	8.00			8.50	8.00	8.25				1,432
Am. Z., L. & S.	25	60,000	42 00	40.25	42.00				42.0	41.75	42 00		43.00	42.00	1,680
Anaconda	25	1,200,000	50 85								53 25				250
Arcadian, c	25	100,000			54 50	52.00	54.50	53.00	55.00	53.50	55.00	53 75	56.00	55.00	1,875
Arnold, c	25	60,000	15.25	15 00					15.38	14.88	15.25	15 00	15 25	15.00	1,0 0
Ashbed. c	25	40,000	2 50		2.13	2.00	2.00				2.13	2.0			750
Atlantic, c	25	40,000	32.00		32.00				32.0						140
Baltic, c	25	100,000	33 00		33 50	33 00	33 50	33.00	34.0	33.50	33.50	33 00	36 50	35 00	5,346
Bingham, c.&g.	10	100,000	11.50	11.00	11.50				11.00				11. 3		375
Bonanza, g	10	300,000	2 63		2.50		4.50		2.50		2 50		2.50	2.00	8,290
Bost. & C. Cg	2	200,000													
Bos.&Mon,Tr.R	25	200,000			335				338	335			340	335	111
Breece	25	150,000					11 00		11.75	11.50	11.8	11.75			
BritishCol.,Ltd	5	200,000									77.00				750
Butte & Bost., c	10	200,000													100
Cal. & Hecla, c	25	200,000	795						7.85		795				8
Catalpa, s	10	100,000													
Centennial, c	25	500,000	33.00	32.0	32 00		32.50		33.00		34.00	33.0	34 0	32 0	1,350
Cochiti, g	10	90,000	12 00		2 00		12.50	12.00	12.50	12.00	12 25	12.00			1,190
Copper Range	10	150,000			45 00				44 75	44.00	45.00	44.75	44 75		550
Crescent, s	10	300,000													
Dominion Coal	100	300,000	52 0	51 .8	52 50	51 25	53.5	52.50	54.2	53.0	55 00	53.50	56.00	54.50	3,875
do. pref	100	150,000	116	115	116				116						67
Dunkin, s	25	200,000	.20												20
Federal Steel	100	80,000	60 25	57 25	58 63	57 75	59.25	58.25	59.38	53.00	60.38	59.75	59 88	58 88	15,791
* do. pref	100	464,813	82.75	81 88	82 00	81 00	81.50	81.00	82.0		82.75	81 2	81 88	81 50	1,139
Franklin, c	[25	527,676	18.50		18.00	17 50	17.50		17.75	17.38	17.75	17.50	18 25	17.50	2,905
Guanajuato	5	114,000													
" pf.	5	81,16													
Humboldt, c	25	40,000					2 50								50
I. Royal Con. c	25	100,000	42 50	42.00			42 00		43 50	43 00	44 00		43.75	42.00	1,126
Mass. con	25	100,000	11.50	11.00							11.00	10.50	11,00		3.6
Melones	10	167,577													
Merced, g	25	100,000											12.50	11.00	850
Michigan	25	100,000	13.13		13.00		13.00		13.00		13.00		13 50	13.00	840
Mohawk, c	25	100,000			26.00		26 00		25.50	25.00	25 75	25.50	25.50		1,125
New Idria, q	5	100,000													
N.A.Gold Dre'g	10	100,000	35.00						35.0						200
Old Colony, c	25	100,000	10 50	10.00					0 38	10.0			10 00	9 88	385
Old Dominion, c	25	150,000	37.25	37.0					37 25	36.88	38.00		38.25	38.00	345
Osceola, c	25	93,000			83.00						84.00	83.50	84 50		552
Parrot, s c	10	230,000	51.50	50 25	51.0	50 25	5 .50	51.00	52.25	51.00	52 25	52.00	52.75	52 00	2,942
Pioneer, g	100	100,000	2.50				2.50		2.50		2.50				755
Quincy, c	25	100,000	160						135						15
Rhode Island	25	100,000	8 50						8.50	7.88	7.75	7.50	7.00	5 50	1,362
Santa Fe, g. & c	10	250,000	11 50	11 25	11.50		12.00	11.50			12 00	11.50	11.75	11 50	670
San. Ysabel, g	5	130,000							3.00		13 25	13.00			52
Tamarack, c	25	60,000	205	200	210	205							205		227
Tecumseh, c	25	40,000									5 50		5 50	5 25	200
TrimountainMg	25	100,000	11.00		19 75				10 50				11.00		225
U.C.L & Mg. Co	25	80,000	7 50		7.13		7 00		8.25	8.00	8.25		8.25	8.00	560
United States	25	250,000					2 50		21.50	21.25			21 0		725
Utah Cons,g &c	5	300,000	41 50	40 50	40 88	40 25	42.0	40.50	42 50	42.00	43 00	42.00	43.50	42 50	2,970
Victor, g	5	200,000													
Victoria	25	100,000	6.00		5.75	5 50			5 50	5.00	5.00		5.25		495
Washington	25	40,000													
White Knob	100	50,000													
Winona, c	25	100,00					14.50	14.25	14.00		4 00		14 00		785
Wolverine, c	25	60,000	48 50		14 50				44.25	43.75			14 50		820
Wyandotte	25	100,000	6 60		6 60				7.0	6.75	7.0		6.00		885

†Official quotations Boston Stock Exchange. Total sales, 64,651. * Ex-dividend.

COLORADO SPRINGS COLO.‡

NAME OF COMPANY.	Par val	June 19. B.	June 19. A.	June 20 B.	June 20 A.	June 21. B.	June 21. A.	June 22. B.	June 22. A.	June 23. B.	June 23. A.	June 24. B	June 24. A.	Sales.
Alamo	$1	.07¾	.08	.07¾	.08	.08		.49	.50¾	.46	.50	.47½	.49	24,300
Anaconda	1	.47	.50			.48		.26	.28	.25	.28	.24	.28	2,100
Arg'ntumJ	1	.23½		.25				.26	.28	.25	.28	.24	.28	2,100
C. C. Con	1	.09						.09¾	.10	.09¾	10	.09¾	10½	600
Creosus	1													
Currency	1			.06½										1,000
Dante	1	.11½												1,000
ElktonCon	1	.89	.89¼	.88¼	.89	.88¾		.88¾	.89¼	.88¾	.89¼	.89½	.90¾	2,8 0
El Paso G	1	.26	.27½	.27½	.28	.26¼	.29½	.29¾	.29¾	.29¾	.29¾	.29¾	.30	10,900
Favorite	1	.14												5,000
Findley	1	.14	.14½	.14	.14½	.14	.14¾	.15¾	.15½	.15¾	.16	.15¾	.16	27,000
Golden Fl	1						.81¾	.33	.34	.32	.36	.32	.36	
Ing. Con	1			.08¼										1,000
Isabella	1	.77¾	.79¼	.78	.79½	.76¼	.79¼	.84½	.84¾	.80	.80½	.79	.80	52,100
Jack Pot	1	.35	.35¾	.36	.36½	.34¾	.34¾	.36½	.37	.36	.36½	.35¾	.36	27,000
Lexington	1	.10¾	.10¾	.10¾	.10¾	.10¾	.11¾							47,200
Ma'net R	1	.04	.04¼	.04	.04¼	.04								40,500
Maton	1	.32		.32¾		.30½	.31	.33	.34	.33¼	.34	.33	.34	6,000
Midway	1	.05¾		.05¾		.05¾								7,000
Mobile	1	.05	.05¼	.05	.05¼	.04¾	.04¾							53,000
Mollie Gib	1					.24½	.25					.24	.25	1,500
Montreal	1													
Moon-A'c'r	1	1.00	1.01	1.02	1.05			1.05	1.08	1.16	1.17	1.16	1.19	1,400
Mt. Rosa	1						.23½	.24	.25	.24	.25	.24	.25	
New Haven	1	.02½				.02¾	.02¾							21,500
Oriole	1	.05¾	.06¾	.05½	.05½	.05								41,000
Pilgrim C	1	.04¾		.05										2,000
Pinnacle	1	.18¾	.17¾	.16¾	.17	.13¾	.16¾	.17¼	.17¼	.17¾	.17¾	.17¾	.17¾	189,000
Portland	1	1 95		1.94	1.95	1 88	1 90	1.92	1.93¾	1.9	1.91¾	1 90	1.94	16,000
Prince Alb	1	.03¾		.03¾										6,000
Princess	1			.04¾										1,000
Pythias	1	.03¾		.04										9,000
Specimen	1	.06¾	.07	.07	.07¾									6,000
Tornado	1													
Trachyte	1	.04¾		.04¾		.04¾								6,000
Union	1	.24	.26¾	.2 ¾	.26¾	.25	.26¼	.27¼	.28	.27½	.27¾	.28	.28¼	168,800
Uncle Sam	1	.04¾		.04	.04¾									3,000
Vindicator	1			.92	.92½	.91		.90	.91	.91	.90¾	.89	.90	3,500
Work	1	.23¾	.22½	.21¾	.22¾	21	23¾	23¾	.23¾	22¾	.22¾	.24¾	.23	146,900

‡ Colorado Springs Mining Stock Exchange. Sales for week ending June 21st, 931,900; quotations from June 22d to June 24th by telegraph.

BALTIMORE, MD.‡ June 29.

NAME OF COMPANY.	Location.	Par value	Bid.	Ask	NAME OF COMPANY.	Location.	Par value.	Bid.	Ask
Atlantic Coal	Md.	$10			Howard C.&C	Md.	$5		
Big Vein Coal	"	10			Newburg Orrel C.	"	25		
Consolidation Coal	"	100	54	56	Silver Valley	N. C.	5		
George's Creek Coal	"	100							

ST. LOUIS, MO. June 27.

NAME OF COMPANY.	Location.	Par value.	Latest Bid.	Latest Ask.	Sales.	NAME OF COMPANY.	Location.	Par value.	Latest Bid.	Latest Ask	Sales.
Am. Gold.	Colo.	$10				Granite B.	Mont.	$10	$3 05	$3 10	6 0
Am Nettle	Colo.	10				Hope St. L.	Mont.	10	1.25		00
Central L	Mo.	100	$94.0			St. Joe. L.	Mo.	10	15.00		
Doe Run L.	Mo.	100				Sm. Hopes	Colo	50		1.50	

SHANGHAI, CHINA.* May 15.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelubu Mg. & Trad	China	45,000	$5	$5	Oct., 1894.	$0.25	Taels 6.85
Tungjom Mg., Ltd	"	60,000	2	2			" 5.47
do. pref	"	30,000	1	1			" 1.17
Sauh A'lian G. Mg	"	200,000	$1	148,101	July, 1898.	$1	" 41.61
Sheridan Con. M.& M.	Colo.,U.S	20,000	Taels 100	Taels 100			" 4.00

*Special report of J. P. Bissett & Co. The prices quoted are in Shanghai taels.

