THE ENGINEERING AND MINING JOURNAL AND COAL

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

VOL. LXII. AUGUST 22. No. 8.

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

Subscriptions are PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.
The address slip on the paper will show date of expiration of subscription. When change of address is desired both old and new address should be sent.
NOTICE OF DISCONTINUANCE.—The JOURNAL is not discontinued at expiration of subscription but is sent until an explicit order is received by us, and all arrearages are paid as required by law. The courts hold a subscriber responsible until the paper is paid for in full and ordered discontinued. PAPERS RETURNED ARE NOT NOTICE OF DISCONTINUANCE.

Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.
(Cable Address, "ROTHWELL," New York. Use McNeill's or A B C 4th Edition Code.)

Branch Offices: Chicago, Ill., Monadnock Building, Room 737. Denver, Colo., Boston Building, Room 206. San Francisco, Cal., 12 Montgomery Street, Rooms 11 and 12. London, Eng., E. Walker, Man'g., 20 Bucklersbury, Room 366.

CONTENTS.

We have received a pamphlet from Messrs. MacFarlane & Company, of Vancouver, B. C., as agents for British Columbia, of the National Ore and Reduction Company. This company has its headquarters in an obscure quarter of St. Louis, Mo., and we regret to say it is simply a reproduction of the well-known Hartzfeldt furnace humbug. This matter we have denounced for at least 10 years past in the *Journal* from time to time, whenever it cropped up under any recognizable name. Our object in referring to the matter now is to warn our contemporaries and readers in British Columbia and other points west and northwest against this often exposed fraud.

It is quite true that the kingdom of Denmark does not possess a very extended area, but the government by building railroads and buying those built by private enterprise have now succeeded in giving to its inhabitants a very cheap means of locomotion, and at the same time owns a very valuable asset for a large amount of its national debt.

The freight rates are already the lowest known. A bill introduced by the Government proposes to abolish return tickets and only to issue direct tickets between all stations. One will be able to travel the whole length and breadth of Denmark third-class for a sum not much exceeding $1.50, and the distance covered is about 300 by 200 miles. This is a reduction of 50 per cent.

An interesting statement has been issued by Director of the Mint Preston on the subject of silver coinage. It would naturally be expected, from the fact that the Republic of Mexico is the largest silver producer in the world and that her mints are open for coinage at a fair charge, that the largest amount of silver would be coined in Mexico. Yet this is not so. According to actual returns, Mexico gives a return of $24,832,350; Japan, $23,883,500; China, $8,253,340. This, however, gives no idea of the real silver currency and practical coinage in China, for in 1895 there were imported into the port of Shanghai alone 44,000,000 oz. of silver. There is no doubt that China is the largest absorber and coiner of silver to-day as she has been for many years, but most of her coinage does not pass through the mints and is put into circulation in form of taels, "sycee" money, etc.

Mining interests in Rhodesia are at a low ebb at present, and the prospective developments promised 12 months ago are removed at least a few, possibly five years. The cablegrams from that country give a most lamentable account of the conditions of affairs.

Practically speaking, so far as profit or safety is concerned, there is no longer a colony or colonists, every one having evacuated Matabele and Mashona Lands that had the means to do so. It is quite true that the Matabele have not gained any substantial advantage, but the result is that the population of Rhodesia is no longer an earning community, but simply a fighting one. Of course business with Rhodesia is at a standstill, agents who had been sent out are recalled and negotiations commenced in London or Paris are adjourned "sine die."

The colonists are rushing out toward the Transvaal, Cape Colony and Natal, and the only traffic into this vast region is munitions of war and provisions for the fighters. It will take a most thorough subjugation of the Matabele, and a better organization of the powers that be, before Rhodesia is a desirable abiding place for colonists or prospectors.

Though the gold winners in South Africa have many disadvantages to strive against such as monopolies of railroad freights, price of explosives etc., it is wonderful how in an almost entirely treeless country fuel should have been provided sufficient (and at a low cost) for all industrial needs. Mr. Lajuerre, a French scientist, has given an account to the Societé de l'Industrie Minerale as follows:

The impure coal of the Karoo District contains from 20 to 25% of ash; and the coalmasters, acting as if they were persuaded the collieries would only last as long as the gold mines, take out the coal by the pillar and stall method, leaving the pillars. The seams worked are thick, the roof is very strong and work is carried on without timbering. The mean depth of the deposit is 50 meters—54 yards—and the coal is raised by rectangular shafts, divided by partitions, parallel with the short side of the rectangle, into four compartments, one for the ladders, one for the steam and compressed air pipes and electric conductors and two for winding. The coal raised is screened, the slack being thrown out to spoil, and the lumps, nuts and peas being alone utilized. The plant comprises a 40 to 50-horse winding engine, one of 20 to 30-horse power for the screen, and another for the dynamo. The cost of putting out the coal varies from 5s. to 6s., and the sale price is 9s. per ton. The Brackpan Colliery, started about six years ago, now puts out 1,200 tons daily, and earned £64,000 during the last working year.

New Zealand Gold Mines.

We have heretofore referred to the interest felt in London in New Zealand gold mines, which has found expression in the organization of numerous new companies and in the extension of operations of several old ones, so that a large amount of new capital has already been put into the industry, while more is promised. The colony has long been a gold producer, though less prominently known than several of the other Australasian colonies in that direction. Mining was begun in 1857 and the maximum production was reached in 1871, when the output was valued at $13,937,600; but from that time it fell off rapidly and in 1890 the total value reported had fallen to $3,867,000. This decrease was partly due to the working out of the placers, which furnished a large proportion of the gold turned out in earlier years; and partly to the fact that in many of the mines as greater depths were reached the ores were found to be complex and difficult to work. In short, New Zealand mines came to have a bad reputation and it was not easy to obtain the capital necessary for their exploitation on a paying scale.

Since 1890 there has been a gradual improvement, though the increase was not marked until last year, when the production reached a total value of $5,459,815, showing a gain of 32·5 per cent. over 1894. The increase was chiefly due to greater care in working and to the introduction of improved methods and of processes adapted to the nature of the ores; and in this respect the industry shared in the advance which has been going on all over the world. The movement was aided by the action of the colonial government in granting aid from the public funds to companies which undertook deep level workings. There are now four or five mines in which, with this assistance, gold-bearing deposits of value have been proved to exist at depths from 900 to 1,000 ft.

It was not, however, this gradual increase in gold production which attracted the attention of English investors so much as the phenomenal success of two mines. The first of these—the Waihi, in the Ohenemuri District—has for three years paid 30 per cent. a year on its capital stock of $800,000, and is this year continuing its success. The ores of this mine are comparatively low grade, the return for the first six months of the present year showing receipts of $311,330 from 18,020 tons of ore, or an average of $17.27 per ton. The large dividends, however, indicate that the ore must have been worked at a moderate cost. The other mine referred to, the Hauraki, last year paid 360 per cent. on its capital of $200,000; and for the first half of 1896 reports the production of 12,827 oz. gold from 2,056 tons of ore, an average of 6·24 oz. per ton. Though its ores are richer, the Hauraki is a much smaller mine than the Waihi.

It appears probable from what has already been accomplished and from the explorations already made, that there are many mines in New Zealand which can profitably be worked. The conditions are generally favorable for mining; the islands produce a considerable quantity of coal, timber is abundant, the climate is very good and work can be carried on throughout the year without interruption from the weather. The supply of labor is sufficient, though wages are high, as is the case in all the Australasian colonies. Moreover, there is an abundant sapply of water and the colony has never suffered from the drouth and scarcity which have proved such drawbacks in many parts of the Australian continent.

The present danger appears to be in the "boom" element, and in the activity of the promoters who have taken hold of New Zealand mines and are repeating the methods which they practised in Western Australia. As an instance of these methods we take half a dozen properties which are referred to in a recent number of the London *Economist*, in which not only is the capitalization very high, but in every case an excessive amount is to be paid to the vendors of the claims. The total capital and the purchase price of each of these mines are given below:

Claim.	Capital.	Purchase price.	P. c. of price to capital.
Monowai Consols	$750,000	$625,000	83·3
Maori Dream	650,000	150,000	23·1
Waitekauri Consols	600,000	400,000	66·7
Britannia	500,000	375,000	75·0
Hauraki South	450,000	325,000	72·2
Irene	400,000	325,000	81·3

In only one case out of the six is the vendor's share limited to anything at all approaching a reasonable amount; especially when when we consider that they are all new and untried properties, and for at least three of them the only recommendation seems to be that they are "near the Hauraki."

Such methods may be of temporary benefit to the promoter, but they are sure in the long run to injure the country permanently and to bring it into disrepute. For the sake of our New Zealand friends we hope that "boom" financiering will be discouraged in every form, and that their gold-mining industry may be left to work its way upon its own merits. These are, we believe, sufficient to secure its continued growth and prosderity.

The Model Report of the Alaska Treadwell Gold Mining Company.

The *Engineering and Mining Journal* has so often performed the disagreeable duty of criticizing and condemning the unsatisfactory and dangerous reports of mining companies which give no information to their stockholders, and may well, and generally do, cover in their vague statements, the grossest extravagance, and sometimes absolute dishonesty, that it is a great pleasure to turn to an example that illustrates what a company report should be, and that proves, by extraordinary economy in operation and in administration, the salutary effects of publicity on the cost of production.

The Alaska Treadwell mine, as our readers know, is a low grade gold mine, situated on Douglas Island, Alaska. The ore body is immense; the ore hard quartz, and its yield only about $3 a ton, while wages are high being per diem for miners $2.50: for laborers, $2; drillmen, $2.50 in summer and $3 in winter; millmen, from $65 to $100 per month, and all these employees are furnished free board and lodging by the company in addition to their wages.

Coal costs $8.25 a ton, wood $4.15 a cord and other expenses are in proportion, yet the entire cost of mining, milling which includes concentrating and roasting and chlorinating the concentrates, administration at the offices in London, Paris, etc., and all construction and other expenses at the mines, amounted in the year 1895-96 to only $1.16 per ton on the 263,670 tons of ore milled. Since the ore yielded $2.97 per ton, this would leave $1.81 per ton net profit, or, adding the profits from the store which amounted to about 8 cents per ton of ore milled, the total amount of profit amounted to about $1.89 per ton, or a total of $497,342.22 *which was all applicable for dividends.*

We commend with great satisfaction this admirable example in which the whole receipts, after deducting dividends, are counted as cost of production. There are here no increases of vast "improvement accounts" or "personal" and "real estate" accounts figuring as assets which are as worthless and misleading to the shareholder as is the mirage of a lake to the thirsty traveller on the desert. *What is not dividend is cost* is an axiom that should be constantly borne in mind by shareholders as well as directors, for when the brief life of a mine is ended its real estate and improvements, however much they may have cost, are then worth nothing.

Alaska Treadwell Gold Mining Company.—Balance-Sheet. May 31st, 1896.

Dr. CAPITAL AND LIABILITIES.		
To capital stock—200,000 shares of $25 each		$5,000,000.00
To sundry creditors:		
Suspense cash account:		
Douglas Island	$21,775.97	
Current accounts—Douglas Island	31,996.98	
" San Francisco	25,802.50	
		$79,575.45
To surplus—Balance carried over from the year 1895	$130,286.27	
To profit and loss account, year ending May 31st, 1896	497,342.22	
	$627,628.49	
Less dividends paid during year	450,000.00	
Surplus carried over		177,628.49
		$5,257,203.94
PROPERTY AND ASSETS.		*Cr.*
By mines, canals and reduction works		$5,039,013.34
By store supplies:		
Merchandise at Douglas Island	$77,157.24	
" in transit	10,025.69	
	$87,182.93	
Wood on hand	11,382.00	
Coal on hand	2,459.59	
Extra mill machinery	8,254.32	
Potato account	116.13	
Rebate claims in adjustment	660.26	
		110,055.23
By cash at San Francisco	$80,188.50	
" Douglas Island	27,916 37	
		108,134.87
		$5,257,203.94

Dr. PROFIT AND LOSS ACCOUNT FOR YEAR ENDING MAY 31ST, 1896.	Per ton of ore.		
To operating costs:			
Mining 263,670 tons ore	$.5491	$144,787.68	
Milling 263,670 tons and concentrating 4,373 tons sulphurets	.3476	91,671.34	
Chlorination of 4,397 tons sulphurets	.1138	30,012.80	
General expenses, Douglas Island	.0819	21,597.51	
" San Francisco	.9218	5,727.46	
London, office expense	.0112	2,946.48	
Paris, "	.6006	174.12	
Bullion charges, freight, insurance, etc	.0372	9,807.12	
All construction charged directly to operating.			
Total operating costs	$1.1632		$306,724.51
Net profit for year	1.2862		497,342.22
	$3.0494		$804,066.73
			Cr.
	Per ton of ore.		
By bullion sold	$2.9689		$782,829.67
By interest received	.0006		174.13
By store profits, 12 months	.0799		21,062.93
	$3.0494		$804,066.73

This Alaska Treadwell report not only charges up every expense to cost, but it gives in the utmost detail the items of expenditure, so that anyone can see with what remarkable economy the work has been carried on.

The report goes on to give a detailed statement of receipts and disbursements which are also carried out in detail to the ton of ore. It may appear to some who read this report that there is too much detail in it, but this is a far safer side on which to err than is that of lumping items, which reaches its limit in giving no information whatever, as in the case of our greatest Michigan copper mine. Moreover, many of these details have great professional value. It would, indeed, be of the utmost benefit to the industry were all companies to follow this admirable example, and it would undoubtedly lead to an enormous economy in their operating expenses. No manager wants his extravagant practice made public, and he will diligently strive to reduce costs when he knows that his figures will go before the world in detail.

The report of the Superintendent, Mr. Robert Duncan, Jr., gives the satisfactory information that the reserves of ore amount to 2,745,900 tons, or say a nine years supply and that the bottom of the mine, which indeed is only 220 ft. from the surface, is fully equal to the level above it. The ore body is 420 ft. wide and some 300 ft. long. Great credit is due to Mr. Duncan for his careful and economical management. What higher praise could be given to him than to state that he has mined 263,670 tons of ore during the year at a total cost of 55c. per ton, and that he has milled this ore at a cost of 35c. per ton.

While $1.16 per ton is unquestionably a marvellously low cost, there is one item which we are convinced will still be lowered. The chlorination of the concentrates cost $6.82 per ton, and in this figure about $4.50 per ton is the cost of roasting, presumably in hand rabbled reverberatories. We are convinced that these figures will be reduced materially by the adoption of the latest improvements in roasting and chlorination, though any reduction in them can affect the total cost per ton of ore milled to but a very small amount.

There is but one notable omission in this excellent report, and that we hope to see filled in the future reports. It is nowhere stated what the assay value of the ore milled was, nor consequently what percentage was saved by free milling nor by chlorination. It is true the superintendent says that the ore developed in the lower levels assays $4.19 per ton, and that it is of about the same quality as that in the levels above. If we assume that the ore milled averaged $4.19 per ton, the total saving amounted to about 71 per cent of the gold, but as the saving in chlorination should have been at least 90 per cent of the gold contained in the sulphurets, the saving by amalgamation or free milling must have been 60 per cent, a fair return for ore of this character. Evidently, however, the place to look for better results in this admirably managed concern lies in saving a higher percentage of the gold contained in the ore, for it is scarcely possible to imagine any reduction in costs beyond that in chlorination already alluded to.

It is to the modest consulting engineer in London, Mr. Hamilton Smith, whose name nowhere appears except in the title page, that the chief credit for this model report and for the results so satisfactory to the shareholders is due. He it is who has inaugurated the system of reports and who follows the execution of the work and the expenditures with that ceaseless care and attention that are essential in the attainment of economic success.

NEW PUBLICATIONS.

THE MINERAL INDUSTRY; ITS STATISTICS, TECHNOLOGY AND TRADE IN THE UNITED STATES AND OTHER COUNTRIES TO THE END OF 1895. VOLUME IV. Edited by Richard P. Rothwell. New York and London; the Scientific Publishing Company. Pages 880; illustrated. Price $5.

When the first volume of THE MINERAL INDUSTRY; ITS STATISTICS, TECHNOLOGY AND TRADE made its appearance three years ago, there were many who, while acknowledging the merits and the usefulness of the work, doubted whether the plan outlined could be carried out. The first issue was all very well, said these doubters, in the old familiar strain of their class; but it will be impossible to keep up so great a work, and it must fall off in interest and become a mere compilation of dry statistics of but moderate value.

The best refutation of these predictions has been found in the successive volumes of the work, each of which has been a distinct advance upon its predecessor. Instead of decreasing in interest they have grown in value as well as in size, and the appearance of the book has come to be an event in its special world.

It is no easy task to review in a limited space this volume of over 800 pages, and comment must be restricted to a mere sketch of its varied contents, though some of the articles really deserve separate reviews of their own as monographs on their special topics.

To begin first with the general plan of the book, it may be said that even if it were limited to a compilation of statistics it would be no small benefit to the miner, the manufacturer and the merchant to have at hand in compact and accessible form the figures of the production not only of our own country, but of all the world; to be able to ascertain at once what each nation has produced and to what extent it has exchanged its products with others. This knowledge is the basis of all intelligent operations in trade and industry; but until the present work was undertaken it existed only in a scattered form, in voluminous official reports and other documents, appearing often a year or two behind time, from which it could only be extracted with great labor, and in which it was practically out of the reach of the ordinary man who needed it. I confess that I can hardly understand how so complete a presentation of facts can be secured in so short a time. I can partly appreciate the great labor that must have been required, and I am much more ready to acknowledge the editorial intelligence which has directed, and the capable assistance which has carried out, the work, than to undertake any such colossal task on my own account. In most of the articles I find also that the running comment in the text gives one an idea of the changes in production and methods which have occurred during the year, and which are likely to affect the future supply or cost of the particular substance under consideration.

It may be said also that a general review of the statistical tables is needed to give one an adequate idea of the enormous extent and variety of the mineral industry, which constitutes, with agriculture, the basis of all human existence and progress, and which is, to even a greater degree than agriculture, the foundation of what we call wealth, both national and individual.

But besides the statistical portion, I find in these pages a record of technical progress made during the year, of changes and improvements in methods and machinery, and of scientific investigations and experiments which will be certainly of great service to the miner, the millman and the metallurgist. If there is any criticism to make on this division of the work it is that the purely scientific and theoretical has been rather set aside for the more directly useful and practical. There is a limit, however, to the size of books as well as to everything else, and I suppose that the readers who want information which they can use and apply directly to their own profit in their own business far exceed in number those who, like myself, have a leaning toward purely scientific discussion, and the majority must be considered accordingly. Not that the scientists have been neglected entirely; for I must acknowledge with gratitude such articles as those of Professor Kemp and Professor Vogt on the "Origin of ores," with several others.

There are many people to whom the history of the mineral industry is quite as interesting as its theory or even its practice, and such readers will find here the paper of Mr. John Fritz on the "Iron Trade," of which no other man could write more fully and authoritatively, and that on "The Evolution of the Anthracite Coal Trade," which is modestly published without the name of the author, but which I take to be the work of the editor-in-chief. Both of these articles are gems in their line, and that on anthracite coal especially brings together a mass of material from old reports and other documents of the past which have never before seen the light or been put before the public.

Another historical article which is of great interest is Mr. James Douglas' "Copper Smelting in the United States," in which many facts are grouped with which few of us were before familiar.

If we go through the articles on production the chief fault to be found is that some of them are rather too brief and too much condensed; but here again I must remember that the editor must have regard to the space limit, and hope that some of the products which are but briefly treated here may have more space allotted to them another year.

Among these articles I must call especial attention to that of Mr. Howard on "Asphalt"; to the description of "Chrome" and its various uses; to the copper article, with its very full statements of production: to Mr. Hobart's "Gold and Silver," which is a model of condensed statement and information; to the various technical annexes to the "Iron and Steel": to Professor Hofman's clear and precise statements on the progress made in treating lead ores and bullion, and to the descriptions of the treatment o quicksilver ores in Spain and Austria. From this last-named paper our own metallurgists have much to learn in the way of economy and close-working of low grade ores.

Two, or rather three, articles have struck me as of especial value, since they contain technical information which I have never seen published before, and which I do not believe is in print anywhere else. These are the papers on the "Manufacture of Chromates," on the "Utilization of Petroleum Products," and Mr. John E. Rothwell's excellent paper on "Lead Burning." This last named paper especially puts on record most practical directions with regard to an art which many need, but few know; and it has hardly a superfluous word in it. Other chapters to which I must call attention are that of Professor Richards on "Progress in Ore Dressing," which gives all of us some new points, and an excellent article by Mr. T. Ulke on "Parting and Refining Gold and Silver."

Still another chapter which is most timely and interesting is that on "By-Product Coke Ovens," showing, as it does, what has already been done in a direction to which the attention of coal and iron men has been lately called with most promising results. We are undoubtedly behind our European competitors in this direction, and this clear statement of what they have done will be of great service in showing not only how we can overtake them, but also on what lines we can work to surpass them.

The sharp competition of these modern days has made the closest economy imperative in all industries: and it is evident that both now and in the future our mineral industries, if they are to succeed and be profitable, must be conducted with close attention to the saving of all possible by-products and the prevention of waste in any direction. We hope to see this "Coke Oven" article followed up by others in the same line, such, for instance, as an account of what has been done in the way of utilizing blast furnace slags: a topic, I believe, on which something might be written with advantage to all concerned.

Other articles might be specified, and several of them, indeed, seem to claim special attention; but the limitations of time and space, before referred to, prevent it. The reader, however, will be able to find quickly those papers which may have practical value for him, or which may fit in with his particular line of work or study. It is perhaps the best commendation that the book can receive—certainly it is no small praise—to say that every reader will be able to find something which he needs.

My friend, Dr. Raymond, last year found fault with the red color of the cover which has been chosen for THE MINERAL INDUSTRY. I do not agree with him. Apart from the fact that it is distinctive and readily seen—excellent points in a book to which one must often refer—it seems to me that the cover is in accord with the contents, being bright, striking and sure to attract attention. It is not only better but more appropriate than the modest and somber brown in which the first volume made its appearance.

To put it in a paragraph, Volume IV. of THE MINERAL INDUSTRY is not only fully up to its predecessors; it is a distinct advance, and so shows that there is to be no falling off from the high standard which the editor

and the publisher have set. Its publication is a great service to the industry which it represents, and this fact is very fully appreciated by its readers. C. T.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

Playa de Oro Mining Company.

Sir: The last mail brought your issue of May 30th. In a prominent place in it an item is published in regard to this company which is liable to mislead your readers and do injustice to the company and to the present management.

A very decided change was made in the officers and employees of this company about the beginning of the present year. The new management took charge in Ecuador on the last of February, and a complete reorganization of every department was at once commenced. At present, the general timekeeper and one bookkeeper are the only persons holding positions of any importance at the mines who were in the employ of the company in February last. New men have been brought from California and other States as engineers, miners, foremen, etc., who were carefully selected for the positions they were to fill, and as it is not possible that you have received any reliable reports as to the manner in which these men are performing their duties, your statement that the work is being done in an unskillful and extravagant manner is unfair to them and to the company.

I think that your sense of justice will impel you to make a correction, or at least to state plainly whether your criticism is intended to apply to the present managements and methods, or to those that were in force previous to March 1st of the present year.

Arthur Pew, General Manager and Chief Engineer.

Playa de Oro, Ecuador, July 1st, 1896.

Treatment of Zinc-Lead Sulphides.

Sir: In your issue of June 20th under correspondence, Mr. Longmaid asks some questions relative to the treatment of zinc-lead ores as follows:

1st. What proportion of high-grade zinc ores are used in the charge?

2d. What per cent. of zinc is contained in the furnace mixture?

3d. What per cent. of zinc do the resulting slags contain?

In reply I will say that we use as high a percentage as we can get in our charges, even in some cases up to 45% and 50% zinc.

In the furnace mixture the zinc runs from 15% to 30%, average about 22%, and the slags run from 2½% to 9% in zinc.

It is true that we buy other ores and smelt with the zinc, but this is not essential to the process, and the ores we purchase are those containing copper; mainly, not for the purpose of diluting the zinc, but for better extraction of the gold and silver value.

The process in use at Canon City is not all incompatible with the conditions existing at the Broken Hill mines. The process can be modified to meet the conditions in almost any case. The lead and zinc after recovery as pigment, can be shipped in that form, or be converted back into metallic zinc and lead at slight cost. A small supply of copper ore is essential, and this, I understand, can be obtained in territory contiguous to the Broken Hill District.

The writer takes the ground that if the conditions will warrant the treatment of the Broken Hill ores by any process at moderate cost, nothing has been discovered up to this date which will equal in completeness and cheapness the process in daily use at Canon City. Furthermore, of all the different processes described and contemplated for the reduction of the Broken Hill ores, none is so cheap and complete as the one in use here.

That the advances in the treatment of zincy ores have, here in Colorado, reached far beyond that of any other country is evidenced by the fact that all such ores, when they contain fair value, and are not too far from market, command a ready sale at good prices.

There are, it is true, thousands of tons of zincy ores in this State which contain only slight values in gold, silver and lead which are not handled, but this is simply due to the fact that the value is too little to pay for freight and handling, no process having been found yet which will extract something from nothing.

We are frequently asked to bid on low-grade zincy ores 1,000 or 1,500 miles away, when the freight alone would cost more than the entire gross value of the ore.

So far as the writer's knowledge goes, the Broken Hill people have not yet taken the trouble to thoroughly investigate the process in use at Canon City—certainly not in recent years. Hence the assumption that it cannot be used there is premature. F. L. Bartlett.

Canon City, Colo., July 20, 1896.

Cyanide Copper Assay.

Sir: In your issue of July 18th, Mr. Flynn brings against us a charge of inaccuracy in the description of the cyanide copper assay as given in our text book of assaying.

In defence, I need not dispute the accuracy of Mr. Flynn's experiments, nor, as far as it goes, of the inference drawn from them. In fact, 15 years ago we proved the same thing in a paper which was reprinted in the *Chemical News* September 7th, 1883. Moreover, I claim that in our book we insist, with ample emphasis, on unvarying conditions as regards *ammonia salts*, ammonia, water, temperature and manner of working. If Mr. Flynn had kept in mind our statement, "Probably there is no method of assaying where a slight deviation from the conditions so surely leads to error," he would not have tried to upset our results by experiments in which the deviations from our conditions are not slight. He used a stronger ammonia (how much stronger?) and a weaker cyanide (how much weaker?), and he says nothing as to the strength of his acid or the quality of his cyanide, this last a rather important factor in the matter. Again, he gives experiments with 5 and 10 c. c. of acid. Why has he suppressed that with 15 c. c., which I am sure would have proved instructive.

In the assay as we give it there is a probable variation of something less than 1 c. c. up or down of the 10 c. c. of nitric acid we aim at. Our statement that variations in the quantity of nitric acid are unimportant we expressly limit to *such variations as are likely to occur under the conditions of the assay.* Mr. Flynn is fair enough to quote this qualification, but why does he ignore it? I have had the three experiments repeated. The work was done by Mr. H. W. Hutchin, who has not only had experience in the laboratories of two of our most important chemical works, but has also received four years instruction in the laboratories of the Royal College of Science. This strong ammonia was 33%, his nitric acid 70%, his cyanide a freshly opened sample of commercial 95% stuff, the the temperature about 18° C., the manner of working most careful and deliberate. The results compared with our former ones and Mr. Flynn's are as follows:

Acid used	5 cu. cm.	10 cu. cm.	15 cu.cm.
Former results	21·60	21·70	21·50
Mr. Hutchin's	20·84	20·78	20·67
Mr. Flynn's	35·40	36·40	not reported.

It is beyond the powers of arithmetic to bring Mr. Flynn's results into line; but in the others I see no reason for believing in an error exceeding ·1 c. c. in any one of the six results.

The question of the relative effects of ammonia and ammonium salts on the assay is worthy of fuller treatment, and I propose to deal with it in a separate article. J. J. Beringer.

Camborne, Cornwall, July 11th, 1896.

International Bimetallism.

Sir: President Francis A. Walker, of the Massachusetts School of Technology, has just published a work on "International Bimetallism," comprising in substance the contents of a course of lectures, delivered by him at Harvard University, and constituting one of the most candid, temperate and forcible presentations of the argument for bimetallism available in the English language. In the political "campaign of education" upon which we are now entering, the utterances on both sides are likely to be colored by passion and confused by haste. President Walker's book, written before the issues of the pending election had been defined, and without direct reference to them, is therefore likely to be peculiarly timely and useful.

As an additional claim to authority, it may be mentioned that President Walker was a pronounced bimetallist nearly a quarter of a century ago, when most of the present advocates of that cause had either never heard of the subject or were on the other side, at the time, for instance, when Senator Stewart, of Nevada, pronounced his famous panegyric on gold as the only true monetary metal.

On the other hand, it must be frankly said that the "free silver" party of to-day, while it may draw from President Walker's book strong arguments for bimetallism, will not be able to claim him as an adherent to its doctrine: for he takes pains, in his preface, to reiterate the opinion he had previously expressed that the independent free coinage of silver by the United States would be a serious mistake, and an injury to the cause of bimetallism throughout the world.

It is not my purpose, however, to state or to weigh President Walker's views on this or any other aspect of the subject. I wish simply to point out two errors into which he has fallen, and which, while they may be of no great importance to his general argument, are unquestionably blemishes, likely to impair the confidence of his readers.

I refer to the mention, in his historical and general introduction, of the special points of precious-metal mining, among which he specially names the danger of explosions of fire-damp, and to his summary statement that statistics prove this occupation to be notably unhealthy.

Upon the first of these assertions comment is scarcely necessary. Any professor or graduate of the School of Technology would have told its president that explosive gases are not encountered in gold or silver mines.

As to the unhealthy character of gold and silver mining, I know of no statistics which support this proposition. Those who desire to see a summary of the evidence may consult my paper on "The Hygiene of Mines," in the *Transactions* of the American Institute of Mining Engineers, Vol. VIII., p. 97.

I presume that President Walker fell into both of these errors by hastily confounding coal mining with metal mining. However they may have originated, the elimination of them from his book would improve it. R. W. Raymond.

Spanish Imports and Exports of Minerals.—Imports of coal into Spain for the six months ending June 30th were 717,627 tons, a decrease of 144,724 tons from last year. Imports of coke were 120,409 tons, a gain of 48,340 tons. Imports of iron and steel for the six months included 7,072 tons of pig iron, 6,741 tons of wrought iron, and 10,420 tons of steel, the latter being chiefly in the form of rails. The exports of minerals for the half-year showed large gains, being reported as below, in metric tons:

	1895.	1896.	Changes.
Iron ores	2,361,426	3,320 678	I. 952,252
Copper ores	272,606	342,546	I. 69,940
Lead ores	4,572	4,002	D. 570
Zinc ores	15,004	16,321	I. 1,317
Salt	102,823	145,327	I. 42,504

Exports of metals included 7,930 tons pig iron, a decrease of 2,926 tons; 12,956 tons of copper, a decrease of 1,974 tons; and 78,601 tons of lead, an increase of 3,850 tons.

Production of Tungsten.—According to researches on tungsten by M. H. Moissan, the pure metal is readily obtained by the reduction of tungstic acid with carbon in the electric furnace. With a large excess of carbon the carbide CW_2 is formed, which, in the fused state, readily dissolves more carbon, graphite crystalizing out on cooling. Pure tungsten can be readily filed and forged, it welds easily, has no action upon a magnetic needle, and has a melting point higher than chromium and molybdenum.

THE INTERNATIONAL GEOLOGICAL CONGRESS AT ST. PETERSBURG, AUGUST, 1897.

The seventh triennial meeting of the International Geological Congress, will take place in August, 1897, at St. Petersburg, by invitation of the Russian Emperor. The programme proposed by the committee, will enable the members of the congress to take advantage of this opportunity to study the geological and topographical features of Russia in Europe, the Emperor himself offering all the visiting geologists free transportation, first-class, over the Russian railways, before and after the sessions of the congress, including the excursions.

Membership in the congress is open not only to professional geologists, but also to other persons interested in the science, and may be obtained in accordance with conditions which may be learned by addressing the secretary. The meeting will extend over eight days, and the sessions will be devoted to discussing general principles of geology and the present state of the science in the effort to bring about harmony among the geologists of the world. Much time will be given to the exposition of the geological work being done in Russia, especially in those regions covered by the excursions. The usual facilities will be given for the display of instruments, maps and books pertaining to geology.

The principal tour proposed before the meetings is from Moscow, eastward to the Ural Mountains, crossing that chain and visiting several famous mineral and mining localities, including Ekaterinburg and Tagilsk and returning by way of Perm to Moscow. Persons especially interested in historical geology will, however, take the excursion into the province of Esthonia, while those who prefer crystalline rocks and glacial geology will spend six or seven days in Finland. An excursion which will occupy a month is proposed for the time immediately following the close of the congress in St. Petersburg. After visiting Moscow and its environs in a body the party will split up into three divisions, one section going by way of the Donetz Valley to the baths of Vladikavkaz, the second going by the Volga River, and the third by the Dnieper Valley to the same rendezvous. Thence the route leads over the Georgian military road to Tiflis, stopping on the way to visit some of the glaciers of the Caucasus Mountains. From Tiflis a visit will be made to Baku, the headquarters of the petroleum fields of the Caspian Sea, and afterward to Batoum, on the Black Sea, whence ship will be taken for Kertch, where a study of the Crimea will be begun which will end at Sebastopol, where the congress will finally dissolve. Six alternative and supplementary trips are offered in connection with the great tour, for those who are particularly interested in mines, in glaciers, in the ascent of Mount Ararat, etc.

Persons expecting to attend the Congress are requested by the committee to notify the general secretary of the congress by next October, as to which of the excursions they propose to take. The president of the congress is A. Karpinsky, director of the geological survey of the Russian empire, and the secretary, to whom all communications should be addressed, is Th. Tschernyschew, St. Petersburg.

The last meeting of the congress was in 1894, at Zurich, and the one preceding that was at Washington, in 1891, in connection with the American Association for the Advancement of Science and the Geological Society of America.

A NEW METHOD OF DETERMINING CARBON IN IRON.*

By E. Volmer.

Mr. Peipers, an engineer at Remscheid, has introduced a method of determining carbon in steel which is similar in principle to the assay by touch in use for gold. A series of test-bars of known carbon contents, and varying from each other by about 0·2% between the limits 0·2% and 1·2%, form the touch needles, while the touchstone is represented by a slab of hard-biscuit porcelain. The bar is hammered and filed to a blunt conical point, which leaves a black mark when rubbed on the porcelain slab. The sample to be examined is rubbed upon the center of the plate to form a patch of about the breadth and length of the finger, a similar one being made on either side of it with two of the bars whose composition is known. The chief point to be attended to is to make the patches uniform in depth of tint, which can be readily done with a little practice. The marked slab is then immersed to about half its depth in a beaker containing a 12½% solution of copper-ammonium chloride in water, which dissolves away the iron from the immersed portions of the patches, leaving the carbon behind as a gray stain, whose intensity increases with the percentage proportion. Steel with about 1½% of carbon is nearly as dark after as before immersion, while that with 0·25 gives only a very pale shade when the iron is removed.* If the metal were perfectly free from carbon, the mark would be completely dissolved.

Numerous substances have been tried for streak plates, including agate, Arkansas stone, hard glass, and feldspar, but none of them has been found equal to unglazed porcelain. In its ordinary state, however, the latter is too rough to abrade the metal equally, so that it must be rubbed down with coarse emery-cloth to render the surface sufficiently uniform. The markings may be nearly completly removed by washing in water, but a more satisfactory method is to clean the slab by immersion for 15 minutes in nitric or hydrochloric acid, which removes rust spots and stains, and restores the original white surface. The method is capable of indicating differences of 0·05% or 0·025% of carbon under favorable conditions. The cost of the apparatus is about £1 2s.

German Iron Production.—According to *Stahl und Eisen* the production of the German blast furnaces for the month of May was 559.991 metric tons, showing an increase of 21,595 tons over April, and of 70,362 tons, or 14·3% over May, 1895. The production this year was made up of 88,819 tons foundry iron; 149,838 tons forge iron; 45,123 tons Bessemer pig and 276,211 tons Thomas pig. The total number of furnaces in blast in May was 144, against 141 in April; the average output was 3,889 tons per furnace. For the five months ending May 31st the total production was 2,658,742 metric tons, showing an increase of 293,270 tons, or 12·4%, over the corresponding period of last year. The production is now at the rate of about 6,600,000 tons yearly.

* The Inst. C. E., Vol. CXXII. (Stahl und Eisen, Vol. XV., 1895, p. 199.)

French Movements of Iron Ore.—The following table shows the French imports and exports of iron ore during the first six months of the year as compared with the first half of 1895:

	January-June.	
Imports.	1896. Tons.	1895. Tons.
Belgium	39,104	20,442
Germany	663,746	611,841
Spain	248,590	163,454
Italy	206	.....
Algeria	4,161	5,417
Other countries	17,723	21,444
Total imports	913,530	822,598
Total exports	109,506	97,919

Cleaning Castings by Sandblast.—An experiment made by Howard A. Pedrick, locality not stated, in order to determine the practicability of cleaning large castings by blowing sand against them under steam at a pressure of sixty pounds per square inch, is described in the *Iron and Coal Trades Review*. It was found that the steam wet the sand, causing frequent clogging of the pipes, and made it next to impossible for a man to stand the severe rebounding of sand from the casting; but after a time compressed air was substituted for steam, and the process was improved until at present ornamental and fancy castings can be thoroughly and cheaply treated in this way, producing an article which would otherwise require much labor to finish. In ordinary classes of work it is practicable to clean thoroughly 6 sq. ft. per minute, no matter how much ornamentation covers the casting; steel is very hard to clean in the usual manner, but yields readily to the sand blast. The outside appearance of the sand box is like that of a vertical boiler; it is fitted with feed valves and sand chambers, so arranged that an air pressure of about 10 lbs. per square inch forces the sand through a rubber hose, which must be kept free from kinks.