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	June 19. B.	June 19. A.	June 20 B.	June 20 A.	June 21. B.	June 21. A.	June 22. B.	June 22. A.	June 23. B.	June 23. A.	June 24. B.	June 24. A.	Sales.
Mines:														
Anac'da G.	$5	.49	.52	.....	.....	.....	.....	50	.52	.....	.....	46	.52	.....
CrippleC.C.	1	.09	.09¾	.09	.10¾	.07¾	10	.....	.....	.....	.....	.09	.....	1,000
Della S	1	.03	.....	.....	.....	.03	.....	.03	.....	.03	.....	.03	.....	.....
Elkton Con.	1	.89	.....	.....	.....	.88	.89	89	.93	.....	.....	.90	.....	.....
El Paso	1	.....	.....	.....	.....	.....	.....	31	.....	.....	.....	.....	.....	.....
Enterprise	1	.....	.....	.06¾	.08¾	.....	.....	.....	.....	06	.....	.....	.....	.....
Fanny R	1	.....	.....	.....	.....	.....	.....	.40	.....	.....	.....	.....	.....	.....
Findley	1	.....	.....	.....	.....	.13	.14¾	.....	.....	.....	.....	.....	.07¾	.....
Garf. Con.	1	.10	.12¾	.10	.12½	.....	.....	.....	.10¾	.....	.11	.12½	.12	12½	.....
Gold Coin.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Eagle.	1	.35	.....	.40	.50	.41	.50	.....	.....	.....	.....	.40	.....	.....
Independ'nce	1	.58	.....	.58	.....	.55	.60	.....	.....	.59	.....	.53¾	.....	.....
Iron Clad	1	.....	.....	.03½	.04¾	.04¾	.04¾	.05¾	.05¾	.06¾	.....	.06¾	.....	29,000
Isabella	1	.77	.79¾	.79	.....	76	.78	.84	.92	.81	.85	.90	.....	1,500
Jack Pot	1	.32	.....	.35¼	.....	.32½	.35	35	.40	.31	.....	.35	.36¾	.....
Jefferson	1	.06¾	.07¾	.06¾	.....	.....	.....	.....	.....	.....	.....	.06¾	.07¾	.....
Keystone	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
LosAngeles	1	.08	.09	.....	.09¾	.08	.09	.08¾	.....	.....	.....	.08¾	.09¾	.....
Mollie Gib.	1	.....	.....	.....	.30	.....	.30	.25	.....	.24	.30	.23	.27	.....
NewZealand	5	.20¼	.20¾	.28¼	.31	.29	.30	.....	.32	.28	.34	.29	.30	1,000
Ophir	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pharmacist	5	.05	.....	.....	.....	.....	.....	.....	.....	04¾	.06	.05	.....	10,000
Portland	1	1.90	.....	.....	1.93	1.80	.....	.....	1.91	1 95	1.89	1.95	1.86	.....
Pr. Albert	1	.03¾	.05¾	.03¾	.....	.03	.04	.....	.....	.....	.03¾	.03¾	.03¾	.04	.....
Specimen	¼	.07	.09¾	.....	.....	.06	.08	.....	.....	.06	.08	.....	.06¾	.....	.....
Union Gold	1	.26	.28¾	.25¾	.26¼	.25	.26¾	.27	.30	.27	.28	.26¼	.29	19,630
Va. M.	1	.....	.....	.04	.04¾	.04¾	.....	.....	.....	.....	.....	.04¾	.04¾	.....
Work	1	.20¾	.....	21	.22¾	.19¾	.22	23	.....	.22	.23	.24½	.23	1,500
Prosp'cts:														
Gene Field.	1	.002¼	.003	.002¼	.....	.002¼	.002¾	.002¾	.002¼	.....	.....	.002¼	.003¾	.....
Old Gold	1	.012	.013¾	.011¾	.013¾	.012	.013¾	.012½	.014	.012¼	.013¾	.011	.013¾	47,000
Pilgrim	1	.003¼	.004½	.003½	.004½	.003½	.004	.003¼	.005	.003½	.004½	.....	.....	6,000
Puritan	1	.034¾	.....	.....	.....	.035¼	.064¾	.....	.....	.....	.....	.004¾	.....	1,000
Miscell.‡														
Acacia	1	.03¾	.09	.03¾	.10	.03¾	.09¼	.09¾	.09¾	.10¾	11¾	.12¼	.12¾	.....
Battle Mt.	1	.25½	.26	.26¾	.30	.26	.28¾	.26½	.35	.27	.....	.28¼	.....	5,000
Blue Bell	1	.07	.12	.09¾	.10¾	.09¾	.09¾	.09¾	.....	.10¾	.10¾	.10¾	.10¾	10,000
C. C. & M	¼	.08¾	.09¾	.....	.10	.08¾	.09	.08¾	.09¾	.08¾	.09¾	.08¾	.09¾	3,000
De Beers	1	.01	.01¾	.....	.....	.01¼	.012¾	.01	.011¾	.01	.....	.....	.....	1,000
Favorite	1	.....	.....	.....	.....	.....	.....	.04½	.04¾	.04¾	.....	.04¾	.05¾	4,000
Insley	1	.....	.....	.004½	.....	.005	.005¾	.....	.....	.....	.....	.....	.....	1,000
Magnet R	1	.04	.04¾	.04	.05	.03¾	.04	.04	.04¾	.04¾	.04¾	.04	.04¾	13,000
Mobile	1	.05	.05¾	.05¼	.05¾	.04¾	.05	.05	.05¾	.05	.....	.05¾	.05¾	12,000
Mt. Beauty	1	.05¼	.05¾	.....	.....	.04¾	.05¾	.05¼	.05¾	.05¼	.05¾	.05	.05¾	2,000
Omega	1	.01¾	.01¾	.01¼	.01½	.01¾	.01¾	.01¼	.01½	.01¼	.01¾	.01¼	.01¾	12,000
Pinnacle	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trachyte	1	.04¾	.05	.....	.05	.....	.....	.04¾	.....	.04¾	.....	.04¾	.....	1,000
Wh. of For.	1	.006	.006¼	.07	.....	.008	.006¼	.006¾	.006¾	.006	.007	.....	.....	48,000

‡ Official Quotations Denver Stock Exchange. Sales: Mines, 83,300 shares; Prospects, including those mentioned, 54,000 shares; Miscellaneous, 127,500 shares; total, 244,800 shares.

SAN FRANCISCO, CAL.

NAME OF COMPANY.	Location.	Par. value.	June 22.	June 23.	June 24.	June 26	June 27.	June 28.
Alpha Con.	Nev.	1.00	.05	.06	.06	.07	.07	.05
Alta	"	2.00	.07	.09	.09	.11	.17	.09
Andes	"	2 00	12	.17	.17	.44	.20	.18
Belcher	"	3 00	37	.37	.38	.44	.39	.37
Best & Belcher	"	3 00	41	.44	.48	.46	.55	.59
Bullion	"	1.00	.06	.09	.08	.08	.09	.09
Caledonia	"	3.00	.60	.85	.75	.85	.71	.69
Challenge Con.	"	3 00	.35	.36	.36	.39	.36	.32
Chollar	"	3.00	.28	.33	.32	.36	.34	.34
Confidence	"	3.00	.90	.95	.97	1.05	1 00	1.00
Con. California & Virginia	"	2 50	1 35	1.55	1 85	2 90	2.10	2.10
Cons. Imperial	"	1.00	.02	.01	.02	.02	.01	.01
Cons. New York	"	1.00	.....	.....	.....	.....	.....	.....
Crown Point	"	3 00	.27	.29	.30	.31	.29	.28
Exchequer	"	1.00	.....	.....	.....	.....	.....	.....
Gould & Curry	"	3.00	.22	.27	.28	.38	.32	.33
Hale & Norcross	"	3 00	.34	.38	.38	.40	.37	.38
Julia Con.	"	1.00	.02	.02	.02	.02	.02	.02
Justice	"	2.00	.14	.12	.16	.15	.16	.12
Kentuck Con.	"	1 10	.05	.05	.05	.05	.15	.04
Mexican	"	3.00	.48	.52	57	57	.58	.65
Occidental Con.	"	3 00	.20	24	25	29	29	.26
Ophir	"	3 00	.92	1.05	1.20	1.45	1.15	1.0
Overman	"	2.00	.17	.19	.18	.22	.19	.17
Potosi	"	3 00	.40	45	.46	.54	.50	.50
Savage	"	2 50	.28	.33	.31	.34	.29	.30
Seg. Belcher & M.	"	2.00	.06	.08	.07	09	.09	.08
Sierra Nevada	"	3 00	.64	.76	.77	.89	.77	.76
Silver Hill	"	1.00	.....	.....	.....	.....	.....	.....
Standard	Cal.	10.00	2 55	2 55	2 50	2 40	2.40	2.40
Union Con.	Nev.	2.50	.36	.41	.41	51	.44	.45
Utah Con.	"	1.00	.11	.16	.16	.18	.20	.14
Yellow Jacket	"	3.00	.38	.38	.40	47	.40	.41