Coal Mining in the Ourals.—Carboniferous deposits are found on both sides of the Oural Mountains. On the western side they run almost continuously along the chain of mountains. On the eastern side, the carboniferous formation is met with in the form of thin bands with numerous interruptions, and interposed in the mass of crystalline rocks. The composition of the deposit on the eastern side is almost identical with that of the Moscow basin. Mining operations on the western side of the Ourals are concentrated within a small area in the north. The thickness of the seams varies from 3·2 ft. to 16·4 ft., with occasional swellings. The coal obtained is of the uninflammable kind, and only rarely gives, after washing, an agglomerated coke. The principal coal deposits worked on the eastern side of the Ourals are distributed in the direction of the meridian over a distance of about 100 km. They are divided into two parts, the north producing uninflammable coal and anthracite, and the south giving a coal which produces an agglomerated coke, while at certain points, by the side of the anthracite, a graphitic coal is found, and even deposits of graphite. Although coal-mining operations in the Oural basin were at first carried on on the eastern side—from 1851 to 1861—and also that good deposits of coal have been met with in recent years, the principal seat of operations is on the western side. The coal produced in this district is principally consumed by the railways, the iron and steel works, and the salt works.

The Mineral Wealth of Victoria, Australia.—The acting secretary for mines, Mr. J. Travis, in his report on the condition of the mining industry for the year 1895 states that the gold yield for the colony for the year was 740,086 oz., which was the best since 1884. The highest yield was in 1856, when 3,053.744 oz. were obtained. From 1851 to 1895 the aggregate yield was 60,186,321 oz., valued at £240,745,284. Last year Ballarat headed the list with 166,215 oz., Bendigo following closely with 159,414 oz.; Beechworth contributed 96,409 oz., Gippsland 92,280 oz., Maryborough 81,376 oz., Castlemaine 66,087 oz., and Ararat 32,052 oz. Ballarat headed the alluvial yields with 75,584 oz., and Bendigo the quartz yields with 153,924 oz. The dividends paid by gold-mining companies during the year amounted to £438,507, the Bendigo District being easily first with £130,842. Ballarat came next with £86,061; Beechworth, £60,882; Gippsland, £56,240; Maryborough, £40,800; Castlemaine, £35,255, and Ararat, £28,425. During the year 194,226 tons of coal were raised, the value being £118,400. Altogether 111 accidents occurred in gold mines during 1895, 44 persons being killed, the number of men employed in gold mining being 29,897. During the past 20 years 30,642 men have been employed on an average. Accidents number 2,559, of which 896 proved fatal, the total killed and injured being 2,791.

Changes in Mexican Patent Law.—The Mexican Consul in New York has received information from his government of a change in the Mexican patent law. The amendments affect only Article, capter 5 of article 33d of Law of June 7, 1890, on Patents of Invention, aud also the Transient Article of that law. Article 33d, as amended reads:

"The owner of a patent invention or a patent of improvement is compelled to prove before the Department of Fomento at the end of every five years of the existence of his patent, and in order to keep it in his possession for the following five years, that the payment of an additional tax has been entered into the Federal Treasury, as follows: At the end of the first five years, $50; at the end of 10 years, $75, and at the end of 15 years, $100. All these payments must be made in Mexican dollars.

"To prove that these payments have been made at the end of the said period of five years a term of two months is allowed, which cannot be extended."

The Transient Article, as amended, reads: "The persons concerned who, on the date of the publication of this law, have incurred the forfeiture established by section 3 of the 37th article of the law of June 7, 1890, may avail themselves of the dispositions of the present law to be exempted from the forfeiture penalty, provided they make the due payment of the taxes within three months after its publication, it being understood this concession will take place only in case that a third person will not suffer in his rights after the forfeiture may have been established."

ELECTRICITY DIRECT FROM CARBON.*

By Dr. Alfred Coehn.

The problem of the direct production of electricity from carbon would find its simplest solution if we could succeed in dissolving carbon in a fluid, just as we do metals. This question is formulated thus by the theory of electrolysis: Can carbon form ions?

In attempting to find an answer to this question, I started from an observation made by Bartoli and Papasogli, that when dilute sulphuric acid was electrolyzed between carbon electrodes, the carbon anode takes part in the electrolytic processes, in such a way that, besides oxygen, both carbonic oxide and carbonic acid make their appearance at the anode. I commenced my experiments by varying the important factors, viz., concentration, temperature and current density, in order to discover whether it was possible to obtain the products of combustion without admixture of oxygen on the anode. I have not succeeded in obtaining carbonic acid or carbonic oxide alone, but a mixture of the two, containing only 1% of oxygen. In this mixture about 70% was carbonic acid and 30% carbonic oxide.

In these experiments it was observed that at low temperatures a disintegration of the carbon anode took place, small particles of carbon being seen suspended in the acid. At higher temperatures, on the contrary, no such disintegration of the carbon took place, but a distinct coloration of the acid was produced, at first yellow, then later dark red and red-brown. If this is a solution of the carbon brought about by the current, the carbon is presumably contained in it, in the form of ions, *i. e.*, in a form capable of being influenced by the directing power of the current. Such a solution must be capable of giving up carbon to the cathode, since carbon does not decompose water. (A series of platinum plates, coated with carbon, was shown, and a dish, such as is used by Classen for quantitative electrolytic analysis, was shown coated inside with a dense layer of carbon.) The solution and precipitation could readily be obtained with different kinds of coal as anode. Ordinary coal ground smooth, and arc lamp carbons, were found specially suitable; the experiment also succeeded with coke.

That the precipitate was really carbon, and not metal derived from impurities in the coal, was shown by treatment with acids. It was not attacked by hydrochloric acid; in hot nitric acid traces were dissolved—as in the calorimetric test for carbon in steel. In the flame, even the densest precipitates completely disappeared immediately. Finally, a direct proof was obtained by oxidizing the precipitated carbon by chromic acid, and absorbing the resulting carbonic acid in alkali. A number of analyses were made, and these always showed, in addition to carbon, a little hydrogen. The residue—reckoned as oxygen—was sufficient to convert the hydrogen found into water. Either, therefore, in addition to the carbon, a solid, conducting carbohydrate was separated, or some kind of crystalline water which adhered strongly to the carbon was produced. The presence of water in the precipitate is indicated by its behavior with concentrated sulphuric acid. If the acid is dropped on the precipitate it is immediately loosened and blackened, reminding one of the behavior of sulphuric acid with a carbohydrate.

It was now of interest to attempt to construct an element whose soluble electrode consisted of carbon. The only question now was to place a more electro-negative element opposite the carbon. The peroxides stand still nearer even than carbon to the negative end of the potential series. Lead peroxide was used in the practical form of a charged accumulator plate. If this is placed opposite a carbon in sulphuric acid of the proper concentration, temperature, etc., an element is formed of which carbon is the soluble electrode. The element supplies a strong and constant current. Through an external resistance of 100 ohms it shows an e. m. f. of 1·93 volts.

There arises here the question whether any share in the production of the current is due to the reaction on the carbon, and if so, what share? Platinum also, when placed opposite a peroxide plate under the same conditions, shows a current in the same direction as the carbon. But it never comes to a visible development of oxygen; as soon as the platinum is charged with oxygen the current becomes exceedingly small. If the carbon was an insoluble electrode it would behave in the same way. But this is not the case. The current lasts till the accumulator plate is discharged. A second charged peroxide plate may then be substituted, and the current is again produced as strong as before.

The results of my investigation may be summarized as follows:

1. It is possible by electrolysis to produce a solution of carbon.
2. From such a solution carbon may be separated as a cation.
3. An element may be formed of which carbon is the soluble electrode.

*Abstract of a paper read before the Berlin Elektrot. Verein. *Industries and Iron.*

BRITISH COLUMBIA MINES.

Written for the Engineering and Mining Journal by H. M. Beadle.

What are called the East and West Divisions of Kootenay District of British Columbia are destined to be among the greatest mineral-producing districts of the world. The discovery of the mineral character of the country and the opening up of the mines are owing to prospectors of the United States Rocky Mountain region. The writer does not know who were absolutely the first prospectors to find mineral-bearing veins there, but a party of Montana prospectors, of whom Hon. Joe Oker, of Helena, was one, found ore in the Slocan country in the summer of 1889. The

Trail Creek Beginnings, "Lily May" Tunnel.

party was driven out by a terrible snow storm, which was so heavy that they found great difficulty in getting out. They went down the Kootenay River from Bonner's Ferry in a canoe to Kootenay Lake and returned the same way.

While the silver-lead mines of the Slocan country are attracting great attention, the greatest interest centers in Trail Creek. This stream is only seven miles in length and flows almost due east into the Columbia River in a direct line. Trail Creek is about five miles north of the international boundary line.

Mineral-bearing veins have been found along the western side of the Columbia River from the mouth of the Kootenay to the mouth of Kettle River, in Washington. The most noted districts are Boundary Creek, some 20 or 25 miles west of the Columbia, and Grouse Mountain, which rises almost out of the Columbia, and which the international boundary crosses. With few exceptions the character of the ore is the same on the west side of the Columbia, and will be described when the Trail Creek ores are spoken of. On Waterloo Creek, and other places immediately east of the Columbia, the ore is much of the same character. On the east side of the river, at Northport, the mountains are composed of lime or dolomite rock, and the character of the ore is much the same as at Slocan and Ainsworth.

The country rock of the region west of the river is very much the same, except where the lime occurs along the river. At Trail Creek it is called diorite. Some assert that it is syenite. Whether the feldspar in it is orthoclase or oligoclase, there is evidently considerable lime in it as well as in the hornblende. It is a tough, hard rock, very difficult to drill, therefore every company as soon as it feels able, puts machine drills at work. The writer was only six days in the country, and it was impossible for him to see a great deal of it. Near the Columbia, especially, lime is seen in many places, and it is said there is quite a body of slate some three miles northwest of Rossland. A great many granite boulders are scattered over the surface of the country, and there are

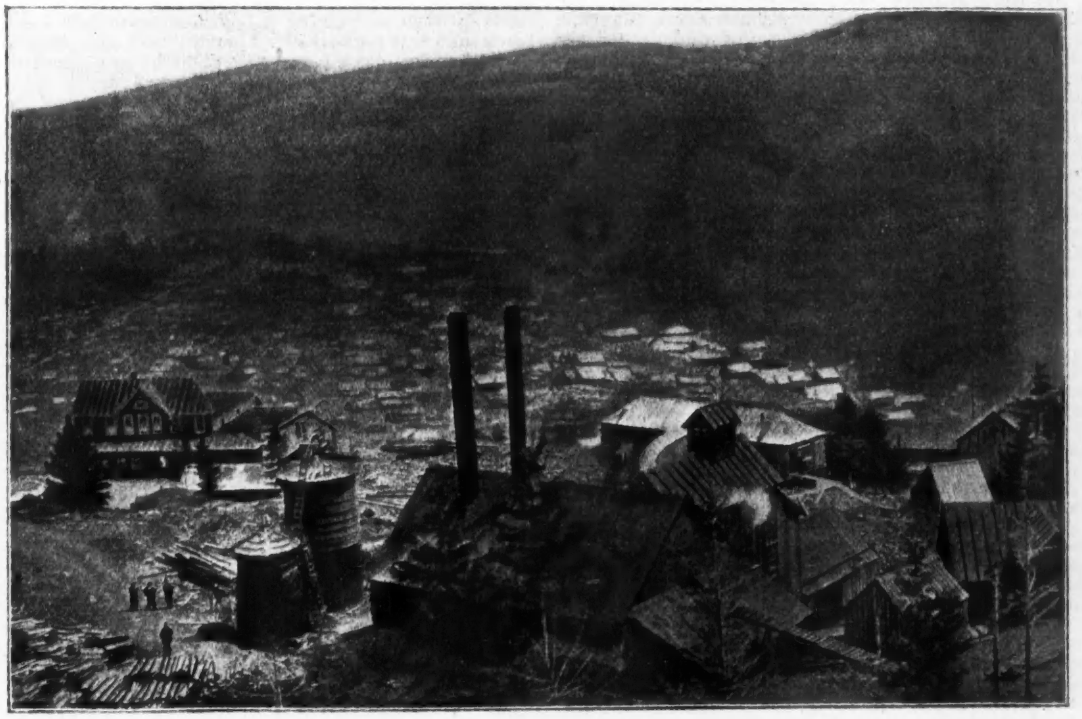
undoubtedly bodies of granite and granite dykes found in the country rock, as well as coarser-grained diorite and syenite.

On the west side of the Columbia the mountains are very rugged and broken, but none are probably over 6,000 ft. above the sea. The altitude of Trail is 1,400 ft. and Rossland 3,800 ft.

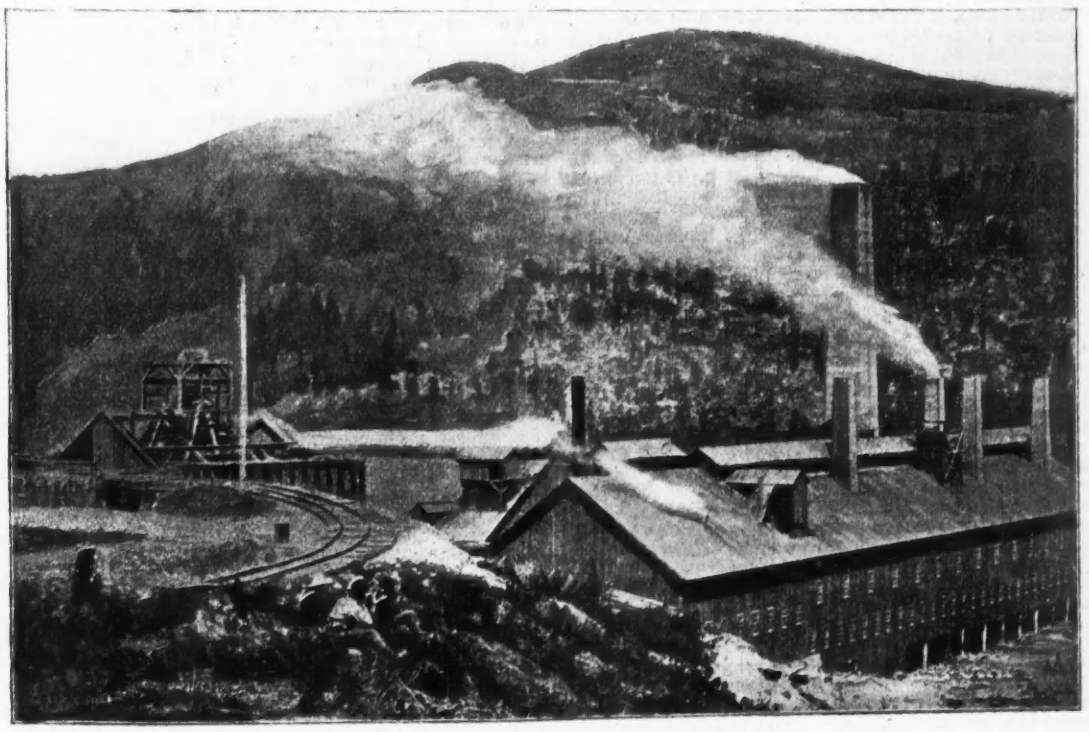
In the vicinity of Trail Creek the mountains north of the creek are called the North Belt and those south are called the South Belt. Rossland lies in the North Belt. Bodies of lime have been found in the South Belt.

The principal veins in the Trail Creek country have a strike in an easterly and westerly direction, but if it is true that iron capping marks a vein, they may be found running in almost every direction. It is believed at Rossland that every iron capping covers a vein and that if the vein is explored more or less good ore will be found. Inquiry in regard to large ore bodies always being found under the iron capping were answered in the affirmative. It seems to an observer that it would be foolish to expect that every vein was mineralized sufficiently to pay for working, even if every such capping covered a vein. The east and west veins, the only ones that have been explored to any great extent, dip to the north. So far every vein explored has proved to be larger at depth and the ore richer. The ore shoots, however, do not seem to grow in length. In the War Eagle, there were four ore shoots on the surface, but in the lower tunnel, some 250 ft. below the apex, these shoots had grown into one great shoot, over 300 ft. long. It is generally believed that the ore shoots incline to the east; it is certainly so in the Le Roi.

The ore is iron and copper pyrites, white and magnetic iron. The proportion of copper is from a trace to 20%. It is estimated that the copper in the whole camp will average 2%. In a general way, it may be said that the higher the value in copper the richer the ore is in gold. But this is not always the case, for often very rich copper carries but little gold. The ore needs no concentration. The iron in the ore is considered very valuable as a flux, and it has been treated at the smelters very cheaply, so cheaply that there has been a profit on ores that yield $20 a ton. There is a little silver in the ore, but so little that it is seldom taken account of in estimating its value. The ores of the War Eagle mine carry about six ounces of silver to the ton. In the other mines the average will not be three ounces.



LE ROI MINE, KOOTENAY, BRITISH COLUMBIA.



TRAIL CREEK SMELTER, BRITISH COLUMBIA.

The ore bodies of the several mines of the camp are very large, as will appear from a description of them. Much of the ore is of low grade. So far as developments go there is probably more tons of ore below $20 in value than there are above that amount.

The Le Roi is probably the largest mine in the camp; at any rate it is the best developed. The shaft has been sunk to the 450-ft. level on the lead which inclines between 50 and 60°. The perpendicular depth is about 300 ft. A shaft is being sunk from the lower level and has prob-

ably reachod a depth of 500 ft. on the lead. The ore in this shaft is richer than the ore above, and it has been characteristic of this mine, and all others in the camp, that the ore has increased in richness as depth has been attained. A diamond drill has shown that there is 10 ft. ot good ore a short distance from the hanging wall, and other small veins have been encountered. The mine is working about 120 men, and will soon have an air-compressor plant of sufficient capacity to operate 40 machine drills, and there is so much ore blocked out that it could not be stoped with the present force in three years. The net value of the ore will amount to over $3,000,000. There is at least 10,000 tons of ore on the dump. While there is considerable low-grade ore in the mine, there are bodies that will run very high, much of it yielding $70 a ton.

Next to the Le Roi, the War Eagle is the best-developed mine. The lowest tunnel is 250 ft. below the apex. The ore shoot in this tunnel is over 300 ft. long. The average of the richest part of the ore (in the whole camp the richest ore has been found on the hanging walls of the veins) is over 14 ft. wide, and its value is very great. Mr. James Clark, superintendent, informed the writer that a large body of it would run 8% copper and carry $80 gold to the ton. A very conservative estimate puts the net value of the ore above the bottom of this tunnel at over $1,000,000. A shaft has been sunk on the Iron Mask mine, belonging to the same parties that own the War Eagle, though organized in a different company, and it is said that the War Eagle will be worked through this shaft below the present tunnel. The Iron Mask is proving to be a good property, and some are claiming that it will prove to be a greater producer than the War Eagle. The former is bonded for $1,000 000 and the War Eagle for $,00,000. Unless the present stockholders retain part of their stock, the mines are very cheap at the figures stated. There are 95 men employed on these properties.

The Centre Star, though it has shipped no ore, is the next best-developed mine in the camp. The tunnel is driven about 850 ft., and at its face is probably 250 ft. below the apex of the vein, which is 70 ft. wide, and dipping to the north at an angle of about 60°. There is a small vein, some three feet in width some distance south of the foot wall, and two somewhat larger veins north of the hanging wall. There are several shoots of ore in the immense vein. There are ore bodies on the hanging and foot walls as well as in the center of the lead. The richest ore is on the hanging wall and is over 12 ft. wide. One body is over 140 ft. long and 35 ft. wide, and it will yield from $35 to $80 a ton. The net value of the ore above the tunnel is at least $2,000,000.

The Josie was the first mine to ship ore in the camp. It is developed by a tunnel in some 540 ft. There was a good body of ore at the mouth of the tunnel, and the next body was 140 ft. long and the third 40 ft. long. The lead was about 7 ft. in width. There are four veins on the property, two of which are being worked. The ore has been very rich.

The Nickel Plate is down 150 ft., and is being worked through a shaft. A crosscut was driven north from the hanging wall and at some 12 ft. a rich streak of ore 1 ft. wide was cut. At 100 ft. a second vein was struck some 4 ft. wide, and at 220 ft. a third vein was struck, but the ore was of little value. At the surface the vein upon which the shaft was sunk was only about 8 in., at 150 ft. it is 4 ft., and it is believed that three of these veins will come together at depth. The ore in the Nickel Plate is the richest in the camp, much of it running over $100 to the ton.

The Jumbo, on Spokane Mountain, some three miles from Rossland, is probably the largest mine in the camp, and contains bodies of ore that run well. All these mines are in the North Belt. In addition to these there are many others, the most prominent of which will be found in the list of producing mines given below. The Great Western is the most prominent prospect in the camp. It has nine distinctly marked veins on the surface, some of them very large. In several shafts ore has been encountered, and if these should prove to be as large and rich at depth as those already developed, a great property, probably the greatest in the world, would be the result.

The South Belt contains some good mines, but none of them are so far developed as those in the North Belt. There is considerable galena ore in the mines of the South Belt, carrying silver and gold. The best-developed of these is the Crown Point.

The only free-milling property in the Trail Creek region is the O. K. on a mountain of the same name. The vein is in diorite. A 10-stamp mill is being erected on the property, which has already yielded largely.

Some parties aver that there are no veins in Trail Creek region; that there are only large and irregular deposits of ore. That they are mistaken is shown that by the fact that the ore is found in the direction of the indications; that there are walls found in which there is no ore, and that on these walls, as well as on many seams and slips of the rock, calcite gouge is found. The walls of the Centre Star, though 70 ft. apart, are as as clearly defined as the walls of any vein.

The ores of the camp were formerly hauled to Northport by wagon, 17 miles, and shipped to the smelters both east and west. Since the smelter has been built at Trail all the ores the smelter can handle have been sent to Trail, especially since the narrow-gauge road to Trail has been built. It is stated that the Trail smelter will be enlarged, and that much of the ores from the Le Roi, War Eagle and other mines will be treated there. But if that smelter was twice its present capacity, it could not treat all the ores furnished by the Le Roi mine alone. When the road to Rossland from Northport is completed (and it will be before the snow falls sufficiently to interfere with its construction), the ores can be sent at considerably reduced rates to the United States smelters. If the smelters of British Columbia want the ores the Canadian Pacific must build branches to Rossland. No doubt several smelters will be erected in Rossland before this time next year.

Coal is now used for the furnaces, but wood will be used as soon as there is enough seasoned on hand to keep the smelter running steadily. The product of the smelter is an iron matte, the value of which the management would not state. This matte is shipped to Butte, Mont., and is used to flux the ore and enrich the copper produced in the smelter there, belonging to the same men. It is the intention to put in a refining plant at Trail, where the matte can be refined.

The mines of the camp ready to produce ore, beside those already mentioned, are; Cliff, St. Elmo, Consolidated St. Elmo, Virginia, Poorman, Columbia, Kootenay, and Iron Horse, in the North Belt, and Crown Point, Mayflower and Lily May, in the South Belt.

THE GOLD INDUSTRY OF BRITISH GUIANA.

Written for the Engineering and Mining Journal by David E. Headley.

The development of the gold industry of British Guiana may be said to have been started in the year 1864, and its start was somewhat romantic.

It was at Bartica Grove in the year 1864 that Mr. B. V. Abraham came across some miners, who had come by way of the Cuyuni River from the Upata Mine in Venezuela, and in their possession was some black sand which was shown to him and in which he detected auriferous signs. He then placed the matter before some influential gentlemen, and sufficient money was subscribed for the purpose of testing the place where this black sand was found. Mr. Abraham then proceeded to the place, and on testing the quartz found that the pannings justified the expenditure of money. A company was then formed under the cognomen of the British Guiana Gold Mining Company, and which may be said to have been the pioneer gold company. But strange to say, signs were apparent which left no doubt that the British Guiana Gold Mining Company was not the first to be on that spot in search of the precious metal. An iron mortar and pestle were found buried deep in the soil, and from the signs of age which they exhibited were said to be no less than three hundred years old.

On the same spot were also found some battle axes, evidently prehistoric weapons of Indian warfare. After the formation of the British Guiana Gold Mining Company, the Government was then approached for a concession, which was granted, comprising fifty square miles of auriferous country, from the source of the Uari Creek to its mouth and two miles of land on either side. A first-class mining engineer was put in charge of the property, but the gold won during the first twelve months being only two ounces, great disappointment was caused to the shareholders.

Mr. B. V. Abraham, however, proceeded to the mine and assumed the management, and the returns were infinitely better.

In 1866 Mr. Abraham went to England, and succeeded in interesting some Australian capitalists in the mine. Arrangements for the sale of the mine were concluded, but just as the agreement was on the point of being signed, the Venezuelan Government protested on account of the concession being in the disputed territory. This frightened off the capitalists, and all arrangements for the sale of the mine were cancelled. The shareholders were disinclined to go on and the mine was abandoned, and all the tools, machinery, etc., was left to rot. An idea may be formed from the price offered what the intended purchasers thought of the property; it was £15,000 in cash and £15,000 in shares.

But it was not until about 20 years later that any systematic search for the precious metal was made, and the result of that search has made British Guiana one of the recognized gold-producing countries of the world. The recognition which the gold industry met at the hands of colonists was in a great measure due to the unremitting toil and exploration of the interior of the colony by such men as D'Amil, Brown, Bremond and the veteran gold hunter Jules Caman, who made some lucky finds in his day.

During the years 1882, 1883 and 1884, the output of gold was not large on account of the few companies engaged in the work. Extensive prospecting was impeded by the large advances demanded by laborers, cost of getting goods into the interior, and in getting reliable and practical men as prospectors.

During this period there was no settled mode as to the location of claims, therefore each prospector who went into the interior occupied whatever land he found to be rich and started washing gold. The result of this was that any other company that came along and had a stronger force drove off the company already located and enjoyed the fruit of their luck and labor. This state of affairs led to many disputes, and, in some intances, to the shedding of blood.

At this juncture (1887) the Government stepped in and made regulations. This necessitated each prospector arming himself with a prospecting license, which cost him 24 cents for a term of one year and gave him the privilege of locating any creeks found by him and the protection of the Government.

Many citizens during this time had bitter experience. Unscrupulous fellows would go to them with a couple of pennyweights of raw gold, declaring that they had found rich creeks. Scores of them got expeditions costing several hundred dollars, departed for the bush, and, after remaining for a few weeks, would return without a grain of gold, and in some cases let in confiding partners for thousands of dollars. A favorite trick tried on by vagabonds on the uninitiated was the taking of spelter and hawking it around for gold, and many who bought this stuff found to their cost that "All that glitters is not gold." The output of gold nevertheless continued to increase year after year until the maximum output of any year was reached in 1893, the amount of gold won being 142,788 oz.

This has been all achieved by means of the most primitive methods, and by local capital solely. During the years 1884 to 1892 the working of gold was prosecuted with the utmost coolness and equanimity, but the feverish excitement which takes place on every new gold field was only evinced in the colony with the advent of Messrs. Tennant & Connolly from London, 1893. On every side were heard tales of untold wealth, only lying in the interior, to be won by the spending of capital in the development of quartz mining claims. Expeditions were sent out and numberless mining claims were located. On every hand could be heard the words, "Tennant, gold and shares." Company after company was floated, and many who had hoarded up their little savings took them out, and those who had none borrowed from friends or pledged securities, to procure shares, each investor vieing with the other to see who could subscribe for the most shares.

All were laboring under the delusion that everybody would be rolling in wealth within the course of a year; but, alas! all the vast castles that were built in the air toppled over, and the golden dreams passed away, leaving nothing but disappointment and regrets; and it is the fate of every industry which is not run on a firm commercial basis, but on wild speculation.

The outcome of this crash was that many who had invested in gold ventures suddenly ceased to do so, a want of confidence was felt in the

industry, and expeditions to the interior were no longer sent out. Some of the companies died a natural death, and others are still lingering in expectation of better days. The industry is only now recovering from the blow that was dealt it.

Starting with 250 oz. in 1884, in 1889, 28,282 oz. were produced: 1890, 62,615; 1891, 101,298; 1892, 129,615; 1893, 142,788; 1894, 129,670; 1895, 122,023.

Output of gold from the different rivers during 1894 and 1895:

1894.	Oz.	1895.	Oz.
Barima	29,493	Barima	27,953
Barama	3,848	Barama	4,618
Cuyuni	27,759	Cuyuni	28,753
Groete Creek	155	Groete Creek	438
Mazaruni	5,238	Mazaruni	1,534
Puruni	2,987	Puruni	6,766
Essequebo	35,026	Essequebo	27,206
Potaro	25,671	Potaro	25,614
Demerara	615	Demerara	21

The auriferous portion of the colony is divided into five districts for the convenience of carrying out the gold regulations.

District No. 1.—From the left bank of the Corentyne River to the watershed between the Demerara and Berbice rivers, with all the tributary streams.

District No. 2.—The Demerara and Essequebo rivers and tributaries excepting those of the Essequebo below Bartica.

District No. 3.—The Mazaruni River and tributaries to the watershed between itself and the Cuyuni River.

District No. 4.—The Cuyuni River with all its tributaries and the tributaries of the Essequebo below Bartica.

District No. 5.—The northwest district, including the Pomeroon River and all rivers, creeks and streams to the north of the watershed of the Cuyuni River (left bank).

District No. 1.—Very little has been done in the way of prospecting this district. A few expeditions have gone up the Berbice River, but they have all returned with reports of only having seen traces of gold. The general belief is, that gold some time to come will be found higher up the river, but on account of the almost impassable barriers, in the way of cataracts, very little of the upper portion of the river has been explored.

District No. 2; Demerara River.—A good many expeditions have been up this river and a little gold has been won by alluvial washings. From reports, time after time, colonists were led to believe that this would be the district of the colony for quartz mining. But the belief was scattered to the wind by the bursting of the Kanaimpoo "Bubble." After the arrival of Mr. J F. Connolly, M. E., and the subsequent arrival of Mr. R. Tennant (Mr. Connolly's principal) the Kanaimpoo mine was floated into a limited liability company (Mr. R. Tennant being promoter) with a capital of £50,000. Development was continued under Mr. Mulford, who was sent out by Messrs. Fraser & Chalmers, of Chicago. A 20-stamp mill was erected, and after the expiration of about 12 months crushing was started, and the result of the first fortnightly crushing was disastrous, yielding 119 oz., 20% of which was copper. The mine was ultimately shut down and was bought by the Sproston Dock and Foundry Company. The collapse of this company brought universal consternation and a want of confidence in mines and miners. Since then the only active operations that have been carried on in this river are at the Appaparu mines, the property of Mr. James Winter.

This river (Demerara) is destined to become the highway to the Potaro, Conawaruk and their tributaries, by the laying of a railroad connecting the Demerara River with the upper Essequebo. All passengers, etc., will go by way of steamer up the Demerara River and by train across to the Essequebo.

Potaro River (No. 2 District) is a tributary of the Essequebo, and, standing about fourth in the list for gold production, has turned out a considerable amount of gold. The largest gold producing company has been the Rhodius Syndicate. Gold made by Rhodius Syndicate from alluvial washings: 1893, 3,564 oz.; 1894, 3,987 oz.; 1895, 2,510 oz. Very rich samples of gold-bearing quartz have been brought down from this river from time to time, which indicates that there are rich leads to be found in the vicinity

Conawaruk River (No. 2 District) is about the least known among the gold-producing rivers, but its output is equal to any of the others. It was in this river some years ago that a Mr. Luckie, in the employ of the Sproston Dock and Foundry Company found a large piece of gold and quartz weighing 40 lbs., about 5% of this was quartz.

Quartz samples, extraordinarily rich, have been brought down from this river which, if given good facilities in the way of roads and conveyances, will I believe become the richest quartz mining center of the colony.

Situate on this river are the claims of the Garnett syndicate. Its output of gold being as follows: 1891, 5,362 oz.; 1892, 8,538 oz.; 1893, 15,839 oz; 1894, 11,958 oz.; 1895, 9,153 oz.

Upper Essequebo River (above Bartica).—This portion of District No. 2 has turned out a considerable amount of gold, all of which may be said to have come from the celebrated "Bonanza" Omai Placers, owned by Jacobs, Rosa & Carreiro. This has been the richest plot of placer ground found in the colony as yet. The output of gold, 27,231 oz., which was won with an average of about 100 men, between 1889 and 1893, will give some idea as to the enormous dividends it has given. It is at present lying idle until some scientific process is brought into play to extract the enormous amount of gold which is contained in the tailings, and gravel which are too poor to be worked by the ordinary methods, not to say anything of the supposed rich leads that are around, and which I have no doubt but that future development will expose.

District No. 3.—Mazuruni River was explored by Jules Caman, the veteran gold hunter, who located some very rich placers which he sold some time after for $30 000 to a combination which was known as the Essequebo Gold Company. After some time the name of this company was changed to that of the Barnard Syndicate, and under the able management of Mr. A. B. Barnard has turned out about three-quarter million dollars worth of gold, which gave the shareholders handsome dividends. There is a vast amount of land in this river waiting to be explored which some day may yield up its treasures to practical miners backed by capital.

Puruni River (No. 3 District), may be said to have been the "pioneer" river of the colony, as all the first expeditions that were sent in search of gold explored its banks, and it was on account of the rich finds made that the colony was believed to contain rich goldfields. Years gone by the production of this river was very large, but it has fallen off considerably on account of prospectors having been attracted to other rivers.

District No. 4.—Cuyuni River—It is on one of the tributaries of this river that the assault was made by the Venezuelan policemen on Inspector Barnes and his men and for which Venezuela has just had to pay £1,600. Gold washing has been pursued with a large amount of push and energy and has given satisfactory returns to a large number of investors. Chief among them may be mentioned Messrs. Duarte and Diguair, the output of their placers being in 1893 4,075 oz. 8 dwt. 3 gr.; 1895, 3,753 oz. 2 dwt. 2 gr.

Quartz mining is being carried on by Mr. W. H. Goring who was associated with Mr. Spiers (formerly manager of the Barima mine) quartz veins panning up to 100 oz. per ton are said to have been discovered. The Cuyuni River was first on the list in 1895 for gold production.

No. 5 District (Northwest).—It was only about 1890 that gold was discovered in this portion of the colony. In the Waini River very little has been done in the way of exploration, and prospectors have reported to have seen only traces of gold. Barama River, a tributary of the Waini, has produced a large quantity of gold, and is a good field for investment. Well defined quartz reefs can be seen on every hand, many of them crossing the course of the river, and from the clayey substance by which they are inclosed rich pannings may be obtained. Chief among the men who have made money may be mentioned Mr. W. H. Goring, whose largest monthly output was 960 oz. Large nuggets have been found weighing as much as 80 oz.

Barima River.—This is the "pioneer" river of the Northwest District, and is the one in which the destiny of the colony is bound up, as, should quartz mining here prove a success, the success of the colony will be assured. A large quantity of alluvial gold has been won from the Barima, which in 1894 and 1895 stood second among the gold producing rivers. Among the companies which have done most to push alluvial mining in the Barima are the Arakaka Placer and Mining Company, Drayton and Ouckama, North West Syndicate, and Lewis, Winter & Garnett.

The concern mentioned under the name of Lewis, Winter & Garnett was very prosperous until the advent of a Mr. George Dixon, from England, who made proposals to the partners to allow him to handle the property, promising to give them a return of $.00,000 oz. in six months, and for these proposals he was given $400 per month and taken in as a partner. The affairs of the company were managed in such an unpractical manner that Messrs. Garnett & Winter were let in for a matter of $110,000, and all the preparations made for working were abandoned and now stand as a monument to stupidity.

With the advent of Messrs. Tennant and Connolly in 1893, much enthusiasm was shown about gold in the Barima and everybody who was interested in the industry felt like being the owner of a mine, in consequence of which mining claims were located all along the Arakaka Creek. Although everybody's expectations were not realized, yet much must be placed to the credit of Messrs. Tennant and Connolly who so ably helped to bring the industry to the notice of the London mining community, more especially the latter named gentleman, through whose indefatigable efforts the Sir Walter Raleigh Company has been floated and who is still among us laboring for the success of the mining industry. But to Michael Farraher must be placed the credit of being the first to attempt mining in the Barima. Messrs. France and Theobald located some mining claims and Michael Farraher was got to develop the same, and with their push and energy associated with that of Messrs. Connolly and Tennant, was floated the company known as the Barima Gold Mining Company, and which, if handled properly, is destined to eclipse anything yet heard of and to amaze the mining world. I have had the opinions of practical men who have visited the colony and they all express their wonder at what is seen on every hand.

Float quartz can be seen scattered all over the district which gives extraordinary rich pannings. Large deposits of alluvial (wash) can be found on the hillsides carrying a large amount of gold which some day will be handled when practical men backed by capital come among us.

Chief among the companies, is the Barima mine, with a capital of $300 000 and a subsequent issue of 12,000 preference shares.

This property has met great vicissitudes. After it was floated into a company a "Yankee" known as Harris was selected as manager and sent up to the mine. His report was made, which meant anything else besides saying that the mine was good. He made the most determined efforts to ruin the company by putting in unnecessary work, and in one instance when his men struck a reef that was showing gold he deliberately blocked it in and drove the tunnel in another direction. Fortunately for the company his intentions were found out and he left the country in disgrace. Under the management of Mr. Spiers (who was sent up to report on the property prior to Harris being discharged) the company has come to the front and is destined to have no rival on any known field. From one of the reefs which is in a tunnel which has been driven for a distance of 300 ft. can be got quartz samples, no matter how taken, that will average 29 oz. to the ton. The deepest shaft on the property is 200 ft. and the reef goes down into solid formation and gives an average of about 6 oz. per ton. Mr. Spiers, who was manager of the property, has now resigned and Mr. Watson, who was sent out by Messrs. Fraser and Chalmers, is manager and under his management a 20-stamp mill has been erected. Crushing will be started this month.

New York & British Guiana Mining Company is a New York concern with a nominal capital of $1,000,000. The New York folk bought some mining claims from Capt. E. T. White and others, and floated the above company. This company's claims have been pronounced by Mr. Watson, the mining engineer of the Barima Gold Mining Company, second to none in the Barima. Mr. Watson is the best authority we have in the colony, and his opinion is regarded as correct, and always commands both respect and confidence. Mr. L. W. Adams, M. E., of San Jose, Cal., was sent out to the colony as manager, and under his able management the property has been splendidly developed, and if properly handled, will become one of the successful mines of the country. This property should have been more advanced, but matters have not been pushed with that amount of energy which is characteristic of American concerns.

Sir Walter Raleigh Mining Company.—This is an English company and is located on some of the best ground in the Barima. And I see no reason why it should not be a big dividend-paying concern later. That is my earnest desire, especially on account of its name, as should it prove a success it will help to perpetuate the name of one of England's greatest men who have helped to make her arms encircle the globe.

Among the other many companies are development syndicates and private concerns which are all developing slowly.