Official telegraphic quotations of San Francisco Stock Exchange

TORONTO, CAN.*

NAME OF COMPANY.	Par val.	June 21. B.	June 21. A.	June 22. B.	June 22. A.	June 23. B.	June 23. A.	June 24. B.	June 24. A.	June 26. B.	June 26. A.	June 27. B.	June 27. A.	Sales
Ontario:														
Bullion	$1	.57	.57½	.45	.60	.....	.....	.58½	.59½	.....	.....	.59	.60	2,000
Empress	1	04	.06	.01	.06	.04¾	.07¾	05	.05½	.05	.06¾	.04	.06	10,000
Golden Star	1	.62	.67	.62½	.64	.58¾	.60¾	.60¼	.61	.62½	.63	.58	.61¾	193900
Ham Reef	1	.22½	.27	.21½	.26½	.23¾	.28	.24	.24¾	.24¾	.26	.23	.27	193600
Hiawatha	1	.22½	.25	.23	.25	.....	.....	.24	.....	.....	.....	.....	.....	500
J. O. Al	1	.04¾	.07¾	.04	.07	.03¾	.04¾	.03	.04	.04¾	.04¾	.02	.01¾	10,100
Olive	1	.80	.85	.75	.85	75	.....	.80	.84	.80	.85	.75	.85	1,500
Sup G.&C.	1	.13	17	.13¾	.20	.....	.....	.....	.....	.18½	.20	.19	.20	3,500
British Col.:														
Alice A	1	.24½	.25	.24½	.25¼	.24¾	.26	.24¾	.25¼	.....	.....	.24	.25¾	6,500
BigThree	1	.19½	.....	18	.20	.....	.....	.18	.22	19	.20	.17¾	.21	1,000
Dardanelles	1	.12¾	.14	.12½	.13¾	.13	.13¾	.13¾	.14¾	.13½	.14¾	.12¾	.13½	3,250
Deer Park	1	.03	.04	.03	.04	.03	.04	.03¾	.04	.03	.04	.03	.04	1,000
DeerT'lNo.2	1	.24½	.....	.24½	.25	.24¾	.27	.25¼	.26	.25¾	.....	.25¾	.....	9,000
Evening St'r	1	.10½	.12¼	11	.13	.11	.12	.11¾	.....	.10½	.12	.10	.12	2,000
F'view corp	¾	.07¾	.09½	.08	.09	.08¾	.10	.09¾	.09¾	.09¼	10	.09¼	.10	12,000
Iron Horse	1	.10	.13¾	.10	.14½	.....	.....	.....	.....	10	.13	.10	.14	1,000
Minnehaha	1	.21½	24	.20	.25	.21	.24	23	.24	.22	.25	.21½	.24	3,500
N'pt'n Belle	1	.04	.08	02	.03	02	.08	.02	.05¾	.02	.03	.02	.03	.....
Rambler C.	¾	.29½	33	.29¼	.33	.27	.31¾	30	.31¾	29	.33	28	.31½	2,000
Rathmullen	1	.06¼	.07¾	.06¾	.07¾	.06¾	.08	.06¾	.07½	.7	.07¾	.06¾	.07¾	5,500
Republic	1	1.23	1 3	1.22	1 28	1.28	.....	1.27	.....	1.24	1.28	1 22	1.29	1,000
Smuggler	1	.02¾	.03¾	.02¾	.03½	.03	.03½	.03	.03½	.03¾	.03¾	.03¼	.04¾	24,000
Van Anda	1	.07¾	.03½	.03¼	.03½	.09¾	.10½	.06¾	.09¾	.08¾	.09¾	.08¾	.09¾	24,000
Victory Tri.	1	.07	.08¾	.06	.08	.06¾	.08	.06¾	.07¾	.07	.08¾	.07¾	.08	5,500
Virginia	1	15	23	.16	.22	18	.33	18	.20	.18	.21	.19	.21	4,500
WarEagle	1	3.58	3 63	3.58	3.64	.....	.....	3.73	3.74	3.62	3.78	3.62	3.78	14,000
Waterloo	0.10	08	.11	.08	.11	.09¼	11	.08	.10	.08½	.09	.07¾	.09	,000
White Bear	1	.03¾	.04¾	.03¾	.04½	.03¾	.04¾	.04	.04½	.04	.04¾	.04	.04½	41,200
Winnipeg	1	30	35	.32½	.34	32	33¾	.35¾	.39¾	32	.34	.33¾	.35	5,000
Develop Co.														
B.C.G.Fields	1	.03¾	.05	.03¾	05	.03½	.04¾	.03¾	.04½	.04¼	.05	.04¾	.05	1,000
Can.G.F.S.	0.10	.06½	.07	.05	.07¼	.06	.07½	.06½	.07	.06¾	.07½	.07	.07½	33,500
Gold Hills	1	05	.06½	.05	.06¼	.05¼	.06¾	.05¾	.06	.05¼	.06½	.05	.06½	2,000

* Official quotations of the Standard and Toronto Mining and Industrial Exchanges. Total shares sold, 539,250.

SALT LAKE CITY, UTAH.* June 24

STOCKS.†	No. of shares	Par val.	Bid.	Asked.	STOCKS.†	No. of shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$1.25	$1.32½	Homestake	400,000	$1	$0 08½	.....
Alice	400,000	25	.60	1.00	Horn Silver	400,000	25	1 40	$1 75
Anchor	150,000	10	.15	.85	Little Pittsburg	400,000	5	.02¾	12
Buckeye	500.000	1	.04	.04¾	Lower Mammoth	150,000	1	39	.41¾
Bullion-Beck & Ch.	100,000	10	5.62½	6.00	Mammoth	400,000	5	2.13¾	2 14
Centennial Eureka	80,000	50	47.50	50.50	Mercur	200,000	25	7 06	7.12
Chloride Point	200,000	1	.65	.....	Northern Light	400,000	5	.61	.62
Daisy	500,000	3	.24	.25	Omaha	300,000	2	.27	.40
Dalton	500,000	5	.02	.....	Ontario	150,000	100	6.50	8.50
Dalton & Lark	2,500,000	1	.10	.10¾	Richmond-An.	500,000	1	10	.12
Daly	150,000	20	1.38½	1.42	Sacramento	1,000,000	5	48	.4¾
Daly West	150,000	20	12.50	13 64	Silver King	150,000	20	33 00	50.00
Dexter	200,000	5	2.21	2.50	Star Consolidat'd	500,000	1	.96	.97
Eagle	150,000	1	.06	.08	Sunbeam	250,000	1	.60½	62
Eagle & Blue Bell	250,000	1	1 67½	1.80	Sunshine	250,000	10	.60	.70
Emerald	300,000	1	.06	.11	Swansea	100,000	5	3.80	4.00
Four Aces	250,000	1	.24	.25	South Swansea	150,000	1	1 80	1 70
Galena	100,000	10	24½	.28	Tetro	300,000	1	.04¾	.....
Geyser-Marion	800,000	5	.51	51½	Utah	100,000	1	.50	.....
Grand Central	250,000	1	8.00	9.20	Valeo	300,000	10	1.00	1.07

*From Our Special Correspondent. † Utah Companies. ‡ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

ROSSLAND, BRITISH COLUMBIA.* June 22,

NAME OF COMPANY.	No. of shares.	Par value.	Selling price.	NAME OF COMPANY.	No. of shares.	Par value	Selling price.
Brandon & Gold. Cr.	1,500,000	$1	$0 30	Lerwick	500,000	$1	.....
Brit. Amer. Corp'at'n	7,500,000	5	6 00	Lily May	1,000,000	1	$0.12
Brit.Col. Dev. Co	1,500,000	2½	5 25	Lon.&Van.Fin.Dev.Co	500,000	5	.....
Canadian Gold Fields	10,000,000	0 10	10	London B. C. Gold F.	250,000	5	.....
Cariboo	1,800,000	1	1 60	Monte Cristo	1,000,000	1	.....
Commander	500,000	1	.....	New Gold Fields, B.C.	250,000	1	.....
Deer Park	1,000,000	1	.....	Novelty	1,000,000	1	.....
Dundee	1,000,000	1	30	Queen Bess Prop	120,000	5	.....
Evening Star	1,000,000	1	.10	Rambler Con.	1,000,000	1	40
Fern	300,000	¼	.40	Reco	1,200,000	1	1.10
Gold Fields of B.C.	3,000,000	5¾	.....	Red Mt.View	1,000,000	1	.....
Hall Mines	250,000	5	3 00	St. Elmo	1,000,000	1	.....
Hattie Brown	1,000,000	1	.....	St. Paul	1,000,000	1	.....
Homestake	1,000,000	1	05	Sarah Lee	1,000,000	1	.....
Iron Colt	1,000,000	1	.....	Silver Queen	1,500,000	1	.5
Iron Horse	1,000,000	1	.....	Slocan Star	500,000	1	1.30
Iron Mask	500,000	1	.35	Vic.Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo	500,000	1	.....	War Eagle Con	2,000,000	1	3.80
Kenneth	1,000,000	1	.....	Waverly Mines	100,000	5	3.00
Keystone	1,500,000	1	.....	White Bear	3,000,000	0 16	.10
KootenayGold Fields	20,000	.....	.....	Wild Horse	400,000	1	.....

* From Our Special Correspondent.

MEXICO. June 22,

NAME OF COMPANY.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.	NAME OF COMPANY.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Chihuahua:					Hidalgo:				
Gloria	1,500	.....	$50	$50	Real del Monte	2,354	10 00	760	780
Durango:					San Francisco Ric	6,000	1.00	160	170
Barradon y Cab	2,400	.....	60	50	San Rafael y An.	1,200	13.00	1,010	1,000
Candelaria de Pan.	1,200	.....	20	20	do. aviado	1,200	5 00	450	420
Capuzaya	2,400	.....	50	30	do. del Oro	3,000	5.00	20	5
Penoles	2,500	30.00	2,000	2,000	Soledad	980	5 00	370	350
Restauradora	10,000	.....	30	30	Sorpresa	960	5.00	225	240
Rosario y Anexas	4,800	.....	10	10	Union Hacienda	2,000	5.00	385	380
Guanajuato:					Mexico:				
Angustias	2,400	5.00	360	335	Coronas	500	.....	75	75
Cinco Senores y An	2,000	15.00	300	305	Esperansa y An.	3,000	10.00	1,730	1,850
El Oro	500	.....	30	30	Michoacan				
do. pref.	2,000	.....	30	30	Luz de Borda ava	3,000	.....	40	22
Guadalupe Hacie'a	10,000	2.00	245	250	do aviado	1,000	.....	20	20
Trinidad, aviador	2,000	.....	130	125	Pueblo:				
do. aviado	400	.....	115	110	Tlauzingo	2,400	.....	27	28
Zona Minera de Paz	2,400	.....	58	57	S. Luis Potosi:				
Hidalgo:					Concep. y An	2,400	.....	6	100
Amistad y Concord	9,600	2.09	30	31	Sta. MariadelaPaz	2,400	10 00	715	720
Arevalo	720	.....	100	200	Zacatecas:				
Bartolome de Med.	2,000	3.00	80	70	Asturiana y An.	2,500	10.00	80	60
Carmen	1,100	7.75	470	465	Cabezon	2,400	.....	15	15
Luz de Maravillas	1,100	.....	200	180	C'delar. de Pinos	2,530	.....	90	90
Pabellon	1,000	37.89	20	20	Palma de Somb	2,400	.....	100	80

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

PARIS. June 8,

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2,050.00	2,185.00
" " Firminy	"	" "	3,000,000	500	85.00	3,750 00	3,710 00
" " Fives-Lille	"	" "	12,000,000	500	35.00	600 0	600 00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,575.00	4,440.00
" " la Marine	France	Steel mfrs.	20,000,000	500	40.00	1,730 00	1,720.00
" " Longwy	"	" "	.....	500	35.00	1,280 0	1,284.00
Anzin	"	Coal	.....	190.00	6,200.00	6,215.00	
Biache-St. Vaast	"	Steel	.....	1,000	160.00	3,800.00	3,800.00
Boleo	Lower Cal.	Copper	.....	500	1 07	2,750.00	2,450.00
Brianak	Russia	Coal & iron	.....	500	.....	1 425 00	1,413.00
Bruay	France	Coal	3,000,000	400	900.00	46,000.00	45,000.00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	116 50	115.50
Champ d'Or	"	Gold	3,375,000	25	3.75	61.00	60.00
Courrieres	France	Coal	600,000	300	60.00	2,340.00	2,350.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	774.50	726.50
Denain-Anzin	France	Steel	.....	500	30.00	950.00	940.00
Dombrowa	Russia	Coal	.....	500	12.50	1,150 0	1,141.00
Donetz	"	Steel	.....	.....	.....	1,405.0	1,390.00
Dourges	"	Coal	.....	1,000	300.00	23,000.00	25,000.00
Dynamite Centrale	France	Explosives	.....	500	12.50	545.00	537.00
Epinac	"	Coal	.....	2,500	30.83	5:5.00	575.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,230.00	1,160.00
Fraser River	Brit. Col'mb	Gold	250.0.0	25	.....	7.00	7.25
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	65 50	62.50
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	91 00	89.00
Lagunas	Chile	Nitrates	16,250,000	125	12.50	35 00	35.00
Laurium	Greece	Zinc & lead	16,300,000	500	80.00	680.00	690 00
Lautaro	Chile	Nitrates	13,750,000	125	.....	100.00	100.00
Malfidano	Italy	Zinc	12,500,000	500	40.00	1,455.00	1,350.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	30.00	695.00	6 7.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,3-0.00	1,275.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	860.0	826.00
Napthe, Le	"	"	.....	.....	.....	2,000 00	2,010.00
Napthe Nobel	"	"	.....	.....	.....	614.00	610.00
" " parts	"	"	.....	.....	.....	12,945.00	12,225.00
Nickel parts	N. Caled'nia	Nickel	10,000,000	250	50.00	409 00	400.00
Penarroya	Spain	Coal, etc	.....	500	65.00	2,6 0 0	2,612.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	7.50	7.50
Rio Tinto	Spain	Copper	40,625,000	125	47.70	1,190.00	1,192.00
" " preferred	"	"	40,625,000	125	.....	157.00	156 00
Rive-de-Gier	France	Coal	.....	.....	.....	20.00	20 00
Robinson	S. Africa	Gold	68,750,000	125	12.50	284.00	275.00
St. Etienne	France	Coal	.....	.....	18.00	491. 0	475.00
Salines de l'Est	France	Salt	.....	500	11.50	261.0	260.00
Salines du Midi	France	" etc	.....	500	25.00	860.00	882 00
Sels Gem. de la Bus. Mer	Russia	" etc	.....	500	25.00	385.00	6 0.00
Tharsis	Spain	Copper	33,750,000	50	8.75	220.25	210.50
Vicoigne-Noeux	France	Coal	.....	1,000	700.00	25,450.0	25,895.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	821 00	770.00

STOCK QUOTATIONS.

LONDON.

June 16.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	May, 1899	17 6	1 2 6
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	"	4 10 0	4 15 0
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¾	May, 1899	10 5 0	10 10 0
Cariboo, g f, pref	BritishCol'mbia	160,000	5 0 0	.....	.....	10 0	15 0
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	1 0 0	1 5 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1899	4 6	5 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 0	2 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Mar., 1899	18 9	1 1 3
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	11 3	13 9
Le Roi, g	"	1,000,000	5 0 0	.....	.....	6 16 3	6 18 9
*Lillie, g	Colorado	250,000	1 0 0	2½	July, 1899	1 6 3	1 8 9
Lillooet, F. R. & Car., g	British Col	300,000	1 0 0	.....	.....	5 0	10 0
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	5 6	6 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	7 5 0	10 0
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	1 5 0	10 0
Palmarejo & Mexican, g., s	Mexico	800,000	1 0 0	.....	.....	3 0	4 0
Piumas-Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	2 6	3 6
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	5 0	7 6
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	6	10
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	6	Jan., 1899	6 3	8 9
Copiapo, c	Chile	200,000	2 0 0	6 0	July, 1899	12 6	3 17 6
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Mar., 1899	2 2 6	2 5 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Jan., 1899	1 0 0	1 12 6
Tollima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	1 10 0	2 0 0
Tollima B., s., g	"	80,000	5 0 0	5 0	" "	1 0 0	1 10 0
UtahCon. g (High l'ndBoy)	Utah	800,000	1 0 0	rts.	Mar., 1898	7 15 0	8 5 0
Ymir, g	BritishCol'mbia	200,000	1 0 0	.....	.....	1 6 3	1 8 9
British Am. Corp.	"	1,500,000	1 0 0	rts.	Dec., 1898	1 4 0	1 4 6
Linares, l	Spain	45,000	3 0 0	12 6	Mar., 1899	8 0 0	9 0 0
Mason & Barry, c., sul	Portugal	630,000	2 0 0	5 0	Apr., 1899	3 15 0	4 0 0
Rio Tinto, c	Spain	1,625,000	5 0 0	1 7 6	May, 1899	44 10 0	46 15 0
" " pref	"	1,625,000	5 0 0	2 6	May, 1899	6 2 6	6 5 0
Tharsis, c	"	1,250,000	2 0 0	11 0	" 1898	8 2 6	8 7 6
*Assoc. Gold Mines	W. Australia	500,000	1 0 0	2 0	June, 1899	9 17 6	10 0 0
Broken Hill Prop., s	N.S. Wales	384,000		8 0	1 0 May, 1899	2 8 9	2 6 0
Great Boulder, Prop	W. Australia	1,750,000	2 0	x all	May, 1899	1 8 0	1 9 0
Hannan's Brownhill, g	"	110,000	1 0 0	7 6	May, 1899	11 5 0	11 10 0
Ivanhoe Gold Corp.	"	1,000,000	5 0 0	5 0	May, 1899	11 7 6	11 10 0
Kalgurlie, g	"	120,000	1 0 0	rts.	Feb., 1899	10 5 0	10 10 0
Lake View Consols, g	"	250,000	1 0 0	5 0	May, 1899	21 7 6	21 12 6
Mt. Lyell M. & R., l., c	Tasmania	975,000	3 0 0	3 0	July, 1899	8 17 6	9 2 6
*Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	June, 1899	5 5 0	5 10 0
*Wathi, g	New Zealand	320,000	1 0 0	2 0	Mar., 1899	7 2 6	7 7 6
West Aust. Jt. Stk. L. & F	W. Australia	1,000,000	1 0 0	1 0	Dec., 1898	5 9	6 3
Champion Reef, g	Colar Fields	220,000	10 0	3 6	May, 1899	5 0 0	5 2 6
Mysore Gold, g	"	250,000	10 0	5 6	Mar., 1899	5 10 0	5 12 6
Nundydroog, g	"	242,000	1 0 0	1 6	" 1899	3 0 0	3 2 6
Ooregam, g	"	145,000	1 0 0	1 6	Apr., 1899	3 13 9	3 16 3
" pref. g	"	120,000	1 0 0	1 6	" 1899	4 3 9	4 11 3
Angelo, g	Transvaal	275,000	1 0 0	5 0	Mar., 1899	7 5 0	7 7 6
*Bonanza, g	"	200,000	1 0 0	11 0	June, 1898	4 7 6	4 12 6
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 0 0	3 2 6
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1899	4 7 6	4 12 6
" " pref	"	150,000	2 0 0	5 0	" 1899	4 5 0	4 15 0
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug, 1899	5 12 6	5 17 6
Con. Deep Level, g	"	200,000	1 0 0	xb.	Apr., 1898	3 5 0	3 10 0
Crown Reef, g	"	120,000	1 0 0	10 0	May, 1899	17 0 0	17 10 0
De Beers Con., d	Cape Colony	9,350,000	5 0 0	£1	Mar., 1899	28 13 9	28 16 3
Durban Roodepoort, g	Transvaal	135,000	1 0 0	5	June, 1899	6 0 0	6 5 0
Ferreira, g	"	90,000	1 0 0	30 0	Feb., 1899	23 15 0	24 5 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	Aug., 1899	11 5 0	11 13 0
Geldenhuis Est., g	"	200,000	1 0 0	7 6	" 1899	8 5 0	8 10 0
Ginsberg, g	"	160,000	1 0 0	4 0	Feb., 1899	3 8 9	3 11 3
Henry Nourse, g	"	125,000	1 0 0	10 0	June, 1899	8 10 0	8 15 0
Heriot (New), g	"	115,000	1 0 0	5 0	Aug. 1899	6 17 6	7 2 6
*Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	9 0	June, 1899	13 16 3	14 1 3
Johannesburg Con. Invst	So. Africa	2,750,000	1 0 0	2 0	Aug., 1897	1 8 9	1 11 0
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug, 1899	6 5 0	6 15 0
Jumpers, g	"	100,000	1 0 0	10 0	Feb., 1899	5 15 0	6 0 0
Kleinfontein, g	"	275,000	1 0 0	2 0	Mar., 1899	2 15 0	2 17 6
Langlaagte Estate, g	"	500,000	1 0 0	3 0	Mar., 1899	3 5 0	3 10 0
*May Con., g	"	275,000	1 0 0	rts.	June, 1899	5 8 9	5 11 3
Meyer & Charlton, g	"	85,000	1 0 0	rts.	Apr., 1899	6 5 0	6 10 0
*Namaqua, c	Cape Colony	200,000	1 0 0	6 6	June, 1899	4 0 0	4 5 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Feb., 1899	4 5 0	4 7 6
Rand Mines, g	So. Africa	400,000	1 0 0	£1	Feb., 1899	4 0 0	4 5 0
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	Aug, 1899	10 10 0	10 15 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 3 9	1 6 3
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	June, 1899	6 8 9	6 11 3
§ Vemmer, g	"	80,000	1 0 0	15 0	Jan., 1899	13 10 0	14 0 0
Wolhuter, g	"	860,000	4 0 0	2 0	Feb., 1899	4 15 0	5 0 0
Worcester, g	"	100,000	1 0 0	3 0	May, 1899	3 0 0	3 5 0

§ Dividend pending. * Ex-Dividend.

MEETINGS.