Mining in British Guiana is bound to succeed, as we have in the country all the superficial signs that are liked to be seen by miners, and which undoubtedly show that the districts are rich in quartz veins. Here we have not to transport machinery, etc., over almost impassable mountains, nor have we to encounter the enormous charges that are made for conveying machinery, stores, etc., in Western Australia and South Africa. Barring South American mining fields, I doubt if there is any other field where mining can be done so cheaply. Our industry now appears to be attracting attention from abroad. In January, 1896, Professor Aruzuni was sent to this colony by Rotnschild and two other Berlin bankers. He has been in all the auriferous districts of the colony, and his opinion of British Guiana can be gauged from the fact that after his arrival in Berlin, the agent of the Berlin combination, Mr. Jacob D Jonge, has made large moneyed offers for a six months' option on several of the mining properties in the Barima.

The climate of the colony has been roundly abused by many persons, and many of the trades that have appeared in the papers from time to time have been from European and Americans who come out to a tropical climate and go in for a great amount of dissipation and very often trying to convert themselves into stills; they invariably go under and then it is put down to the climate of British Guiana. But any white foreigner who is prepared after arrival in the colony to live temperately, and according to hygienic laws will find it as desirable a climate as he would like to meet anywhere.

DIAMONDS.

The first authentic discovery of diamonds made in the colony was on the property of Messrs Gilks and Kaufmann. Gilks, who was prospecting for gold, found 37 stones and on account of never having seen diamonds in their rough state was unable to decide whether the stones found by him were diamonds. On communicating with his partner, Mr. R. T. Kaufmann, who was in the city telling him of his find, he replied, asking him to forward the stones and on receipt of them they were examined by Professor Harrison, who pronounced them to be diamonds. During the space of twelve weeks Gilks found 896 stones. The size of the largest stone found was $2\frac{5}{16}$ carats. With these stones were also discovered topaz, white sapphire and corundum.

Mr. A. B. Barnard has also found some good diamonds at the Himaracka Mazaruni River. The last find was made a few months ago in the Potaro at the Inflexible Syndicate, and was shown to Professor Aruzuni, geologist, who pronounced them to be stones of the first water. It is evident from the above that diamonds are to be found in British Guiana in large quantities, and the colony may, with capital and scientific search made by men experienced in diamond mining, prove to be a lucrative field for diamond mining.

The late gold commissioner, Mr. E. P. Wood, says: "There is not the slightest doubt that diamonds are to be found in the different rivers of the Colony, and it is possible a dry mine may be found in the neighborhood." The samples I have seen have been perfectly glassy octohedron stones of the best quality, and I consider that the country has a possible future as a diamond-producing country.

The writer wishes to thank the following for information: R. P. Kaufman, George Garnett, Patrick Dargan and D Guair, and the Demerara *Daily Chronicle*, for the statistics obtained from its columns.

DETERMINATION OF SULPHUR IN ROASTED ZINC BLEND.

Written for the Engineering and Mining Journal by J. George Heid.

The raw zinc blend contains in addition to zinc sulphide a large quantity of iron sulphide, as well as smaller quantities of other metallic sulphides. Calcium and magnesium carbonates are also mostly essential constituents of the blend. The roasting process should be for the purpose of volatilizing the total quantity of sulphur, under the formation of sulphurous acid, whereby the metallic sulphides are transformed into oxides, and thus brought into a fusible state. The roasting process follows, though by no means so smoothly that the total sulphur volatilizes as sulphurous acid, but it will be found that the ore still contains metallic sulphides, as also particularly calcium and magnesium sulphates.

In order to determine if the roasting process has sufficiently succeeded, we must ascertain how much sulphur, yet in the form of sulphides, is contained in the ore, but the sulphur combined with lime and magnesia in the form of sulphuric acid must not be determined with it.

As we know by experience most chemists in determing the sulphur in the roasted ores, do not take the presence of the sulphur as sulphates into consideration, and simply determine the total sulphur, whereby too high results are naturally obtained.

In the following seven samples of roasted zinc blende we have determined the total sulphur contained, and have obtained the following results:

I.	II.	III.	IV.	V.	VI.	VII.
2.15.	1.25	1.80.	0.95.	2.75.	1.10.	1.65.

We have removed the sulphates contained in the same samples and then again determined the sulphur therein, which resulted as follows:

I.	II.	III.	IV.	V.	VI.	VII.
0.42	0.55	0.13	0.26	0.36	0.07	0.12

By this means the actual quantity of sulphur was obtained, which alone can be the standard for the control of the roasting process.

To determine the sulphur contained in the roasted blende as sulphide, proceed in the following manner:

Boil 1 g. of the finely pulverized sample in an Erlemeier flask of about 200 cu. cm. capacity with about 50 cu. cm. of a 5% sodium acetate solution, let it settle and decant the liquid resting above the precipitate through a fine filter, repeat this operation and boil in the same manner twice with distilled water. By this means all the sulphur occurring as sulphates is extracted. The filter is then placed into the Erlemeier flask, that which is in the flask with the filter is treated in the manner known with fuming nitric acid to transform the sulphur into sulphuric acid, and the sulphur determined according to practice as Barium sulphate.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

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

WEEK ENDING AUGUST 11TH, 1896.

565,474. Safety Rotary Feed for Rock Drills. John G. Leyner, Denver, Colo. Filed October 21st, 1895. A combination consisting of an independent ratchet wheel, one or more pawls arranged in operative engagement therewith, an independent axial support adapted to transmit the intermittent rotary feed of the ratchet wheel to the object to be intermittently rotated, or from an intermittently rotating object through the axial support to the ratchet wheel, and means for securing the axial support to the ratchet wheel to permit one part to automatically turn upon the other when the pawls and ratchet wheel engage one another with destructive energy. A safety intermittent rotary feeding device for rock-drilling engines comprising a ratchet wheel mounted on the rifle bar, spring-actuated pawls in operative engagement with the teeth of the ratchet wheel and means for securing the rifle bar to the ratchet wheel whereby it will rotate in the ratchet wheel when a ratchet tooth engages a pawl with destructive energy.

565,497. Miner's Implement. Thomas J. Murray, Grubgulch, Cal. Filed October 31st 1895. An implement comprising a handle composed of a strip or plate of metal, bent to form a loop, and the ends of which form the jaws of the handle, a pointed blade pivoted between the jaws, an attaching or suspending device pivoted to one of the jaws, and provided with a curved and pointed end, a candle stick or holder, secured to the base of the attaching or suspending device, the parts being adapted to be folded together, and one of the jaws of the handle, and the shank of the blade being provided with notches or recesses, whereby they are adapted to serve as a fuse cutter, and the end of the shank of the blade being also provided with a short cutting blade.

565,675. Process of Hardening Bituminous Substances. Edwin T. Dumble, Austin, Tex. Filed July 30th, 1895. The method consists in mixing liquid or viscid bituminous substances with bituminous coal or analogous bituminous material, subjecting them to a temperature below the volatilizing point of the lighter oils, thereby softening and dissolving the solid bituminous material and uniting it with the liquid or viscid bituminous substance.

565,812. Ore-Concentrator. Merchant Stoddard, Farmington, Ia., Assignor of one-half to Charles H. Scott, same place. Filed September 25th, 1895. In an ore-concentrator a riffle pan comprising a rectangular tray having an imperforate bottom which is centrally and longitudinally depressed to form a V-shaped gutter, a series of transversely disposed riffles located in the bottom of the pan, the bottom edges of the riffles being separated from the bottom of the pan by intervening V-shaped spaces, and a pendent extension of the pan forming a pocket or receptacle which is arranged centrally of one end of the pan and at the terminus of the V-shaped gutter.

565,813. Ore Roaster. Nathaniel A. Stratton, New York, N. Y. Filed April 2d, 1896. The combination with an inclined pan, of a series of connected oil-reservoirs, arranged on different planes, turners on the reservoirs, and means at the upper reservoir for filling all of the reservoirs.

565,840. Coal and Rock Drilling Machine. Alfred J. Cooper, Duryea, Pa. Filed March 27th, 1896. Serial No. 585,068. The combination with the pivoted nut, the hollow screw-threaded cylinder and the drill-rod extending therethrough, of the hand-wheel mounted on the cylinder, the crank on the drill rod provided with a set screw adapted to positively engage the hand-wheel, and a spring interposed between the crank and hand-wheel and mounted on the set screw, whereby a positive or friction feed is provided.

Great Britain.

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

WEEK ENDING JULY 11TH, 1896.

15,656 of 1895. W. H James, London. In dissolving gold by cyanide, the use of peroxide of hyorogen to give the requisite supply of oxygen.

15,729 of 1895. F. Hurd and J. J. Millar, Glasgow. Improved cutter bar for coal-cutting machines.

16,721 of 1895. J. Pfleger, Kaiserslautern, Germany. Ut electrolytic baths for depositing gold from cyanide solutions, forming the diaphragm of ramie fiber.

6,290 of 1896. D Pemakoff, Pierre Huy, Belgium. Forming double sulphides of aluminum and alkali metals by acting on alkaline aluminates with sulphur or carbon desulphide.

WEEK ENDING JULY 18TH, 1896.

6,009 of 1895. W. M. Mackey, Leeds, and J. F. Hutcheson, Glasgow. Making sodium cyanide by subjecting in a furnace a mixture of carbonaceous matter and a compound of sodium to the action of two blasts, one to dry the mixture before it is acted on by the other.

12,692 of 1895. P. A. Gasse, Paris. Using ozone for oxidizing sulphide ores.

14,162 of 1895. L. F. Gowans, Johannesburg. In cyanide tanks injecting air into the solution through pipes, thus supplying the necessary air and also keeping up the circulation.

15,813 of 1895. F. M. Lyte London. Making zinc and chlorine by roasting blende to sulphate, treating with salt, and electrolyzing the resulting solution of zinc chloride.

15,954 of 1895. Societe pour l'Extraction Integral et Economique de l'Ore Procédé de Rigaud, Paris. The use of sulphur chloride as a solvent for gold in ores.

16,737 of 1895. J. Pfleger, Kaiserslautern, Germany. In baths for the electrolytic deposition of gold from solutions, the use of an electrode made of iron wire.

10,097 of 1896. J. Jones, Melbourne. Treating antimony gold ores with hydrochloric acid and electro-depositing the antimony.

WEEK ENDING JULY 25TH, 1896.

14,060 of 1895. J. U. Askham, Sheffield. In crushing mills in which arms carry rollers, mechanism for detaching the rollers and reversing them.

14,682 of 1895. John Bowing Tilbury. Method of coking small coal.

14,960 of 1895. J. Dick, Glasgow. In frue vanners, using a contact surface for the travelling band, made of some fibrous material.

WEEK ENDING AUGUST 1ST, 1896.

13,534 of 1895. E. A. Ashcroft, Roken Hill, New South Wales. Certain modifications of the patentee's process for treating zinc lead sulphides.

17,707 A of 1895. N. G. Kimberley, London. Improvements in jaw crushers.

23,950 of 1895. C. Parnacott, Londo A white alloy of great strength and non-corrodible, made of 44 parts copper, 20 parts nickel, 25 parts zinc, 7 parts iron, 3 parts cobalt and 1 part magnesium.

6,999 of 1896. A Hussener, Essen, Germany. Improvements in horizontal by-product coke ovens.

12,519 of 1896. J. T. Penney, Adelaide, and J. Dungey, Melbourne. The use of kerosene to stop sickening of mercury in amalgamators.

PERSONAL.

GEN. E. W. RUCKER, vice-president of the Sloss Iron & Steel Company, Birmingham, Ala., has been elected president of the Alabama National Bank to succeed R. M. NELSON.

MR. GEORGE ZOELLER, who for the past five years has been superintendent of the Chattanooga division for the Pullman Palace Car Company, has resigned and is now associated with the Kentucky Jellico Coal Company.

MR. JOHN BONSALL PORTER has recently been appointed professor of mining and metallurgy in the McGill University, and MR. HERBERT W. UMNEY appointed assistant professor of civil engineering in the same university.

MR. WILLIAM WARING, mechanical engineer of the Hidalgo Mining Company, Pittsburg, left there last week on a six week's prospecting tour through the Black Hills, Colorado, Nevada and Mexico. He was accompanied to Chicago by MR. S. A. GILL, president of the company.

MR T. W. GOAD has resigned the active management of the Gold and Silver Extraction Company of America, his resignation to take effect on September 1st. MR. GOAD has been in Colorado for 17 years, was prominently connected with early mining operations at Leadville, and other parts of the state.

MR. HENRY PENTON, now with S. F. Hodge & Company, Detroit, Mich., has been appointed superintending and designing engineer of the Chicago Ship Building Company's new engine works, and will enter upon his duties September 1st. Plans for the new works are completed, and their construction will soon be begun.

MR. GEORGE LOWE, formerly general superintendent of the Pullman Iron and Steel Company, at Pullman, Ill., has been employed to succeed MR. LEVI BIBBINS, resigned, as superintendent of the rolling mill of the United States Car Company, at Anniston, Ala. The mill was shut down for a few weeks on account of a strike, but has resumed operations.

OBITUARY.

WILLIAM T. BULLIS, inventor of a process for recovering gold from sand, died suddenly August 11th at Glens Falls, N. Y.

WILLIAM GREGG died recently at Charleston, S. C., aged 39 years. He had been engaged for many years in phosphate mining.

J. D. REED, superintendent of the Woodward Iron Company's coal mines at Dolomite, Ala., died at his home in that place July 31st.

EDWIN J. DU VAL died near Petersburg, Va., August 1st, aged 82 years. He was largely interested in coal mining, sawmilling and mercantile enterprises.

JAMES M CLARK died August 10th at St. Michael's, Md., aged 72 years. Mr. CLARK was formerly a resident of Westmoreland, N. Y., where he held an interest in the malleable iron works.

ROBERT P. KEATING, superintendent of the Savage, Justice and other Comstock mines, in Nevada, and one of the best-known men on the Pacific coast, died at Virginia City, August 13th, aged 56 years.

ALEXANDER HENRY GREEN, M. A., F. G. S., F. R. S., died in London, England, August 20th, aged 63 years. In 1855 he was sixth wrangler at Cambridge and was elected Fellow of Caius College the same year. He was appointed in 1861 to a post on the Government Geological Survey of England and Wales, and became professor of geology, and afterward professor of geology and mathematics in the Yorkshire College in 1875. In 1888 he became professor of geology in the University of Oxford. He was the author of "Physical Geology," "The Geology of the Yorkshire Coalfield," and various papers on geological subjects.

PROF. JOSIAH DWIGHT WHITNEY, of Harvard College, died at Lake Sunabe, in New Hampshire, where he was summering, on August 19th, having been in poor health for some time. He was born in Northampton, Mass., on November 23d, 1819, and was graduated at Yale in 1839. He served as assistant geologist in the survey of New Hampshire, and then traveled in Europe for several years, studying chemistry, geology and mineralogy. In 1847 he was engaged in the geological exploration of the Lake Superior region for the government, and with John W. Foster, his associate, published (1849) full reports of his explorations. Then he spent two years in investigating the mining and mineral resources of the States east of the Mississippi, publishing his "Metallic Wealth of the United States" in 1854. In 1855 he was appointed State chemist and professor in the Iowa State University, and later made a geological survey of the State. Later he surveyed the lead region of the Upper Missouri in connection with the official surveys of Wisconsin and Illinois, printing the results of his explorations in 1862. He was appointed State geologist of California in 1860 and, until 1874, was engaged upon a topographical, geological and natural-history survey of the State. His reports on this subject amounted to more than six volumes, and are regarded as the standard authority. Meanwhile, in 1865, he was appointed professor of geology at Harvard; and in 1870 Yale conferred the degree of LL. D. upon him. He was one of the original members of the National Academy of Sciences, and a member of many learned societies at home and abroad. He translated Berzelius's "Use of the Blow-Pipe," wrote "The Yosemite Guidebook," and contributed innumerable scientific articles to different periodicals. Mount Whitney, the highest mountain in the United States, was named in his honor.

SOCIETIES AND TECHNICAL SCHOOLS.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The following programme has been arranged for Section D, Mechanical Science and Engineering, for the meeting at Buffalo, N. Y., on Monday, August 24th, 1896: The section will meet for organization immediately after the adjournment of the general sessions. At 4:30 p. m., in Buffalo Library Lecture Hall, the vice-president's address will be delivered; subject, The Artistic Element in Engineering. The reading of papers will begin on Tuesday, August 25th, in room 23 of the High School building, those already arranged for being the following: (1) The Most Economical Points of Cut-off for Steam, by Henry T. Eddy. (2) The Performance of Small Steam Pumps, by M. E. Cooley; (3) The Friction of the Water in the Pipes of a Hot-Water Heating System, by J. H. Kinealy; (4) On a Continuous Indicator for Engine Tests, by Thomas Gray; (5) New Water-Prony Brake for Testing Steam Turbines Without Reduction Gearing, by J. E. Denton; (6) Apparatus for tracing a Curve representing the Force required to overcome the Inertia of Reciprocating Parts of a Steam Engine, by D. S. Jacobus; (7) An Apparatus for accurately measuring Pressures of 2,000 lbs. per square inch and over, by D. S. Jacobus; (8) Apparatus for Observing the Distribution of Moisture in a Steam Main, by D. S. Jacobus; (9) Values of Heat of Combustion of various Gases per cubic foot for use in calculating the Heating Power from the Analysis of a Gas, by D. S. Jacobus. Mechanics and Materials: (10) Some Results of the United States Timber Tests, by J. B. Johnson; (11) On the Molecular Stability of Metals, by Wm. A. Rogers; (12) A new Testing Machine for Beams and Framed Structures (Capacity 50 tons), by Malverd A. Howe; (13) On the Yield Point of Steel, by Thomas Gray; (14) On the Conversion of an Ordinary Planer into an apparatus for Precise Graduations, by Wm. A. Rogers. Hydraulic Engineering: (15) Irrigation of the Eastern United States, by Olin H. Landreth; (16) The Hydrographic Survey, by F. H. Newell; (17) Some Notes, Physical and Commercial, upon the Delta of the Mississippi River, by Elmer L. Corthell; (18) Seepage from Colorado Canals, by L. G. Carpenter. Miscellaneous: (19) An Arrangement using Storage Batteries for the Automatic Regulation of Engine Loads in Power Plants of Variable Output, by W. S. Franklin; (20) The Cycle of the Plunger-Jig, by R. H. Richards; (21) Soaring Flight, by O. Chanute; (22) National Endowment of Engineering Research, by W. S. Aldrich; (23) The Better Distribution of Forecasts, by John A. Miller

INDUSTRIAL NOTES.

The Shoenberger Steel Company, Pittsburg, Pa., is enlarging its steel plant.

The Tudor Iron Works of East St. Louis, Ill., have closed down pending more active demand for iron.

The Casey & Hedges Company, Chattanooga, Tenn., will add a foundry to their boiler-making plant.

The Bethlehem Iron Company has shipped two turret plates, weighing 80 tons, for the Iowa, to Cramp & Sons, Philadelphia.

The Big Stone Gap Colliery Company's coke plant at Norton, Va., has been sold to Oats & Company, of Knoxville, Tenn., for $31,210.

The Pittsburg Forge and Iron Company, of Woods Run, Pa., has started fires in 25 puddling furnaces, and will work them double turn.

The La Belle Iron Works, Wheeling, W. Va., have ordered a duplex polisher from the Anderson (Ind.) Foundry and Machine Works.

The Penn Steel Casting Company has cast a 16-ft four-bladed propeller wheel for Roach's shipyard. The weight of the casting is 17,000 lbs.

The works of the Northwestern Chemical Company, near Milwaukee, Wis., were destroyed by fire last week. The loss is estimated at $30,000.

The Robinson Foundry and Machine Company has been incorporated at Birmingham, Ala., with a capital of $25,000. J. A. Wiggs is president.

The Harlan & Hollingsworth Company, Wilmington, Del., will build a large ocean tug for the Philadelphia & Reading Railroad Company.

The 8, 12 and 16-in. mills of the Sylvan Steel Works at Moline, Ill., started with a full force on the 8th inst., and will run night and day until further notice.

Two thousand tons of Birmingham pig iron were recently shipped to Europe. The iron went by way of Mobile, Ala., at which place it was loaded in the steamer.

The Risdon Iron Works, of San Francisco, Cal., will furnish the water wheels for the Pioneer Power Company, at Ogden, Utah. Five Knight wheels will be used.

All the puddling furnaces of Zug & Co., Pittsburg, Pa. have been put into operation, as also those of the Republic mill of the National Rolling Mill Company.

Jones & Laughlins, Pittsburg, have about completed their new 34-in. blooming mill. Four more of the series of 40-ton basic open-hearth furnaces are nearly completed.

The Lebanon (Pa.) Manufacturing Company has shipped 42 new hopper cars to the Philadelphia & Reading Railroad Company. They are the first of an order for 500, and are of 60,000 lbs. capacity.

The plant of the Crystal Emery Wheel Company at Northampton, Mass., which has been idle for more than a year, has been leased by George P. Allen, of Boston, with the privilege of purchasing.

The Carnegie Steel Company's ore mines at Scotia, Centre County, Pa., have been started up after a three months' shut-down and are now running full time, which means employment to several hundred men.

Furnace No. 1 of the Ashland Coal, Iron and Railway Company, at Ashland, Ky., which has been shut down for some time undergoing repairs, consisting of a new lining, etc., is being dried out and will be put in blast again at an early date.

Corrigan, McKinney & Company, Cleveland, O., have banked the Douglass Furnace, Sharpsville, Pa., for an indefinite period, and have put in blast Charlotte Furnace, Scottdale, Pa., for a short time, to use up supplies of coke and ore now on hand.

The contract has been let for the new plant of Block & Pollak, manufacturers of steam forges and car axles, to be built at Carthage, O., at a cost of about $20,000. It will be a steel structure, 80 ft. front and 350 ft. deep. The main contract was awarded to the Cincinnati Architectural Iron Works Company.

The Bessemer steel works of the Colorado Fuel and Iron Company, at Pueblo, Colo., have shut down completely, and it is said will not resume operations in any department until after election. The shut-down throws about 1,200 men out of employment and from 300 to 400 at the company's iron works near Village Grove, in Sagnache County, and above Salida in Chaffee County.

The main building of the extensive phosphate and fertilizer works of Baugh & Sons Company, Philadelphia, Pa., was destroyed by fire early on the morning of August 4th. A large quantity of costly grinding machinery and considerable stock in process of manufacture was also destroyed. Superintendent Wells estimated the company's loss at $200,000, partly covered by insurance.

The Calcium Carbide Company, of New York City, has been incorporated to manufacture, install and deal in devices, apparatus and materials useful in producing light, heat and power. Capital, $1,200,000. The directors are: Emerson McMillan, Spencer D Schuyler, Francis Wyatt, Dewitt C. Flanagan, Richard W. Rundle, Frederick W. Jones, Cantine T. Scoville, George T. Thompson and Ernest W. Cocke, of New York City.

An entire locomotive plant will shortly be taken to St. Petersburg from Philadelphia, Pa., on the British steamship *Laleham*, which has been chartered for the purpose. The plant is to be erected at Nijni Novgorod, the commercial metropolis of the interior of the Russian Empire. Contracts for machinery for the plant, amounting to over $500,000 were awarded to American manufacturers, the bulk of them coming to Philadelphia firms. The plant is to be built in connection with the Sarmova works, an extensive establishment engaged in manufacturing cars, steamboats, steam boilers, etc., and employing 5,000 hands. The locomotive plant will have a capacity for building 200 engines a year and will employ about 1,000 hands. All of the foremen and engineers will be Americans. The buildings have been completed and are now ready to receive the machinery. The Czar has given valuable encouragement to the enterprise. As nearly 85% of the railways in the empire are operated by the government, the new company will get a great share of its work. The company will be known as the Russian-American Manufacturing Company. The consignment aggregates over 3,000 tons.

TRADE CATALOGUES.

The Parke & Lacy Company, San Francisco, Cal., has issued a catalogue illustrating and describing the Ropp straight-line furnace for the smelting or chloridizing of base or sulphureted ores or the roasting of mattes. It is the invention of Mr. Alfred Ropp, Superintendent of the Selby Smelting and Lead Works, whose experience in Europe, Colorado, Montana and California has made him familiar with all forms of mechanical roasters. The standard furnace is 105 ft. long and 11 ft. wide in the clear, and has a capacity of roasting 36 tons of ore, containing 20% sulphur, 8% lead and 17½% zinc and iron pyrites down to 5% of sulphur in 24 hours. To roast "dead" the furnace requires slow feeding, and will handle from 20 to 22 tons in 24 hours, reducing the sulphur contents to less than one-half of one

per cent. The following are the advantages claimed for the Ropp furnace: (1) Low cost of installation as compared with any form of mechanical revolving furnace, or any other fixed hearth mechanical rabbling furnace, being from one-third to one-half less for the same capacity. (2) Low cost of maintenance, due to its simplicity. (3) Low cost of operation, roasting with less fuel per ton of ore treated than any other, and one man can attend to the fireplaces and look after the ore fed into and discharged from the furnace. (4) Minimum amount of dust, as no blast is used and the ore is stirred only enough to present fresh particles to the influences of the oxygen. (5) The capacity of the furnace can be increased by increasing the width of the hearth and lengthening the rabble arms.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in terest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

GENERAL MINING NEWS.

ALABAMA.

SHELBY COUNTY.

Montevallo Lump Coal Company.—This company is making arrangements for the brisk operation of its mines near Dogwood, on the Brierfield, Blocton & Birmingham Railroad.

ARIZONA.

COCHISE COUNTY.

Buckhorn Mining Company.—The main shaft on this company's property has attained a depth of 216 ft., showing a strong, regular pay streak from top to bottom and averaging well in gold. There are also about 600 ft. of drifts, winzes, etc. The gold in the ore reported is remarkably clean and heavy.

Johnson-Fitts.—The shaft in this mine is 55 ft. deep, and a crosscut here revealed the ledge to be 12 ft. wide. From this point a drift was run some 150 ft. on the ledge, occasionally cutting through a rich "stringer" which, it is said, assayed as high as $200 to $300 per ton.

YAVAPAI COUNTY.

Sundance Mining Company.—This company owns a group of mines 11 miles from Prescott, consisting of the Silver Trail, Thorne and Lillian mines. The properties have 1,200 ft. of development work, all in good ore. Work is now being pushed on the Silver Trail, which carries a 32-in. pay streak of ore averaging $40 per ton, gold, silver and lead. Twenty per cent. of the ore is shipping ore, and the balance milling and concentrating ore. There are now 200 tons on the dump worth about $50 per ton.

CALIFORNIA.

AMADOR COUNTY.

Reward.—At this mine, near Pine Grove, which recently changed hands, 10 more stamps are to be added immediately, and the mine work will be vigorously pushed.

Amador Queen.—The long standing litigation between Vincent Neale and W. N. Bardue, involving the title to a portion of this mine in Hunt's gulch, has finally been settled by the Supreme Court, which rendered a decision August 3d, in favor of Neale.

BUTTE COUNTY.

(From Our Special Correspondent.)

John Dix.—At this mine, at the Forks of Butte, the tunnel is in over 1,000 ft., in good pay ground. Twenty men are employed.

Spring Valley Mining Company.—This company, which is still in the hands of a receiver, owns almost 100 miles of ditches, and its brush dam is in good repair. Five companies using mining derricks are working on this property, also a number of individual miners, all of whom pay a percentage to the receiver.

CALAVERAS COUNTY.

(From Our Special Correspondent.)

Chaparral Hill.—This mine, on the mother lode, near Robinson's Ferry, has been bonded by A. N. Butts, of Salt Lake, Utah.

Gwin.—The shaft at this mine has reached a depth of 1,335 ft. and sinking has been suspended while stations are being cut at the 1,300 and 1,200 levels. As soon as the stations are in far enough to make it safe to work in the sump sinking will be resumed. Grading for the 40 stamp mill is about completed and work on the mill will be pushed as rapidly as possible.

Pierano.—This mine, on the Carson Road, 2½ miles from Angels, has been purchased by Salt Lake parties and is being worked under the management of Col. Woodrow.

MENDOCINO COUNTY.

(From Our Special Correspondent.)

Eden Valley Copper Mine.—This mine, located in Eden Valley, is being developed by an Eastern syndicate, working day and night shifts. The ore is said to be rich in copper.

NEVADA COUNTY.

(From Our Special Correspondent.)

Summit Consolidated.—This property comprises the Fortuna, Orleans, Dodo and Live Yankee mines, located 1¼ miles from Nevada City, and is an extention of the Champion and Providence claims. Development work is progressing rapidly, and high-grade ore is being hoisted.

PLUMAS COUNTY.

(From Our Special Correspondent.)

At a point near the junction of Grizzly and Yellow creeks, about five miles below Humbug Valley, a good gravel mine has been developed by two tunnels from the Yellow Creek side which cut into the ancient river channel. The body of gravel appears to be very large and rich.

Harrison.—This mine, in the Granite Mountain District, 23 miles south of Quincy, is being developed by a tunnel now in 250 ft. The vein is 3 ft wide, the ore averaging only $5 for milling and 2% sulphurets. The 10 stamp mill operated by water power is crushing 30 tons per day. Seven men are employed.

SHASTA COUNTY.

(From Our Special Correspondent.)

Maddox.—This mine, on Whiskey Creek, four miles from Whiskeytown, is to be reopened by the French syndicate which now owns the property.

SISKIYOU COUNTY.

(From Our Special Correspondent.)

Commodore.—Robert E. Billups has sold his interests in the Commodore, Goodenough and Insurance mines to his partners, Humphreys & Quigley, for $5,000. These mines are located on Barkhouse Creek, 13 miles northeast of Scott's Bar. The ore is being crushed by a twin arrastra.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

Alameda.—At this mine, one mile northwest of Jamestown, on the mother lode, an upraise has been commenced, which will be over 230 ft. long. It will start from the end of the crosscut tunnel, which is in 800 ft. When the upraise is through, an incline shaft will be sunk on the ledge until it is thoroughly prospected.

App.—In this mine, near Jamestown, the water is now down to the 500-ft. level; the water cars run only half the time on account of hoisting ore for the mill. The ore now being milled is coming from the 200 and 300-ft. levels. On the 650, 700 and 800-levels are long drifts running south from the shaft, all full of water, which will take a long time to remove.

Dutch.—On the 200-ft. level in this mine a rich strike has been made. The vein, which is 3 ft. in width, has been stripped for a distance of 70 ft., showing free gold all the way.

COLORADO.

BOULDER COUNTY.

Mule Skinner.—This is a new find at the head of Gregory canon, about four miles from Boulder, in an entirely new district. The shaft is but 35 ft. deep, but has shown a good-sized vein.

CLEAR CREEK COUNTY.

Badger Mining and Milling Company.—This company has bought the Burg-Craig mill at Empire. Mr. A. Clark is putting in new machinery, and Mr. D. Clark, the superintendent of the mine, is working three shifts on a 6-ft. streak of good milling ore.

Falcon.—It is reported that while sinking the shaft on this mine the owners cut a big body of galena and in a carload shipment the mineral ran 70% lead, the highest of any producer in the district. This is supposed to be the same ore chute that was cut in the Lamartine tunnel at a depth of 600 ft.

Gem and Gem Extension.—W. E. Renshaw has placed new hoisting plants on both of these shafts and is driving and sinking in the lower ground for the purpose of making a connection for air and the cheaper working of the ground. A good sized ore chute was cut in one of the drifts and this mineral is being mined. While there is some smelting ore the greater amount is suitable for concentration, and one of the mills is now treating this product.

G. W. Van Antwerp & Company.—This company is reported to have struck 14 in. of ore in the Mount McGregory mine, besides 3 ft. of good concentrating ore. This is said to be one of the most promising mines on Silver Mountain.

Humboldt.—The new Leadville owners of this mine have finished the erection of a stamp mill at the mine, and have begun treating the low-grade ore now broken down in that property. Some rich free gold ore has been taken from the lower workings.

Silver Glance.—L. E. Aldrich has shipped 1,200 lbs. of ore from this mine, which returned 42 oz. silver and 4.2 oz. in gold.

Toledo.—In sinking the shaft on this claim, an extension of the old Freeland lode, to a depth of 100 ft., the leasers have taken out $1,000 worth of smelting ore from this work alone. A level has been started westward, and a wagon load of this ore netted the lessees $638. A company is arranging to take charge of the prospect and put in a plant of machinery.

EL PASO COUNTY.

Chicola Gold Mining Company.—This company is developing a group on Straub Mountain, south of Victor, and getting assays as high as $120 from a vein of good width, located in a tunnel. The company is sinking a two-compartment shaft on the vein. At a depth of 45 ft. a strong flow of water was encountered, and now it is necessary to put on pumps and a complete steam plant.

Isabella.—The conflict which has been pending for the last three years between the owners of the X-Jay Gould, a claim lying to the north and adjoining this group, has finally been settled by the Isabella Company buying all the land in controversy for the sum of $5,500. It is said the price first asked by the X-Jay Gould Company was $50,000. This sum was reduced from time to time until the $5,500 offered by the Isabella people was accepted. This will allow the Isabella Company to proceed to patent about 40 additional acres of valuable mineral ground.

EL PASO COUNTY—CRIPPLE CREEK.

Lucky Guss Gold Mine, Limited.—At the first annual meeting in London, August 7th, the chairman, Mr. S. Jennings, presented the following statement: "In completing the purchase of the Lucky Guss, and obtaining possession, we had to do with most reluctant sellers, for every conceivable obstacle was placed in our way as the bond neared its termination. Every device was attempted to throw us off the bargain; the machinery which was included in the sale was removed; law-suits between workmen and lessees were threatened; and, finally, the last payment, when tendered, was refused on technical grounds; but, thanks to the promptitude and energy of our local agents, as well as to the honorable loyalty of some of the original owners, we obtained legal possession. When we came to examine the mine, it was a disappointment to find that the lessees, our predecessors, had left it in a deplorable condition. Everything in the shape of plant and facilitities for continuing work had been cleared out; the shaft and workings were left choked with waste; every particle of ore within reach had been removed, notwithstanding the provisions of lease and bond. Of course, we had a legal remedy, but your directors concluded that both time and money would be saved by accepting the situation, and promptly ordering new machinery and making good the damage. This was immediately done, and then came the disastrous fires, which, though they did not directly injure our property, yet for a time thoroughly disorganized labor and transport, causing fresh delay and hindering progress. As to the present position of the mine, our claim of 1,500 ft. in length is intersected at right angles by another claim, called the Specimen, by which our longitudinal area is reduced by 300 ft., and our property divided into two sections. It is on the western—the smaller of these sections—that all the work up to the present has been done. This section is traversed by three veins—the Lucky Guss proper, upon which our shaft had been sunk to a depth of 330 ft.; the Orpha May, the apex of which lode was only uncovered upon our property 10 days ago; and the Rubie. The eastern section is known to contain at least three veins, two of which have afforded excellent profit on adjoining properties. These veins all cross our property. We have, therefore, plenty of prospecting work before us, which can be taken in hand at our own convenience. After clearing out the shaft, strengthening the weak points, getting the new steam-hoisting plant to work, and getting a vast quantity of waste out of the way, our manager started sinking on the Lucky Guss lode below the point at which work was suspended by the lessees. On June 4th, at a depth of 22 ft. below the 4th level, he again uncovered the vein 1½ to 2 ft. thick of ore, which sampled $276 per ton, 13 to 14 oz. gold to the ton, and since then sinking has proved it continuous. We are now down 87 ft. and levels are being driven to open up this ore body. Some 40 tons of second-grade ore have already been shipped, netting about $17 per ton. We are informed that none of the better class of ore had been raised, but a shipment was to have been made toward the end of July. The ore shipped was $30 and $35 ore; the next shipment is expected to run about $100 per ton. While this work was going on a crosscut was driven from the fourth level in the supposed direction of the Orpha May lode. Our neighbors had carried their operations close to our boundary line at a depth of 128 ft. Here they left a strong lode of rich ore, carrying an exceedingly rich streak of 3 in. We, driving some 200 feet below this, at a point about 150 ft. ahead of the direction of this lode as it enters our property, have not been successful in striking it; lode matter had indeed been cut, but it was not thought to be the vein we were seeking. It may yet prove to be so, and a few feet above or below may show a different result. Operations were then started on the surface, and a new shaft was commenced on the probable direction of the Orpha May lode. After sinking some 12 ft. through the wash, the apex of the lode was reached; it shows a large body of quartz and a streak 4 in. wide, that is, very rich free gold in large quantities. I think we will have about 150 ft. of the vein that will be worth a great amount of money to our company. The

ledge shows quartz for at least 8 ft.; we are not deep enough yet to tell just how wide."

(From Our Special Correspondent.)

BLUE BIRD.—This mine, on the Bartlett lease, still yields the usual amount of shipping ore from a small vein, the grade of ore being over 5 oz.

CITY VIEW.—This mine, on Gold Hill, shipped two cars of ore last week, one first class and one second class. The ore came from the 250-ft. lease. The property is under lease to Bradford & Company, who have done considerable work, employing 14 men for months. The claim is owned by Pueblo and Denver parties.

ELTON.—This mine has declared its usual dividend of $10,000 and has now in the treasury the sum of $78,000.

GARFIELD GROUSE.—This property, on Bull Hill, shows steady improvement. It is without any regular well defined ore shoot, yet the ore found in small irregular pockets enables the company to ship enough to pay expenses and a little over.

HILLSIDE.—This mine, on the south slope of Gold Hill, is about to become a regular shipper. The lease on this property was recently sold to Messrs. Kinney & Harnan, who are preparing to sink a two-compartment shaft. There seems to be a big vein on the claim, but above the 20-ft. level it is very pockety. The intention of the new owners is to sink a deep shaft.

INDEPENDENCE.—Only a few men are employed on this mine. The owner is anxiously awaiting the result of the Peck mill, which started on Wednesday of last week to test the machinery, and is still at it. It is reported that the machinery was made piecemeal by several foundries, one foundry making pulleys the second the shafting, the third the key, etc., so as to prevent any one foundry from making a duplicate of the mill, if such a luxury should be needed. Persons conversant with the mill, who at the same time know the elements of metallurgy, predict a dismal failure, claiming it is a difficult matter to concentrate tellurium such as is found in the Independence mine. Concentration has been tried in this camp by vanners, by revolving tables, by Gilpin County tables, Morgan concentrators, etc., and has been found wanting, and a patent to a centrifugal table in this mill does not endow the telluride of gold with any new element so that it is willing to become an easy victim to water. The owner of the mine is very sanguine about the successful operation of the mill. In this camp we have now over 100 stamps idle. We have had as many "new process fiends" here as ever infested Empire, Clear Creek County, Colo. We have had the Crawford process, the Crawford crusher, the Crawford amalgamator, the Crawford feeder, but unfortunately not the Crawford ore to be treated. We had the "Nabob mill," and the Bailey mill. We had the Roreman mill, costing over $100,000, yet could not treat a few tons of ore; and so the list could be swollen. Chlorination is well adapted for the "blue" or unoxidized ores of the camp, and cyanide has done good work on the "red" or oxidized ores. Why capitalists entrust money to erect mills to persons who are neither metallurgists or chemists is strange, and we hope the Peck mill will be a grand success.