NAME OF COMPANY.	Location.	Meeting.	Date.	Place of Meeting.
Alexander	S. Dak.	Special	July 1.	Deadwood, S. Dak.
Best & Belcher	Nevada	Annual	July 12.	309 Montgomery st., San Francisco, Cal.
Bankers	Colorado	"	July 10.	207 Ernest & Cranmer Bldg, Denver, Colo.
Big Cadmus	Utah	"	July 10	Deseret Nat. Bk. Bldg., Salt Lake City, Utah.
Calumet & Hecla	Michigan	"	Aug 18.	Boston, Mass.
Centennial	Michigan	"	July 18.	60 State st., Boston, Mass.
East Sierra Nevada	Nevada	Special	July 17.	319 Pine st., San Francisco, Cal.
Fish Springs	Utah	"	July 15.	163 So. Main st, Salt Lake City, Utah.
Galena Treasure	S. Dak.	"	July 1.	Deadwood, S. Dak.
Golden Fleece	Colorado	Annual	July 20.	Council Bluffs, Iowa.
Homestake	S. Dak.	Special	July 1st	Mills Building, San Francisco, Cal.
Ivanhoe	California	"	July 10.	Mills Building, San Francisco, Cal.
Madge	S. Dak.	"	July 1	Deadwood, S. Dak.
Monte Cristo		Annual	July 10.	26 Broadway, New York City.
Union Con	Nevada	"	July 17.	309 Montgomery st., San Francisco, Cal.
Union Hill Con	California	"	July 12.	320 Sansome st., San Francisco, Cal.
West Cable	Utah	"	July 8	503 McCornick Bldg., Salt Lake City, Utah.
Yellow Jacket	Nevada	"	July 20	Gold Hill, Nev.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Dlq.	Sale.	Amt.	OFFICE.
			April			
MidnightBowers	Utah	1	21	July 1	.01	T.R. Jones & Co.'s B'nk, Salt Lake City.
Yankee Boy	S. D.	3	27	July 1	.00½	Deadwood, S. Dak.
			June			
Alaska	Utah	..	19	July 5	.03½	714 McCornick Block, Salt Lake City.
Alta	Nev.	62	26	July 17	.05	309 Montgomery st., San Francisco.
Arrastraville	Cal.	3	19	July 11	.10	213 Jackson st., San Francisco, Cal.
Florence	Utah	2	15	July 1	.00¼	43 W. First South st., Salt Lake City.
Granite Hill	Cal.	27	14	July 5	.03	Masonic Temple, Sacramento, Cal.
Marguerite	Cal.	13	12	July 10	.10	223 Sansome st., San Francisco, Cal.
Mari. Marsicano	Cal.	19	14	July 3	.05	217 Sacramento st., San Francisco.
Maxfield	Utah	..	30	July 20	.09	Salt Lake City, Utah.
Mexican	Nev.	61	12	July 6	.10	309 Montgomery st., San Francisco.
Murray Hill	Utah	2	10	July 10	.00¼	66 Hooper Block, Salt Lake City.
Old Bonanza	Cal.	1	10	July 8	.02½	163 Crocker Bldg., San Francisco, Cal.
Omaha Con	Cal	4	20	July 15	.25	401 California st., San Francisco, Cal.
Rose Creek	Cal.	3	10	July 8	.05	163 Crocker Bldg., San Francisco, Cal.
Shower Con	Utah	1	2	Aug. 2	.02	Salt Lake City, Utah.
Texas	Cal.	1	9	July 7	.15	203 Battery st., San Francisco, Cal.
Vallejo	Cal.	.	23		.02	
			July			
Ben Butler	Utah	..	18	Aug. 15	.02	Progress Bldg., Salt Lake City, Utah.
Boulder	Cal.	3	1	July 27	.03	163 Crocker Bldg., San Francisco, Cal.
Cedar Valley	Utah	1	11	July 29	.00½	431 Atlas Block, Salt Lake City.
Central Eureka	Cal.	12	3	July 24	.03	320 Sansome st., San Francisco, Cal.
Con. Imperial	Nev.	42	20	Aug. 10	.01	Mills Building, San Francisco, Cal.
Eureka C'n Drift	Cal.	..	15		.00½	
Gould & Curry	Nev.	86	6	July 27	.10	309 Montgomery st., San Francisco
Joe Bowers Ext.	Utah	..	17	Aug. 4	.01	310 McCornick Bldg., Salt Lake City.
Live Yankee	Cal.	..	1		.01	Graniteville, Cal.
Mayday	Cal.	2	10	Aug. 28	.10	24 Post st., San Francisco, Cal.
National Con	Cal.	7	10	Aug. 1	.05	773 Mission st., San Francisco, Cal.
Pacific	Utah	1	16	Aug. 2	.00⅝	Diamond, Utah.
Revenue	Utah	..	3	July 22	.01	412 Dooley Block, Salt Lake City.
La Suerte	Cal.	..	10		.02½	
Silver King	Ariz.	21	10	Aug. 8	.25	310 Pine st., San Francisco, Cal.
Snowflake	Utah	13	8	July 29	.02	306 McCornick Block, Salt Lake City.
Success	Utah	6	12	July 29	.01	617 McCornick Block, Salt Lake City.
Tetro	Utah	8	12	July 29	.01	617 McCornick Block, Salt Lake City.
Tracy	Cal.	1	7	July 31	.05	400 Parrott Bldg., San Francisco, Cal.
Willow Creek	S. D.	..	7	July 22	.00½	Le Mars, Iowa.
West Mountain	Utah	..	1	July 20	.05	705 McCornick Block, Salt Lake City.

DIVIDENDS.

NAME OF Co.	Date.	Am't.	Paid 1899.	Grand Total.	NAME OF Co.	Date.	Am't.	Paid 1899.	Grand Total.	NAME OF Co.	Date.	Am't.	Paid 1899.	Grand Total.
Alamo, Utah			$2,500	$2,530	Highland	Jun 15	$20,000	$120,000	$3,904,718	South Swansea	Jun 21	$7,500	$22 500	$126,560
Alaska-Mexican			36,000	353,031	Holy Terror			5,000	122,000	Standard, Cal			30,000	3,859,226
Alaska-Treadwell			150,000	4,070,000	Homestake	Jun 26	62,500	375,000	7,556,250	Standard, Ida			30,000	1,745,000
Ætna Con	July 1	$10,000	30,000	180,000	Horn Silver			20,000	5,250,000	Strong	Jun 15	25,000	150,000	675,000
American Coal			75,000	652,500	Idaho. B. C			128,000	292 000	Swansea	Jun 10	5,000	30,000	166,500
American Gold			21,000	407,000	Isabella	Jun 25	45,000	180,000	450,000	Tamarack	Jun 27	240,000	240,000	5,910,000
Am. Zinc-L. & Sm.	July 1	20,000	20,000	20,000	Jack Pot			25,000	25,000	Tomboy			80,000	730,000
Anaconda Copper			1,500,000	9,750,000	Jamison, Cal			11,700	50,700	Utah, Utah			2,000	179,000
Anchoria-Leland			36,000	198,000	Lake Superior Ir			84,000	227,860	Vindicator			76 125	203.000
Apollo Con., Alas			40,000	140,000	Lillie	July 1	11,250	78,750	235,360	War Eagle, B. C.	Jun 15	26,250	157,500	335,250
Argonaut, Cal	Jun 26	20,000	120,000	300,000	Mammoth	July 1	80,000	80,000	1 430,000	Wolverine			90,000	150,000
Aurora Iron	Jun 19	50,000	50,000	800,000	Mead, Cal	June 1	20,000	40,000	120,000	Yellow Aster			60,000	218,789
Bald, Butte			52,500	702,148	Mercur			25,000	1,266,000					
Bonanza Dev	Jun 13	1,050,000	1,050,000	1,500,000	Modoc	Jun 24	10,000	60,000	140,000					
Boston & Cal	June 1	35,000	72 000	72,000	Montana, Ltd			28,855	453,700					
Boston & Colo. Sm.			150,000	375,000	Mont. Ore Pur			320,000	1,120,000					
Boston & Mont			1,650,000	10,775,000	Morning Star, Cal	Jun 10	6,000	44,400	732,600					
Breece	June 1	10,000	20,000	50,000	Moulton, Mont			20,000	480,000					
Bul. Bec. & Champ	Jun 15	10,000	60.000	2,378,400	Mt. Shasta, Cal			6,000	6,000					
Bunker Hill & S			105.000	705,000	Napa Con	July 1	20,000	60,000	1,010,000					
Calumet & Hecla	Jun 28	2,000,000	6.000.000	62,850,000	New Central Coal			20,000	470,000					
Cariboo			12.000	248,965	New Idria	July 1	20,000	60,000	140,000					
Centenn'l Eureka	Jun 15	15,000	90,000	2,120,000	N.Y. & H.-Rosario	Jun 20	15,000	75,000	1,065,000					
Central Lead	Jun 15	5,000	30,000	112,000	North Star, Cal			50,000	550,000					
Charleston, S. C	June 1	20,000	20,000	200,000	Olive			12,000	12,000					
Colorado Sm.			100,000	1,945,000	Orig. Empire, Cal			5,000	500,000					
Consolidation Coal			205,000	2,613,750	Osceola	Jun. 15	279,000	279,000	2,801,500					
D'rTr'l No 2. Wash			12.500	30,000	Parrot			552,000	2,690,898					
Doe Run, Mo	Jun 15	2,500	15,000	75,000	Pennsylvania	June 9	2,575	15.450	67,100					
De Lamar, Idaho			48,000	2,346,000	PennsylvaniaCoal			890,000	14,050,000					
Empire State, Ida	Jun 15	20,000	104,331	165,638	Pioneer, Cal			12,500	62,500					
Fanny Rawlings			10,000	10,000	Portland	Jun 15	60,000	360,000	2,197,080					
Ferris-H'g'ty, Wyo			5,000	5,000	Queen Bess, B. Col			12,150	12,150					
Garfield Con			12,000	34,000	Quicksilver (Pref.)			21,500	1,845,411					
Gold Coin, Vict	Jun 26	10,000	60,000	210,000	Quincy			350,000	10,470,000					
Golden Cycle	Jun 18	10,000	45,000	198,500	Rambler Cariboo			10,000	50,000					
Gold King, Col			30,000	30,000	Republic, Wash	Jun 15	31,500	63,000	183,000					
Golden M. & Ex			10,000	10,000	Royal, B. C			25,000	1,025,000					
Golden Star, Ont	July 1	11,000	41,000	41,000	Sacramento	July 1	5,000	35,000	92,500					
Grand Central, Ut	Jun 10	37,500	212,500	531.250	St. Joseph Lead	Jun 20	37,500	75,000	2,859,500					
Grass Valley Ex			15,000	15,000	Silver King	Jun 10	50,000	275,000	2,025,000					
Gwin, Cal	Jun 15	5.000	20,000	71.500	Small Hopes			25,000	3,325,000	Grand Total		$4,556,075	$18,254,761	193,844,196
Helena & Frisco	Jun 10	125,000	125,000	550,000	Smuggler	Jun 15	10,000	60,000	1,155,000					