LUCKY GUSS.—This mine, on Bull Hill, shipped two tons of ore last week which sampled at the Grant Smelting Works 92 oz. per ton, or $3,680 for the lot. It was broken by two men in five days from a surface shaft on a new vein. The 40 tons of second-class ore assayed well, and a grab sample taken from the dump to-day yielded $50 per ton. The shaft is now 35 ft. deep, and is being sunk by six men. At the fifth level a new ore shoot has been found which is being driven and the length thus far is 18 ft.

ORPHAN BELL.—This property is being vigorously developed by 18 sets of lessees, employing over 100 men. Five steam hoists are on the property. Not a few of the lessees are making regular shipments.

PORTLAND.—This mine, on Battle Mountain, maintains a steady output, as it has during the past four months. The Burns shaft is now sunk 640 ft. and is still being sunk. From the Burns shaft at the 600 ft. level, called the second level, the vein is 93 ft. distant in a southeast direction. The mine employs 160 men. An increased output is hardly to be expected until the Anna Lee shoot is opened, which cannot be for nearly two months at the present rate of sinking. The new machinery is working well; the cages are double deckers.

PRINCE ALBERT.—This property, on Beacon Hill, has been leased out in blocks 300 ft. square to several sets of lessees who are actively at work, as this part of the camp has received a stimulus by a strike of mineral and a lawsuit.

VINDICATOR.—This mine, on Bull Hill, is working 22 men, most of whom are engaged in development work. This mine has been more than self-supporting. The output of ore still keeps above the $4,000 mark per month. The product is low grade as a rule, but the ore shoots are large.

GILPIN COUNTY.

(From Our Special Correspondent.)

The first train came through late on the evening of August 14th, after the district had been shut off from railway communication for three weeks. Excepting for a temporary check to the production, however, the damage caused to mining interests was not serious.

CARR.—This mine, on Bobtail Hill, is operated by a party of leasers Their output averages something over $2,000 per month, mainly in smelting ore. The mine is 450 ft. deep.

CONCRETE.—The stock of fuel at this mine was sufficient to keep the new pump at work, and on Monday of last week the mine was drained to the bottom.

GOLD COIN.—Connection was made a few days ago between the 1,000-ft. level, which has been driven out from the point where the cross-cut from the Kansas intersected the Indiana vein, and a winze sunk from the 900-ft. level further west. It is understood that the pay-shoot has pinched, this 1,000 ft. level having encountered only low-grade mill-dirt so far. The stopes above the 700 level, on the other hand, are yielding better than ever.

GREGORY BOBTAIL.—Owing to the scarcity of coal, the pumping from the Gregory incline had to be suspended, and the bottom pumps were drawn up. It is, however, hoped that the water can be redrained before much loss has been incurred.

UPPER GERMAN.—An English syndicate has taken a lease and bond on the western or less developed portion of the German vein. The eastern portion was for years one the largest producers in this county. The German vein is the western continuation of the Bates-Hunter, which ranks after the Gregory as the second important vein discovered in Colorado, and which is known to be one of the richest and most consistent producers of gold ore, although for various reasons no part of it is at present being worked.

LAKE COUNTY.

(From Our Special Correspondent.)

THE LEADVILLE STRIKE.—It has now been two months since the strike of miners was inaugurated in this camp, and as yet there is no settlement. Mine and business interests are suffering, and the smelters, which have been running on short supply, have necessarily been suffering too. Unless the settlement comes quickly, it is evident that the smelters in this camp, as well as all over the State, will lose materially, and may find it obligatory to close down part of their stacks.

In my letter and telegrams on Friday of last week I called attention to the fact that propositions had been made by both sides. This is the first step that may lead to arbitration as a means of settling the differences. This is merely a surmise on my part, as neither the mine managers or the miners have announced that they would submit the question to arbitration. But, as I remarked above, there is now a loophole whereby persons other than miners or managers may be able to suggest a favorable settlement. The mine owners in their proposition call attention to the fact that they are not only friendly to their men, but that the miners have their respect and their sympathy; further, that they believe the Leadville miners are especially efficient for the mine work here, and hence they do not desire to call upon outsiders for labor. They believe the strike has been ill-advised, and think the employees are of the same opinion, but that many of them, simply from a feeling of pride, are unwilling to return to work. They call attention to the fact that in 1893, when the price of silver was 73¾c. an oz., they entered into an agreement by which they promised to raise the scale of wages to $3 per day when the price of silver had advanced to 83½c. They now modify their offer, providing the men return to work without delay, to $3 a day when the average silver quotation is 75c.

The miners have made no formal reply to this proposition, but from an informal talk with a number of the leaders, your correspondent learns that they will not agree to these terms.

On the other hand, in the resolutions adopted by the miners, they declare that they believe if Mr. Bryan is elected president of the United States, an era of prosperity will be inaugurated which will bring about a national readjustment of all industrial conditions, and further, realizing that the present strike has caused a complete stagnation in all lines of business, they give notice that they are willing to and will gladly resume work at once at the scale fixed by the court in the Weldom decision, that is, miners, underground men and topmen $3 per day, and all surface men $2.50 a day.

MONTEZUMA COUNTY.

STAR GROUP.—The first mining deal of any importance in Mancos district was closed August 13th. Mr. H. G. Sayles, of Chicago, purchased from Rush, Bauer & Wade the Star group of four claims on the East Mancos. The price paid is said to be $10,000. The new owners will start at once to build a road to the mines and will put up a 20-stamp mill as soon as the road is completed. There is about 6 miles of road to build, which will cost about $5,000.

OURAY COUNTY.

CAROLINE MINING COMPANY.—This company, located at Ouray, has put in a No. 3 style "A" Cummer dryer for drying concentrates. This is the second installation of Cummer dryers for this company.

PARK COUNTY.

LONDON & RIP VAN WINKLE GROUP.—The former property, located eight miles west of Alma, and the latter group of mines, situated to the east of Alma, are reported to have been acquired by Boston investors under a 20-year lease, who will operate them under the superintendency of Alvin Phillips, the well-known mining man of Alma. The Rip Van Winkle group consists of the Rip Van Winkle, the Kansas and the Magnolia. They are situated about 16 miles from the London.

SAN MIGUEL COUNTY.

GOLD KING.—Ten more stamps are being added to the mill at this mine, which will increase the number to 50 and enable it to treat about 100 tons of ore per day. For some time past only 25 stamps of the mill have been dropping, on account of development work being prosecuted in the mine, detracting somewhat from the output. At present from 45 to 50 tons are treated per day. The shaft from the seventh level from which the ore is being taken is now down a little over 200 ft. Drifting on the vein both ways from the shaft has been commenced at a depth of 190 ft. All the machinery at the mine and mill, as well as the surface tramway, is operated by electric power. The Gold King vein averages 6 ft. between walls and is composed of soft and decomposed free milling gold quartz.

FLORIDA.

HILLSBORO COUNTY.

PERUVIAN PHOSPHATE COMPANY.—Some time ago W. S. Saul, of Atlanta, Ga., took hold of this company's plant, which mines its pebble from the bed of the Alafia River, and after managing it successfully for some months he interested Mr. B. Arentz, who has recently purchased half of the business, Mr. Saul owning the other half. The property is valued at $40,000, but it is not known what the consideration was in the trade.

IDAHO.

LATAH COUNTY.

BLUE BIRD.—This mine, owned by Leigh & Rothrock, has a good showing of free-milling quartz. At a depth of 90 ft. the average width of the vein is 6 ft.

OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—The following is the return reported for the month of July: Crushed ore during the month, 4,261 tons; bullion produced in the mill, $54,845; estimated value of ore shipped to smelters, $6,000; miscellaneous revenue, $375; total produce, $61,220; total expenses, $42,145; profit for the month of July, $19,075.

TRADE DOLLAR MINING COMPANY.—This company recently secured a bond upon the Alpine group, adjoining its property, and will proceed to develop it on liberal lines.

ILLINOIS.

SANGAMON COUNTY.

BARCLAY SHAFT.—The 200 striking miners at this shaft, at Springfield, have decided to return to work at the old price of 32½c. per ton. They are promised better wages by the operators as soon as prices warrant them.

INDIANA.

GRANT COUNTY.

WESTERMAN NATURAL GAS AND IRON COMPANY.—This company was last week placed in the hands of a receiver. The liabilities are $100,000, while the assets are $25,000 in excess. Inability to realize on accounts is given as the cause.

VERMILION COUNTY.

INDIANA BITUMINOUS MINING COMPANY.—Work has been resumed at the mines of this company after an idleness of nearly three months. Two hundred men are now employed, and it is said the miners are getting plenty of work and good wages.

INDIAN TERRITORY.

QUAPAW MINING AND MILLING COMPANY.—This company, with a capital of $500,000, was incorporated recently under the laws of Kansas, with ex-Congressman Sam Peel, of Arkansas, president, Robert Sands, vice-president, A. W. Abrams, secretary, and J. M. Cooper, treasurer. The company has just closed lease contracts on several thousand acres of mineral lands in the Quapaw Reservation a few miles east of Miami. Prospecting is to begin at once.

MAINE.

CUMBERLAND COUNTY.

PLEASANT RIVER GRANITE COMPANY.—This company has been organized to operate granite quarries at and near Pleasant River. The office is in Portland. The capital stock is $100,000; the officers are W. J. Knowlton, president; John A. Dalot, treasurer.

MASSACHUSETTS.

NORFOLK COUNTY.

LYONS GRANITE COMPANY.—At the annual meeting in Quincy recently the officers elected were: James Lyon, president; Clarence Durgin, treasurer; Andrew Milne, clerk; and the directors are the above and J. A. O'Connor, Barnabas Clark, James McGrath and John Swithin. The board declared a dividend of 5% on the capital stock.

MICHIGAN.

BAY COUNTY.

BAY COAL MINING COMPANY.—John C. Zill, a member of the company, states that the shaft 6 × 16 ft. in the clear has reached a depth of 116 ft., and that it will be completed shortly. At 123 ft. there is a 20-in. vein of coal, but the shaft is to be extended in the expectation of finding another seam.

COPPER.

CALUMET & HECLA MINING COMPANY.—At the annual meeting of this company, on August 19th, Messrs. Alex. Agassiz, of Cambridge; F. L. Higginson, of Boston; Francis W. Hunnewell, of Wellsley; Quincy A. Shaw, Jr., of Boston, and Jas. N. Wright, of Detroit, were re-elected directors. They were chosen by a vote of 72,940 shares, of which 264 shares only were represented personally and the balance by proxy.

MINNESOTA.

(From Our Special Correspondent.)

DULUTH.—Shipments of iron ore have decreased considerably the past week, owing somewhat to the falling off in tonnage caused by the carrying over till later the contracts made by mines, and to the stoppage of all shipments not essential to mines or to purchasers. The docks of the Duluth, Missabe & Northern are still full of ore, and the shipments last week of the Duluth & Iron Range were only about 60,000 tons, less than for any week since the season fully began. Freight rates show no change, and are still at the lowest ebb.

The new 426-ft. steel steamship *Maricopa*, of the Minnesota Iron Company, has just taken its first cargo from that company's docks, 3,964 gross tons. This is probable not the vessel's capacity on present draft. The steel steamship *Queen City*, of Duluth, has broken its own record by carrying 4,648 net tons of ore from Two Harbors this week. This is the largest load ever taken out of Lake Superior.

IRON—MESABI RANGE

(From Our Special Correspondent.)

ADAMS MINING COMPANY.—About 1,500 tons are the daily shipments from this mine, and there are yet no signs of a more complete closing than has taken place.

AUBURN MINING COMPANY.—All stripping contracts have been stopped, and the mine is doing but little. Some 150 men have been laid off.

FAYAL MINING COMPANY.—This company has reduced its force by 120 men, leaving 225 employed. A 10% cut has also been made in wages. Shipments are going on from both mine and stockpile. The company has not, it is stated, received pay for the ore it has sold for this season's delivery, and it is not easily able to discount the purchasers' notes in the present financial conditions.

FRANKLIN MINING COMPANY.—Underground work at this mine has almost wholly ceased, and most of the men have left for other fields. About 1,500 tons a day are being loaded from the two stock piles by steam shovel.

MINE ASSESSMENTS.—Mesabi mines have been assessed by the county board at about double the figures of the town assessors, and 30% higher than the figures submitted by the mine owners. Besides the mines, which are assessed for something like $2,500,000, the unproductive iron lands are put in at $575,000. Some of the mines have been increased six-fold from the assessors' figures, the Biwabik, for instance, being raised from $30,000 to $317,000. This is the first attempt of the county to tax mining properties, and the result is of considerable interest.

OHIO MINING COMPANY.—This company is still shipping 1,000 tons a day, Drake, Stratton & Company doing the work, and this is the sole remaining work under way by the firm on the range.

OLIVER MINING COMPANY.—This company mined and shipped during July 180,000 tons, and its total shipments for the season to date have been 590,000 tons. The mine is to keep at work at this rate until about October 1st, when it will close down with a total for the season of probably 800,000 tons, thus leading the mines of the lake region for the year. Last week, in one day, the two large shovels employed in mining at this property mined 10,750 gross tons, the best record yet made there or anywhere else. Nearly all the ore from this mine goes to the Carnegie furnaces at Pittsburg.

IRON—VERMILION RANGE.

(From Our Special Correspondent.)

MINE ASSESSMENTS.—By the Board of Equalization of St. Louis County the assessment of Vermilion mines has been fixed as follows: Minnesota Iron Company, $365,300; Chandler, $403,000; Pioneer, $132,700; Zenith, $31,200. This is an increase of 300% from the returns made by the assessors, and of 30% from the valuations fixed by the mine owners themselves.

MINNESOTA IRON COMPANY.—This company has reduced the force of miners at its Soudan mines by 100 and has cut the wages of the rest 10%. The men accept the reduction philosophically, and the discharged employees are leaving for the West. The mines are reducing their shipments.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The output of ore was about the same as the week before, but the coming week it will be considerably less, as quite a number of the operators talk of shutting down their mines on account of the low price of zinc and lead ores. The top price paid for zinc ore was $21 per ton, with an average of $19 at Joplin, $18 at Webb City and Carterville and $16.50 at Galena, Kan. The continued hot weather has contributed to lessen the output. The price of lead dropped to $13.75 per 1,000 lbs., with 50c. added for hauling. Nearly all the lead producers will shut down, as it does not pay to work the lead mines at less than $14 per 1,000 lbs.

There is an uneasy feeling among the mine operators in regard to future prices of re until after election, and those who are working their mines are reducing the number of men employed and are making only enough ore to pay expenses and keep the men employed.

The following was reported from the different camps in the district: Joplin zinc, 640,800 lbs.; lead, 156,710 lbs.; value, $8,282. Webb City zinc, 323,450 lbs.; lead, 39,620 lbs.; value, $3,474. Carterville zinc, 688,800 lbs.; lead, 185,210 lbs.; value, $8,840. Galena, Kan., zinc, 2,250,000 lbs.; lead, 375,000 lbs.; value, $22,122. Aurora zinc, 550,290 lbs.; lead, 47,900 lbs.; value, $3,971. Mt. Vernon zinc, 123,480 lbs.; value, $1,235. Alba zinc, 114,630 lbs.; value, $1,146. Wentworth zinc, 100,610 lbs.; value, $1,006. Oronogo zinc, 41,890 lbs.; lead, 16,570 lbs.; value, $607. Totals for the district: Zinc, 4,833,950 lbs.; lead, 824,030 lbs.; value, $50,683.

BOOTLEG COMPANY.—At the Bootleg shaft they are drifting at 95 ft. on a large face of lead ore in black selvedge ground with only enough water to wash the ore. Last week they obtained over 10,000 lbs. of lead and had just started to drift.

CHOLWELL.—Much prospecting is going on in this new field two miles southeast of Carthage. Several important strikes of lead have been made, which bid fair to make a good camp of this new property.

EMPIRE ZINC COMPANY.—The Empire Zinc Company, whose works are located just west of the city of Joplin, is engaged in making extensive improvements looking toward increasing the horse-power capacity of the plant. A new rotary calcining kiln has just been fired up preparatory to making a run. It is automatic in its operations, having the fuel and ore fed by machinery, so that when once it is in operation it will continually be delivering ore ready for the retorts. The machinery was made and put up by Denver, Colo., parties. The south furnace is about ready to be fired. A large engine was recently put in position, a new addition to the pottery has been made and a mill constructed for mining the clay works. These, with other contemplated improvements, will greatly increase the capacity of their already extensive works. This is the only smelter at Joplin. The company owns several 40-acre tracts of mineral land near the city, most of which has been and is now producing large quantities of zinc ore.

FLYNN BROTHERS.—These people are drifting at 65 ft. on a large face of lead and zinc ore in open ground with just enough water to wash their ore. They are producing about 10 tons of zinc ore and 7,000 lbs. of lead each week. They are driving an air drift, and as soon as it is cut through, will put more men at work and increase their output of ore.

LEHIGH MINES.—Arrangements are being made to open up the old Lehigh mines, which have been lying idle for several years. A company from Galena, Kan., has secured the lease and has ordered 12 pumps, which they claim will be on the ground the 24th of August, and will be put in place as soon as possible. These mines lie about one mile southwest of Carl Junction, on Center Creek. At one time Lehigh was considered quite a rival to Carl Junction, but at the present time is almost depopulated. The zinc ore from these mines is of the very best grade, most of it of the pebble variety, and always brought the highest market price. There is no reason why these mines should not pay big dividends if opened up and managed on business principles. The people of Carl Junction believe that the new company means business and that it will not be long until these mines will be running in full blast as in years gone by.

LINZEE MINES.—These mines, near Carthage, are being reopened by H. P. Etheridge and Heman R. Powers, of Chicago. A very heavy pumping plant has been completed and started, and it is expected that the mines will be drained within a month. This property was a steady producer of blendes for several years, but owing to the decline in the price of ore and a serious fire which destroyed the concentrating plant, the mine has been closed for the past three years.

ORE SHIPMENT TO WALES.—A. O. Ihlseng has fitted up a laboratory at Carthage, as he is now engaged in buying zinc ore for Vivian & Son, of Swansea, Wales, which is purchased on assay. This week he starts eight car loads of zinc ore on its trip to the seaboard for its journey across the water. He has orders for 3,000 tons of ore, and Vivian & Son will keep him in the field as their buyer as long as the prices of ore are satisfactory. This will be a help to the zinc ore producers.

VICTOR COMPANY.—This company's plant, on the Connor land, is one of the largest and finest double plants in the district. The ore starts from the top of the derrick and goes down through the crushers and three sets of rolls into the roughing jigs, in this manner doing away with so many elevators. They are mining steadily on rich dirt, and one day last week produced 13½ tons of high-grade zinc ore from 266 tubs of dirt in six hours. They are drifting at 175 ft. on a large face of ore in shooting ground and heavy water. The company, which is composed of Ohio capitalists, has a lease on 40 acres.

WEST VIRGINIA COMPANY.—This plant, on the Eastern Star lease, is running steadily on rich dirt and producing about 25 tons of high-grade zinc ore every week. They are drifting at 185 ft. on a large face of ore in hard ground.

WILTERMOOD & SCRUGGS.—On the Durham lease Wiltermood & Scruggs are sinking their shaft deeper, and are down 67 ft. in rich dirt, but will sink to 70 ft., which will give a 20-ft. face of lead and zinc ore to drift on. Last week they made their first shipment which more than paid for the sinking and other expenses.

ZOGG & COMPANY.—The plant of this company, on the Eleventh Hour lease, is running steadily on rich lead and zinc dirt, producing 25 tons of zinc ore and 15,000 lbs. of lead each week. They are drifting at 60 ft. in open ground.

LAWRENCE COUNTY.

(From Our Special Correspondent.)

BOYER.—This plant, one mile southeast of town, has been producing about 10 tons of ore steadily from the steam plant. The ore seems to occur in a flat deposit about 16 ft. high, and of unknown lateral dimensions. It is a mixture of blende with some silicate.

GOBBLER.—This property at Wentworth, owned by Mr. Gross, shows a good body of high grade blende. It is well equipped with a steam concentrating plant of 100 tons capacity. The property is very systematically handled and has been the initial plant of a new district which now has three steam plants and a fourth in contemplation,

HAMER.—This new plant, south of town, is probably the finest ever put up in southwest Missouri. Much care and money have been expended to make it a thorough success. The company has a lease on eight acres of land, which has been thoroughly prospected and a fine body of ore opened up at several points at a depth of 125 ft.

TURKEY HEN.—This mine was closed down some time ago on account of differences among the owners. Arrangements have been made to reopen the mine and a steam plant of the very best construction, with a complete pumping plant, will be put in. The new company has ample capital to make a success of this enterprise.

MONTANA.

BEAVERHEAD COUNTY.

JAY HAWK AND LONE PINE CONSOLIDATED MINING COMPANY.—At a special meeting held in London, August 4th, it was resolved to wind up the affairs of this company and transfer the property to a new company, which will close the mines in Montana and purchase a gold property in the Hauraki district in New Zealand. The 25-stamp mill and other machinery now at the mines in Montana will be taken down and shipped to New Zealand. The manager, Mr. Grothe, estimates that this can be done for much less than it would cost to buy new machinery and erect it at the mines. He reported that there is a quantity of ore in sight in the Lone Pine mine, but it is not of a grade which can be profitably worked at the present price of silver. If at any time the price of silver should rise, or the conditions change so as to admit of a reduction in working cost, it will be possible to reopen the old mines.

DEER LODGE COUNTY.

MONTANA MINING COMPANY, LIMITED.—The total output for July was 6,300 tons of ore, which contained 1,980 oz. gold and 7,720 oz. silver of an estimated value of $44,900. The expenditures were: Working expenses on revenue account, $33,100; outlay on developments, $4,700; outlay on Blue Bird and Hickey mine, $1,000; extraneous expenses, $800; permanent improvements and machinery, $300; total, $39,900, leaving a net result of $5,000.

(From Our Special Correspondent.)

ONTARIO.—The stockholders of this mine met Tuesday of last week and resolved to do everything in their power to raise the money to pay off the indebtedness upon this property and begin work again. In the meantime arrangements have been made to keep the pumps running, so as to prevent the water from accumulating in the mine.

FLATHEAD COUNTY.

BOAZ MINING COMPANY.—This company, operating on Grouse Mountain, near Troy, has just completed a 50-ft. tunnel, and is reported to be getting assays of $14 in gold, in addition to the silver.

HIAWATHA.—There are 2 ft. of good silver lead ore in this mine which, it is said, will run 50 oz. in silver and 50% lead.

GRANITE COUNTY.

LOOKOUT MOUNTAIN GOLD MINING COMPANY.—This company recently uncovered a 5-ft. lead of free milling gold ore that is said to sample from $18 to $20 per ton.

JEFFERSON COUNTY.

CROSSCUT GOLD MINING COMPANY.—A suit has been filed against this company for $1,070.50 by employees for labor performed.

(From Our Special Correspondent.)

DIAMOND HILL.—The sale of this mine, in the St. Louis district, is reported, the price is stated to be $2,000,000. That the property has been sold can not well be doubted, but it is hardly probable that the price is as large as stated. However, the Diamond Hill is undoubtedly a great gold property. There is now in sight, so experts have claimed, over a million dollars worth of gold ore, and if properly managed, one-fifth should be clear profit. The probabilities are that further developments will

open up other ore bodies more extensive than those now exposed.

FREE COINAGE.—This mine, in Lump Gulch, has been leased and work has been begun upon it. There are now but two mines closed down in Lump Gulch on account of the difficulty with the miners in regard to boarding at the companies' boarding houses. It is said that there is no doubt but both of these will resume in the near future.

HOPE.—It is stated that this company has a force of men at work at Basin putting the mine in order. It is also said that another shaft will be sunk across the river, so there will be two shafts upon the property. The Hope is a good mine yet, and there is sufficient precious metal in its vein to put its affairs in good shape. The company has been very unfortunate, and it is hoped that it will soon be at work with a full force of men.

KATIE.—This mine at Basin will soon be at work again. The concentrator and hoist were destroyed by fire about a year ago, and since that time nothing has been done upon the mine. A large force of men have been put to work erecting a new concentrator building, which will be much larger than the old one. The new mill will have a capacity of 500 tons, 200 tons more than the old one. The Katie is one of the best gold mines in the state, and when it is again running Basin will resume its old prosperity. It is said that the company will also erect a smelter at Basin to treat their ores. The Glass Brothers deserve much praise for their perseverance in getting this mine at work again.

LUMP GULCH.—The Liverpool, Little Nell and Free Coinage, in Lump Gulch, are shut down on account of a disagreement between the miners and mine-owners in regard to the rule requiring the men employed in the mines to board at the boarding houses of the several companies. The mine-owners insist that, as they have been to the expense of constructing boarding houses for the men, they must conduct them, and that in order to pay expenses all their employees must board with them. The miners insist that there are other boarding houses in the camp, and they should have a choice. The married men, especially, they say, should be allowed to board at home without paying for board to the company. There seems to be no effort made to adjust the matter, and the mines continue idle.

LEWIS & CLARKE COUNTY.

(From Our Special Correspondent.)

MARYSVILLE.—There are now 140 stamps dropping on ore mined at and near Marysville—110 on Drumlummon ore, 30 on ore from the North Star and Ball Mountain claims, owned and worked by Col. Thomas Cruse, of Helena. 10 on ore from the St. Louis properties, and 40 on the Bald Butte ore.

The property worked by Col. Cruse is said to be showing up well, a large and rich ore-shoot having been uncovered on the North Star. In the Bald Mountain a shoot of fine ore has also been found and both are being worked. It is rumored that Col. Cruse has purchased the Belmont mill, in which he is working his ores, but it could be traced to no reliable authority. There is a fine body of ore in the St. Louis which will keep the 10-stamp mill running a long time. The camp of Marysville is more prosperous than it has been for several years, the Drumlummon mine continuing to work with a full force.

PIEGAN.—This mine, some three miles from Marysville, has been sold at sheriff's sale to satisfy a judgment against it in favor of Frazer & Chalmers, of Chicago, for $3,558.39. It is a matter of interest that the man who located it in 1865 was the sheriff who sold it. It is a fairly good property, but the company which owned it has been made up of so many antagonistic interests that no one has been benefitted by it except a few working people and the lawyers. The richest mine in the world would not pay if managed the way the Piegan has been.

MEAGHER COUNTY.

(From Our Special Correspondent.)

Some thirty years ago the mining camp of Copperopolis was located 16 miles south of east from White Sulphur Springs. This was before a single house had been erected at the Springs, where there is now a prosperous little city. The Indians drove the miners away from this camp, burning their cabins. But little work has been done upon the claims since that time, the deepest shaft being less than 200 ft. in depth. Several of the claims have been patented. Recently the Sutherlin Brothers, proprietors of the White Sulphur Springs *Husbandman*, got an option on the property and induced Mr. Barton Sewell, of Chicago, to take the bond, which was for the sum of $60,000. The bond runs till March 1st, 1897. Mr. Sewell is now working the property. The veins are said to be small, but the ores are rich in copper and carry sufficient silver and gold to make them valuable. The permanency of the veins, and the amount of ore contained in them have yet to be determined, but there is every probability that they will prove satisfactory and that the bond will be taken up.

FLORENCE MINING COMPANY.—It is said that this company recently bought the Monarch and two other adjoining claims. One of them is an extension and the others are for dumping purposes. The price paid was $25,000. This acquisition makes the Florence one of the best and most independent mining companies in the State. It can enlarge its force of men and soon take out the amount of money paid.

CONFEDERATE GULCH.—J. M. Norris and his partners, David Wood and Mr. Jacobs, are pushing the work of erecting a 10-stamp mill in Confederate Gulch, at the mouth of Spruce Gulch, and a tramway is to be built so that the ore from the lead, which is high up the mountain, will come direct into the mill. The foundation for the mill is almost completed and a large amount of timber and lumber is on the ground. Work in the mine is progressing favorably and a portion of the ore is being hauled to the Helena smelter where it yields from $140 to $180 per ton.

Confederate Gulch placer mines will yield a larger amount of gold this year than last. Water has been sufficient to work the properties and every claim except one has been worked all season. The yield has not been estimated. While water in some localities was scarcer than last year, an increased yield of gold is expected.

RAVALLI COUNTY.

(From Our Special Correspondent.)

HELENA & VICTOR MINING COMPANY.—The Curlew mine, near Victor, owned by this company, has been in the past a large producer. The decline in silver, and the difficulty of working the property, the ground being very hard to hold, caused it to shut down, and at that time there was a considerable debt upon the property—over $30,000 A new shoot of ore was discovered in the property, which has been taken out to the depth of 100 ft. This paid all expenses and $10,000 on the old debt. As reported by Hon. A. M. Holter, of Helena, president of the company, the account was as follows: Realized upon ores and concentrates up to July 1st last, $56,234.38; expenses, $42,309.68. Paid on old indebtedness, $10,281.74; remaining in the treasury, $3,642.96. The ore and concentrates on hand with the money in the treasury will about pay the demands against the company for its recent work. The trustees have asked the stockholders, as the stock is non-assessable, to contribute 40c. a share to enable the company to pay off the old indebtedness and sink 100 ft. deeper, believing that the ore body the company has been working on goes down and that it is of sufficient value to make a return to the stockholders in dividends. If this is not done, it is declared, the creditors will foreclose on the mortgage on the property, and sell it for their debt.

SILVER BOW COUNTY.

(From Our Special Correspondent.)

AMERICAN DEVELOPMENT COMPANY.—This company, of Butte, has taken up the bond it had on property at Gibbonsville, Idaho, and has given a bond for another group of claims for $200,000 more. The property was owned by the Helena and Idaho Gold Mining Company, of which Mr. A. J. Seligman, of Helena, is the principal stockholder. The American Development Company has been treating the ores at Gibbonsville by chlorination, and has found that it works very successfully.

OREGON.

BAKER COUNTY.

CONSOLIDATED VIRGINIA.—David Keith, of Salt Lake, Utah, who recently bought a two-thirds interest in this mine, which is the south extension of the Virtue mine, will at once start sinking a 500-ft. double compartment shaft and then crosscut to the Virtue ledge.

PENNSYLVANIA.

ANTHRACITE COAL.

NEWTON COAL COMPANY.—This company will begin work at the ill-fated Twin Shaft at once and endeavor to get out coal. The gas has been cleared out of a large portion of the west side of the shaft, in the sixth vein, and it is believed to be safe enough to permit the resumption of work in chambers not affected by the cave-in. About 10 or 12 chambers will be worked at the outset, but the number will probably be increased as rapidly as possible.

TWIN SHAFT.—The following is from the Pittston *Item* of recent date: "Two statements recently made by Mr. Law, the superintendent, in connection with the Twin Shaft are of considerable interest. First, he said that before he stopped work at the cave, he invited the general managers of the different mining companies in this vicinity to visit the mine. This visit was made about three weeks ago. After inspecting the mines thoroughly, Mr. Law requested each gentleman to write a private letter informing him of his opinion about the cave, and the advisability of continuing excavating for the bodies of the entombed miners. Each gentleman did as requested, and while the writers differed about the cause of the cave, each and every one informed Mr. Law that they considered further excavation unnecessary and extremely dangerous. After considering the matter of liability in case of accident it was decided to stop work.

"Mr. Law has said that before work would be resumed at the cave the miners should sign an agreement exonerating the company from any liability for any accident that might occur, and, furthermore, that each miner's wife and family would also have to sign a similar agreement. It is doubtful if any men will be found so anxious to risk their lives in the fatal slope that they will go through such a formality to secure the opportunity. It is safe to say that the last stroke toward recovering the bodies has been made."

SOUTH DAKOTA.

LAWRENCE COUNTY.

COLETTA.—Men at work in this mine at Galena recently crossed a 4-ft. vein of ore similar in character to what they have been finding, and which is reported to run from $20 to $60 a ton.

HAWKEYE.—A seam of good ore was struck in this mine recently, the gravel-like rock being cemented with gold which forms nearly half the mass. The extent of the seam is not yet known.

HOMESTAKE MINING COMPANY.—The ore in this company's mine is reported to be running better than last year. Three hundred stamps are now dropping and when the new mill is completed 400 stamps will be at work.

UTAH.

JUAB COUNTY.

SWANSEA.—This mine, near Silver City, in the Tintic district, has a shaft that is now down a distance of 460 ft. In sinking the shaft stations were cut at the 350 and 450-ft. levels and from these drifts will be run on the fine ore bodies exposed and stoping in winzes and upraises will be driven. The bottom of the shaft shows over 4 ft. of galena ore.

SALT LAKE COUNTY.

ATLANTIC MINING AND MILLING COMPANY.—This company, which is driving a 2,000 ft. tunnel at Bingham to cut the Dalton & Lark, Brooklyn and Richmond veins, recently encountered good ore 750 ft. in from the mouth of the tunnel. The ore is said to carry $22 in gold. This property is located between the Dalton & Lark and the Lead Mill, and the tunnel will be driven ahead to cut the other veins.

WASHINGTON.

KING COUNTY.

KING SOLOMON.—The lead in this mine is 80 ft. in width, with a pay streak 8 ft. wide. The ore is a gray copper and assays well in gold and silver. Eastern parties have taken hold of the property and will push the development and are now building a trail to the mine.

OKANOGAN COUNTY.

WYANDOTTE GROUP.—A rich strike is reported to have been made on this group of mines, now being operated by Professor Langhammer for a Chicago syndicate.

SNOHOMISH COUNTY.

It is reported that a seam of coal 5 ft. thick has been discovered near Everett. The seam is only a short distance from the Great Northern Railroad.

WEST VIRGINIA.

BELMONT COUNTY.

PIPE CREEK COAL AND IRON COMPANY.—This corporation has gone into the hands of a receiver. The Common Pleas Court has appointed James Pollock, of St. Clairsville, receiver, and Captain Burgett McConnaughy, W. C. Burgundthal and Ferdinand Dorsey, appraisers. The company owns considerable surface and coal lands in the lower part of the county near the mouth of Pipe Creek. Inability to realize on its real estate caused the concern to go into a receiver's hands.

TYLER COUNTY.

NEWBANKS.—This famous oil well, which is also a strong producer of gas, took fire on the night of August 15th through an accident, burning the derrick and several thousand barrels of oil. When the pressure was reduced at the mouth of the well the gas broke the spouting oil into spray, throwing it into the air more than 100 ft. The flame was in the shape of a huge torch, the spraying oil forming into glistening drops in the air and dropping in a dazzling shower, while the smoke, densely black, ascended way above the mountain. The hills for miles around were covered by sightseers, who had come from all over the region. The loss to the owners is large, as the well was producing 20 bbls. a day. There is no way known to put out the fire, as the gas and oil pressure are constant and the roaring and the heat of the flames terrific.

SPRAGG OIL AND GAS COMPANY.—This company has under lease 2,000 acres of land on Elk Fork, and while developing its first well for oil, struck a gas well with 1,200 lbs. pressure.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

KASLO DISTRICT.

BELL.—W. E. Mann & Company have taken an option on this property, known as one of the best claims in Jackson Basin. L. P. Peterson, with a force of eight men, has begun operations.

NEW SAMPLING WORKS.—Mr. George Alexander of the International Trading Company, is at the head of a new company that has begun the erection of an ore sampling plant. The site is on the bay near the old sampler.

The orders for lumber and timbers have been placed and the machinery will be on the ground before the completion of the buildings. The Kaslo & Slocan Railway will continue its track around the point to the new sampler, in front of which a dock will be built. Mr. Whitney, late of the Colorado Smelter & Sampling Works at Butte, will be the

superintendent. He has arrived and will take charge at once.

KOOTENAY DISTRICT.

MAPLE LEAF AND OAK LEAF.—The litigation over these claims, on the Illecillewaet, has been disposed of by the Lillooet, Fraser River & Cariboo Gold Fields Company, purchasing for $47,000 cash, the interest of McArthur, Ducey and Grant.

SLOCAN DISTRICT.

ADAMS GROUP.—This group, at the top of the mountain between the Ruth and Idaho, has been bonded for a sum reported at $110,000. Captain Adams and partners, who also own the Canadian group, adjoining the Adams group, were the owners. Fifteen men have been put at development work, and contractors are putting up buildings at the mine. S. K. Green, of Spokane, has taken general management of the company's operations. The Adams is described as an undeveloped property. The ground is said to be cut with a number of large veins, all converging to one point about the center.

BONDHOLDER GROUP MINING COMPANY.—This company, a British syndicate recently organized, holds the Bondholder group of mines on the divide between Ten-mile and Springer creeks. These claims are located upon the same lead as the Enterprise. For some time past a small force of men has been prospecting the property. There has been considerable stripping of the ledge, and a number of small prospect tunnels run into it. The property will be worked from the Ten-mile side. It is reported that the company will put a force of 40 men to work. The same syndicate has control of the Two Friends, on Springer Creek, and the Crusader, on the north fork of Lemon Creek.

RUTH.—The main tunnel of this mine is now 700 ft. The second tunnel is in 200 ft., and the air-shaft is down 156 ft. The company is building a wagon road and is putting up a bunk house to accommodate 75 men. The wagon road will be finished about August 20. A new exhaust fan has been made and is working well. The ore runs $120 and $130 to the ton. Considerable gray copper is now being found in the ore. The company owns an adjoining claim to the Ruth.

SPECULATOR.—It is reported that a large body of concentrating ore has been discovered on this claim lying between the Arlington and Enterprise on Ten-Mile Creek.

SOUTH AFRICA.

TRANSVAAL.

WITWATERSRAND GOLD PRODUCTION.—The companies adhering to the Johannesburg Chamber of Mines report a total production of 168,521 oz. gold in July, while those belonging to the Association of Mines of the South African Republic announce a total of 35,352 oz. This makes in all an output of 203,873 oz.; equivalent, at the usual rate of Witwatersrand gold, to 166,350 fine ounces gold. Taking the reported ounces, we find there was an increase of 10,233 oz. over the June production, and a gain of 4,420 oz. over July, 1895. It is the largest monthly production ever reported, exceeding by 300 oz. that of August, 1895, which, had been the largest on record. For the seven months ending July 31st the total reported production was 1,258,376 oz., which compares with 1,313,000 oz. last year, 1,141,689 oz. in 1894 and 791,140 oz. in 1893. The production for the seven months this year is equivalent to 1,026,834 fine oz. gold, or to $21,224,659 in value.

LATE NEWS.

(Special to the Engineering and Mining Journal.)

LEADVILLE, COLO.—BY TELEGRAPH, Aug. 20, 1896.—One thousand members of the miners' union in session to-day adopted resolutions refusing to accept the proposition of the mine managers to go to work at the old scale of wages on an average silver quotation of 75c. per ounce. All show of amicable settlement now seems gone.

A wonderful gold strike is reported to have been made in Cedar Hollow, Mont., in the vicinity of Gaylord, on the western slope of the Tobacco Root range. The strike is said to be the richest ever made in the State. The surface ore, of which several carloads have been shipped, has yielded from $400 to $500 per ton, and the returns from 12 carloads approach $100,000. Another carload of select rock is expected to net $25,000. The properties upon which the work has been done are in the Mayflower group, located and owned by Charles Preuitt, of Whitehall, and S. M. Fair and E. M. Clark, of Butte.

Foreman Peter Ryan, John Manning and John Campbell were instantly killed in the St. Lawrence mine, near Butte, Mont., by the failure of a clutch on the hoisting engine to work and permitting the cage to drop to the bottom of the shaft, 1,250 feet. Ryan came up on the cage alone, and when it reached the top he was just in the act of stepping off when the cage dropped like a shot down the shaft. At the 1,200-ft. level Manning and Campbell were at work, and the falling cage crushed them to pieces and tore the shaft timbers so badly that it will require a great deal of work to reach the bodies. There were other men at work in the shaft, but as the accident occurred just after a shift it is hoped and believed they had gone home.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, August 21.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending August 5th, 1896, compared with the corresponding period last year:

	1896. Week.	1896. Year.	1895. Year.
Pennsylvania Railroad.....	63,928	2,126,468	2,272,399

PRODUCTION OF BITUMINOUS COAL, in tons of 2,000 lbs. for week ending August 15th, and for years from January 1st, 1896 and 1895:

Shipped East and North:	1896. Week.	1896. Year.	1895. Year
Allegheny, Pa.....	43,175	1,441,466	2,250,666
Barclay, Pa.....	613	25,251	....
Beech Creek, Pa.....	55,839	1,886,777	1,790,277
Broad Top, Pa.....	5,109	250,268	2,562,178
Clearfield, Pa.....	65,771	2,999,199	3,104,201
Cumberland, Md	173,448	2,012,319‖	1,712,012
Kanawha, W. Va.....	153,305	1,913,618	1,754,071
Phila. & Erie	† 792	45,796	31,745
Pocahontas Flat Top.....	*72,000	2,210,422	1,567,899
Totals	370,052	12,785,116	14,773,049

* Week ending Aug. 1st.
† Week ending Aug. 7th.
‡ Week ending Aug. 8th.

Shipped West:	1896. Week.	1896. Year	1895 Year.
Monongahela, Pa.....	22,832	639,543	484,045
Pittsburg, Pa.....	29,361	1,228 983	1,094,466
Westmoreland, Pa.....	28,410	1,211,455	1,098,130
Totals.....	80,603	3,079,981	2,676,641
Grand totals.....	470,855	15,365,097	17,449,690

Production of coke on line of Pennsylvania Railroad for the week ending August 15th, 1896, and year from January 1st, 1896, in tons of 2,000 lbs.: Week, 59,577 tons; year, 2,713,924; to corresponding date in 1895, 3,504,775 tons.

Anthracite.

The point of greatest importance in connection with the anthracite trade at this time is the widely circulated rumor that the price of all domestic sizes is to be increased 25 cents a ton on September 1st. This increase has not been officially announced. That it is credited in some directions is shown by the inquiries that have been received by some companies for shipments before September 1st, and for shipments during that month at current prices. This to a slight extent has stimulated trade. As a whole, however, the market shows no improvement, and the retail trade is also very dull. Prices are without exception reported firmly held by all the companies.

The amount of coal now being mined is moving smoothly and is only sufficient to meet the demand. The stock of coal on hand is not being materially increased.

Stove, egg and broken are the sizes which are in most demand at this time. The prices are still those of the July circular, and are as follows: $3.75 for broken; $4 for egg; $4.25 for stove and $4 for chestnut, subject to the usual commission of 15c.

Bituminous.

Commercially, the bituminous coal trade is dull; financially, it is stagnant, while as a whole it presents no immediate outlook for a material change. The cotton and other mills in the East are closing down one by one owing to the depressed state of business, and as they are among the largest consumers of coal this causes dullness in this market. We have been informed that practically the only business doing in bituminous coal is centered at Baltimore—a place where prices are said to be cut.

As coal is now being produced in small quantities only, transportation from the collieries to tidewater is quiet and the car supply ample for all requirements.

The representative of the *Engineering and Mining Journal* has been informed that vessels of 1,000 tons and less are very scarce at Philadelphia, while at Baltimore they are also dropping off, thus opening a way for higher freight rates. The larger craft seem to be in good number, but the cargoes are slow in forthcoming. The ruling freight rates from Philadelphia to the East are so low that some owners are tying up their boats awaiting better times. There are, however, some vessels which are taking cargoes of coal to the far East, but these carry ice on their return trip. Vessel owners and captains fear that should they tie up their craft their crews will soon become scattered, thus causing difficulty in gathering them together again when better freight rates can be secured.

All-rail trade continues in the same condition as last reported, although it has been a little quieter.

We quote current rates of freight from Philadelphia as follows: To Boston, Salem, Portland and the Sound ports, 50c.; Portsmouth and Bath, 55c.; Wareham, 70c.; Lynn, 60@80c.; Newburyport, 60@65c.; Dover, 90c. alongside and towage; Saco, 75c. alongside and towage; Gardiner, 55@60c. and towage; Bangor, 55@60c. Five and ten cents above these rates are asked from Norfolk, Newport News and Baltimore.

The Association prices remain as follows: F. o. b. Philadelphia, Norfolk and Newport News, $2.35; Baltimore, $2.28; New York Harbor shipping ports, $2.80, alongside; New York Harbor, $3. There is a 20c. differential in favor of Clearfield and Beech Creek coals.

NOTES OF THE WEEK.

The valuable coal deposits in Washington and Greene counties, Pa., south of the main line of the Panhandle, and extending west of the Ohio River and east to the Monongahela, are attracting the attention of railroad men and coal operators, and it is said that several short branch lines from the Panhandle, Baltimore & Ohio and Pittsburg & Lake Erie systems are to be built soon. The main lines of railway manage to get across this region by following the narrow valleys cut down by small streams and crossing up and down over steep divides. The short coal branches start on steep gradients up the smaller ravines and reach the Pittsburg coal bed at a considerable elevation. In Greene County the coal dips beneath higher geological formations, and at most places is below the railroad levels. At such places shafts will be sunk, but where the coal can be reached by drifts it can be mined more economically. The Panhandle has now its Bridgeville & McDonald branch and one or two other short lines reaching valuable mines, and the Pittsburg & Lake Erie, by means of the Chartiers & Youghiogheny branch, reaches several important mines in Washington County, while farther south the Baltimore & Ohio reaches the coal by its main line and several short branches. Not one-tenth of the coal area between the Panhandle and the Baltimore & Ohio has been developed, and it is to this territory that numerous feeders will be sent from the Pennsylvania, Baltimore & Ohio and Vanderbilt systems.

In the Monongahela River region the coalbeds of Washington, Fayette and Westmoreland, as well as the Greene County coal along the river, are being worked extensively. Most of the railroads in this region depend entirely upon the coal and coke traffic.

Buffalo. Aug. 20.

(From Our Special Correspondent.)

The hot wave has disappeared at last, and since Sunday the thermometer has been at times as low as 57°. Heavy rains have fallen. The anthracite coal trade has not been affected yet, as the demand continues very light at unchanged quotations.

The Board of Police of this city have awarded the contract for 800 tons of anthracite coal at the rate of $4.01 for grate, $4.23 for egg, stove and nut, and $3.05 for pea per net ton delivered.

Bituminous coal continues to be sold only in small lots for immediate requirements at previous rates. Supply is rather in excess of demand.

Lake freights on coal are unchanged; the movement has increased and the receipts are immediately taken up at the low figures prevailing.

Generally, business is on the mend, but transactions are light.

The shipments of coal westward by lake from Buffalo from August 9th to 15th, both days inclusive, showed a marked increase, aggregating 81,116 nets tons, distributed about as follows: 35,700 tons to Chicago, 12,800 tons to Milwaukee, 8,800 tons to Duluth, 2,520 tons to Toledo, 6,500 tons to Superior, 2,525 tons to Green Bay, 900 tons to Bay City, 700 tons to Detroit, 500 tons to Gladstone, 225 tons to St. Ignace, 1,575 tons to Hancock, 1,050 tons to Menominee, 1,030 tons to Saginaw, 1,740 tons to Ft. William, 2,050 tons to Marquette and 3,000 tons to ports not stated. The rates of freight were 20c. to Chicago, Milwaukee, Duluth, Toledo, Superior, Ft. William, Green Bay, Marquette, Gladstone; 50c. to St. Ignace; 40c. to Saginaw; 25c. to Bay City, Detroit, Portage and Hancock. Closing steady.

The propellers *Oceanica* and *Chrisholm* collided in the new channel at Lake St. Clair on Friday last. Both vessels sank 17 ft. under water. The former was laden with coal. No lives lost.

Chicago. Aug. 19.

(From Our Special Correspondent.)

There is but little trade in anthracite coal. But few orders are being received, and these only for present requirements. No movement has as yet appeared tending toward placing contracts for fall supply, and it is not likely that much will be done in laying in supplies for the fall for some time yet, the depressed condition of affairs not warranting any outlay. The stock of hard coal in Chicago is more than sufficient to meet any demand likely to arise at the present time. The Lincoln Park commissioners have refused all bids to supply hard coal for the coming year; $5.85 per ton was the lowest bid and they will according use soft coal in place of hard.

Circular prices for hard coal are $5.35 for broken or grate and $5.60 f. o. b. cars Chicago for egg, stove or chestnut.

Bituminous coal trade is slow in town, but a trifle better in out-of-town business. The manufacturing plants are buying less coal than ever, and a good many have temporarily closed. The summer trade so far has been the poorest in years.

Pittsburg. Aug. 20.

(From Our Special Correspondent.)

Coal.—Trade along the Monongahela is dull. The miners and operators are still apart in their views; the latter are still waiting for miners to come down from the 70c. rate, which the latter will undoubtedly be forced to do. At the same time only those mines are running which have accepted a reduction. What is being loaded now is principally for local consumption. Col. W. P. Reed, the Panhandle coal operator, is paying the 70c. rate, and is not asking for a reduction; he says trade is good and the outlook entirely satisfactory; in railroad trade very little has developed since our last, in fact the conditions are practically the same as prevailed all

along this season, neither better nor worse. The large lake shippers seem to have secured the lion's share of the Northwestern trade, and are fully able to supply it from the mines directly controlled by them.

At Cumberland, Md., the first steps have been taken for building a railroad that will open up great coal-fields and bring to Pittsburg market a quantity of timber and other products; it is to be known as the Pittsburg & Potomac Railroad of Maryland. Capital stock, $500,000; the road will be an extension of the road from Stranburg, Va., to Potomac Station in Garrett County, and will connect with the Pittsburg & Connellsville road.

Connellsville Coke.—The depression in the trade still continues with no signs of abating; a large number of ovens were banked last week and more will follow, W. J. Rainey being conspicuous. The H. C. Frick Coke Company issued orders to bank all the ovens at the Oliphant plant, 80 more at the Brownfield plant, leaving only 150 of the 446 at the latter works in blast. Over 10,000 of the 17,000 ovens in the Connellsville regions are now shut down. The production of the region for the week, estimated upon the ovens drawn, reached 78,955 tons as against 91,758 tons the week previous, a decrease of 12,803 tons. Estimates on production at present would be unreliable. The number of blast furnaces being shut down makes demand for coke very uncertain with the end not in sight. In the mining order of the ovens in blast 3,086 ovens made six days; 4,789 ovens five days; 183 ovens four days; 700 ovens three days, and 750 ovens two days. The shipments for the week were 4,692 cars, a decline of 332 cars, distributed as follows: To Pittsburg and river points, 1,810 cars; to points west of Pittsburg, 1,936 cars; to points east, 946 cars. Prices nominal.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Aug. 21, 1896.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Aug. 23, 1895.		Week ending Aug. 21, 1896.		From Jan., '95.	From Jan., '96.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	41	23,257	35	21,430	666,511	855,080
Coke...	140	148,820	112	133,110	4,663.574	5,245,494
Charcoal...	22	4,428	23	6,760	135,637	186,205
Totals....	203	176,505	170	161,300	5,465,722	6,286.729

Accounts from all quarters show a continued dullness in the iron trade. Notwithstanding a heavy drop in pig iron production there seems still to be a surplus, and prices have been weaker than at any time since the early months of 1894. In steel and finished iron trade is very light everywhere, and in those instances where combines have held up the nominal prices there is little business doing.

At present there seems to be no prospect of improvement, and it is altogether likely that none will come before November. It may be said that the trade is generally prepared for a dull time; credits have been on a very restricted scale, and almost everyone is in as good shape to meet hard times as circumstances would permit.

NOTES OF THE WEEK.

The Merchant Bar Iron Association held a meeting this week, but the attendance was not large and no new business was transacted. It is said that some matters of importance will be brought up at the meeting next month.

Another order for 9,000 tons of steel rails for Japan is reported. They will be made by the Carnegie Steel Company. Of course no price is named, but the order has presumably been taken on the same terms as those already filled for that country. The former price was stated to be about $21.26 per ton. It is reported that an agent has been sent to Russia to negotiate for a contract for rails for the Pacific section of the Siberian Railroad, but the rumor cannot be verified, and is somewhat doubtful.

New York. Aug. 21.

"What is the use of talking about business now? There is none, come in next November and we may have something to say." That is the general expression of the feeling in the local iron trade. For the time all large transactions are laid aside, and the small orders which usually make up an important part of the local business are coming in very slowly. Most of the shops in this district are running light. Newark and Bridgeport complain of small orders and slow collections. Structural material even, which has all this year been the lively section of the trade, is rather dull, and complaint is made of trouble about getting money for new projects. A few talk hopefully of next winter's business, but the majority are cautious and prefer to wait and see. Meantime there is a very close scrutinizing of credits, and most people are not pressing for new business.

Pig Iron.—The fact cannot be concealed that the pig iron market is in a demoralized condition. Some dealers continue to quote fair prices, but few disguise the fact that, if pressed, they would take less. Most of the Northern furnaces are not pressing sales, and some have shut down rather than to go on selling at present prices. The Southern makers are more inclined to keep on and take what they can get. It is stated on good authority that fair Alabama foundry has been offered on a basis of $6.50 Birmingham, or about $10 New York. In spite of the low prices but little business can be noted; foundrymen do not feel like carrying big stocks, and most of them believe that they can do as well in October as now, if they need the iron.

It is not easy to make exact prices, but for Northern iron we quote: No. 1 foundry, $11.75@$12.50; No. 2, $11.25@$11.75; gray forge, $10.50@11. For Southern iron prices are: No. 1 foundry, $10.75@$11.25; No. 2 foundry, $10@10.75; No. 1 soft, $10.25@$10.75; No. 2 soft, $9.75@$10.25; forge, $9.25@$9.75. Basic pig is offered at $10.50@$11. All prices are for tidewater delivery.

Cast-Iron Pipe.—In the absence of new contracts to figure on this week some of the pipe-men have been amusing themselves by talking up a combination to put a stop to sharp competition and low prices. There are too many interests to be consulted to make a working combine possible, however, and a few open contracts would stop the talk.

Spiegeleisen and Ferro-Manganese.—Nothing is reported in spiegel. There has been a little done in imported ferro at $47@$47.50 for 80%, New York.

Steel Billets and Rods—The pool price is $21.75 per ton, New York. Brokers claim that they have still some outside steel to sell, and it is reported that one small lot was placed this week at $1.50 below pool rates; but the parties refuse to say anything. No other business is noted. Rods are quoted $28@$29, with nothing doing.

Merchant Iron and Steel.—There is very little doing and prices are somewhat uncertain. We quote: For common bars 1·10@1·15c.; refined bars, 1·20@1 45c.; soft steel bars, 1·20@1·30c. Other quotations are: Steel hoops, 1·50@1·60c.; steel axles, 1·60@1·75c.; links and pins, 1·60@1·70c.; tire steel, 1·80@1·90c.; spring steel, 1·95@2·15c. All prices are for delivery on dock, New York.

Plates.—Nobody is buying plates and prices are nominally unchanged. The mills are anxious for orders and new business is fought for. We quote for universal mill plates, 1·40@1·50c. For steel plates we quote: Tank, 1·35@1·45c.; boiler shell, 1·45@1·55c.; good flange, 1·60@1·75c.; firebox, 2@2·40c. Charcoal iron plates are quoted 2·25c. for shell, 2·75c. for flange, and 3·25c. for firebox. Rivets are 2·15@2·25c. for steel and 3@3·25c. for iron.

Structural Iron and Steel.—The market, which has held up well so far, is falling into dullness. The only large contract now under consideration is for a large building on Herald Square. Several plans are waiting on account of difficulty in placing loans. We quote for angles, 1·35@1·45c.; channels, 1·70@1·75c.; tees, 1·65@1·70c.; beams, 1·70@1·75c. for large orders, and 1·80@1·90 for small lots.

Wrought Iron Pipe.—Only a retail business is reported. Discounts are unchanged, as follows, out of store: For black, large, 67, 10, 10, 10 and 10; 1¼ in. and smaller, 57, 10, 10, 10 and 10. For galvanized, large, 55, 10, 10, 10 and 10; for 1½ in. and smaller, 52, 10, 10, 10 and 10.

Nails.—The pool price continues $2.55 per keg f. o. b. Pittsburg for steel wire nails, and $2.30 per keg, f. o. b. Pittsburg, for cut nails. Buyers are taking only small lots for their immediate requirements—which means just now practically no business at all.

Steel Rails and Rail Fastenings.—The combination price is still $28.75 per ton at tide water, or $28 at mill, for heavy sections. Girder rails are $29@$31, tidewater. No business is reported.

Little is doing in rail fastenings. Angle-bars are 1·15@1.25c. and spikes 1·60@1.65c., tidewater delivery. Bolts are 1·95@2·05c. for square nuts, and 2·05@2·15c. for hexagon nuts.

Old Rails.—Nothing has been done in old iron rails here, and $12.25@$13 is about the best that can be quoted. There is a surplus of old steel rails. A large lot of heavy section has been offered, we hear, but the best bids were $10 for Sound port and $10.50 for Harlem River delivery; both were declined.

For moderate lots we quote $10.50@$11.50, New York harbor. There is some inquiry for export. Old steel rails fit to relay are quoted $19@$20, New York for 56 lbs. or over, with only a few small sales.

Scrap Iron.—The demand for foundry scrap is light, and in the absence of any large transations we continue to quote $10@$11.50 for good machinery; $8.50@$9.50 for ordinary cast scrap; $6@$7.50 for stove-plate and mixed.

Buffalo. Aug. 19.

(Special Report of Rogers, Brown & Co.)

There is a lack of the enthusiasm in this district which has been noticed for a week or two past, and business is confined largely to orders of the carload and 100-ton variety. The new orders entered and requests for delivery on old contracts are for quick shipment, indicating that consumers are carrying unusually light stocks. Prices are a shade lower and the probabilities are the prospect of a good-sized order would bring out even lower figures than those mentioned below. We quote on a cash basis f. o. b cars Buffalo as follows: No. 1 foundry strong coke iron, Lake Superior ore, $12.50; No. 2 foundry strong coke iron, Lake Superior ore, $12; Ohio strong softener No. 1, $12.50; Ohio strong softener No. 2, $12; Jackson County silvery No. 1, $15.25; Southern soft No. 1, $11; Southern soft No. 2, $10.75; Lake Superior charcoal, $14@$14.50.

Chicago. Aug. 19.

(From Our Special Correspondent.)

There is but little new business in this market this week. Buying in all lines continues light, nobody appearing to have any desire whatever to come into the market for anything larger than for temporary wants. A number of large concerns are entirely out of the market in consequence of their inability to carry on business because of the closeness of the money market. Business is being refused for the want of ready capital and the banks almost to a unit will lend no money even on excellent security. The railroads are buying no rails and the billet and rod market is almost flat.

Pig Iron.—Buying continues just large enough to supply immediate wants and no more, The aggregate sales of the week will not exceed a few thousand tons, and none of them were for more than a couple of hundred tons. Prices are low now, but notwithstanding that consumers look on the conditions prevailing as too uncertain. We quote as follows: Lake Superior charcoal, $13 50@$14; local coke, foundry, No. 1, $11.75@$12; No. 2, $11.25@11.75; No. 3, $11@$11.25; local Scotch, No. 1, $11.75@$12; No. 2, $11.25@$11.75; No. 3, $11@$11.25; Southern coke, No. 1, $11@$11.35; No. 2, $10.60@$10.85; No. 3, $10.35@$10.60; Southern, No. 1, soft, $10.60@$10.85; No. 2, soft, $10.60@$10.85; Jackson County silveries, $14.50@$16; Ohio strong softeners, $15@$15.50; Alabama car-wheel, $16.85@$17.35; coke, Bessemer, $13@$13.50.

Bar Iron.—Buying is confined wholly to small quantities. Prices are for common iron 1·30@1·35c.; guaranteed, 1·35@1·40c.

Steel Rails.—Orders are being booked for rails, but the aggregate sales are not up to one good order. Rails are quoted $29 and upward according to specification.

Billets and Rods.—There is but small demand for billets or rods. Billets are quoted $21.25.

Structural Material.—The new building of the Illinois Trust and Savings Bank is in the market for 700 tons. Otherwise but a small business is being transacted, chiefly in bridge material. Quotations are: Beams and channels, 1·70@1·75c.; angles, 1·35@1·40c.; plates, 1·40@1·45c.; tees, 1·55@1·60c. Small lots from stock are quoted ¼@½c. higher.

Old Rails and Wheels.—There is no demand for either old iron rails or old wheels. Old wheels are quoted $12.50@$13; old iron rails, $13.

Cleveland, O. Aug. 12.

(From Our Special Correspondent.)

Iron Ore.—The movement of ore from the upper lake region is somewhat stronger this week than last, but the market is not affected. The sales have been very slow and small in quantity, the business at present being but a drop in the bucket compared to that transacted during the same period last year. For the first time since the early sales were made in the spring after the prices were fixed, the quotations show indications of weakening. However, no sales were reported at less than the scale. The quotations are: Standard Bessemers, $4; non-Bessemer hematites, $3@3.25; Mesabi non-Bessemers, $2.40@$2.60.

Lake freights remain the same as last week. Two or three vessels have been tied up during the past week, and they were the property of ore dealers. The other vessel owners are of the opinion that there will be a reaction in their favor in the fall.

Pig Iron.—There have been so few sales of pig iron that the dealers say they are doing absolutely nothing. Prices have weakened since last week, but the nominal quotations are the same, as will be seen in the following: Lake Superior charcoal, $13.50@$14; bituminous coke, No. 1 foundry iron, $12.25; No. 2, $11.75; Ohio Scotch, No. 1, $12.25; No. 2, $11.75; Bessemer pig, $12.25.

Philadelphia. Aug. 20.

(From Our Special Correspondent.)

Pig Iron.—The undue anxiety of several nearby and far-off producers to realize on pig iron has led to some remarkable quotations for iron, particularly forge, during the past few days. There is nothing of a satisfactory nature to report. Some brokers explain the situation by saying paralysis has struck business. Fall orders are backward. Late spring contracts for iron in some cases have not been all delivered. Forge iron has been offered at $10.25. A few sales of first-class forge were made at $11. Everybody wants to wait; but our prophets still say to look out for big business in October. Foundry irons drag, but strong holders of good brands say they will not let go at less than $12.50; No. 2 best brands, $12. Standard Bessemer is supposed to be worth $13.25, but no sales are reported for a few days.

Steel Billets.—From good sources it is learned that certain large consumers have sounded pool representatives on billets at $20.50@$20.75, but the pool price is $21.50. Nothing can be learned as to whether these suggestions made any impression. People are waiting for something to happen.

Merchant Bars.—Production was reduced one-half last week in Eastern Pennsylvania. Everything is as usual this week. From all quarters comes practically the same report that business is not rushing. Bars range from 1·20c. up.

Sheets.—The sheet mill manufacturers have gathered a fair amount of business during the hot week past, and to-day sent out quotations on what they say will prove to be large orders. This is a good time to order for winter delivery if manufacturers will agree to deliveries so far ahead.

Skelp.—Business since Monday is unimportant.

Merchant Steel.—Orders for tool works, carriage

and wagon material and for other uses were sent to mills this week, but prices are weak.

Pipes and Tubes.—Small orders for tubes were booked Monday. Deliveries on early July orders for wrought pipe are being hurried along. Cast pipe works are pretty well fixed.

Plate and Tank.—The unexpected postponement of some work that Eastern mills looked for knocks out three or four orders that were counted upon to help us out.

Structural Material.—There would be a sharp struggle for business if there were any to struggle for. The orders coming along are small and keep only a portion of mill capacity engaged. Angles are 1·40c.; beams and channels 1·70@2·00c.

Steel Rails.—Makers report the season approaching when a number of roads will be in the market for business, but mostly for repairs.

Old Rails.—The business done is unimportant.

Scrap.—The yards are well stocked and more stuff is offered than is taken.

Pittsburg. Aug. 20.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business continues dull in all departments; the volume of transactions is steadily shrinking and without improvement in prices. Merchants in all departments of trade have adhered to a very conservative policy, and business as a general thing has been restricted to the supply of actual requirements. Increasing stringency in the money markets and closer discrimination in mercantile credits have operated to retard improvement in business. Industrial conditions have not changed for the better. Some necessary business is going through, but it does not amount to much, while there is a disposition to avoid making engagements for the future. The stocks of crude iron in first brands increased from 816,272 tons to 842,464 tons last month.

Even the present reduced production is probably in excess of the consumption, and, at all events, the market is weak and unsettled. Buyers are satisfied of their ability to get iron at any time, and hence are not disposed to make contracts. A furnace designing to sell any quantity of pig-iron at this time would probably have to make large concessions from present prices. It is possible that some irons may be had for 50c. per ton less than at present quoted. The Tennessee Coal and Iron Company is making some very low prices on iron; Southern irons are even duller than Western irons: Business in the Ohio valley continues very unsatisfactory; most big plants are closed for the present, the principal cause being the unsettled condition of the money market and the difficulty of obtaining discounts.

Latest.—The market shows neither life nor activity, prices are very weak but no lower. Speculators seem to be afraid to make a bid for a block of iron.

Tons.	Cash.
COKE AND COAL SMELTED, LAKE AND NATIVE ORE.	
1,000 Bessemer, Aug., Pitts	11.00
1,000 Bessemer, Aug., Pitts	10.80
1,000 Bessemer, Sept., Pitts	10.75
800 Bessemer, Aug., Pitts	11.25
500 Gray Forge, Aug, Pitts	9.75
500 Bessemer, Aug., Pitts	11.00
200 Grey Forge, Spot, Pitts	9.75
125 No. 1 Foundry, Spot, Pitts	12.00
100 No. 2 Foundry, Aug., Pitts	11.50
50 No. 2 Foundry, Spot, Pitts	11.50
50 No. 2 Foundry, Spot, Pitts	11.70
25 No. 3 Foundry, spot, Pitts	10.75
25 No. 2 Foundry, spot, Pitts	11.50
25 No. 2 Foundry, spot, Pitts	11.75
25 No. 2 Foundry, spot, Pitts	11.50
25 No. 2 Foundry, August, Pitts	11.50
25 No. 2 Foundry, spot, Pitts	11.00

Tons.	CHARCOAL. Cash.
50	Cold Blast, Pitts $23.00
50	Charcoal, Pitts	22.00
50	Charcoal, Pitts	18.00
25	No. 2 Foundry, Pitts	16.00
25	No. 2 Foundry, Pitts	16.00
	BLOOMS, BILLETS AND SLABS AT MILL.
500	Billets, Aug., Sept. at mill	19.50
300	Billets, spot, at mill	19.50
200	Billets, Aug., at mill	19.75
100	Billets, Aug., at mill	19.00
500	Billets, Aug. at mill	21.25
	SKELP STEEL.
100	Wide grooved, Pitts	$1.05 4 m.
100	Narrow grooved, Pitts	1.00 4 m.
	MUCK BAR.
300	Neutral, deliv'ed, Pitts	$19.50
	BLOOMS, BILLETS, BAR ENDS.
200	Blooms and billet ends, Pitts	$12.50
	SHEET BARS.
1,000	Delivered, Pitts	$22.25

Cartagena, Spain. Aug. 3.

(Special Report of Barrington & Holt.)

Iron Ores.—The general activity has continued throughout the district for the past month and local prices are being forced up all around. The amount of ores shipped in July was as follows: To England, 54,620 tons; Rotterdam, 6,300 tons; United States, 3,500 tons; France, 2,050 tons: total, 66,970 tons. We quote: For ordinary 50% Portman ore, 5s. 6d.@6s. per ton; special low phosphorus (guaranteed not over 0·03%), 5s. 8d @6s. 4d.; specular ore, 60% iron, 8s. 9d. For manganiferous ores quotations are: No. 1, 20% iron and 20% manganese, 14s. per ton: No. 1 B, 25% iron and 17% manganese. 11s.; No. 2, 30% iron and 15% manganese, 10s. 6d.; No. 3, 35% iron and 13% manganese, 9s. 7d. All prices are f. o. b. shipping port.

Considerable interest is being displayed in anticipation of the meeting of the British Iron and Steel Institute, which is this year to be held in Bilbao, September 1st–4th. The members will leave London August 29th per steamer *Ormuz*, and will visit the great iron-ore districts.

Other Metals.—We quote for iron pyrites, 40% iron and 45% sulphur, 10s. 6d. per ton. Copper ore is quoted at 7s. 6d. per unit.

METAL MARKET.

New York, Friday Evening, August 21, 1896.

Gold and Silver.

Prices of Silver per Ounce Troy.

	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1		St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1
15	4·87	31	67⅜	.521	19	4·85	30⅜	65¾	.508
17	4·86½	30⅞	67	.518	20	4·85½	30½	66⅛	.515
18	4·85¾	30⅝	66½	.514	21	4·85½	30⅛	66¾	.517

Silver suffered a sharp decline this week to 30⅜d., reacting to-day to 30⅛d., but closing weak at 30⅛d. This has been due to withdrawal of Chinese buyers and a diminishing demand for India, resulting in lack of support. There has also been some liquidation of speculative holdings.

The United States Assay Office in New York reports the total receipts of silver at 96,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States ports, July, 1896, and years from January 1st, 1896 and 1895:

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Gold					
July.	$10,603,716	$2,505,928	$23,295	$161,414	E. $8,959,699
1896..	53,539,267	26,672,625	79,276	999,330	E. 26,006,568
1895..	39,098,966	26,556,397	317,529	1,002,677	E. 11,857,421
Silv.					
July.	5,730,554	839,155	33,652	1,769,929	E. 3,155,112
1896..	35,657,784	6,783,537	370,575	10,619,636	E. 18,625,192
1895..	28,711,548	5,084,794	36,142	7,032,888	E. 16,629,978

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

Gold and Silver Exports and Imports, New York

For the week ending August 21st, 1896, and for years from January 1st, 1896, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$4,500	$32,541	$1,027,207	$67,800	E. $931,366
1896..	40,369,448	17,634,198	24,990,732	1,795,945	E. 45,930,037
1895..	43,738,828	25,237,873	26,553,498	1,172,221	E. 43,682,232
1894..	81,869,435	12,731,494	23,966,725	1,099,062	E. 91,545,404
1893..	69,230,427	45,572,236	21,111,717	1,667,548	E. 43,102,360
1892..	55,355,363	6,128,810	14,248,135	1,387,377	E. 62,087,311

The gold imported for the week went to the West Indies; the silver nearly all to London. The gold imported came from Mexico and Central America; the silver from South America.

Average Monthly Price of Silver

in New York and London, per ounce Troy, from January 1st, 1896, and for corresponding months, 1895 and 1894.

Month.	1896.		1895.		1894.	
	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.
January	30·69	67·13	27·36	59·69	30·81	66·63
February..	31·01	67·67	27·47	59·90	29·18	63·43
March	31·34	68·40	28·33	61·98	27·28	59·49
April	31·10	67·92	30·39	66·61	28·95	62·92
May	31·08	67·88	30·61	66·75	28·69	62·96
June	31·46	68·69	30·47	66·61	28·68	62·59
July..	31·45	68·75	30·48	66·75	29·82	62·45

FINANCIAL NOTES OF THE WEEK.

The features of the financial situation this week are found in the exchange market and in the position of the banks. In the former rates have ruled low, and instead of gold shipments outward, a small reverse movement has set in. While no gold has yet arrived, it is announced that several consignments, amounting in all to $2,750,000, have been ordered and some are actually on the way here, the first being due in New York early next week. These imports are partly the result of the action of the banks and foreign exchange houses, referred to in preceding weeks, and partly of the high rates of interest just now prevailing here. Most of them, however, seem to be in anticipation of cotton and grain shipments later, and in the natural course of events, could not have been expected before October.

The New York banks have been further curtailing their loans. This has been partly due to the reduction of the surplus, the total reserves being now very nearly down to the legal limit. It is partly due also to the withdrawal of deposits and the movement of currency to the West and South, which is usual at this season. The stringent money market due to this contraction still continues, though the high rates prevailing must be attributed in part to the general uncertainty and the unwillingness shown in many quarters to close any important transactions covering any length of time. This feeling is, of course, affecting all business and and is further shown by the fact that there is everywhere a very close scrutinizing of credits and of securities when accommodation is asked.

While the import of gold and its supposed causes have produced a little better feeling, it is manifest that the situation is somewhat strained and artificial. In normal times the difference in interest rates would be sufficient to cause a heavy movement of money this way, but at present it requires a good deal of preparation and too obvious an amount of machinery to bring about the present comparatively small results.

The price of silver has receded this week, as shown by the table given at the head of this column. While the supply from this country has not exceeded the usual limit, the price recently has been high enough to call out offers from other quarters. Thus the fact may be noted that the trade returns from India just received show that in July there was actually an excess of exports of silver from India over the imports amounting to 821,000 oz. for the month. This is most unusual, as the imports are generally much in excess; and shows that exceptional influences have been at work.

The statement of the United States Treasury on Thursday, August 20th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	August 13.	August 20.	Changes.
Gold	$106,733,067	$104,229,130	D. $2,503,937
Silver	36,073,214	32,070,664	D. 4,002,550
Legal tenders	71,721,412	70,331,703	D. 1,389,709
Treasury notes, etc..	34,589,873	34,771,070	I. 181,197
Totals	$249,117,566	$241,402,567	D. $7,714,999

Treasury deposits with national banks amounted on August 20th to $16,346,450, showing an increase of $206,429 during the week.

Although there have been no large withdrawals and no exports, the decline of $2,503,937 for the week in the Treasury gold reserve shows that the withdrawal of small amounts continues. A demand from Canada is offered as a partial explanation of the drain; but the Canadian banks are not in special need of gold at this time. It is hinted that some of the shipments over the line are really made on orders from this side; parties who do not wish it to be known that they are drawing gold might easily make use of a Montreal or Toronto bank for the purpose. The transaction would be a little roundabout, but not too expensive to be carried through if there is any object it it. The explanation seems at least plausible.

The foreign merchandise trade of the United States for the seven months ending July 31st is reported by the Bureau of Statistics of the Treasury Department as below:

	1895.	1896.
Exports	$443,406,784	$512,326,732
Imports	464,625,876	421,583,123
Excess	I. $21,219,092	E. $90,743,609
Excess of exports, gold		26,006,568
" " silver		18,625,192
Total excess of exports		$135,375,369

The gold and silver movement in detail will be found in the usual place, at the head of this column.

Imports of specie at San Francisco by water amounted to $1,838,065 for the seven months ending July 31st, showing a decrease of $231,087 as compared with the corresponding period in 1895. Of the total this year there was $1,618,824 from Mexico; $153,463 from British Columbia; $5,650 from Central America; $3,334 from other countries. The descriptions were as follows:

	Coin.	Bullion.	Total.
Gold	$57,508	$512,743	$570,251
Silver	254,576	1,013,238	1,267,814
Total	$312,084	$1,525,981	$1,838,065

The total for the month of July was $308,501, of which there was $79,403 in gold, mostly in Mexican bullion, and $229,098 in silver, chiefly from the same country, including $200,231 in bullion.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending August 15th, gives the following totals, comparisons being made with the corresponding weeks in 1895 and 1894:

	1894.	1895.	1896.
Loans and discounts	$486,798,800	$511,275,200	$464,918,200
Deposits	584,889,000	577,223,300	467,393,700
Circulation	9,761,400	13,254,800	15,789,800
Reserve:			
Specie	91,028,400	65,689,200	46,863,000
Legal tenders	123,000,500	119,883,500	79,385,600
Total reserve	$214,028,900	$185,572,700	$126,248,600
Legal requirement	146,222,250	144,305,825	116,848,425
Surplus reserve	$67,806,650	$41,266,875	$9,400,175

Changes for the week this year were increases of $317,200 in specie and of $826,600, in circulation; decreases of $3,119,400 in loans, $9,770,800 in deposits, $7,175,300 in legal tenders and $4,415,400 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:

Asso. Banks of New York	.....	.....	$46,863,000
1895	.....	.....	65,689,200
Bank of England	$237,374,755	.....	237,374,755
1895	202,108,705	.....	202,108,705
Bank of France	419,298,297	$250,092,319	669,390,616
1895	413,189,179	252,129,577	665,318,756
Imp. Bank of Germany	.....	.....	228,200,000
1895	.....	.....	254,970,000
Austro-Hungarian Bank	142,230,000	64,285,000	206,515,000
1895	102,350,000	66,399,000	168,749,000
Netherlands Bank	13,170,000	34,368,000	47,538,000
1895	21,425,000	34,699,000	56,124,000
Belgian National Bank	.....	.....	19,686,000
1895	.....	.....	20,658,000
Bank of Spain	42,029,000	53,534,000	95,563,000
1895	40,021,000	60,364,000	100,385,000
Bank of Italy	60,625,000	10,560,000	71,185,000
1895	60,410,000	10,355,000	70,765,000
Imp. Bank of Russia	477,545,000	.....	477,545,000
1895	465,770,000	.....	465,770,000

The return for the Associated Banks of New York is of date August 15th; all the others are of August 20th, except the Bank of Italy, July 20th, and the Bank of Russia, July 16th-28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England and the Bank of Russia report gold only. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately, but their reserves are mainly gold, the silver being chiefly subsidiary coin.