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Ætna Cons., q	Cal	$500,000	100,000	$5	*				$170,000	April.	1899	.10
2	Alaska-Mexican, g	Alask	1,000,000	200,000	5					353,031	April.	1899	.10
3	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				4,070,000	April.	1899	.37½
4	Alamo, g. c. i	Utah.	125,000	125,000	1	$937	Mar.	1898	.00¼	2,500	April.	1899	.02
5	Alice, g. s	Mont.	10,000,000	400,000	25	*				1,075,000	April.	1898	.05
6	American Gold, g. s. c. l	Colo.	3,000,000	300,000	10	*				407,000	Mar.	1899	.07
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25					9,750,000	May.	1899	1.25
8	Anchoria-Leland, g	Colo.	600,000	600,000	1	*				198,000	April	1899	.03
9	Appie Ellen, g	Colo.	600,000	600,000	1					25,000	Aug.	1898	.01
10	Argonaut	Cal	2,000,000	200,000	10					260,000	April.	1899	.10
11	Associated, g	Colo.	1,250,000	1,250,000	1	*				72,000	Dec.	1898	.01
12	Atlantic, c	Mich.	1,000,000	40,000	25					780,000	Feb.	1898	1.00
13	Aurora, i	Mich.	2,500,000	100,000	25	*				750,000	May.	1898	.50
14	Bald Butte	Mont.	250,000	250,000	1	*				702,148	May.	1899	.06
15	Big Six, g. s	Colo.	500,000	500,000	1					15,000	May.	1898	.00½
16	Bonanza, Dev	NMex	3,000,000	300,000	10					1,500,000	June.	1899	3.50
17	Boston & California	Cal	600,000	600,000	1					36,000	Mar.	1899	.06
18	Boston & Colorado Sm.	Colo.	750,000	15,000	50					375,000	April.	1899	5.00
19	Boston & Mont. Con	Mont.	3,750,000	150,000	25	*				10,775,000	May.	1899	6.00
20	Breece, i	Colo.	3,500,000	700,000	5					50,000	June.	1899	.05
21	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,368,400	May.	1899	.10
22	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					705,000	May.	1899	.07
23	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					62,850,000	June.	1899	20.00
24	Cariboo, g	B.C.	800,000	800,000	1					248,965	Feb.	1899	.01½
25	Centen l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,105,000	May.	1899	.50
26	Central Lead, l	Mo.	1,000,000	10,000	100	*				112,000	June.	1899	.50
27	Champion, g. s	Cal	340,000	34,000	10					296,200	April.	1898	.25
28	Charleston, p. r	S. C.	1,000,000	10,000	100	*				200,000	June.	1893	2.00
29	Colorado, Sm., g. s. c	Mont.	1,000,000	100,000	10	*				1,945,000	Jan.	1899	1.00
30	Con. Tiger & Poorman	Idaho	1,000,000	1,000,000	1	*				20,000	Dec.	1898	.02
31	Creston Leasing	Colo.	1,000,000	1,000,000	1					54,000	Dec.	1898	.01
32	Crœsus, g	Cal	1,000,000	200,000	5					30,000	Dec.	1898	.15
33	Crowned King, g. s. l	Ariz.	6,000,000	600,000	10	*				232,000	Dec.	1898	.02
34	Deadwood-Terra, g	S. D.	5,000,000	200,000	25	*				1,350,000	May.	1898	.15
35	De Lamar, g. s	Idaho	2,000,000	400,000	5					2,346,000	May	1899	.12
36	Deer Trail No. 2	Wash	1,000,000	1,000,000	1					30,000	May.	1899	.00¼
37	Doe Run, l	Mo.	500,000	5,000	100					75,000	June.	1899	.50
38	Dutch, g	Cal	1,500,000	150,000	10					39,000	Feb.	1898	.04½
39	Elkton Cons., g	Colo.	1,250,000	1,250,000	1					656,961	Nov.	1898	.01½
40	El Paso, g. s	Colo.	650,000	650,000	1					12,393	Jan.	1898	.01
41	Empire State-Idaho	Idaho	1,000,000	100,000	10					165,638	June.	1899	.20
42	Enterprise, s. l	Colo.	500,000	500,000	1					900,000	Sept.	1898	.05
43	Fanny Rawlings, g. s	Colo.	1,000,000	1,000,000	1					10,000	May.	1899	.01
44	Ferris-Haggarty, c.g.s	Wyo.	1,000,000	1,000,000	1					5,000	Mar.	1899	.00½
45	Fern	B.C.	200,000	200,000	1					10,000	Jan.	1898	.05
46	Garfield Con., g	Colo.	1,200,000	1,200,000	1					34,000	May.	1899	.01
47	Geyser-Marion, g	Utah.	1,500,000	300,000	5					96,000	Sept.	1898	.02
48	Gold Coin of Victor, g	Colo.	1,000,000	1,000,000	1					200,000	May.	1899	.01
49	Golden Cycle, g	Colo.	1,000,000	200,000	5					198,500	June.	1899	.05
50	Gold King, g	Colo.	1,000,000	1,000,000	1					30,000	May.	1899	.02
51	Golden Reward, g	S. D.	1,000,000	100,000	10					155,000	Feb.	1898	.15
52	Golden Star	Ont.	100,000	100,000	1					41,000	July.	1899	.01
53	Grand Central, g	Utah.	250,000	250,000	1					493,750	May.	1899	.15
54	Grass Valley Expl	Cal	100,000	30,000	2	*				15,000	April.	1899	.25
55	Gwin, g	Cal.	1,000,000	20,000	50	286,000	Jan.	1898		66,500	May.	1899	.25
56	Hall Mines, Ltd	B. C.	1,250,000	250,000	5					160,000	May	1898	.25
57	Highland, g	S. D.	10,000,000	100,000	100	304,000				3,884,718	May.	1899	.20
58	Holy Terror, g	S. D.	500,000	500,000	1					122,000	Mar.	1899	.01
59	Homestake, g	S. D.	12,500,000	125,000	100	200,000	July.	1878	1.00	7,493,750	May.	1899	.50
60	Hope of St. Louis, s	Mont.	1,000,000	100,000	10	*				762,252	Mar.	1898	.10
61	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,250,000	Mar.	1899	.05
62	Idaho	B.C.	500,000	500,000	1					292,000	Jan.	1899	.05
63	Iowa, g	Colo.	1,000,000	1,000,000	1					95,000	June.	1898	.00½
64	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10	*				507,500	April.	1898	.02
65	Isabella, g	Colo.	2,250,000	2,250,000	1					405,000	Feb.	1899	.06
66	Jack Pot, g	Colo.	1,000,000	1,000,000	1					25,000	Mar.	1899	.02½
67	Jamison	Cal	3,900,000	390,000	10	144,000	Nov.	1896	.17	50,700	April.	1899	.10
68	Jersey Leasing	Colo.	200,000	158,167	1					137,875	Oct.	1898	.03½
69	Lake Superior Iron	Mich.	2,100,000	84,000	25					736,000	Feb.	1899	1.00
70	Le Roi	B. C.	5,000,000	200,000	25					825,000	April.	1898	.10
71	Lillie, g	Colo.	1,250,000	250,000	5					224,110	June.	1899	.05
72	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,350,000	Dec.	1898	.05
73	Matoa, g	Colo.	1,000,000	1,000,000	1					25,000	Dec.	1898	.02½
74	Mead, g	Cal	200,000	200,000	1					100,000	Mar.	1899	.20
75	Mercur, g	Utah.	5,000,000	200,000	25	*				1,266,000	Jan.	1899	12½
76	Minnesota Iron, i	Minn.	16,500,000	165,000	100	*				4,735,000	Oct.	1898	1.50
77	Modoc, g	Colo.	500,000	500,000	1					130,000	May.	1899	.02
78	Montana, Ltd., g. s	Mont.	3,300,000	657,128	5	*				453,700	April.	1899	.12
79	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*				1,120,000	May.	1899	1.00
80	Montreal	Colo.	1,000,000	1,000,000	1					7,500	Nov.	1898	.01
81	Moon-Anchor Con,, g.	Colo.	1,750,000	600,000	1					261,000	Nov.	1898	.07½
82	Morning Star, g	Cal	240,000	2,400	100	70,800	Feb.	1887	.75	726,690	May.	1899	2.50
83	Monument	Colo.	300,000	300,000	1					12,624	Dec.	1898	.01
84	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1898	.02
85	Mt. Shasta	Cal	100,000	20,000	5					6,000	May.	1899	.30
86	Moulton	Mont	2,000,000	400,000	5					480,00	Feb.	1899	.05
87	Mountain Copper	Cal	6,250,000	250,000	25					93,750	Sept.	1898	.62½
88	Napa Cons., q	Cal	700,000	100,000	7	*				990,000	April.	1899	.20
89	New Idria, q	Cal	500,000	100,000	5					120,000	April.	1899	.20
90	N.Y.&Hon Rosario,s.g.	C. A.	1,500,000	150,000	10	*				1,050,000	May.	1899	.10
91	North Star, g	Cal	5,000,000	500,000	10	20,000	June	1885	.02	550,000	April.	1899	.25
92	Nugget	Colo.	1,000,000	1,000,000	1					20,000	Aug.	1898	.00½
93	Orphan Bell, g	Col	1,000,000	1,000,000	1					115,000	Mar.	1898	.01
94	Ophir Hill	Utah.	25,000	1,000	25					20,000	Dec.	1898	20.00
95	Original Empire, g	Cal	5,000,0 0	50,000	100	975,000	Aug.	1896	1.25	500,000	May.	1899	1.00
96	Osceola, c	Mich.	2,500,000	93,000	25	*				2,801,500	June.	1899	3.00
97	Parrot, c	Mont.	2,300,000	230,000	10	*				2,690,898	May.	1899	1.50
98	Pennsylvania Cons.	Cal	5,150,000	51,500	100	50,051	Feb.	1892	.05	67,100	June.	1899	.05
99	Pioneer g	Cal	1,000,000	100,000	10					62,500	Mar.	1899	.12½
100	Portland, g	Colo.	3,000,000	3,000,000	1	*				2,197,080	June.	1899	.02
101	Quicksilver, pref.	Cal	4,300,000	43,000	100					1,845,411	May.	1899	.50
102	Quicksilver, com.	Cal	5,700,000	57,000	100					643,867	July.	1882	.40
103	Quincy, c	Mich.	2,500,000	100,000	25	*				10,470,000	Feb.	1899	.50
104	Rambler-Cariboo	B. C.	1,000,000	1,000,000	1	*				50,000	April.	1899	3.01
105	Raven, g	Colo.	1,500,000	1,500,000	1					19,500	Mar.	1898	.01
106	Republic Cons., g	Wash	3,500,000	3 150,000	1					183,000	June.	1899	.01
107	Royal Con., g	B. C.	2,500,000	2,500,000	1					1,025,300	Mar.	1899	.01
108	Sacramento, g	Utah.	5,000,000	1,000,000	5					87,500	June.	1899	.00½
109	St. Joseph, l	Mo.	3,000,000	300,000	10	*				2,822,000	Mar.	1899	.50
110	Santa Rosalia, g.s.	Cal	100,000	100,000	1					125,000	Feb.	1898	1.10
111	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	1,975,000	May.	1899	.25
112	Small Hopes, s	Colo.	5,000,000	250,000	20	*				3,325,000	Feb.	1898	.10
113	Smuggler, s. l. z	Colo.	1,000,000	1,000,000	1					1,155,000	June.	1899	.01
114	South Swansea, s. l.	Utah.	150,000	150,000	1					119,960	April.	1899	.05
115	Standard Cons., g. s	Cal	2,000,000	200,000	10	99,888	June.	1890	.50	3,859,226	May.	1899	.10
116	Standard	Idaho	500,000	500,000	1					1,745,000	April.	1899	.06
117	Swansea, s. l.	Utah.	500,000	100,000	5					161,500	May.	1899	.05