Shipments of silver from London to the East for the year up to August 6th are reported by Messrs. Pixley & Abell's circular as below:

	1895.	1896.	Changes.
India	£2,251,580	£2,175,578	D. £76,002
China	1,100,767	574,413	D. 526,354
The Straits	512,703	545,686	I. 32,983
Totals	£3,865,050	£3,295,677	D. £569,373

Shipments for the week included £185,000 bar silver to India and £28,154 in Mexican dollars to the Straits, a total of £213,154. Receipts were £16,000 from the West Indies and £210,000 from New York in bar silver and £150,000 from Vera Cruz in Mexican dollars, a total of £360,000 for the week.

Indian exchange continues strong, and there were plenty of applications for the 50 lakks of Council bills offered in London. The average price was 14·25d. per rupee. The demand has been helped by a somewhat unusual movement, a large export of silver from India.

Domestic and Foreign Coins.

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

	Bid	Asked.
Mexican dollars	$0.51¾	$0.53¾
Peruvian soles and Chilean pesos	.47½	.49
Victoria sovereigns	4.90	4.94
Twenty francs	3.88	3.92
Twenty marks	4.78	4.85
Spanish 25 pesetas	4.78	4.85

Other Metals.

Copper.—The market has been somewhat livelier, but prices have again suffered. Of the larger lake companies, the Calumet & Hecla are entirely out of the market, while, the other large producers are holding firm at 11c. Some second-hand lots of ingot copper have, however, sold somewhat lower, and at various prices, but at the close 10·90 was paid. For electrolytic copper some concessions have again been made in certain instances, and values are rather irregular, but we now have to quote for cakes, wirebars and ingots 10⅜; cathodes 10⅛. Casting copper has also shown large variations, and while the larger producers hold firmly for 10½, others have been selling at 10¼ and even a trifle below. Business for home trade still remains rather poor and manufacturers prefer to use up their stocks before making additional purchases. On the other hand, the demand for export remains exceedingly good. Shipments continue on a very heavy scale, and refiners are hard pushed to turn out the copper as fast as it is being produced. There can be no question but that if the general conditions of trade were somewhat better a rather higher value for copper would exist, but under present conditions the foreigners view our markets with suspicion.

The foreign market has been somewhat irregular, and G. M. B.'s declined middle of the week to £47 5s., but have since then strengthened quite materially and closed at £47 12s. 6d.@£47 15s. for both spot and three months prompt. Fine copper has been rather pressed for sale, and some concessions have again been made in price, so that G. M. B.'s are getting very near the value of refined sorts.

For refined and manufactured we quote: English tough, £49 5s.@£50 10s.; best selected, £49 15s.@£51 15s.; strong sheets, £58@£59; India sheets, £54@£55; yellow metal, 5d.

Statistics at the middle of the month show an increase in stocks of 1,000 tons, which, considering the very heavy shipments from this side, may be considered as quite a fair result.

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

Production fine copper, long tons:	July. 1896.	Seven months 1895.	Seven months 1896.
Reporting mines in U. S.	15,395	83,136	59,575
Pyrites and outside sources, U. S.	1,200	10,200	8,400
Reporting soreign mines	7,847	49,472	50,102
Total production, tons	24,442	142,808	158,077
Exports from U. S., fine copper	11,885	39,528	69,203

For the seven months there was an increase this year of 14,639 tons, or 15·7%, in the total United production. There was also an increase of 29,675 tons, or 75·1%, in the United States exports.

Tin has been in very good demand, and spot tin has been exceedingly scarce. In consequence of this prices for spot have gone up to 13·50@13·60, but future deliveries are obtainable at 13·30@3·35. Several steamers with heavy quantities of tin on board are expected during the next 10 days, all of which will probably go at once into consumption.

The London market declined early in the week, most probably on account of the easier prices established for silver, but since the latter has been firmer again, values for tin have also profited and closed at about the same as quoted last week, £59 17s. 6d.@£60 for spot and £60 10s. for three months prompt.

Exports of tin from the Straits Settlements for the half-year ending June 30th were as follows, in tons of 2,240 lbs:

	1894.	1895.	1896.
United States	3,304	3,113	8,172
Europe	19,390	19,625	14,503
China	960	953	1,696
India	804	1,003	1,342
Total	24,455	24,694	25,713

The great increase in shipments direct to the United States is to be noted. The total increase has not been large.

Lead.—In spite of the low prices now ruling, lead appears to find no friends. Very little business has been done, and this at concessions. Desilverized has been freely offered at 2·70c. for August-September delivery, and several sales have been made at below this figure, down to 2·65c. The St. Louis market is also rather flat and sales are reported at from 2·50c. down to 2·45c. Consumers who have yet some stocks on hand still pursue their waiting policy.

The foreign market has also given way quite considerably, declining to £10 15s. for Spanish and £11 for English lead.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead continues weak and the decline in prices is still going on. Common lead is selling only lightly, and we quote 2·45c. Corroding lead is taken at 2·50c.

Spanish Lead Market.—Messrs. Barrington & Holt write from Cartagena, Spain, under date of August 3d: The average local quotation for July has been 56·13 reales per quintal of lead on wharf, silver to be paid off at 15·12 reales per ounce. The exports for July were 6,783,425 kgms. lead, an increase of 1,180,249 kgms. over June. For lead ores we quote as follows: Potters' ore, 8s. 9d. per cwt.; Linares sulphide, 6s. 9d.; Linares carbonate, 4s. 6d. per cwt.

Spelter continues quite demoralized. Prime Western brands are freely offered at 3·50 St. Louis and 3.75 New York, but buyers are rather scarce. The galvanizing business is in a very poor condition, and in consequence the considerably reduced production cannot be easily marketed.

Spelter in London has been rather irregular. It appears that spot is rather scarce, and from £16 15s. up to £17 1s. 3d. has been paid for same in London, but futures are difficult of sale and are to be quoted at 5 to 10s. lower.

Antimony is in very poor demand and we have to quote Cookson's, 7c.; United States French Star, 6¾c.; Hallett's, 6⅝@6½c.

Nickel.—With no marked change in demand, which is not very heavy, prices are firm and even a shade higher. We quote 35@36c. per lb. for ton lots and 37@39c. for smaller orders. London prices are 14d.@15d. for large orders and 15d.@16½d. for small lots. The New York price is on a parity with London, allowing for the United States duty of 6c. per lb. on the metal.

Platinum.—Demand is steady and prices are firm at $14.50@$15.50 per oz., New York. London quotations are 57s. 6d.@59s. per oz.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotation, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes, 50c., 51c. and 52c. per gram. Wire and foil are 47c., 48c. and 49c., per gram. The current retail price for crucibles is 60c. per gram.

Quicksilver.—The price is unchanged at $35.50 per flask, New York. The London quotation is also unchanged at £6 7s. 6d. per flask, with £6 6s. 3d. named from second hands. Quicksilver receipts at San Francisco in July were 1,750 flasks; for the seven months ending July 31st they were 20,189 flasks, against 17,445 flasks in 1895 and 16,147 flasks in 1894. Exports from San Francisco by sea for the seven months were 9,533 flasks, an increase of 400 flasks over last year. The shipments were divided as follows: China, 3,000 flasks; New Zealand, 16; Mexico, 3,207; Central America, 805; British Columbia, 11: New York, 2,500 flasks. In addition to these exports a considerable quantity has been shipped to New York and interior points by rail, both from San Francisco and directly from the mines.

The Minor Metals.—Quotations for these metals are given in the table below, the prices being for New York delivery:

Aluminum:	
No. 1, 98% pure rolling ingots, per lb	50@55c.
No. 1, " ingots for re-melting, per lb	48@53c.
No. 2, 94% pure, " " "	38@42c.
Ingots from scrap, per lb	35@40c.
Aluminum-nickel casting metal, per lb	40@45c.
Bismuth, per lb	$1.30@$1.75
Phosphorus, per lb	50@55c.
Platinum, per oz	$14.50@$15.50
Tungsten, pure, powder per lb	70c.
Tungstic acid, per lb	45c.
Ferro-tungsten, 60% in ton lots, per lb	60c.

The variations in price are usually with the size of the order.

Average Monthly Prices of Metals

In New York since January 1st, 1896, and for the corresponding periods in 1895, 1894, 1893 and 1892, in cents per pound.

Month.	1896.	1895.	1894.	1893.	1892.
Copper:					
January	9·87	10·00	10·13	12·13	11·00
February	10·34	10·00	9·63	12·00	10·00
March	11·03	9·75	9·81	11·88	10·38
April	10·98	9·75	9·50	11·38	11·50
May	11·15	10·25	9·80	11·00	11·63
June	11·67	10·63	8·94	11·00	11·86
July	11·40	11·25	9·00	10·88	11·50
Tin:					
January	13·02	13·25	20·16	19·99	20·50
February	13·44	13·35	19·60	20·30	20·00
March	13·30	13·20	19·09	20·71	20·25
April	13·34	14·00	19·75	20·81	20·50
May	13·54	14·65	20·21	19·96	20·80
June	13·59	14·15	19·75	19·76	22·00
July	13·63	14·40	19·22	19·15	21·00
Lead:					
January	3·08	3.10	3.19	3·87	4·20
February	3·19	3·12	3·31	4·22	4·12
March	3·14	3·12	3 37	3·96	4·21
April	3·07	3·08	3·43	4·08	4·15
May	3·03	3·16	3·39	3·89	4·22
June	3·03	3·25	2·31	3·77	4·16
July	2·96	3·25	3·50	3·58	4·13
Spelter:					
January	3·75	3·28	3·56	4·39	4·69
February	4·03	3·20	3·85	4·39	4·69
March	4·20	3·23	3·89	4·28	4·89
April	4·09	3·30	3·62	4·38	4·68
May	3·98	3·50	3·47	4·41	4·79
June	4·10	3 65	3·40	4·27	4·71
July	3·97	3·75	3·43	4·13	4·78

Imports and Exports of Metals.

New York.*	Week, Aug. 14. Expts.	Impts.	Year, 1896. Expts.	Impts.
Aluminum lbs.	.....	.....	10,000	2,010
Antimony ore...short tons	.....	20	10,000	2,356
" regulus. casks	.....	150	.....	1,521
Brass, old.....short tons.	19	.....	186	.....
Copper, fine.....long tons	†637	.....	46,295	2,429
" matte.... " "	†100	.....	10,439	1,256
" ore..... " "	.....	.....	.....	4,592
" sulphate.. " "	.....	.....	4,431	.....
Iron ore..... " "	.....	60	.....	2,769
" pigs, bars, rods..... " "	946	393	455	5,093
Iron pyrites..... " "	.....	.....	.....	1,200
" sulphate..... " "	.....	.....	.....	610
Ferro-mangan'se " "	.....	.....	.....	499
Ferro-silicon..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	5,244
Spiegeleisen..... " "	.....	893	.....	24,001
Lead ore..... " "	.....	.....	.....	.....
" pigs and bars " "	†562	†491	5,098	25,771
Magnolia metal.. " "	.....	.....	42	.....
Nickel..... " "	120	.....	611	30
Steel, billets, rods. " "	.....	363	.....	17,721
Tin..... " "	36	†110	301	9,396
Tin and black plates, boxes.	.....	26,823	.....	584,675
Zinc (spelter).....long tons	.....	.....	1,156	12

* Metal Exchange Reports. † Week ending Aug. 20.

Baltimore.**	Week, Aug. 20. Exp.	Imp.	Year, 1896. Exp.	Imp.
Bismuth metal, cases	.....	.....	.....	52
Chrome ore..... long tons	.....	.....	40	4,891
Copper, fine..... " "	800	.....	20,973	.....
" matte..... " "	.....	.....	500	.....
" sulphate.. " "	20	.....	2,064	.....
Iron ore..... " "	.....	4,527	.....	254,954
" pigs, bars, ingots, blooms. " "	.....	.....	.....	2,076
Iron oxide..... bags	.....	.....	.....	300
" pyrites.....long tons	.....	.....	150	.....
Ferro-manganese " "	.....	101	.....	1,458
Ferro-silicon..... " "	.....	.....	.....	70
Lead..... " "	150	.....	3,097	.....
Limestone.....short "	.....	.....	21	2,743
Manganese metal.long "	.....	.....	.....	6,518
Spiegeleisen..... " "	.....	.....	.....	415
Steel..... " "	.....	.....	21	.....
Steel wire, bundles.....	.....	169	.....	7,488
Tin, long tons.....	.....	.....	189	238
Tin and black plates, boxes	.....	250	.....	121,545
Zinc (spelter) long tons....	30	.....	241	.....

**From our special correspondent.

Philadelphia.††	Imports. Week. Aug. 13.	Year, 1896.
Antimony, casks	...	102
Copper ore, long tons	3,819	13,900
Ferro-manganese, long tons	25	485
Ferro-silicon	...	60
Iron ore, long tons	9,277	178,357
" pig " "	75	500
" and steel scrap, long tons	...	618
Manganese ore, long tons	...	4,564
Spiegeleisen " "	...	134
Tin " "	...	341
Tin and black plates, boxes	...	27,073

†† From New York Metal Exchange Reports.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, August 21.

Heavy Chemicals.—The same state of affairs exists in this market to-day that has been reported for some time past. It is no more active and not any duller than before, a condition similar to that which in parliamentary matters is best indicated by a report consisting of the single expressive and yet meaningless word—"progress." What business is being done is at the old prices, no change of any sort having occurred. From some directions the report comes of an unusually dull week, poorer than any other week of the present year. Quotations are as follows: Caustic soda, 60%, $2.22½@$2.42½; 70, 74@76%, $2.12½@$2.37½ per 100 lbs. Alkali, 58%, 80@85c. for 50-ton lots and over, and 90c.@$1 for smaller quantities; 48%, $1.20@$1.40 for jobbing lots. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.65@$1.75 per 100 lbs. Bicarb. soda, English, 1·50@1·60c.; American, bulk, $1.50@$3.50 per 100 lb. Salsoda, English, 70@72½c.; American, 65c. (in barrels), 80c. (in kegs) per 100 lbs.

Acids.—No change worthy of note has occurred in the acid market within the past week. The volume of business that is being done is the same as for some time past, and at prices that have been firmly maintained. The situation is summed up in one word, "quiet."

Quotations show no change, and are as follows: Acetic acid (in barrels or carboys), $1.25@$1.40; muriatic acid, 18°, 75c.; 20°, 75@85c.; 22°, $1.10@$1.25, according to make and quantity. Nitric acid, 36°, $3.25@$4.36; 40°, $4@$4.50; 42°, $4.50@$5.50. Oxalic acid, $7.25 ex-dock and $7.50 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@95c., 10@15c. higher for small quantities. Chamber acid, $6@$6.50 per ton at factory. Blue vitriol, $4@$4.25, according to grade and order.

Brimstone.—There have been several arrivals of brimstone within the past week, and the steamship *Stag* with a cargo of 1,400 tons best unmixed seconds is expected within a few days. For this grade the spot price is given variously from $21@$22½ per ton. The price for September for best unmixed seconds is $20¼, and for October $18¼ per ton. For thirds the deduction from both of these prices is 50c. per ton. There is, however, reported to be little demand for futures.

Fertilizing Chemicals.—An exceptionally dull week is reported for this market, practically no sales having been made. This is said to be due in part to the offers of the buyers, which have been such that sellers were not willing to accept them. This would naturally make the market very flat. Although the quotations for sulphate of ammonia remain the same as before, prices have ceased to sag and the market is said to show a little more firmness. We quote: Sulphate of ammonia, gas liquor, $2.25@$2.27½; bone, $2.15@$2.20 per 100 lbs. Dried blood, high grade, $1.55@$1.60 per unit; low grade, fine ground, $1.40@$1.42½ f.o.b. Chicago. Azotine, $1.65@$1.70 basis New York. Concentrated phosphate (30% available phosphoric acid), 60c. per unit. Acid phosphate, 13% @15%, av. P_2O_5, 54@65c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 87½@90c. per unit. Acidulated fish scrap, $9@$9.50, and dried scrap $18.50@$19 f. o. b. fish factory. Tankage, high grade, $18½@$19; low grade, $17½@$18. Bone tankage, $21; ground bone, $22@$22.50. Bonemeal, $19.50@$23.

Sulphate of Potash: 90-95%, New York and Boston, $1.96½; Philadelphia, Baltimore and Norfolk, $1.98; Southern ports, $2.

Double Manure Salts: 48-53%, New York and Boston, $1.01; Philadelphia, Baltimore and Norfolk, $1.02; Southern ports, $1.03½.

Muriate of potash: The new prices are 1·78c. at New York and Boston; 1·79½c. at Philadelphia, Baltimore and Norfolk, and 1·81½c. at New Orleans for 80@85% (basis of 80%), in lots of 50 tons and upward.

Kainit.—Quotations for 1896 are as follows: New York, Boston, Philadelphia and Baltimore, $8.80 per ton; Norfolk, $9.15, and New Orleans, $9.30 per ton, for 25 tons and upward. Sylvinit at the same ports is quoted at 36½c., 37½c. and 38c., respectively.

Nitrate of Soda.—The prices quoted are 1·77½@1·80c. for spot, according to quantity; 1·80c. to arrive, and 1·82½@1·85c. for futures.

NOTES OF THE WEEK.

The directors of the nitrate combination have fixed the total quantity of nitrate to be exported from Peru and Chile for the year from April 1st, 1896, to March 31st, 1897, at 20,300,000 Spanish quintals. A variation of 2½% on this total will be allowed, which will permit an addition of 507,500 quintals, if necessary. From present appearances it is probable that the whole amount will be exported.

The report of Brunner, Mond & Company for the fiscal year just closed shows that after paying dividends of 30% on the ordinary stock for the year the company is able to carry a surplus of $90,000 to the reserve fund. For the purpose of further extending its operations, the company proposes to issue $400,000 in new 7% preference stock. The shares are $50 each, and will be issued at 107.

Messrs. Mortimer & Wisner, the well-known brokers of this city, send us the following statement of nitrate, issued under date of August 1st.

	1896. Bags.	1895. Bags.	1894. Bags.
Imported into Atlantic ports from West Coast S. A., from Jan. 1, 1896, to date	548,239	482,763	323,557
Totals	548,239	482,763	323,557
Stock in store and afloat Aug. 1, 1896, in New York	92,613	91,861	53,673
Boston	...	2,436	...
Philadelphia	...	5,200	...
Baltimore	2,500	3,500	500
Norfolk, Va	...	400	...
Charleston	...	1,200	...
To arrive, actually sailed	163,000	170,000	172,000
Vis. supply to Nov. 15, 1896	258,113	274,597	226,173
Stock on hand, Jan. 1, 1896	53,839	58,367	44,938
Deliveries past month	58,127	30,597	52,859
" since Jan. 1 to date	509,465	436,533	314,322
Total yearly deliveries	...	828,042	701,202
Prices cur. Aug. 1, 1896	1·77½	1·67½@1·70	2.10@2½c.

Liverpool. Aug. 12.

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

The dull monotony which has characterized the chemical market for so long past continues without relief.

Soda ash in ample supply, while the demand is disappointing. Quotations vary according to export market, and nearest spot range for tierces is about as follows: Leblanc ash, 48%, £4@£4 5s. per ton; 58%, £4 5s.@£4 10s. per ton; ammonia ash, 48%, £3 5s.@£3 10s. per ton; 58%, £3 10s.@£3 15s. per ton, net cash; bags 5s. per ton less.

Caustic soda is quiet steady, the nearest spot range, as to market, being about as follows: 60%, £6 5s.@£6 7s. 6d. per ton; 70%, £7 5s.@£7 7s. 6d. per ton, net cash; 74%, £8 5s.@£8 7s. 6d. per ton; 76%, £9@£9 5s. per ton, net cash.

Bleaching powder is lifeless, and £6 12s. 6d.@£7 per ton is nominal range for hardwood packages, as to market.

Chlorate of potash neglected, and 4¼d.@4⅝d. is about spot range, but there is very little business reported.

Bicarb. soda is not active, but price is steady at £6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia has eased off and is quoted at £8@£8 5s. per ton, for good gray, 24%@25%, in double bags f. o. b. here, as to quality.

Nitrate of soda is selling in a small way, at £8 2s. 6d.@£8 5s. per ton, less 2½% for double bags f. o. b. here, according to quality.

Carb. ammonia, lump, 3d. per lb.; powdered, 3½d. per lb., net cash.

MINING STOCKS.

Complete quotations will be found on pages 190 and 191 of mining stocks listed and dealt in at:

New York. Boston. Philadelphia. Baltimore. Pittsburg. Denver, Colo. Cleveland, page 164. Aspen, Colo. Colorado Springs. Duluth, Minn. Helena, Mont. Salt Lake, Utah. San Francisco. St. Louis. Paris, France. Mexico. Shanghai, China. Valparaiso, Chile. London, England.

NEW YORK, Friday Evening, August 21.

This market continues to be featureless; stocks on the other hand show a better aggregate than last week, while prices are a little firmer.

The Consolidated Stock and Petroleum Exchange and the New York Stock Exchange both report sales of 14,600 shares this week: an increase of 5,220 shares as compared with last week.

The Comstocks were traded in to some extent, but only six stocks showed sales, aggregating 3,200 shares at prices varying from 5c. for Mexican to $1.75 for Consolidated California & Virginia.

The only California stock dealt in was Brunswick Consolidated, which recorded sales of 6,100 shares at 19@20c.

The Colorado stocks, especially the Cripple Creeks, made a fair showing, the most active being Pharmacist with transactions of 2,300 shares at 8c.

The Black Hills stock, Father de Smet, has again made its appearance on the board of the exchange. This time it shows sales of 300 shares at 20@21c. The Deadwood Terra Mining Company declared a dividend of 50c, per share on August 15th without a public announcement. Brokers who were on the inside purchased the stock in anticipation of receiving this dividend, but the books were closed before they handed in their claims without due notice.

Boston. Aug. 20.

(From Our Special Correspondent.)

The dealings in mining stocks the past week have been light and chiefly confined to Boston & Montana and Old Dominion copper stocks. The former opened at $73 and sold up in the course of the week to $77⅛, with reaction to $75⅛, followed by a rally to $77⅞ to-day, which was however lost, selling at $75½ and closing at $75¾.

Old Dominion has ruled quite firm all the week, with not much stock offered on the market. The opening price was $12¾, which was the lowest, followed by an advance to $14½, reacting at the close to $13¾.

The balance of the market requires but little comment. Calumet & Hecla maintains its figure at $300, all the sales being at that price. At the annual meeting yesterday the old board of officers were elected without opposition.

Quincy, declined $1, with sales at $107.

Tamarack advanced from $65 to $70 on small sales.

Atlantic was firmer at $16½ but lost the fraction in late sales.

Kearsage sold at $10 for round lots, but small lots sold at $9½ to $9¾.

Osceola was firm at $23 and Wolverine steady at $6.

Tamarack, Jr., sold at $8, same as last week.

Pioneer was the only active gold stock, and seems to be in demand at $4 to $4½. Santa Isabel advanced from $7 to $8 for 150 shares. Merced sold at $5½, which is an advance of $1½ over last sale.

Gold Coins sold at 51c.—3 p. m.

The market for the coppers closed a little heavy. Boston & Montana $75½ bid, $75¾ asked. Quincy was offered at $108 and $300 was bid for Calumet & Hecla.

Chicago.

The following table gives the highest prices with sales of the stocks recorded on the Chicago Mineral and Mining Board for the week ending Aug. 19th:

Stocks.	Aug. 13.	Aug. 14	Aug. 15	Aug. 17	Aug. 18	Aug. 19	Sales.
Capazone	.04	.03⅞	.03⅞	.03⅞	.03¾	.03⅝	6,200
C.C. & C. C	.....	.....	.08⅛	.08½	.08¾	.08⅝	7,300
C. C. Golden Group	.13¼	.13¾	.14	.14	.13¾	.13¾	14,500
C. C., G. M. B. & L. Co	.....	.....	.....	.....	.....	.....	.....
Chi. & G. Mt.	.....	.....	.....	.....	.....	.....	.....
Chi. & Mont.	.13	.13¼	.13¼	.13½	.13⅝	.14	37,700
Christmas	.....	.....	.....	.....	.....	.....	.....
Chula Vista	.08¼	.08	.07⅞	.07¾	.....	.15	46,700
Cosmopolitan	.....	.....	.....	.....	.....	.....	.....
Delaware Cf.	.46⅜	.46⅜	.....	.47	.47	.47	5,200
Finance	.....	.....	.....	.....	.....	.....	.....
Great Fissure	.11⅞	....	.12	.12¼	.12½	.12½	7,000
Hawkeye	.....	.....	.....	.....	.....	.....	.....
Imperial Pfd.	.....	.....	.....	.....	.....	.....	.....
Investors' and Prospectors'	.....	.....	.....	.....	.....	.....	.....
Lion's Gold	.....	.....	.....	.....	.....	.....	.....
Little Gem	.....	.....	.....	.....	.....	.....	.....
Lucille	.....	.....	.....	.....	.....	.....	.....
Medina G. M Co	.....	.....	.....	.....	.....	.....	.....
Michigan Gold	.....	.....	.....	.....	.....	.....	.....
Peerless G.M. Co	.15¼	.15⅜	.15⅜	.15½	.....	.15½	9,600
Rhyolite	.11⅞	.11¾	.11⅝	.11¼	.11	.10	6,500
Royal Age	.....	.....	.....	.....	.....	.....	.....
San Pedro	.10¼	.10¼	.10¼	.....	.10¼	.10⅜	1,100
Squaw Mt	.....	.....	.....	.....	.....	.....	.....
Sumpter	.04¾	.04¾	.04¾	.04⅞	.04¾	.04⅞	7,500
Sunnyside-Gilpin	.11⅞	.11⅝	.11½	.11	.11¼	.11	7,000
Thompson	.18⅛	...	.....	.18¼	....	.18⅜	1,100
Utah Mercur	.04⅝	.04⅝	.04¾	.04¾	.04⅝	.04¾	5,000

Total shares sold, 200,100.

Cleveland. Aug. 19.

(From Our Special Correspondent.)

Not a trade in iron stock was reported during the past week. This condition is said to be due to the agitation of the currency question and the fact that the Cleveland investors are satisfied with their present holdings. Consequently, there are no changes in the quotations, which are as follows:

Name of Company.	Par val.	August 19. Bid.	Ask.
Adams Iron Company	$10	$1.50	$2.00
Aurora	25	6.00	8.00
Biwabik	100	32.00	34.00
Champion Iron Company	100	10.00	30.00
Chandler	25	34.00	35.00
Clark Iron Company	100	2.00	3.00
Cincinnati Iron	25	10.00	13.50
Cleveland-Cliffs Iron Company	100	45.00	.....
Jackson Iron Company	25	70.00	75.00
Lake Superior Iron Company	25	30.00	34.00
Lake Superior Consolidated	100	20 00	21.00
Mesabi Mountain Iron Company	100	21.50	22.50
Mesabi Chief Iron Company	100	.75	1.25
Minnesota	100	50.00	52.00
Pittsburg & Lake Angeline	25	75.00	.....
Republic Iron Company	25	18.00	.....

Salt Lake City. Aug. 15.

(Special Report of James A. Pollock.)

Conditions in the local mining stock market during the past week were not very flattering. Some

of the stocks, even including several of the investments and dividend payers, showed weakness, although general conditions were as flattering as ever. A comparatively small amount of buyers were in, however, and a few semi-forced sales had a tendency to produce weakness. All of the heavy stocks are now shaded in price.

A material improvement in the ore showing at the Ajax is reported. The stock showed no material change during the week. Anchor was in slightly better demand, although comparatively little business was done in this security. Alliance, Gas and Bogan did practically nothing. Bullion-Beck's, on August 6th, paid a special dividend of 15c. per share, and August 20th it will pay a double regular of 30c. per share, making a total of 45c. in dividends for the month. The properties are reported to be in fine condition and the stock was in good demand at somewhat advancing quotations. Centennial-Eureka pays its usual dividend of $1 per share August 15th. This will make a total of $1,800,000 for the properties, or $300,000 more than the capitalization of the company. Dealings in the stock were confined to odd blocks, with the quotation practically unchanged from the previous week. Notwithstanding the coming dividend of 25c. per share, Daly did not maintain the strength of last week's close, although the offerings of the stock were not heavy. Daly-West continued strong and did some business around $8.50. There was practically no change in Dalton. Dalton & Lark is scheduled to pay its usual dividend of ½c. per share on August 15th. Galena paid a 5c. dividend August 10th. The properties are being equipped with an improved hoisting plant. Rather important developments at the Geyser were the cause of an improvement in that stock, bidding being higher and the asking quotations well maintained. Horn Silver was inactive. Mammoth was slightly shaded for no apparent reason. Mercur's August dividend will be a week or 10 days delayed, if it is paid at all. The company has recently been to extraordinary expense in purchasing new ground, putting in new hoisting plants and increasing its mill capacity. It is understood the directors also desire an increased surplus fund, and deem it good business to delay, if not pass, the August dividend. The offerings of stock were not heavy, although quotations were somewhat shaded. Ontario was quite strong. Silver King was in good demand at a strong quotation. Reports from the Sunshine are of a very gratifying nature. The stock was slightly lower in the offering. Swansea was again held up around the $2 mark. Utah has paid its August dividend of 2c. per share.

San Francisco. Aug. 22.

(From Our Special Correspondent.)

The extremely dull opening of the market on Monday did not promise well for the week's business and the result simply justified anticipations. There was no recovery at all and at the close to-day prices were weak and business light, as at the opening. The news from the mines was not of an exciting nature, and no one seems to take any interest in the market.

Some closing quotations on Comstocks were: Chollar, $2.05@$2.10; Consolidated California & Virginia, $1.60@$1.65; Hale & Norcross, $1.15@$1.20; Potosi, $1@$1.05; Ophir, 90@91c.; Best & Belcher, 84@85c.; Occidental, 56@58c.; Savage, 49@50c.; Sierra Nevada, 39@41c.

A little was done in the Bodies, but not enough to make any stir. At the close to day Bodie Consolidated stands 47@48c.; Bulwer, 29@30c.; Mono, 15@17c.

On the Gold Mining Exchange business was dull also, with light sales and few changes in price. Some of the Comstock shares are now on the list, but prices range about the same as on the old board. Some quotations to-day are: Savannah, 49@50c.; Grant, 40c.; Sebastopol, 40c.; Lockwood, 29@30c.

The Navajo Mining Company has re-elected the old officers, with J. W. Pew as secretary.

The Mountaineer Mining Company, of Nevada County, has levied an assessment of 2c. per share, delinquent September 8th.

The Baltic Gravel Mining Company, of Nevada County, has levied an assessment of ¾c. per share, delinquent September 2d.

Mining assessments delinquent in August amount to $66,800, of which Nevada mines call for $48,800, California mines for $16,500 and a Lower California mine for $1,500.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, Aug. 8.

A considerable improvement in the sales of mining stocks has been noticeable for some days. The impetus is due to the new-born interest manifested by parties in Montreal, Ottawa, Toronto and other places in the East. Mine owners and promoters are alive to the necessity of making Eastern capitalists understand that the Trail Creek camp is really a bona fide enterprise, in which large amounts of capital are finding investments, directly and indirectly, not only in the mines, but in those undertakings which are necessary to the development of the staple interest of the camp.

There have been some complaints that the shipments of ore have not been sufficient to justify the many glowing reports which have gone abroad, for the purpose, it is said, of influencing capital in this direction.

One of the best explanations given is that there has been plenty of ore produced, but the facilities for shipment have not been sufficient. The day for shipping Trail Creek ore in any great quantities has passed and it will pay mine owners better to wait until the completion of the Northport-Rossland branch of the Nelson & Fort Shepherd Railway, which will be about November 1st next. The Trail Creek smelter cannot take all the ore in the various mines which has been produced for some time. The productive capacity of the camp has been greatly increased—the producers in addition to Le Roi, War Eagle and O. K. being the Center Star, Iron Mask, Iron Horse, Cliff, Crown Point, Deer Park, Josie, Jumbo, St. Elmo, Commander, Columbia and Kootenay.

The impetus which will be given to the shipping of ore from the various producing mines in this camp by the construction of Mr. Cohn's road will be very great, and this expectancy has added largely to the confidence which is felt in the many enterprises which have been projected here.

The geologists have defined a gold belt in the Trail Creek country and so far as known this gold belt extends westwardly to the Boundary Creek country, where the mineral industry has found a dividend payer in Camp McKinney.

There has been no cessation in the activity of the camp, which has now became characteristic.

My present visit to the midst of the various mining enterprises of the camp enables me to form comparisons with the growth of last year. The changes are many and in some cases marvelous. One feature is especially noticeable. This is the great amount of machinery which this year has been added to the different mining propositions in this vicinity.

London. Aug. 8.

(From Our Special Correspondent.)

The South African market has been dull in sympathy with the general dullness on the Stock Exchange. The depression in American railroad stocks consequent on the condition of the New York market has had a bad effect on speculative business all round. The improvement in the state of the Rand and the expected increase in the output during July have been powerless to improve the market, and gold and diamond shares have fallen away in price.

Other sections of the mining market have been rather more lively. West Australians have been brisk, on the continual issue of encouraging figures of output at various mines where the mills have been recently started, and also on the news that the time has arrived when the government will be enabled to take up the water question thoroughly. Indians have been very strong on the increases in the production of the leading mines. New Zealands have been only moderately active.

In the American section the chief interest has been centered in Alaska-Treadwells, the report of which mine for 1895-6 has been greatly admired. The extraordinarily low figures for cost per ton of ore treated, viz., $1.08, are received with nothing short of astonishment.

The shareholders of the Jay Hawk have agreed on a reconstruction scheme. The silver mine in Montana has turned out to be too low a grade for working at a profit, and it has decided to give up this mine and acquire a gold property at the Hauraki district in New Zealand. Owing to the difficulty of selling their machinery they are intending to move it to New Zealand. The directors of Jay Hawk belong to the group that operate some of the most successful New Zealand mines, so that the shareholders have quite a hopeful prospect for the future.

Paris. Aug. 9.

(From Our Special Correspondent.)

The past week has been without special events, and there have been but few changes in the stock market. The copper speculation, which reached its height a few weeks ago, is still strong and the reactions in the chief stocks have not been great; all of them are still high and show no signs of further decline.

The zinc and lead stocks also continue strong and nearly all of them show substantial gains over last year's prices.

In this connection it is of interest to make a short comparison of prices. I find that copper is this week quoted at 127·50 fr. per 100 kgms., for good bars, against 118·50 fr. at the corresponding date last year. Silesian zinc is 46·75 fr. per 100 kgms., against 40·75 fr. a year ago. On the other hand, tin has fallen, to-day's quotation being 166·25 fr. per 100 kgms., for Banka or Billiton ingots, against 178·75 fr. last year; while lead has also fallen a little, standing at 27·75 fr., against 28·50 fr. It is true that the supply of both tin and lead is large, but the same thing may be said of copper and zinc also. The consumption of copper has been extraordinary, but there has been no unusual demand for zinc, and the rise in that metal has been contrary to all expectations.

The iron and steel companies continue to show great activity, and their stocks are in sufficient demand to keep them at good prices. Nearly all of the French companies have contracts which will keep them busy for the rest of the year, and prices of all sorts of iron and steel are good.

Much interest is felt in the stocks of the Russian iron works and those chiefly dealt in here—Briansk, Donetz and Huta-Bankowa—have all risen. There is room for a great development of the iron industry in that country.

Huanchaca stock is higher, as better reports continue to come from the great silver mine, and the managers are evidently trying to remedy some past errors.

The weak point in the market is in the South African gold shares, which continue dull; and there is manifestly an uneasy feeling among the holders, who do not understand why production does not improve, now that political troubles have subsided and we are told that the labor difficulties are removed. There is a feeling that matters are not as they should be, and that stock manipulation has too much to do with the management of the mines, and this our investors do not like.

Upon the whole, our prospects for trade are very good, and it looks very much as if we, with the rest of Europe were to have a period of reviving industry and commerce. The Turkish question is the chief factor of possible political disturbance just now, and that appears less threatening than it did a month ago.

AZOTE.

MISCELLANEOUS DIVIDENDS.

Weisbach Commercial Company, quarterly dividend of 2% on the preferred stock, payable September 10th.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.	Sale.	Amt.
Alpha Con.	Nev.	17	Sept. 7	Sept. 29	.10
Anita Gold.	Cal.	16	Aug. 25	" 15	.07
Argonaut.	"	3	" 10	" 12	.05
Baltic Gravel.	"	2	Sept. 2	" 19	.00¾
*Belcher Silver.	Nev.	53	" 10	" 30	.25
Best & Belcher.	"	60	Aug. 6	Aug. 27	.25
*Central Eureka.	Cal.	2	" 15	Sept. 7	.01
*Confidence Silver.	Nev.	27	Sept. 3	" 24	.30
Con. Imperial.	"	37	Aug. 27	" 22	.01
Eureka Con.	Utah		July 8	" 5	.10
Hale & Norcross.	Nev.	109	Aug. 14	" 4	.15
Jamison.	Cal.	8	" 10	Aug. 31	.05
Lucky Bill.	Utah.	20	" 17	Sept. 15	.02
Marguerite.	Cal.	3	July 28	Aug. 28	.10
Orient Gold Placer.	"		Aug. 26	Sept. 5	.50
Orleans.	"		" 24	" 21	.10
*Providence.	S. D.	4	Sept. 12	Oct. 12	.002
Rocky Peak Gold.	Cal.		Aug. 24	Sept. 21	.02
Ruby, G. & S.	S. D.	9	Sept. 1	" 19	.01
Sevier.	Utah		" 9	Oct. 9	.05
*Sierra Nevada Silver.	Nev.	111	" 11	" 1	.25
Stone Creek Copper Belt.	Mont.		" 1		.005
West Cable.	Utah.	6	Aug. 17	Sept. 17	.01
Ybarra Gold.	Mex.	5	" 31	" 15	.15

* New assessment.

DIVIDENDS.

NAME OF COMPANY	Current Dividends. Date.	Amount.	Paid since Jan. 1, 1896.	Total to date.
Ætna Con.			$20,000	$60,000
Alaska-Mexican.	Aug. 1	$18,000	54,200	155,031
Alaska-Treadwell.	" "	75,000	275,000	2,950,000
Anaconda.			750,000	
Aurora Iron.			50,000	700,006
Bangkok-Cora Bell.			6,000	107,510
Big Six.			2,500	2,500
Boston & Mont.	Aug. 20	450,000	1,050,000	4,475,000
*Bullion Beck & Ch.	" 20	30,000	155,000	2,105,000
*Calumet & Hecla.			1,500,000	45,850,000
*Cariboo.			32,000	95,080
*Centennial-Eureka	Aug. 15	30,000	270 000	1,800,000
C. O. D.			5,000	25,000
*Dalton & Lark.	Aug. 15	12,500	87,500	87,500
Daly.	Aug. 22	37,500	37,500	2,887,500
Dominion Coal.			600,000	
Elkton Con.	Aug.—	10,000	30,000	75,000
Florence.			54,390	89,348
*Galena.	Aug. 10	5,000	26,000	46,000
Gold Coin.	" "	20,000	65,000	80,000
*Golden Fleece.	" —	6,000	132,000	533,179
Gold & Globe Hill.			19,500	28 875
Hecla Con.			30,000	2,130,000
Highland.			25,000	3,159,918
*Homestake.	Aug. 25	31,250	251,000	5,962,500
*Hope.			10,000	
Horn Silver.			50,000	5,130,000
Iowa.	Aug. 15	10,000	30,000	40,000
Iron Mountain.			30,000	440,000
*Isabella.	Aug. 25	22,500	157,500	180,000
*Jackson.			7,500	
Le Roi.	Aug. 15	25,000	125,000	200,000
*Mammoth.	Aug. 1	20,000	20,000	1,090,000
*Mercur.			125,000	475,000
*Minnesota Iron.			495,000	3,240,000
*Mont. Ore Pur. Co.			280,000	440,000
Moon-Anchor.			18,000	18,000
Moose.			6,000	186,000
*Napa Con.			50,000	790,000
*Ontario.	Aug. 31	15,000	135,000	13,310,000
*Osceola Con.			120,000	2,072,500
Ottaqueschy.			1,000	1,000
Portland.			120,000	743,000
Quincy	Aug. 17	1300,000	740,000	8,370,000
*Silver King.	" 7	37,500	300,000	750,000
Slocan Star.	Sept. 1	100,000	200,000	260,000
Small Hopes.			25,000	3,275,000
*Smuggler-Union.			100,000	100,000
*Tamarack.			150,000	4,320,000
Union.			23,500	73,000
*Utah.	Aug. 10	2,000	17,000	149,500
*Victor.			140,000	605,000
Victor M. & L.			12,000	42,000
War Eagle.			25,000	157,000
Wasp.			26,000	26,000
Totals.		$1,257,250	$9,029,090	$119,877,867

* July dividend paid. ‡ Extra dividend of $2 included.

STOCK QUOTATIONS.

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Aug. 14 H.	Aug. 14 L.	Aug. 15. H.	Aug. 15. L.	Aug. 17. H.	Aug. 17. L.	Aug. 18. H.	Aug. 18. L.	Aug. 19 H.	Aug. 19 L.	Aug. 20. H.	Aug. 20. L.	Sales.
Allouez	Mich.	25													
Arnold	"	25													
Atlantic	"	25							16.00		16.50		16.00		85
Bost. & C. C.	Colo.	1													
Bost. & Mont.	Mont.	25	75.25	73.00	75.00	74.00	77.00	75.00	77.88	75.75	76.88	75.00	77.63	75.50	22,287
Butte & Bost.	"	25													
Cal. & Hecla	Mich.	25	300		300		300		300						54
Centennial	"	25													
Dominion Coal.	N. S.	100	8.00	7.75	8.00	7.88	8.00	7.75	7.88		7.75	7.50	7.88	7.75	1,475
" pref.	"	100	80.00						81.00	80.00			80.00		21
Franklin	Mich.	25													
Gold Coin	Colo.	1									.50				100
Illinois Steel	Ill.	100	44.00	43.50	43.00		44.00	42.38	44.00		45.50	44.00			470
Kearsarge	Mich.	25	10.00						9.75	9.50	10.00	9.75	10.00		305
Lake Sup. Iron.	"	25													
Merced	Cal.	15			5.50										2.0
Minnesota (Ir.)	Minn.	100													
Napa	Cal.	7													
National	Mich.	25													
Old Dominion	Ariz	25	14.38	12.75	13.75		14.25	13.63	14.5	13.75			14.00	13.75	3,710
Osceola	Mich.	25							23.00		23.00		23.13	23.00	146
Pioneer	Cal.	10					4.25	4.00	4.00		4.00		4.00		615
Pontiac	Mich.	25													
Quincy	"	25	108				108		107		107				117
do. scrip	"										77.00				1
Santa Rosa	Cal.	10													
San. Ysabel (G.)	"	5							8.00				8.00		150
Tamarack	Mich	25	66.00										70.00		18
Tamarack, Jr.	"	25									8.00				100
Tecumseh	"	25													
Westingh E. & M	Pa.	50			24.50										4
do. pref.	"	50	49.00		49.00		49.00		49.00	48.50			49.00		84
do. scrip	"														
Wolverine	Mich.	25					6.00				6.00				167

* Official quotations Boston Stock Exchange. Total sales, 3,239.

INDUSTRIAL COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Aug. 15. H.	Aug. 15. L.	Aug. 17 H.	Aug. 17 L.	Aug. 18. H.	Aug. 18. L.	Aug. 19. H.	Aug. 19. L.	Aug. 20. H	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Sales
Balt. & Ohio	100											15¼	15	300
Ches. & Ohio	100			13¼	13¼	13¼		13¼	13	13½	.13	13	12⅝	1,741
Col. C. & I. Dev	100													
Col. Fuel & I.	100	17		17⅛	16½	17⅝	16⅝			17⅛		17	16¼	1,616
Col., H. V. & Tol	100							14⅛						130
do. pref.	100			59½										100
Col. & H. Coal	100													
Del. & Hud. C	100			119¾		119	118¾	119¾	118	119	118			485
Del., L. & W.	50					147		147				147		400
General Elec.	100	24		24⅛	23½	24⅝	24¼	24⅛	23¾	24¼	23⅝	23½	23¼	5,135
Lake Erie & W	100			14	13¾	14¼	14	14¼				14½		1,600
do. pref.	100			63⅝	62¾	63¾	62⅞	63¾		63¾		64		1,475
Morris & Essex	100													
Nat'l Lead	100	18		18		17⅛		17⅛	17⅛	17⅜	17⅛	17⅝		1,460
do. pref.	100	81				80¾		79⅜	76¾	79				1,174
N. J. Central	100	92½		92¾		93		93⅜	93¾	93¼	92¾	92½	92	1,920
N. Y., L. E. & W	100													
do. pref.	100													
N. Y., Ont. & W	100					12¾	12¼	12¼	12¼	12¾	12	11⅞		900
N. Y., Susq. & W	100							½						1
do. pref.	100			18	17	17½		17¾		18		17¾	17½	1,990
Norfolk & W.	50													
do. pref.	50													
Phila. & Read.	50	9¾	9	9⅛	9	8⅝	8⅛	8⅜	7⅞	8	7½	7⅝	7⅛	39,097
Tenn. C. & I.	100	17¼	17⅛	17⅝	17	17⅜	16⅝	17¼	15¾	17⅝	16⅜	16¾	16	10,534
do. pref.	100													
Wheel. & L. E	100	6⅝	6	6¾	6¼	6¼	6	6⅜	5¾	6⅛	5¾	6¼	5⅛	34,975
do. pref.	100			24⅛	23⅝	24		24⅛		23⅝	23½			575

* Official quotations N. Y. Stock Exchange. Total shares sold, 105,295.

NEW YORK.*

Name of Company.	Location.	Par val.	Aug. 15. H.	Aug. 15. L.	Aug. 17. H.	Aug. 17. L.	Aug. 18. H.	Aug. 18. L.	Aug. 19. H.	Aug. 19. L.	Aug. 20. H.	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Sales
Adams	Colo	10													
Ajax	Utah	10													
Alamo	Colo.	1													
Alice	"	1													
Alliance	Utah.	1													
Amer. Flag	Colo.	10													
Anaconda	"	5										.51			100
Andes	Nev.	100													
Argentum-Jun.	Colo.	2													
Bedford Con	Mont.														
Belcher	Nev.	100													
Best & Belcher	"	100													
Bodie Con	Cal.	100													
Bullion Beck & C	Utah.	10													
Bulwer	Cal.	100									.28		.34	.33	900
Breece	Colo.	25													
Brunswick	Cal.	2			.20		.20				.19		.19		6,100
Centennial Eur.	Utah.	50													
Challar	Nev.	10													
Chrysolite	Colo.	50													
Comstock T.	Nev.	100													
do. bonds	"	100													
Con. Cal. & Va.	"	100			1.65				1.75		1.70				700
Con. Imperial	"	100													
Creede & C. C.	Colo.	1			.06										1,000
Cripple C. Con.	"	1					.11		.11						1,000
Cresus	"	1													
Crown Point	Nev.	100													300
Dalton	Utah.	25													
Daly	"	20													
Deadwood Ter.	S. Dak	100													
Eureka Con.	Nev.	2													
Father de Smet.	S Dak	100			.20		.21								300
Gold Coin	Colo.	1													
Golden Fleece	"	1													
Gould & Curry	Nev.	100													
Hale & Norcross	"	100													
Homestake	S. Dak	100													
Horn Silver	Utah.	25													
Iron Silver	Colo.	20													
Isabella	"	1													
King & Pemb.	Ont	10													
Lacrosse	Colo.	10													
Leadville Con.	"	10										.12			100
Little Chief	"	50										.16			100
Mexican	Nev.	100									.65				100
Mollie Gibson	Colo	5													
Mono	Cal.	10													
Mt. Rosa	Colo.	1			.12										200
Occidental Con.	Nev	100													
Ophir	"	100									.95			1.05	300
Pharmacist	Colo	1			.08		08		.08						2,300
Phœnix	Ariz.	1													
Portland	Colo.	1													
Potosi	Nev.	100													
Rover	Utah.	10													
Savage	Nev	100													
Sierra Nevada	"	100									.70			.45	1,000
Silver King	Utah.	20													
Sm. Hopes Con.	Colo.	20													
Specimen	"	1													
Standard Con.	Cal.	10													
Tetro	Utah	1													
Union Con.	Nev.	100												.21	200
Utah Con.	"	100													
Victor	Colo.	1													
Work	"	1													
Yellow Jacket	Nev.	100			.3										200

* Official quotations N. Y. Stock and Con. Stock & Petroleum Exchanges.
Total shares sold, 14,60[illegible].

COLORADO SPRINGS, COLO.†

Name of Company.	Par val	Aug. 10. B.	Aug. 10. A.	Aug. 11. B.	Aug. 11. A.	Aug. 12. B.	Aug. 12. A.	Aug. 13 B.	Aug. 13 A.	Aug. 14. B.	Aug. 14. A.	Aug. 15 B.	Aug. 15 A.	Sales.†	Sales.*
*Ajax	$1														
Alamo	1	.03	.03½		.04	.03	.03½	.03½	.03¾	.03¾	.03½	.03½	.03½		
*Am'ric'nC	1	.01¾	.01¾											1,000	
Anaconda	5	.45	.50	.45	.50		.50	.40	.50		.49½	.35	.46	100	
Aola	1														
Arg'ntumJ	2	46½	.50	.46½	.48	.43½		.41½	.50	.41	.44	.43	.45	1,530	
Bankok	1														
*Bankers	1	.10½						.08¼	.09					1,000	
Banner	1														
*Ben Hur	1			.04¼	.04¼			.04½	.04⅝						
*Blue Bell	1								.03		.04½			250	
Bob Lee	1	.007	.007½	.007	.008	.007	.007½	.0.7½	.008	.007¼	.0 8¼	.007¼	.008½	6,0 0	
Bost. & C.C.	1														
*Bucknorn	1			.01¾	.01⅞			.01¾	.02	.01⅞				18,000	
*Colo.C.&M	1					.02¾	.03							2,000	
Columbine	1														
Copper M	1														
Cr. & C. C.	1	.05¼	.05⅜	.05⅜	.05¼	.05⅝	.05¾	.06¼	.06¾	.07¼	.07¾	.06⅜	.06½	114,300	2,300
C. C. Con.	1	.10⅜	.10⅝	.11	.11⅛	.10⅝	.11¼	.10⅝	.10¾		.10⅝	.09⅝	.10¼	35,700	250
Cr. Cr. Exp.	1														
Cresus	1			.006	.00 3½		.008½								
*Dante	1														
Des Moines	1	.02		.02	.02¼		.02		.02	.01	.01¾	.01¼	.01⅞	8,000	
*Enterprise	1														
Fanny R.	1	06	.06¼	.06		.06	.06¾	.06	.06¾	.06	.06¾	.06		2,500	1,000
Favorite	1		.06¾		.06	.05							06	1,000	
Franklin	1	.005				.005¾	.006			.005½					
*Garfield-G	1	.03¼	.03¾			.03¾								9,000	
*Gold. Age	1														
*Gold. E'g'e	1														
Gold Fi'ce	1	.88	.9	.90		.92½		.96	.98	.96	1.00	.98	.99	2,000	1,000
Gold & Gl.	1		.16	.14¾				.14¾	.15¾		.15		.14¾	2,000	
*Gold King	1														
*GoldStand	1	.03¾	.04	.03¾	.03¾			.03¾	.04⅞						
*Gould	1														
*Grotte	1														
Henrietta	1							.005½	.006						
Humboldt	1														
Ida May	1										.15				
Ingham, C.	½		.15		.15				.15		.15		.15		
*Iron Clad	1			.06¾	.06¾			.06¾	.06¾						
Isabella	1	.50¼	.50¾	.48¾	.49	.46	.46½	.45½	.45¾	.42¾	.43½	.42½	.42¾	63,200	8,400
do. stan. p.	1	.49½	.49¾	.48¼	.48¾	.45½	.46	.44	.44½	.41¾	.42½	.41	.41¼	16,700	1,000
Jack Pot	1	.04	.04½	.04		.04¼	.04¾	.04½		.04	.04¾	.03¾	.04⅜	2,000	1,000
Jefferson	1														
*Keystone	1							.02¾	.02¾						1,000
Ladessa	1			.00 3¼	.00 5½					.00 3¾	.00 4				6,000
*L'nc'lnB'y	1														
*LottieGlb	1														
*Marion	1	.0 5		.00 4¾				.00 4		.00 5					
Matoa	1			.06	.09				.07		.06½	.0 2	.06		
Mollie G.	5	41½	.48	.40	.46	.40¾	.41¾	.43	.43¾	.41¾	.42	.40¼	.41	19,9 0	
*Monarch	1	.02	.02¾												1,500
Mt. Rosa	1	.10¾	.11¼	.11¼	.11¾	.11	.11¼	.11	.11¼	.10¾	.11	10	.11½	2,300	
*Mutual	1														
*Nugget	1														
*Ophir	1							.04¾	.05						4,000
Oriole	1	.02	.02¼	.02		.02		.02	.02¼	.02	.02⅛	.02	.02⅛	21,000	
*Orphan B.	1														
*Pappoose	1	.02⅜	.02½					.02¼	.02⅝						7,000
Pharmacist	1	.08	.08⅜	.08¼	.08⅜	.07⅜	.08	.08		.07⅜	.08	.07⅜	08	31,200	
Portland	1	1.16¼	1.25	1.24	1.25	1.21	1.22	1.19	1 21	1.19	1.20	1.07⅜	1.14	8,500	1,000
*Princess	1														
*Reno	1														
*Sacram'to	1			.02¾	.03⅛										
*Silver St.	1														
Specimen	1	.06¼		.07¼	.08	.06	.07⅝	.07⅝	.07¾	.07¼	.08¾	.08¾		2,500	
*Sq'wMt.T.	1	.01⅝	.01⅝			.01⅝	.01⅝	01	.01¼						5,000
*Temonj	1	.03⅜	.04⅜	04	.04⅜							.04¼	.04½		11,000
Trachyte	1	.02½	.02⅝	.03⅜	.02⅝	.02⅜	.02¾	.02½	.02⅝	.02½	.02¾	.02½	.02⅞		
Union	1	.30	.30¼	.29⅝	.30	.27⅝	.28	.26¾	.26⅝	.26½	.26⅝	.25¾	.25⅝	117,050	5,200
*Virginia M	1														1,000
Work	1	.07¼	.07¾	.07	.07¾	.06¼	.06¾	.06	.06¾	.06¼	.06⅞	.06¼	.07	3,000	
Total shares sold: Listed														360,480	87,900
" " Unlisted														12,500	98,750

† Official quotations and sales Colo. Springs Mg. Stock Assoc. * Board of Trade Exchange.

ST. LOUIS, MO. Week ending Aug. 4.

Name of Company.	Company's Office.	Par Value.	Bid.	Asked.	Last Dividend.
Central Lead	St. Louis, Mo	$100	$50	$60	March, '96, 1 p. c.
Con. Coal	" "	100	19	21	June, '92, 2 "
Doe Run Lead	" "	100	.90	.95	
Granite Mtn.		25	1 50	1.75	
St. Joe Lead	New York	100	8.50	9.25	July, '96, 1½ p. c.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Aug. 15.	Aug. 17.	Aug. 18.	Aug. 19.	Aug. 20.	Aug. 21.
Alta	Nev.	100	.08		.05	.06	07	
Belcher		100	.25	.25	.25	.26	.26	
Best & Belcher	"	100	.80	.85	.90	1.05	1.05	94
Bodie Con	Cal.	100	.47	.49	.50	.59	.60	.50
Bulwer	"	100		31	.31	.34	.35	.30
Choliar	Nev.	100	2.15	1.92	1.90	2.10	2.05	2.00
Con. Cal. & Va.	"	100	1.70	1.65	1 70	1.80	1.90	1.70
Crown Point	"	100	.32	.32	.25	.26	.26	.26
Gould & Curry	"	100	.55	.50	49	.54	55	.50
Hale & Norcross	"	100	1.25	1 20	1.15	1.25	1.25	1.20
Mexican	"	100	.51	.50	.51	.54	.54	51
Mono	Cal.	100		.15	.15	.08	.20	.18
Ophir	Nev.	100	.95	.91	.91	.96	1.00	.95
Potosi	"	100	.97	.90	.85	.94	.92	.88
Savage	"	100	.56	.49	.49	.56	.55	.53
Sierra Nevada	"	100	.44	.41	.42	.45	.45	.43
Union Con.	"	100	.39	.39	.39	.40	.41	.38
Utah	"	100		.07	.08	.08	.08	
Yellow Jacket	"	100	.32	.30	.25	30	.30	.30

* Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Aug. 20.

Name of Company.	Location.	Par value	Bid.	Ask.	Name of Company.	Location.	Par value	Bid.	Ask.
Balt. M. & S.	N. C.	5			Howard C. & C	Md.	5		
Conrad Hill	"	10			Lake Chrome	"	5		
Con. Coal	Md.	100	32		Ore Knob	"	10		
G. Cr'k Coal	"	100	10		Silver Valley	N. C.	5		75

* Official quotations Baltimore Stock Exchange

BRITISH COLUMBIA.* Week ending Aug. 8.

Name.	Selling price.	Name.	Selling price.	Name.	Selling price.
Bound'y Creek:		**Trail C'k** (con.):		**Trail C'k** (con.):	
Old Iron. Leas.	$0.15	Enterprise		Lily May	
Camp McKenney	.54	Evening Star	$0.20	Little Darling	
Nelson:		Eureka Con		Mayflower	$0.15
Hall Mines	12.00	Georgia	35	Monte Cristo	.20
Slocan:		Gertrude	.10	Nest Egg	.12
Alamo	1.00	Gold Hill		O. K.	.30
Cumberland	10.00	Good Hope		Palo Alto	
Gray Eagle	1.00	Grand Prize		Phœnix	.10
Minnesota		Great Western	.13½	Poorman	.10½
Noble Five		Green Crown		Red Mtn. View	
Rambler		Helen		Rossland Gold	
Slocan Star	2.50	High Ore	.07½	St. Elmo	.13¾
Wonderful	.12	Homestake	.15	St. Mary	
Trail Creek:		Idaho		San Jacquin	
Big Three	.10	Imperial		Silverine	.13¾
Butte		Iron Horse		South Cross	.15
Caledonia Con	.06	Iron Mask	.75	Trail	.15
California	10	Jo Jo		Virginia	.28
Center star	1.25	Josie	.48	Vulcan	
Commander		Jumbo	1 05	War Eagle	1 65
Crown Point	.25	Knikat Templar		West Le Roi	.15¾
Deer Park	.08	Le Roi		White Bear	

Par val.: Hall Mines, Jumbo and Le Roi, $5; Slocan Star, 50c., other stocks, $1.

LONDON. Aug. 7.

Name of Company.	Country	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
N'th Americans:				£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican	Alaska	Gold	£200,000	1 0 0	0 4.8	Feb., '896	1 11 3	1 13 9
Alaska Treadwell	"	"	1,000,000	5 0 0	1 0	June "	5 0 0	5 5 0
De Lamar	Idaho	Gold & silver	400,000	1 0 0	0	May, 1896	14 6	15 6
Harquahala	Arizona	Silver	300,000	1 0 0	0 6	Nov., 1894	2 6	3 6
Holcomb Valley	California		135,000	5 0			9	1 3
Idaho	Idaho	Gold & silver	50,000	5 0	0 6	Jan., 1895	4 6	5 6
Jay Hawk	Montana	Silver	285,000	1 0 0	0 6	Dec., 1892	9	1 3
Montana	"	Gold & silver	660,000	1 0 0	0 3	June, 1896	5 6	6 6
New Guston	Colorado	Silver	110,000	1 0 0	1 0	Dec., 1892	2 6	5 0
Palmarejo	Mexico	Gold & silver	800,000	1 0 0			1 9	2 3
Plumas-Eureka	Colorado	Gold	281,250	2 0 0	0 9	Apr., 1896	8 9	11 3
Poorman	Idaho	Gold & silver	213,038	5 0	scp.	Oct., 1895	6	1 0
Richmond	Nevada	G'ld, Sil. le'd	270,000	5 0 0	1 0	Dec., "	1 2 6	1 7 6
Sierra Buttes	California	Gold	245,000	2 0 0	0 6	Apr., 1896	6 3	8 9
Springdale	Colorado	"	240,000	4 0	0 2	Sept., 1894	1 0	1 3
S'th Americans:								
Colomb. Hydra'lic	Colombia	Gold	75,000	1 0 0	1 0	July, "	7 6	10 0
Frontino & Bolivia	"	"	140,000	1 0 0	0 6	Jan., 1896	18 9	1 1 3
St. John del Rey	Brazil	"	562,000	1 0 0	xn	" 1895	15 0	17 6
Copper:								
Anaconda	Montana	Cop. & Sil.	6,000,000	5 0 0	2 0	May, 1896	6 17 6	7 0 0
Cape Copper	So. Africa	Copper	600,000	2 0 0	2 0	June "	2 10 0	2 15 0
Copiapo	Chile		200,000	2 0 0	2 0	May, "	2 10 0	2 15 0
Mason & Barry	Portugal	Cop. & sulph	1,050,000	4 0 0	2 6	" "	3 2 6	3 7 6
Rio Tinto	Spain	Copper	3,250,000	10 0 0	12 0	" "	24 17 6	24 10 0
Tharsis	"	Sulpr & cop'r	1,250,000	2 0 0	4 0	April, "	5 17 6	6 2 6
Australians:								
Bayley's Reward	W. Au'tl'ia	Gold	480,000	1 0 0	0 4	Dec., 1894	3 6	4 6
Broken Hill Prop'r.	N. S. Wales	Silver	384,000	8 0	1 0	June, 1895	2 8 9	2 11 3
Mt. Morgan Gold	Qu'ns'land	Gold	875,000	17 6	0 6	" "	3 10 0	3 15 0
South Africans:								
British S. Africa Co	So. Africa	Lands & Ex.	2,500,000	1 0 0	xrts.	July, 1895	2 18 9	3 1 3
City & Suburban	Transvaal	Gold	85,000	4 0 0	10 0	" "	4 10 0	4 15 0
Crown Reef	"	"	300,000	1 0 0	10 0	Apr., 1895	11 2 6	11 7 6
De Beers Con	Cape Col'y	Diamonds	3,950,000	5 0 0	22 0	July, "	30 0 0	30 5 0
Ferreira	Transvaal	Gold	90,000	1 0 0	3 0	war, "	20 10 0	21 10 0
Geldenhuis Estate	"	"	200,000	1 0 0	6 0	July, 1895	3 12 6	3 17 6
Jagersfontein	Orange F. S	Diamonds	1,000,000	5 0 0	10 0	Apr., 1896	11 2 6	11 7 6
Langlaagte Estate	Transvaal	Gold	500,000	1 0 0	5 0	Feb., "	5 5 0	5 0 0
Modderfontein	"	"	1,000,000	4 0 0	rgts	May, 1895	5 12 6	5 17 6
Primrose (New)	"	"	280,000	1 0 0	5 0	Feb., 1896	5 2 6	5 7 6
Robinson	"	"	2,750,000	5 0 0	8 0	" "	9 2 6	9 7 6

PARIS. Week ending Aug. 7.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	100.00	1,900.00	1,920.00
" " Firminy	"	"	5,000,000	500	85.00	1,630.0	1,600.0
" " Fives-Lille	"	"	12,000,000	500	35.00	740.00	740.00
" " la Marine	"	"	20,000,000	500	37.50	940.00	939.00
" " Longwy	"	"		500	35.00	814.00	800.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	236.0	235.00
Anzin	France	Coal			160.00	4,675.00	4,690.00
Boleo	Lower Cal.	Copper		500	65.00	1,415.00	1,400.00
Briansk	Russia	Coal & Iron				1,380.00	1,369.00
Bruay	France	Coal	3,000,000	400	700.00	21,905.00	22,500.00
Callao	Venezuela	Gold	32,200,000	125		6.50	6.75
Cape Copper	S. Africa	Copper		50	1.50	64.25	60.50
Champ d'Or	"	Gold		25		50.0	50.00
Courrieres	France	Coal	60,0000	300	160.00	4,600.00	4,60 .00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	790.00	759.00
Dombrowa	Russia	Coal		500		540.00	550.00
Dynamite Centrale	France	Explosives		500	25.00	493.00	499.00
Fraser River	Brit. Col'mb	Gold				41.00	36.00
Huanchaca	Bolivia	Silver		125	5.00	80.00	80.50
Huta-Bankowa	Russia	Iron & steel				2,700.00	2,84 .00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	133.50	135.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	659.00	654.00
Lautaro	Chile	Nitrates		125		154.00	150.00
Malfidano	Italy	Zinc	12,500,000	500	44.00	1,015.00	1,0 0.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	37.50	507.00	532.50
Mines d'Or de la Russie	Russia	Gold				1,010.00	1,005.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	769.00	770.00
Nickel	N. Caled'nia	Nickel	12,720,000	500	30.00	142.00	140.00
Paccha-Jazpampa	Chile	Nitrates				30.00	25.00
Penarroya	Spain	Coal, etc.		500	52.50	1,4 0.00	1,40 .00
Rebecca	Colo'do, U.S.	Gold				24.00	20.50
Rio Tinto	Spain	Copper	31,250,000	250	10.05	562.50	569.50
Robinson	S. Africa	Gold		125	12.50	220.00	229.00
Saint Elie	Gr. Guiana	"	4,000,000	25		20.00	20.00
Salines de l'Est	France	Salt		500	27.00	367.50	317.50
Sels Gem. de la Rus. Mer	Russia	" etc				685.00	634.00
Tharsis	Spain	Copper		50	8.75	139.50	142.50
Vieille Montagne	Belgium	Zinc	9,000,000	80	30.00	5.0.00	505.00

MEXICO. Week ending Aug. 6.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,600	$0.59		$10	$12
Angustias	Guanajuato	2,400	10.00		470	500
Arevalo y Anexas	Hidalgo		10.00		220	240
Asturiana y Anexas	Zacatecas	2,500	10.00		410	400
Bartolome de Medina	Hidalgo	2,000	3.50		200	180
Carmen	"	1,100	7.75		400	400
Castellana y FanRam	Tepic	2,448	3 00		170	170
Cerro Colorado	Chihuahua	15,000		$1.00	10	10
Cinco Senores y An	Guanajuato	2,000	15.00		850	1,000
Concepcion y Anexas	S. Luis Potosi	2,700			180	200
El Oro	Guanajuato	500			80	80
Guadalupe	"	10,000	2.00		180	100
Luz de Maravillas	Hidalgo	1,100			110	110
Pabellon	"	1,000	27.89		180	200
Purisima de los Com.	Zacatecas	2,400			10	10
Real del Monte	Hidalgo	2,554	10.00		850	850
Rosario y Anexas	Durango	4,800			70	70
San Francisco	Hidalgo	2,000	6.00		425	425
S. Fed. Chalchihuites	"	1,000	2.00		100	100
San Rafael y Anexas	"	1,200	20.00		500	600
do. free stock	"	1,200	14.00		250	300
Sta. Maria de la Paz	S. Luis Potosi	2,400			180	190
Soledad	Hidalgo	960	7.50		375	350
Sorpresa	"	960	5.00		220	200
Trinidad	Guanajuato	2,000			110	100
Tlauzingo	Puebla	2,400			30	40
Union	Hidalgo	2,000	8.00		425	425
Zaragoza	"	1,100			15	15
Zomelahuacan (gold	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	50	50

NOTE.—In most 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. Prices are in Mexican dollars.

VALPARAISO, CHILE.* July 16.

Name of Company.	Capital.	Share value Nominal	Share value Paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,900,000	$100	$100	6½ per cent.	$34	$35	$35
Caracoles	315,000	100	100	5 "	25	30	25
Descub. de Huantajaya	1,000,000	100	100	3 "	14	16	15
Huanchaca de Bolivia	8,000,000	25	25	4 "	48½	49	49
Oruro	800,000	200	200		480	500	500
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	30	35	35
Todos Santos	2,000,000	100	100	1 "	10	13	13
Nitrate Cos:							
Agua Santa	3,000,000	50	50	4 "	154	156	156
Antofagasta	2,000,000	200	200	5 "	144	148	144
Union	3,000,000	200	500		47	50	48

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

SHANGHAI, CHINA.* July 17.

Name of Company.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad.	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 2 41
Punjom Mg. Co., Ltd.	"	60,000	4	3.75			" 11.68
do. pref	"	30,000	1	1			" 2.85
RaubA'han G. Mg. Co.	"	200,000	£1	13s 10d.	Dec., 1893	0.21	" 4 02
Sheridan Con. Mg. Co.	Colorado, U.S	20,000	Taels 100	Taels 100			" 9.50

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

DENVER, COLO.*

Name of Company.	Par val.	Aug 10. B.	Aug 10. A.	Aug. 11. B.	Aug. 11. A.	Aug. 12. B	Aug. 12. A.	Aug. 13 B.	Aug. 13 A.	Aug. 14. B.	Aug. 14. A.	Aug. 15. B.	Aug. 15. A.	Sales.
L'd Mines														
Anaconda	$5	.48	.50	.50	.52	.45	.49	.45	.46	.44	.47	.42	.47	2,200
Bankers	1	.....	.....	.09	.....	.09¼	.09¾	.09	.09¾	.08¾	.09	.08¾	.08¾	5,000
Bangkok	1	.05	.07	.05¼	.06¾	.06	.6¼	.06	.06¾	.06	.06¼	.06¼	.06¼	15,700
Big Six	1	.06	.0	.07	.03	.05¼	.08¼	.04	.09	.03¾	.6¼	.....	.08¾	12,000
Gar.-Gronse	1	.03¾	.03¾	.03¼	.03¾	.03½	.03¾	.03¼	.4 3¼	.03¾	.03¾	.03¼	.03¾	17,500
Golden Fl	1	.87	.90	.89¼	91	.93	.99	.94	1.00	.95	1.1C	.92	1.00	1,000
Gold Stand	1	.03¼	.0 3¼	.03¾	.04	.03¾	.04	.03¾	.....	.03¾	.04	.03¾	.03¾	18,500
Insley	1	.007¼	.008¾	.0 7¾	.0 8¾	.0 8¼	.....	.008¾	.0	.0 8¾	.009¼	.003	.003¾	9,000
Iowa	1	.40	.55	.....	.55	.30	55	.....	.55	.4	.55	.4	.55	4,850
Ironclad	1	.06¾	.09	.08	.10	.07	.7¾	.....	.07¼	.05¾	.6¾	.06¼	.06¼	7,500
Isabella	1	.04¾	.09¾	.49	.49¾	.47¾	.48¾	.45½	.46¼	.43¾	.43¾	.42¾	.43	74,500
Jefferson	1	.14	.15¾	.....	15	.10	.....	.....	.....	.12	.....	.10	.....	2,500
Justice	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02	.03	1,000
Mollie G	5	.46	.51	.40	.....	.44	.45	.43	.48	.41	.43	.41½	.42½	1,400
Mt Rosa	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Zealand	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Liat. Pr.														
Addie C	1	.0.9¼	.010¾	.01	.010¾	.01	03	.009	.....	.009	.012	.01	.011	7,000
gate		.002	.0 3	.00 ¾	.003	.002¼	.002¾	.002¼	.002¾	.002¼	.002¾	.002¼	.03	17,000
Aola	1	.009	.011	01	011	.005¾	.011	.01	.1¾	.0 9¾	.011¾	.009	.011	22,000
Big Johnny	1	.2¾	.03	.0 2¾	.....	.02¾	.003	.003	.....	.003¾	.006	.0 3	.04¾	12,000
Blue Jay	1	.0 2	.02¾	.02	.02¾	.002	.002¼	.001¾	.002¼	.002	.002¾	.02	.002¾	67,000
Cannon Ball	1	.003¾	.006	.005	.008	.005¾	.....	.05¼	.05¾	.005	.006	.005	.006	213,000
C.C. Imp'ri'l	1	.....	.....	.002	.003	.....	.....	.....	.....	.002¾	.....	.....	.001	30,000
Defender	1	.005	.003	.....	.....	005	.007	005	.007	.005	.....	.0 3¼	.0 6¾	30,000
Dictator	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dixie	1	.002	.002¾	.002	.002¾	.....	.....	.001¾	.0 2¾	.002	.002¾	.002	.002¾	154,000
Eclipse	1	.0 3¼	.0 3¾	.0 3¾	.0 3¾	.003¼	.004¾	.003¾	.004¾	.003¾	.005	.003¾	.005	3,000
Finance	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Forest R	1	.0 2¼	.003	.0 2¼	.003	.002¼	.....	.002¼	.....	.002¼	.003	.0 2	.002¾	3,000
Gem Field	1	.003¾	.....	.003¾	.003¾	.002	.....	.004	.005	.005¾	.01	.009¾	.01	35,000
Gold Field	1	.002	.002¾	.0 2	.002¾	.002¼	.003¾	.002¾	.003¾	.002	.002¾	.002	.003	10,000
Gold Queen	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gregory	1	.002	.0 2¼	.002	.0 2¼	.002	.002¼	.002	.0 2¼	.002¾	.002¾	.0 2	.002¾	4,700
Henrietta	1	.006	.1	.005	.008	.006	.....	.006	.....	.006¾	.....	.006	.....	40,000
Illinois	1	.0 5¾	.....	.007	.01	.0 5¾	.....	.006¾	.....	.01	.01¾	.01	.01¾	1,000
Internat'l	1	.001¾	.002	.001¾	.003	.0 1¾	.002¼	.002	.002¾	.0 2¼	.0 2¾	.002¾	.....	38,000
Justine	1	.003¾	.004	.004	.004¾	.0 4	.004¾	.003¾	.0 6	.005	.....	.006	.....	48,000
Millionaire	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.004	.003¾	.00
Lincoln Boy	1	.001¾	.002	.001¾	.0 1¾	.001¾	.....	.001¾	.002	.002	.002¾	.001¾	.002	12,000
Omaha	1	.001¾	.002	.0 1¾	.002	.....	.....	.001¾	.....	003	.004	.....	.....	11,000
Orient	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.001	2,000
Pilgrim	1	.....	.....	.....	.003¾	.....	.....	.001¾	.003¾	.002	.003¾	.003	.004	15,000
Puritan	1	.00 ¾	.003	.002¾	.0 3¾	.003¼	.004	.005	.003¾	.003¾	.0 4	.003¾	.005	72,000
Q'n Victoria	1	.009	.003¾	.0 9¾	.009¾	.0 9¾	.01	.0 9¾	.009¾	.0 9¾	.01	.003¾	.009¾	21,500
Reno	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.01¾	.02¾	1,000
Royal Age	1	.003	.0 3¾	.003	.003¾	.003¼	.004¾	.004¾	.....	.0 3¾	.0 6	.005	.006	259,000
Senator	1	.....	.....	.001	.0 2¾	.....	.002¾	.001	.....	.001¾	.0 2	.....	.....	52,000
Sentinel	1	.....	.0 6	.....	.....	.0 2¾	.003¾	.001¾	.....	.007¾	.01	.007¼	.007¾	20,000
Unl. Act.														
Ætna	1	.004	.004¾	.0 4	.004¾	.003¾	.04¾	.004	.004¾	.004	.005	.004	.005	2,000
Alamo	1	.03¾	.04	.....	.....	.03¾	.03¾	.03¾	.04	.03¾	.04	.03¾	.04	2,000
Argentum J	2	.45	.50	.44	.49	.43	.48	.46	.46¾	.4	.45	.....	.....	200
Bob Lee	1	.0 7	.01	.007½	.003¾	.....	.....	.008	.00 3¾	.003¾	.009	.006	.....	12,000
Chimborazo	1	.005	.006	.....	.....	.....	.....	.005	.005	.005	.006	.005	.006	4,000
Colo. C. & M	1	.03¾	.03¾	.03¾	.03¾	.03	.03¾	.03¾	.0 3¾	.03¾	.03¾	.03¾	.03¾	1,000
Creede & C.C	1	.04¾	.05¾	.04¾	.06	.0 5¾	.07	.06¾	.07	.7¾	.07¾	.06	.07	15,000
C. K. & N	1	.0 3¾	.005	.003	.....	.003¾	.004¾	.003¾	.004	.003¾	.004	.003¾	.004¾	6,000
Colo. C. & M	1	.02¾	.04¼	.03	.03¾	.03¾	.03	.03¾	.03¾	.03¾	.0 3¾	.03	.03¾	500
Gold Stone	1	.0 5¾	.007¾	.003	.006¾	.006¾	.005¾	.0 5¾	.....	.005¾	.008	.0 5¾	.....	6,500
Jack Pot	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland	1	1.17	1.21	1.22	1.25	1.22	1.25	1.20	1 24	1.18	1.21	1.10	1 18	12,400
Sc'ram'nto	1	.03¾	.03¾	.03¾	.03¾	.03¼	.03¾	.03¾	.03¾	.03	.03¾	.03	.03¼	3,500
Santa Fe	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Gold	1	.29	.30¾	.24¾	30	.24	.29¾	.26	.27¾	.25¾	.25¾	.....	.....	7,000
Va. M	1	.....	.....	.010¾	.....	.....	.....	.....	.....	.01	.1 3¾	.....	.....	8,000
Wh. of For	1	.....	.....	.0 2	004	.....	.....	.0 4	.006	.0 4	.004	.003¾	.004¾	37,000

*Official quotations Colo. Mg. St'k Exch. Sales, listed, 1,327,15.; unlisted, 103,600; total, 1,470,750.