118	Tamarack, c	Mich.	1,500,000	60,000	25					5,910,000	June.	1899	4.00
119	Tomboy, g	Colo.	2,000,000	200,000	10					730,000	May.	1899	4.00
120	Utah	Utah.	1,000,000	100,000	10	*				179,000	Jan.	1899	.02
121	Victor, g	Colo.	1,000,000	200,000	5	*				1,155,000	Dec.	1898	.50
122	Vindicator, Cons. g	Colo.	1,500,000	1,015,000	1					203,100	April	1899	.05
123	War Eagle, Cons	B. C.	2,000,000	1,750,000	1					309,000	May.	1899	.01½
124	Western Mine Enterp.	Mont.	500,000	500,000	1	*				48,680	Jan.	1898	.20
125	Whitewater	B. C.	625,000	125,000	5					194,000	April.	1898	.32
126	Wolverine, c	Mich.	1,500,000	60,000	25	* 180,000	Mar.	1895	1.00	150,000	April.	1899	1.50
127	Yellow Aster, g	Cal	1,000,000	100,000	10	*				203,789	May.	1899	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l	Utah.	$100,000	100,000	$1	$3,333	Nov.	1895	.01½
2	Alliance, g. s. l	Utah.	150,000	150,000	1	200,000	Dec.	1895	.10
3	Allouez, c	Mich.	2,500,000	100,000	25	1,520,937	June.	1894	1.00
4	Alpha Cons., g. s	Nev.	105,000	105,000	1	316,050	Nov.	1898	.03
5	Alta, s	Nev.	216,000	108,000	2	3,675,710	June.	1899	.05
6	Alta	Utah.	750,000	750,000	1	938	Mar.	1899	.00⅛
7	American Quartz, g	Cal.	1,000,000	100,000	10	1,000	Feb.	1897	.01
8	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
9	Andes, g	Nev.	300,000	100,000	3	1,205,000	June.	1899	.05
10	Arnold, c	Mich.	1,500,000	60,000	25	180,000	Jan.	1899	3.00
11	Baliol, g	Cal.	1,000,000	100,000	10	55,000	Mar.	1898	.30
12	Belcher, s. g	Nev.	312,000	104,000	3	3,525,200	Mar.	1899	.10
13	Belle Isle	Nev.	10,000,000	100,000	100	240,271	July.	1896	.10
14	Benton Con. s	Nev.	10,800,000	108,000	100	587,023	June	1897	.25
15	Best & Belcher, g. s.	Nev.	302,400	100,800	3	2,599,723	April.	1899	.10
16	Bogan	Utah.	1,250,000	125,000	10	26,875	Dec.	1897	.01⅛
17	Boston & Cp. Ck., g.	Colo.	400,000	200,000	2	20,000	Aug.	1898	.10
18	Brunswick Cons., g.	Cal.	500,000	500,000	1	160,000	July.	1897	.03
19	Bullion, s. g	Nev.	100,000	100,000	1	3,125,000	May.	1899	.05
20	Caledonia	Nev.	300,000	200,000	3	3,210,000	Nov.	1897	.10
21	Centennial, c	Mich.	2,500,000	100,000	25	460,000	Mar.	1898	3.00
22	Central Eureka, g	Cal.	4,000,000	400,000	10	92,000	Mar.	1899	.02
23	Challenge Cons,s.g.	Nev.	150,000	50,000	3	430,000	Mar.	1899	.05
24	Chollar, g. s	Nev.	336,000	112,000	3	2,959 800	Jan.	1899	.10
25	Confidence, g. s	Nev.	74.880	24,960	3	545,118	May.	1899	.20
26	Con., Cal. & Va	Nev.	540,000	216,000	2½	734,000	May.	1899	.25
27	Cons. Imperial, g. s.	Nev.	500,000	500,000	1	2,246,000	Nov.	1898	.01
28	Con. New York	Nev.	100,000	100,000	1	160,500	Nov.	1898	.03
29	Crown Point, g. s	Nev.	300,000	100,000	3	2,980,000	May.	1899	.10
30	Dalton, s. l	Utah.	2,500,000	500,000	5	58,750	April.	1899	.01
31	Dexter	Nev.	1,000,000	200,000	5	38,000	Apr.	1898	.15
32	Diamond Con	Utah.	1,000,000	200,000	5	8,000	Mar.	1899	.04
33	Eagle, g. s	Cal.	500,000	100,000	5	5,000	Dec.	1896	.05
34	Eagle, g. s	Ore.	1,000,000	100,000	10	6,000	Oct.	1898	.01½
35	Emerald	Utah	300,000	300,000	1	3,000	Oct.	1898	.00⅛
36	Eureka Cons., g. s. l.	Nev.	1,000,000	50,000	20	585,000	Sept.	1898	.20
37	Eureka Con. Drift, g.	Cal.	500,000	500,000	1	175,000	Feb.	1899	.00½
38	Exchequer, g. s	Nev.	1,000,000	100,000	1	1,020,000	Dec.	1897	.05
39	Florence	Utah.	1,000,000	200,000	5	1,000	June.	1899	.00½
40	Four Aces	Utah.	250,000	250,000	1	5,000	Mar.	1898	.01
41	Galena	Utah.	1,000,000	100,000	10	10,000	Oct.	1898	.10
42	Geyser, s. l	Colo.	5,000,000	500,000	10	1,175,000	May.	1899	.10
43	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July.	1896	.00½
44	Gold Coin	Colo.	1,000,000	200,000	5	10,000	Mar.	1899	.05
45	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,260	Mar.	1897	2.00
46	Gold & Silver Carb.	Utah.	500,000	500,000	1	2,500	Mar.	1899	.00½
47	Gould & Curry	Nev.	324,000	108,000	5	4,614,350	Dec.	1898	.10
48	Great Eastern, g	Utah.	1,500,000	300,000	5	5,000	Oct	1898	.00⅛
49	Great Western, q	Cal.	5,000,000	50,000	100	75,526	May.	1899	.15
50	Hale & Norcross, g.s.	Nev.	11,200,000	112,000	100	5,716,280	May.	1899	.10
51	Horse Shoe Bar Cons.	Cal.	6,000,000	60,000	100	85,800	Jan.	1899	.05
52	Julia Con	Nev.	110,000	110,000	1	1,498,800	Jan.	1899	.03
53	Jupiter, g	Cal.	2,000,000	20,000	100	80,000	Feb.	1898	.20
54	Justice, g. s. c	Nev.	210,000	105,000	2	3,652,000	Feb.	1899	.05
55	Kentuck	Utah.	600,000	300,000	2	30,000	Aug.	1898	.10
56	Kentuck Cons., s	Nev.	105,000	105,000	1	125,300	June.	1898	.05
57	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
58	Little Pittsburg	Utah.	2,000,000	400,000	5	21,000	June.	1899	.00¾
59	Lower Mammoth	Utah.	150,000	150,000	1	15,000	Oct.	1898	.05
60	Lucky Bill	Utah.	300,000	120,000	2.50	56,400	June.	1898	.01½
61	Marguerite, g	Cal.	500,000	50,000	10	75,000	Feb.	1899	.10
62	Marina Marsicano, g.	Cal.	1,000,000	100,000	10	49,360	June.	1899	.05
63	May Day	Utah.	100,000	400,000	¼	4,000	Jan.	1899	.00½
64	Mayday, g. s	Cal	50,000	50,000	1	5,000	May.	1898	.10
65	Mayflower, g	Cal.	1,200,000	60,000	20	6,000	Sept.	1898	.05
66	Merced, g.	Cal.	1,500,000	100,000	15	200,000	July.	1896	2.00
67	Meteor, s. l	Utah.	600,000	300,000	2	6,734	Feb.	1899	.01
68	Mexican, g. s	Nev.	302,400	100,800	3	2,268,800	June.	1899	.10
69	Montreal	Utah.	2,500,000	250,000	10	30,625	April.	1899	.05
70	Mt. Diablo s	Nev.	5,000,000	50,000	100	150,000	Dec.	1898	.10
71	Morning Star, s	Nev.	1,500,000	150,000	10	32,500	Dec.	1898	.00½
72	Nashville, g	Cal	115,000	11,500	10	2,000	Sept.	1898	.17
73	North Banner, g. s	Cal.	1,000,000	100,000	10	21,794	Oct.	1896	.02
74	North Belle Isle, s	Nev.	10,000,000	100,000	100	523,074	July.	1896	.10
75	No. Gould & Curry	Nev.	100,000	100,000	1	375,000	Dec.	1898	.10
76	Northern Light, g	Utah.	2,000,000	400,000	5	80,000	July.	1898	.10
77	Occidental Cons g s.	Nev.	300,000	100,000	3	509,179	April.	1899	.10
78	Ophir, g. s	Nev.	324,000	108,000	3	4,619,768	April.	1899	.15
79	Opohonga	Utah.	200,000	100,000	2	1,500	June.	1898	.01
80	Oro Cache, g. s	S. D.	1,250,000	250,000	5	6,250	July.	1893	.00½
81	Osceola, g	Cal	10,000,000	100,000	100	10,924	Sept.	1898	.01
82	Overman, g. s	Nev.	230,400	115,200	2	4,135,450	Mar.	1899	.05
83	Peer, s	Ariz.	10,000,000	100,000	100	215,000	July.	1894	.05
84	Peerless, s.	Nev.	10,000,000	100,000	100	410,000	July.	1894	.05
85	Pine Hill, g	Cal	1,000,000	100,000	10	30,000	July.	1897	.05
86	Potosi, g. s	Nev.	336,000	112,000	3	2,168,400	May.	1899	.10
87	Red Mountain, s	Colo.	300,000	60,000	5	22,500	Mar.	1891	.12½
88	Rescue, g	Nev.	100,000	10,000	10	5,500	Feb.	1899	.05
89	Reward, g	Cal.	64,000	64,000	1	63,680	Nov.	1898	.02
90	Ridge, c	Mich.	500,000	20,000	25	239,939	Feb.	1897	1.00
91	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
92	Savage, g. s	Nev.	280,000	112,000	2½	7,309,800	Feb.	1899	.10
93	Scorpion, s	Nev.	100,000	100,000	1	445,000	Dec.	1897	.05
94	Seg. Belcher & Mg s.	Nev.	200,000	100,000	2	373.000	June.	1899	.05
95	Sevier, g. s	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
96	Shower Con	Utah.	2,000,000	400,000	5	8,000	Mar.	1899	.02
97	Sierra-Nevada, g. s.	Nev.	300,000	100,000	3	6,706,919	Feb.	1898	.20
98	Silver Age, g. s. l	Colo.	2,000,000	200,000	10	*			
99	Silver Hill, s	Nev.	108,000	108,000	1	2,220,200	May	1868	.05
100	Silver King, s	Ariz.	10,000,000	100,000	100	465,000	Feb.	1899	.25
101	Silver Queen, c	Ariz.	5,000,000	200,000	25	*			
102	Silver State, g	Colo.	700,000	700,000	1	*			
103	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept.	1897	.00½
104	Siskiyou Con., s	Cal	2,000,000	200,000	10	46,000	Apr.	1898	.01
105	Snow Flake	Utah.	500,000	100,000	5	42,000	April.	1899	.02
106	South Fork Con	Utah.	50,000	50,000	1	5,000	Mar.	1898	.01
107	South Side	Mich.	1,000,000	40,000	25	4,000	Jan.	1899	.10
108	Star, g. s	Utah.	1,000,000	200,000	5	7,000	Feb.	1899	.03
109	Success	Utah.	30,000	300,000	0.10	3,750	May.	1899	.00¼
110	Sunbeam Cons	Utah.	250,000	250,000	1	33,125	June.	1899	.02
111	Tecumseh, c	Mich.	1,000,000	40,000	25	40,000	July.	1897	1.00
112	Temonj, g	Colo.	1,000,000	1,000,000	1				
113	Tetro	Utah.	300,000	300,000	1	24,000	April.	1899	.01
114	Triumph	Utah.	1,000,000	100,000	10	1,000	April.	1899	.01
115	Union Cons., g. s	Nev.	250,000	100,000	2½	2,633,000	Jan.	1899	.03
116	Utah Cons., s	Nev.	100,000	100,000	1	480,000	May.	1899	.05
117	Valeo	Utah.	2,000,000	200,000	10	10,000	May.	1899	.05
118	Victory, g. s	S. D.	1,250,000	250,000	5	2,625	Nov.	1899	.00½
119	Watt Blue Gravel, g	Cal.	1,100,000	100,000	10	58,000	May.	1899	.03
120	Work, g	Colo.	1,250,000	1,250,000	1				
121	World, g	Colo.	1,500,000	1,500,000	1	*			
122	Yankee Girl	Utah.	250,000	250,000	1	5,000	April.	1899	.02
123	Yellow Jacket, g. s	Nev.	360,000	120,000	3	5,305,000	April.	1899	.15
124	Yellow Jacket	Utah.	300,000	300,000	1	1,500	Dec.	1897	.00⅛

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable.

NOTE.—This table is corrected up to June 5. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.10
Powd., F. FF. FFF.	"	.08
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	32.00
Pumice Stone, Am. powd.	lb.	.01@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@ 03
Lump, per quality	"	.05@.14
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	20.00
Acids—Acetic, 30% pure	lb.	.02¾
30% ch. pure	"	.06½
80% pure	"	.09
Benzoic, English	oz.	.09@.09½
German	lb.	.46@.47
Boracic, pure cryst	"	.11¼
Powdered	"	.11¼@.11¾
Carbolic, cryst. in drums	"	.14½@.15½
Carbonic, liquid	"	.15
Chromic, crude	"	.23
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.08
Hydrofluoric, 36%	"	.03@.04½
48%	"	.05@.06
Best	"	.25
Nitric, chem. pure	"	.10
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Tartaric, cryst	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.42@2.44
Refined wood, 95@97%	"	.75@.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3.50
Aluminum—		
Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	.02
Com'l	"	1.25
Ammonia—Aqua, 16°	"	.04
18°	"	.04½@.05½
20°	"	.05@.06
26°	"	.07@.08
Ammonium—Bromide, p'r	"	.52@.53
Carbonate lumps	"	.07¼@.07½
Powdered	"	.08¼@.08½
Muriate, gran., white	"	.06
Lump	"	.08½
Gray	"	.05¾
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.2@.15
Chem. pure	"	.60
Antimony—Glass	"	.30@.40
Needle, lump	"	05¼@ 06
Powdered, ordinary	"	.05¼
Best	"	.08½
Oxide, com'l white, 95%	"	.20
Com'l white, 99%	"	.35
Com'l gray	"	.07@.08
Sulphuret, com'l	"	.16
Arsenic—White	"	.04¼@.04¾
Red	"	.07¾@.08½
Asphaltum—		
Ventura, Cal	sh. ton	32.00
Cuban, refined	lb.	.04½
Common	"	.02
Egyptian, refined	"	.06½
Trinidad, refined	"	.01½
San Valentino	lg. ton	16.00
Gilsonite, Utah, ordinary	lb.	.03¼
Select	"	.03¾
Barium—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	25.25@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	"	.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.07
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd	"	.27
Sulphate	"	.01@.02¾
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	18.00@20.00
Floated	"	19.00@20.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	5.10
Second grade	"	4.35
Alabama, f. o. b. cars Rock Run	"	3.85
Benzole—90%	gal.	1.00@1.10
Bismuth—Oxide, hydr.	lb	2.25@2.36
Subnitrate cryst	oz.	.09@.10
Bitumen, "B"	lb.	.03¼
"A"	"	.05
Bone Ash	"	.02¾@.03¼
Borax—Cryst. and pow'd	"	.07¼
Calcined	"	.20
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.90@2.00
Sulphide	"	1.90@2.25
Sulphate	"	2.00@2.50

	Cust. Meas.	Price.
Calcium—		
Carbide, in ton lots, f. o. b. Niagara Falls, N.Y.	lb.	.03@.04
Acetate, pure white	100 lbs.	1.00
Gray	"	1.25@1.30
Brown	"	.80@.85
Carbonate, ppt.	lb.	.05
Chloride	100 lbs.	.90@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.90
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.10½@.11½
White	"	.11@.13½
Chalk—Lump, bulk	sh. ton	2.15@2.25
Precipitated	lb.	.04@.04½
French	100 lbs.	.30@.35
Chlorine—Liquid	lb.	.30
Water	"	.15
Chrome Ore—		
(50% chrome) ex-ship	lg. ton	22.00
Sand	"	35.00
Clay, China—Am. com., ex-dock, N. Y.	sh. ton	7.50
Am. best, ex-dock, N. Y.		8.50
English, common	lg ton	11.00
Best grade	"	17.00
Fire, ground, f.o.b. Jersey City, N. J.	sh. ton	4.00@5.00
Slip Clay	"	6.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	1.76
Gray	"	2.25
Smalt, blue ordinary	"	.14
Best	"	.25
Chem. pure	"	5.00
Copperas	100 lbs.	.60@.62½
Copper—Carbonate	lb.	.18@.20
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide	"	.19@.20
Cream of Tarter—crys.	"	.23½
Granulated	"	.24
Powdered	"	.23½@.24
Cryolite	"	.06½
Explosives—		
Blasting powder, A	"	.10¾
Blasting powder, B	"	-05@.05¾
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite, (40% nitroglycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.23
Glycerine for nitro (32 2-10° Be.)	"	.11@.11¼
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	6.50@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	6.50@7.00
Gravel	"	6.00
Crushed	"	6.00
Ground	"	10.50@11.00
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	8.00
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground. American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—Chromate	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01¼@.01¾
True	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white, b'k'n	lb.	.07¼
Com'l, broken	"	.06¼
White, gran.	"	.08¼
Nitrate, com'l	"	.06½@.06¾
Chem. pure	"	.35
Lime—Bldg., ab. 250 lbs	bbl.	.65@.75
Finishing	lb.	.75@.80
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00
German (85%)	"	12.00
Calcined, 600° C. (Greece)	sh. ton	17.50
1,000° C. (Greece)	"	19.50
3,000° F. (Greece)	lg. ton	30.00
Domestic, soft	sh. ton	12.00@15.00
Bricks, all magnesite	M.	185 00
Magnesite and chrome.	"	226.00
Magnesium—		
Metallic, ingots (Ger)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½
75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05¼
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.22@.23½
Marble—Flour	sh. ton	5.50@8.00

	Cust. Meas.	Price.
Mercury—Bichloride	lb.	.59@.60
Bisulphate	"	.41
Mica—N. Y. gr'nd, coarse	"	.04@.05
Fine	"	.06@.08
Sheets, 1½x3 in.	"	.60
8x10 in.	"	13.00
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—Oxide, bl'k No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—		
Black, reduced 29 gr.: 25@30 cold test	gal.	.07@.07½
15	"	.08@.08½
Zero	"	.11@12
Summer	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	.13@.15½
Extra cold test	"	.21@.25
Gasolene, 86°@88°	"	.14@.16
90°	"	.19@.20
Neutral filtered, lemon, 33@34 gr.	"	.13@.18½
White, 33@34 gr.	"	.21@.23
Wool grade, 32 gr.	"	.11@.14
Naphtha, crude, 68@72°	"	.10
Deodorized	"	.10½
Paraffine, high viscosity	"	.20@.25
903-907 sp. gr	"	.09¼@.09½
903 sp. gr.	"	.08¾@.08½
883 "	"	.07½@.07¾
865@875 sp. gr.	"	.07¼@.07½
Red No. 1	"	.08¾@.09¼
No. 2	"	.08¾@.08¾
Linseed, domestic raw	"	.36@.39
Boiled	"	41@.42
Calcutta, raw	"	.54
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08¼@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.06@.08
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27@.28
Chrome green, common	"	.05@.06
Extra	"	.12@.15
Chem. pure	"	.20@.30
Super	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.05½@.05¾
English flake	"	.07¾@.08
Metallic, brown	sh. ton	16.00@20.00
Red	"	16.00@20.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾@.05
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.07¾@.08¼
Foreign, as to make	"	.08¼@.11
Paris green, pure	"	.12@.14
Red lead, American	"	.05¼@.05¾
Foreign	"	.07½@.08
Shellac, "D. C."	"	.27@.30
Native	"	.17@.18
Turpentine, spirits	gal.	.44½@.45
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	.61
Chinese	"	.80@.90
English, imported	"	.65
Artificial	"	.10@.20
White lead, Am., dry	"	.05@.05½
In oil	"	.05½@.06½
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.40½
Gilders	"	.47
Zinc white, Am., ex. dry	lb.	.04¾@.05¼
American, red seal	"	.07½@.08
Green seal	"	.08@.08½
Foreign, red seal, dry	"	.07@.08½
Green seal, dry	"	.07½@.09¾
Foreign, red seal, in oil	"	.10¼@.11¼
Green seal, in oil	"	.11¾@.12½
Plumbago—Am., pulv., f.o.b., Providence, R. I.	sh. ton	30.00
Lump	"	8.00
German, lump	100 lbs.	1.50@2.00
Pulverized	"	2.25
Ceylon, pulv. common	lb	.03¾
Best	"	.05@.08
Italian, pulv.	"	.01¼
Potash—Caustic	"	.04@.05
Potassium—		
Metallic, in balls (Ger)	kg.	17.85
Bicarbonate cryst	lb.	.08½
Powdered or gran	"	.12
Bichromate	"	.09¾
Bromide	"	.46
Carbonate	"	.02¾@.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.30
Permanganate, pure cr.	"	.14@.15
Silicate	"	.06
Prussiate, yellow	"	.16½@.17½
Red	"	.37@.40

	Cust. Meas.	Price.
Potassium—		
Sulphide, com'l	lb.	.10
Quartz—(See Silica).		
Rosin—Common	bbl.	1.30
Best	"	2.65
Salt—N.Y. com. fine abt. 280 lbs	bbl.	.70
N. Y. agricultural	sh. ton	1.50
N. Y. coarse	"	2.30
N. Y. dairy and table	"	2.90
Saltpeter—Crude	100 lbs.	3.80@3.85
Refined	"	4.25@5.50
Silica—		
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.41@.42½
Oxide	"	.85@1.10
Sodium—Metallic	lb.	.75
Acetate, com'l	"	.03½
Bichromate	"	.07¾
Bisulphite, com'l	"	.01½
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite	100 lbs.	1.60@1.70
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Phosphate	"	.03
Triphosphate	"	.04
Silicate, conc.	"	.01@.01¼
Sulphate, gran., puri'd	"	.03
Sulphide	100 lbs.	1.75
Sulphite	lb.	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.09@.10
Sulphur—Roll	100 lbs.	1.70
Flour	"	1.80@1.85
Flowers, sublimed	"	2.00
Talc—N. C No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian,	"	20.00@30.00
Tar—Coal	bbl.	3.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.22@.23
Muriate	"	.06
Oxide, white, ch. pure	"	.36@.40
Uranium—Oxide	"	1.80@2.00
Zinc—Metallic, ch. pure	"	.09@.10
Carbonate	"	.15
Chloride	"	.06@.08
Dust	"	.07@.07¼
Sulphate	"	.02½

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	oz.	5.95
Crystals	"	9.04
Nitrate (N Y.)	oz.	2.50
Boron—Amorphous, pure	grm	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	21.00
Chromium—Fused	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.21
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	9.52
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm	4.05
Iridium—	"	2.38
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol 95%	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.95
Palladium	"	.95
Rhodium	"	2.37
Rubidium—Pure	"	4.76
Ruthenium—Pure powd	"	2.38
Selenium—Com'l powder	kg	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	5.95
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	23.80
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	5.00@5.50
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused	100 grms.	22.80
Powder, 95@98%	kg.	1.90
Chem. pure	"	6.42
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to June 16th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.