SALT LAKE CITY, UTAH.* Week ending Aug. 15.

Stocks.†	Par value.	Bid.	Asked.	Actual selling price.	Stocks.†	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.60	$0.70	$0.65	Horn Silver	25	$1.80	$2.25	.....
Alliance	1	.20	.30	.....	Little Pittsburg	.....	.01¾	.02¾	$.02¾
Annie	.....	.10	.5	.....	Malvern	.....	.20	.25	.25
Am. Nat. Gas	.....	.02	.03	.....	Mammoth	25	2.80	2.90	2.90
Anchor	20	1.50	1.75	1.55	Mercur	25	6.00	6 25	6.25
Bogan	1	.12½	.15	.15	Morgan	125	.37½	.40	.39
Brick Con	.....	.50	.65	.....	Ontario	100	11.00	11.75	11.60
Bullion Beck & C.	10	6.25	6.75	6.50	Overland	.....	.40	.50	.....
Centen'l Eureka	50	62.50	70.00	65.00	Rover	10	.35	.45	.....
Dalton	5	.02½	.03¾	.03	Silver King	20	16.50	18.50	17.00
Dalton & Lark	.....	.40	.50	.....	Sioux Con	10	1 85	2.00	1.95
Daly	20	7.00	8.00	7.50	Sunshine	10	2.35	2.60	2.55
Daly West	20	8.00	8.50	8.25	Swansea	.....	1.85	1.90	1.90
Eagle	10	.05	.08	.07	Sc. Swansea	.....	.55	.65	.60
Four Aces	.....	.20	.25	.22½	Tetro	1	.0 3¾	.08	.07¼
Galena	10	1.60	1.75	1.65	Utah Con	.....	.75	1 00	.85
Geyser	.....	.85	1.00	.85	Utan	1	1 60	1.75	1.75
Herschel	.....	10	12½	.....					

* Special Report of James A. Pollock. † All the companies are located in Utah.

PHILADELPHIA PA.*

Name of Company.	L'cation.	Par Val'e	Aug. 13. H.	Aug. 13. L.	Aug. 14. H.	Aug. 14. L.	Aug. 15. H.	Aug. 15. L.	Aug. 17. H.	Aug. 17. L.	Aug. 18. H.	Aug. 18. L.	Aug. 19. H.	Aug. 19. L.	Sales
Cambria Iron	Pa.	50	.....	.....	.....	.....	36.00	.....	37.50	36.50	.....	.....	36.00	.....	60
Choc. & Gulf. Ctfs	I. T.	50	5.00	...	5.00	.....	4.75	.....	5.00	.....	5.50	.....	5.00	4.88	1,290
Hunt & Br. Top.	Pa.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" pref.	"	50	50.00	.....	51.00	.....	.....	.....	50.00	.....	.....	.....	49.50	.....	28
Lehigh C. & N.	"	50	39.00	38 00	.....	.....	39.00	38.00	39 00	38.00	.....	.....	38.00	35.00	134
Lehigh Valley	"	50	29.13	29.00	29.13	29.00	29 50	29 00	30.00	29.50	29 13	29.75	29.88	29.50	2,274
Little Schuylk.	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penna. R. R.	"	50	50 88	50 50	51.0	50.88	51.00	50.75	51.00	50.88	51 38	50.63	50.75	50.50	2,358
Penna. Steel	"	.....	20.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	20.00	.....	150
" pref	"	.....	.....	.....	.....	.....	.....	.....	40 00	.....	.....	.....	.....	.....	51
United Gas Imp	"	.....	62.00	61 00	62.00	61 5	62.13	62.00	64.88	62 00	65.00	.....	.....	.....	2,008
Welsb. of Can	Can.	.....	.....	.....	.....	1 75	.....	.....	.....	.....	.....	.....	1.75	.....	235
Welsbach Com	Pa.	.....	.....	.....	15.00	.....	.....	.....	15.00	.....	.....	.....	15.00	.....	327
" pref.	"	.....	.....	.....	.....	.....	.....	.....	60.00	.....	.....	.....	60.00	.....	60
Welsb'h Light	"	.....	.....	.....	39.00	.....	39 50	.....	39.75	39.50	40 00	.....	40 00	.....	318
Westmore and	"	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Official quotations Philadelphia Stock Exchange. Total sales, 9,293.

HELENA, MONT.* Week ending Aug. 7.

Name of Company.	Location.	Company's office	Par value.	Bid.	Asked.	Shares sold.	Price.
Am. Dev. & M. Co.	Mont. & Idaho	Butte, Mont.	$1	$1.50	$1.75	.....	.....
Bald Butte	L. & Clake Co.	Helena "	1	2 00	2 50	500	$2.00
Bi-Metallic	Granite "	St. Louis, Mo.	5	.....	.....	.....	.....
Combination	" "	" "	10	.40	.57	.....	.....
Granite Mt	" "	" "	.....	1.50	1.75	.....	.....
Helena & Victor	Mi soula "	Helena, Mont.	5	25	.36	.....	.....
Helena & Frisco	Shoshone "	" "	.....	2.00	3.00	.....	.....
Iron Mountain	Missoula "	" "	10	.41	.42½	3,000	.41 to .42½
Judge	Meagher "	" "	.....	.09	.10	1,000	.10
Merrill (Gold)	Jefferson "	Butte "	1	.....	.....	.....	.....
Ontario	DeerLodge "	Helena "	1	.....	.....	.....	.....
Yellowstone	Meagher "	" "	5	.15	.17½	1,000	.17½

* Special Report of Samuel K. Davis. Total shares sold, 5,500

PITTSBURG, PA.* Week ending Aug. 18.

Name of Company.	Location.	Par val	Bid.	Ask.	Selling price.
Coal:					
Mansfield	Pa.	50	.....	.....	.....
N. Y. & C. Gas C.	"	50	40	....	.....
Mining:					
Ent'prise	Colo.	5	.....	.....	.....
Lustre	Mex.	10	8½	10	.....
Silverton	Colo.	10	.....	.....	.....
Miscellaneous:					
Carborundum	Pa.	100	.....	.....	.....
Nat. Gas:					
Allegheny	Pa.	100	.....	.....	.....
Chartiers Val	"	100	5	.....	.....
Manufacturers	"	100	.....	.....	.....
Peoples' Nat. Gas	"	50	.....	.....	.....
Peoples' Pipeage	"	25	14	15	.....
Pennsylvania	"	50	3	.....	.....
Philadelphia	"	50	16¾	18	.....
Wheeling	W. V.	50	18	18½	.....

* Official quotations Pittsburg Stock Exchange.

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	Adams, s. l. c	Colo.	$1,500,000	150,000	$10	*				$693,500	Oct.	1895	.04
2	Ætna Cons., q	Cal.	500,000	100,000	5	*				60,000	June.	1896	.10
3	Alaska-Mexican, g	Alask	1,000,000	200,000	5					137,031	April.	1896	.10
4	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				2,875,000	July.	1896	.25
5	American Belle, g. s. c	Colo.	2,000,000	400,000	5	*				50,000	April.	1891	.12
6	Argentum Juniata, s. l. g	Colo.	2,600,000	1,300,000	2	*				156,000	Oct.	1895	.03
7	Aspen Mg. & S., s. l	Colo.	2,000,000	200,000	10	*				900,000	July.	1894	.10
8	Atlantic, c	Mich.	1,000,000	40,000	25					700,000	Feb.	1891	1.00
9	Aurora, i	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
10	Bald Butte	Mont.	250,000	250,000	1	*				437,500	Dec.	1895	.03
11	Bangkok-Cora Bell, s. l	Colo.	600,000	600,000	1					107,310	July.	1896	.01
12	Bates Hunter, g. s	Colo.	1,000,000	1,000,000	1	*				67,500	Dec.	1891	.00¾
13	Belcher, s. g	Nev.	10,400,000	104,000	100	$3,286,420	April.	1896	.25	15,397,200	April.	1876	1.00
14	Belden, F. E., m	N. H.	500,000	100,000	5	*				217,000	Jan.	1896	.04
15	Belle Isle	Nev.	10,000,000	100,000	100	240,271	July.	1896	.10	300,000	Dec.	1879	.25
16	Big Six, g. s	Colo.	500,000	500,000	1					2,500	May.	1896	.00½
17	Bi-Metallic, g. s	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
18	Bodie Cons., g. s	Cal.	10,000,000	100,000	100	714,990	July.	1893	.15	1,677,572	Dec.	1894	.25
19	Boston & M. Cons., g. s. c	Mont.	3,750,000	150,000	25	*				4,475,000	Aug.	1896	3.00
20	Brotherton, i	Mich.	2,000,000	80,000	25	*				120,000	Mar.	1893	.50
21	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					150,000	Oct.	1888	.06
22	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					45,850,000	July.	1896	5.00
23	Centen'l-Eureka, g. s. l. c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	1,770,000	July.	1896	1.00
24	Central, c	Mich.	500,000	20,000	25	100,000	Oct.	1861	.65	1,970,000	Feb.	1891	1.00
25	Charleston, p. f	S. C.	1,000,000	10,000	100	*				140,000	Dec.	1893	2.50
26	Chrysolite, s. l	Colo.	10,000,000	200,000	50	*				1,650,000	Dec.	1884	.25
27	Clay County, g. s. c	Colo.	60,000	60,000	1	*				52,000	Nov.	1891	.02
28	C. O. D., g	Colo.	500,000	500,000	1	*				25,000	Mar.	1896	.01
29	Cœur d'Alene, s. l	Idaho	5,000,000	500,000	10					340,000	June.	1893	.06
30	Confidence, g. s	Nev.	2,496,000	24,960	100	1,629,486	Dec.	1895	.30	277,680	April.	1889	1.00
31	‡Cons. Cal. & Va., g. s	Nev.	21,600,000	216,000	100	441,800	April.	1896	.30	3,898,800	Feb.	1895	.25
32	Cons. New York, g. s	Nev.	10,000,000	100,000	100	168,000	Jan.	1896	.05	10,000	Feb.	1893	.10
33	Coptis, g. s	Nev.	10,000,000	100,000	100					77,000	Feb.	1895	.01
34	Cortez, Ltd., s. g	Nev.	1,500,000	300,000	5					735,000	Feb.	1893	.15
35	Dalton & Lark, s. l	Utah.	2,500,000	2,500,000	1					75,000	July.	1896	.00½
36	Daly, s. l	Utah.	3,000,000	150,000	20					2,850,000	May	1893	.25
37	†Deadwood-Terra, g	S. D.	5,000,000	200,000	25	*				1,140,000	Sept.	1892	.05
38	De Lamar, g. s	Idaho	2,000,000	400,000	5	*				2,094,100	April.	1896	.25
39	Derbec Blue Gravel, g	Cal.	10,000,000	100,000	100	110,000	June.	1893	.10	280,000	Aug.	1891	.10
40	Dexter, g. s	Nev.	1,000,000	100,000	10	8,000	June.	1892	.08	100,000	Aug.	1893	.33
41	Elkton, g	Colo.	500,000	500,000	1					65,000	June.	1896	.02
42	Elkhorn, s	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
43	Enterprise, g. s	Colo.	2,500,000	500,000	5	*				825,000	May	1893	.25
44	Eureka Cons., g. s. l	Nev.	1,000,000	50,000	20	555,000	July.	1896	.10	5,112,500	Jan.	1892	.25
45	Evening Star, s. l	Colo.	500,000	50,000	10	*				1,437,500	Dec.	1889	.25
46	Florence, s	Mont.	2,500,000	500,000	5	*				89,348	May.	1896	.02
47	Franklin, c	Mich.	1,000,000	40,000	25					1,240,000	Jan.	1894	2.00
48	Gold Coin, g. s	Colo.	1,000,000	200,000	5	*				80,000	Aug.	1896	.10
49	Golden Fleece, g. s	Colo.	600,000	600,000	1	*				527,179	July.	1896	.03
50	Gold & Globe, g	Colo.	750,000	750,000	1					28,875	June.	1896	.00⅜
51	Gold Rock, g. s. c	Colo.	500,000	500,000	1	*				28,750	Dec.	1891	.01
52	Gould & Curry, g. s	Nev.	10,800,000	108,000	100	4,785,600	April.	1896	.15	3,826,800	Oct.	1870	.50
53	Granite Mountain, g. s	Mont.	10,000,000	400,000	25	*				12,120,000	July.	1892	.20
54	Granite, s. l	Idaho	500,000	200,000	2.50	*				83,400	Nov.	1890	.10
55	Gt. West'n Quicksilv., q	Cal.	5,000,000	50,000	100					388,366	Nov.	1893	.10
56	Hale & Norcross, g. s	Nev.	11,200,000	112,000	100	5,742,000	Jan.	1895	.15	1,822,000	Aug.	1888	.50
57	Harquahala, g	Ariz.	1,500,000	300,000	5					126,000	Nov.	1894	.12
58	Hecla Cons., g. s. c. l	Mont.	1,500,000	30,000	50	*				2,130,000	Feb.	1896	.50
59	Helena & Frisco, s. l	Idaho	2,500,000	500,000	5	*				425,000	April.	1895	.02
60	Holmes, s	Nev.	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	April.	1892	.25
61	Homestake, g	S. D.	12,500,000	125,000	100	200,000	July.	1878	1.00	5,931,000	July.	1896	.25
62	Hope, s	Mont.	1,000,000	100,000	10	*				592,252	Jan.	1895	.10
63	Horn-Silver, g. s. c. sp. l	Utah.	10,000,000	400,000	25	*				5,130,000	Jan.	1896	.12½
64	Iowa	Colo.	1,000,000	1,000,000	1					20,000	June.	1896	.01
65	Iron Mountain, s. l	Mont.	5,000,000	500,000	10	*				440,000	May.	1896	.01
66	Iron Silver, s. l	Colo.	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
67	Isabella, g	Colo.	2,250,000	2,250,000	1					157,500	July.	1896	.01
68	Jack Rabbit, g	Cal.	10,000,000	100,000	100	118,000	April.	1894	.02	260,000	April.	1891	.10
69	Jay Hawk, g	Mont.	1,425,000	285,000	5					33,375	Dec.	1892	.12
70	Kearsarge, c	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	120,000	Dec.	1895	1.00
71	Kennedy, g	Cal.	10,000,000	100,000	100					1,796,000	Aug.	1895	.48
72	Leadville Cons., s. l	Colo.	4,000,000	400,000	10	*				316,000	Feb.	1893	.03
73	Little Chief, s. l. i-o	Colo.	10,000,000	200,000	50	*				820,000	Dec.	1890	.05
74	Maid of Erin, g. s. c. l	Colo.	3,000,000	600,000	5	*				740,000	Nov.	1895	.02
75	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,070,000	Aug.	1896	.05
76	Mayflower Gravel, g	Cal.	1,200,000	60,000	20					166,897	Dec.	1895	.10
77	May-Mazeppa Con., l. s	Colo.	1,000,000	1,000,000	1	*				170,000	Oct.	1891	.03¾
78	Mercur, g	Utah.	5,000,000	200,000	25	*				475,000	July.	1896	.12½
79	Minnesota Iron, i	Minn.	16,500,000	165,000	100	*				3,240,000	July.	1896	1.50
80	Mollie Gibson, s	Colo.	5,000,000	1,000,000	5	20,000	Jan.	1891	.02	4,080,000	Jan.	1895	.05
81	Monitor, g	S. D.	2,500,000	250,000	10					45,000	Oct.	1890	.03
82	Montana, Ltd., g. s	Mont.	3,300,000	660,000	5	*				2,890,637	Oct.	1895	.06¼
83	Moose, g	Colo.	600,000	600,000	1					186,000	Jan.	1896	.01
84	Morning Star Cons., s. l	Colo.	1,000,000	100,000	10	*				1,025,000	Dec.	1891	.25
85	Mt. Diablo, s	Nev.	5,000,000	50,000	100	140,000	July.	1896	.05	225,000	Aug.	1893	.25
86	Mt. McClellan, g. s. l	Colo.	1,250,000	250,000	5	*				21,936	June	1891	.03
87	Mt. Rosa, g	Colo.	1,000,000	1,000,000	1					10,000	Jan.	1895	.00½
88	Napa, q	Cal.	700,000	100,000	7	*				700,000	July.	1896	.20
89	New Guston, g. s. c	Colo.	550,000	110,000	5	*				1,198,120	Oct.	1892	.25
90	New Hoover Hill, g	N. C.	300,000	120,000	2.50	*				22,500	Dec.	1885	.20
91	North Banner, g. s	Cal.	1,000,000	100,000	10	19,794	June.	1896	.03	20,000	July.	1891	.05
92	North Belle Isle, s	Nev.	10,000,000	100,000	100	523,074	July.	1896	.10	230,000	May	1888	.50
93	North Com'wealth, s	Nev.	10,000,000	100,000	100	85,000	April.	1890	.25	25,000	June.	1891	.25
94	North Star, g	Cal.	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
95	Nugget, g	Colo.	1,000,000	1,000,000	1	*				10,000	Jan.	1895	.00½
96	Ontario, s. l	Utah.	15,000,000	150,000	100					13,280,000	July.	1896	.10
97	Osceola, c	Mich.	1,250,000	50,000	25	*				2,072,500	July.	1896	1.00
98	Pacific Coast Borax, b	Cal.	2,000,000	20,000	100					422,500	July.	1893	1.00
99	Parrot, c	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
100	Petro, s	Utah.	1,000,000	10,000	100					17,500	July.	1891	.75
101	Pharmacist, g	Colo.	1,200,000	1,200,000	1					80,000	Jan.	1893	.01
102	Portland, g	Colo.	3,000,000	3,000,000	1	*				743,000	June.	1896	.01
103	Quicksilver, pref., q	Cal.	4,300,000	43,000	100	*				1,823,911	June.	1891	1.25
104	" com., q	Cal.	5,700,000	57,000	100	*				643,867	July.	1882	.40
105	Quincy, c	Mich.	1,250,000	50,000	25	*				8,370,000	Aug.	1896	6.00
106	Reed National, s	Colo.	500,000	500,000	1	*				45,000	Dec.	1890	.01
107	Robinson Cons., s. l	Colo.	10,000,000	200,000	50	*				585,000	Mar.	1886	.05
108	Running Lode, g. s. l	Colo.	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/0
109	Savage, g. s	Nev.	11,200,000	112,000	100	1,006,600	June.	1896	.20	4,460,000	June.	1869	3.00
110	St. Joseph, l	Mo.	2,500,000	250,000	10					2,524,000	Dec.	1895	.25
111	Silent Friend, g. s. l	Colo.	500,000	500,000	1	*				60,000	Aug.	1891	.25
112	Silver Cord Com., g. s. l	Colo.	5,000,000	500,000	10	*				270,000	April.	1889	.10
113	Silver King, s	Ariz.	10,000,000	100,000	100	222,858	June.	1896	.25	1,950,000	July.	1887	.25
114	Silver King, g. s. l	Utah.	3,000,000	150,000	20					712,500	July.	1896	.25
115	Silver Mg. of L. V., s	N. M.	500,000	500,000	1	*				300,137	Dec.	1891	.04
116	Small Hopes, s	Colo.	5,000,000	250,000	20	*				3,275,000	Mar.	1896	.10
117	Smuggler Union	Colo.	5,000,000	50,000	100					100,000	July.	1896	1.00
118	Standard Cons., g. s	Cal.	10,000,000	100,000	100					3,771,160	June.	1895	.10
119	Swansea, g. s. l	Colo.	600,000	60,000	10	*				39,000	Sept.	1892	.10
120	Tamarack, c	Mich.	1,250,000	50,000	25					4,320,000	June.	1896	3.00
121	Teal & Poe, s. l	N. M.	150,000	150,000	1	*				9,000	Nov.	1891	.01½
122	Tom Boy, g	Colo.	2,000,000	200,000	10	*				410,000	Mar.	1896	.20
123	Tombstone, g. s. l	Ariz.	12,500,000	500,000	25	*				1,250,000	April.	1882	.10
124	Trinity River, g	Cal.	500,000	500,000	1	*				15,000	July.	1893	.00½
125	United Verde, c	Ariz.	3,000,000	300,000	10	*				562,500	Dec.	1893	.25
126	Union, g	Colo.	1,250,000	1,250,000	1					73,000	June.	1896	.01
127	Union Leasing	Colo.	500,000	500,000	1					340,000	July.	1895	.04
128	Victor, g	Colo.	2,000,000	200,000	5	*				605,000	July.	1896	.10
129	Woodside	Utah.	1,000,000	100,000	10					25,000	Oct.	1889	.25
130	Yankee Girl, s	Colo.	1,200,000	200,000	5					520,000	July.	1891	.25

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	Ajax, g	Colo.	1,000,000	1,000,000	1				
3	Alamo, g	Colo.	1,000,000	1,000,000	1				
4	Alice, g. s. c	Colo.	5,000,000	5,000,000	1	*			
5	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec.	1895	.10
6	Allouez, c	Mich.	2,000,000	80,000	25	1,440,937	June.	1894	.20
7	Alpha Cons., g. s	Nev.	10,500,000	105,000	100	247,000	May.	1896	.05
8	Alta, s	Nev.	10,080,000	108,000	100	3,568,960	June.	1896	.10
9	American, c	Idaho	5,000,000	500,000	10	*			
10	Anaconda, g	Colo.	5,000,000	1,000,000	5				
11	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
12	Anchoria-Leland, g	Colo.	600,000	600,000	1	*			
13	Aola, g	Colo.	1,000,000	1,000,000	1	*			
14	Argonaut Cons., g. s.	Colo.	1,000,000	1,000,000	1	*			
15	Atlantic Cable Cons.	Colo.	1,500,000	1,500,000	1	*			
16	Bahama, g	S. D.	1,250,000	250,000	5	3,125	Sept.	1893	.00¼
17	Bankers, g	Colo.	1,250,000	1,250,000	1	*			
18	Ben Hur, g	Colo.	900,000	900,000	1				
19	Blue Bell, g	Colo.	500,000	500,000	1	*			
20	Blue Jay Cons., s. l	Utah.	2,000,000	400,000	5	4,750	July.	1893	.004
21	Bob Lee, g	Colo.	1,200,000	1,200,000	1	*			
22	Bullion, s. g	Nev.	1,000,000	100,000	100	3,020,000	April.	1896	.10
23	Burlington, g. s	Cal.	10,000,000	100,000	100	3,000	May.	1896	.03
24	Buskhorn, g	Colo.	900,000	900,000	1				
25	Butte Queen, g	Cal.	1,000,000	100,000	10	16,000	Feb.	1893	.10
26	Calumet, g	Colo.	1,400,000	1,400,000	1	*			
27	Central Lead, l	Mo.	400,000	4,000	100	*			
28	Central North Star, g	Cal.	1,000,000	100,000	10	10,000	July.	1893	.10
29	Challenge, s, g	Nev.	5,000,000	50,000	100	295 000	April.	1896	.05
30	Cholla, r, g. s	Nev.	11,200,000	112,000	100	2,021,600	July.	1896	.25
31	Cleveland Cliffs, l	Mich.	5,000,000	50,000	100	*			
32	Columbine, g	Colo.	1,000,000	1,000,000	1	*			
33	Cons. Imperial, g. s	Nev.	5,000,000	50,000	100	2,081,500	Sept.	1895	.01
34	Copper Mountain, g.	Colo.	1,000,000	1,000,000	1	*			
35	Creede & C. C., g	Colo.	800,000	800,000	1				
36	CrippleCreekCons., g.	Colo.	2,000,000	2,000,000	1				
37	Dante, g	Colo.	1,250,000	1,250,000	1	*			
38	Denver City, s	Colo.	5,000,000	500,000	10	*			
39	Denver Gold, g	Colo.	300,000	60,000	5				
40	Dickens-Custer, g. s.	Colo.	2,100,000	420,000	5				
41	Enterprise, g	Colo.	800,000	800,000	1				
42	Eureka Con. Drift, g.	Colo.	500,000	500,000	1	90,000	Oct.	1892	.07
43	Exchequer, g. s	Nev.	10,000,000	100,000	100	715,000	Nov.	1895	.05
44	Favorite, g	Colo.	1,200,000	1,200,000	1	*			
45	Fortunatus, g. s	Colo.	100,000	100,000	1	*			
46	Found Treasure, g. s.	Nev.	10,000,000	100,000	100	55,770	Jan.	1892	.50
47	Franklin Gold, g	Colo.	1,000,000	1,000,000	1	*			
48	Free Coinage, g	Colo.	1,000,000	1,000,000	1	*			
49	Galena, l. s	Idaho	500,000	500,000	1				
50	Garden City, g	S. D.	2,500,000	250,000	10	2,898	Sept.	1891	.001½
51	Garfield-Grouse, g	Colo.	1,200,000	1,200,000	1	*			
52	Gem, g	Cal.	10,000,000	100,000	100				
53	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July.	1896	.00½
54	Golden Age, g	Colo.	1,000,000	1,000,000	1	*			
55	Golden Dale, g	Colo.	2,000,000	2,000,000	1	*			
56	Golden Eagle, g	Colo.	1,000,000	1,000,000	1	*			
57	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,000	Aug.	1892	2.00
58	Gold Flat, g	Cal.	1,000,000	100,000	10	13,000	Aug.	1893	.03
59	Gold King, g	Colo.	1,000,000	1,000,000	1	*			
60	Gold Rock, g	Colo.	1,000,000	1,000,000	1	*			
61	Gold Standard, g	Colo.	1,000,000	1,000,000	1	*			
62	Hartshorn, g. s	S. D.	1,250,000	250,000	5	8,750	Sept.	1891	.00¼
63	Head Cent. & Tr., g. s.	Ariz.	2,000,000	200,000	10	22,824	Mar.	1892	.03
64	Hidden Treas., g. s.	Cal.	20,000	20,000	1	1,000	Nov.	1893	.05
65	Himalaya, s. l	Utah.	1,800,000	180,000	10	10,000	Oct.	1892	.01
66	Idaho Co., Ltd., g	Idaho	100,000	1,000	100	*			
67	Idlewild, g	Cal.	1,000,000	100,000	10	*			
68	Inez, s. l	Idaho	1,000,000	1,000,000	1	*			
69	Jack Pot, g	Colo.	1,250,000	1,250,000	1				
70	Jackson, l	Mich.	300,000	12,000	25	*			
71	Justice, g. s. c	Colo.	500,000	500,000	1	*			
72	Keystone, g	Colo.	1,500,000	1,500,000	1	*			
73	Kingman Silver, g. s.	Ariz.	10,000,000	100,000	100	5,000	Sept.	1891	.05
74	Lacrosse, g	Colo.	1,000,000	100,000	10	*			
75	Lottie Gibson, g	Colo.	1,000,000	1,000,000	1				
76	Matoa, g	Colo.	5,000,000	1,000,000	5				
77	Mayflower, g	Colo.	1,000,000	1,000,000	1	*			
78	Mexican, g. s	Nev.	10,080,000	100,800	100	3,063,920	May.	1896	.20
79	Michigan Gold, g. s.	Mich.	2,500,000	100,000	25	40,000	Mar.	1892	.10
80	Milwaukee, s. l	Idaho	500,000	500,000	1				
81	Modoc Chief, g. s. l	Idaho	1,000,000	200,000	5	4,375	Jan.	1892	.00½
82	Monarch, g	Colo.	1,000,000	1,000,000	1				
83	Mutual, g	Colo.	500,000	500,000	1				
84	Neath, g	Colo.	1,000,000	100,000	10				
85	New Gold Hill	N. C.	1,750,000	350,000	5				
86	New Viola, s. l	Idaho	750,000	150,000	5	*			
87	Occidental Cons., g. s.	Nev.	10,000,000	100,000	$100	428,652	July.	1896	.15
88	Original Keystone, s.	Nev.	10,000,000	100,000	100	250,000	Mar.	1892	.10
89	Oro Cache, g. s	S. D.	1,250,000	250,000	5	6,250	July.	1893	.00½
90	Orphal Bell, g	Colo.	1,000,000	1,000,000	1				
91	Overman Silver, g. s.	Nev.	1,152,000	115,200	100	4,177,040	June.	1896	.10
92	Pappoose, g	Colo.	2,000,000	2,000,000	1	*			
93	Peer, s	Ariz.	10,000,000	100,000	100	215,000	July.	1894	.05
94	Peerless, s	Nev.	10,000,000	100,000	100	410,000	July.	1894	.05
95	Pine Hill, g	Cal.	1,000,000	100,000	10	20,000	July.	1896	.05
96	Pioche Con., g. s. l	Nev.	20,000,000	2,000,000	10	*			
97	Potosi, g. s	Nev.	11,200,000	112,000	100	2,016,000	May.	1896	.20
98	Princess, g	Colo.	1,000,000	1,000,000	1				
99	Puritan, g, s	Colo.	1,500,000	150,000	10	*			
100	Quincy, c	Colo.	3,000,000	300,000	10				
101	Red Mountain, s	Colo.	300,000	60,000	5	22,500	Mar.	1891	.12½
102	Ruby & Dun., g. s. l	Nev.	25,300	506	25	*			
103	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
104	Seg. Belcher & M., g. s.	Nev.	10,000,000	100,000	100	330,000	Oct.	1895	.10
105	Silver Age, g. s. l	Colo.	2,000,000	200,000	10	*			
106	Silver Hill, s	Nev.	10,800,000	108,000	100	1,992,600	July.	1894	.05
107	Silver Queen, c	Ariz.	5,000,000	200,000	25	*			
108	Silver State, g	Colo.	700,000	700,000	1	*			
109	Siskiyou Con., s	Cal.	2,000,000	200,000	10	44,000	June.	1896	.01
110	Specimen, g	Colo.	1,200,000	1,200,000	1				
111	Temonj, g	Colo.	1,000,000	1,000,000	1				
112	Tornado Con., g. s.	Nev.	100,000	100,000	1	*			
113	Union Con., g. s	Nev.	10,000,000	100,000	100	2,525,000	Feb.	1896	.20
114	Utah Cons., s	Nev.	10,000,000	100,000	100	410,722	May.	1896	.05
115	Victory, g. s	S. D.	1,250,000	250,000	5	1,250	Nov.	1895	.005
116	Virginia M. Cons., g.	Colo.	1,000,000	1,000,000	1				
117	Waterloo, g	Cal.	2,000,000	200,000	10	30,000	Aug.	1893	.15
118	West Granite Mt., s.	Mont.	500,000	100,000	5				
119	Whale, g. s. l	Colo.	500,000	500,000	1	*			
120	Work, g	Colo.	1,250,000	1,250,000	1				
121	World, g	Colo.	1,500,000	1,500,000	1	*			

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. †The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡Previous to the consolidation in August, 1884, the California had paid $81,320,000 in dividends and the Cons. Virginia $42,390,000.
NOTE.—Corrections to this table are made monthly. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

CLASSIFIED LIST OF ADVERTISERS.

Air Compressors and Rock Drills.
Bullock, M. C., Mfg. Co.
Burleigh Rock Drill Co
Clayton Air Compressor Works.
Fraser & Chalmers.
Ingersoll-Sergeant Drill Co.
Laidlaw-Dunn-Gordon Co.
Leyner, J. Geo.
McKiernan Drill Co.
N Y. Diamond Drill Co
Norwalk Ir. W'ks Co.
Philadelphia Eng. Wks., Ltd.
Rand Drill Co.
(See Diamond Drills.)

Air Hoists.
Whiting Foundry Equipment Co.

Amalgamators.
Bucyrus Steam Shovel & Dredge Co.
Fraser & Chalmers.

Amalgam Plates.
Western Plating and Mfg Co

Anti-Friction Metals
Besley, Chas. H., & Co.
Chester Steel Cast. Co

Architects and Builders.
Berlin Iron Bridge Co.
Pittsburg Bridge Co.
Pollock, Wm. B. & Co.
Shiffler Bridge Co.
Walker Co.

Assayers' and Chemists' Supplies.
Ainsworth, Wm.
Baker & Adamson.
Baker & Co.
Becker, Christian.
Bullock & Crenshaw.
Denver Fire Clay Co.
Elmer & Amend.
Henry Heil Chem Co.
Neiden Judson Drug Co.
Penn Sm. & Ref. Wks.
Penna. Salt Mfg. Co.
Roessler & Hasslacher Chemical Co.
Sargent, E. H., & Co.
Solvay Process Co.
Taylor, John, & Co.
Troemner, Henry.
Western Chemical Co.

Attorneys, Corporation.
Emig, C. E..
Hammersley, Hamilton & La Maistre.

Automatic Boiler Feeds.
Penberthy Injector Co.

Babbitt's Metal.
Besley, Chas. H., & Co.

Bankers and Brokers.
Arkell, E., & Co.
Bartlett & Co
Bonbright, W. P. & Co.
Breitung, E. N.
Crooks, E. E.
Dorsey Investment Co
Grant, E. B
Handy & Harman.
Hendrickson, W. J.
Heron Bros.
Kinney, M.
Leipheimer, N.
Mayer, Andrew.
Miller, J. W., & Co.
Morath Investm't Co.
Northwest Mg. & Investment Co.
Partridge & Storer.
Peck, Frank G.
Prentice, Russell.
Proudfit, J. W., & Co.
Rope, Key & Co.
Shelden, E. C.
Sill & Sill.
Smith, C. H. & Co.
Snow, E. P.
State Trust Co.
Weyand Bros.
White, Samuel.
Williamson, W. W.
Woods Investment Co
Wyoming Mg. Bureau

Belting.
Hendrie & Bolthoff Mfg. Co.
Jeffrey Mfg Co.
New York Belting & Packing Co., Ltd.

Belt Lacing.
Bristol Co.

Blasting Caps.
Metallic Cap Mfg. Co.
Rhenish Westphalian Explosive Co.
Schroeder, Fr.

Blasting Batteries, Caps and Fuse.
Climax Fuse Co.
Lau, J. H., & Co.
Macbeth, James, & Co.
Metallic Cap Mfg. Co.
Standard Fuse Co.

Blowers, Pressure.
Connersville Blower Co.

Boilers.
Denver Eng. Wks. Co.
Fraser & Chalmers.
Philadelphia Eng. Wks., Ltd.
Pollock, Wm. B. & Co.
Risdon Iron Works.
Stilwell-Bierce & Smith-Vaile Co.
Standard Boiler Co.
(See Machinery.)

Brattice Cloth.
Besley, Chas. H. & Co.

Brick Machinery.
Freese, E. M., & Co.

Bridges.
Berlin Iron Bridge Co.
(See Machinery.)
Shiffler Bridge Co.

Car Wheels.
Whiting Foundry Equipment Co.

Carbons
Bishop, Victor, & Co
New York Diamond Drill Co.
Lexow, Theodor.

Chain and Link Belting (See Belting.)

Chemicals
Baker & Adamson.
Bullock & Crenshaw.
Elmer & Amend
Henry Heil Chem. Co.
Penn. Salt Mfg. Co.
Roessler & Hasslacher Chemical Co.
Solvay Process Co
Western Chemical Co.

Chemists.
Simonds & Wainwright.

Chilled Castings.
Whiting Foundry Equipment Co.

Coal.
Berwind-White Coal Mg. Co.
Castner & Curran
Consolidation Coal Co.
Davis Coal & Coke Co.
Maryland Coal Co.
Potts, F. A., & Co.
Stickney, Conyngham & Co
Ward & Olyphant.

Coal Cutters. (See Machinery).
Ingersoll-Sergeant Drill Co.
Jeffrey Mfg. Co.
Leyner, J. Geo
Link Belt Machinery Co.

Compressors.
Clayton Air Compressor Works.
Laidlaw-Dunn-Gordon Co.
Norwalk Iron Works Co.
Rand Drill Co.

Concentrators, Crushers, Pulverizers, Separators, Etc.
Allis Co., Ed. P.
Blake, Theo. A.
Bradley Pulverizer Co.
Colorado Iron Works.
Denver Eng. Works Co.
Dodge Mining Machinery Co.
Fraser & Chalmers.
Frue Vanner Concentrator.
Hendrie & Bolthoff Mfg. Co
Krupp, F.
Link Belt Machinery Co.
McCully, R.
Scoville, H. H., & Co.
Stedman Foundry & Mach. Co.
Walburn-Swenson Co. (See Machinery)

Contractors. (See Machinery.)

Conveying Belts.
Robins Conveying Belt Co.

Copper Dealers and Producers.
American Metal Co
Arizona Copper Co
Atlantic Mining Co.
Balbach S. & Ref. Co.
Baltimore Cop. W'ks.
Bath, H., & Son
BridgeportCopperCo.
Canadian Copper Co.
Copper Queen Mg.Co.
Detroit Cop'r Mg. Co.
Elliott'sMetalCo., Ltd.
James & Shakspeare.
Lambert's Wharf. Co.
Lewisohn Bros.
Orford Copper Co
Pass, C., & Son, Ltd.
Penn Salt Co.
Phelps, Dodge & Co.
Vivian, Younger & Bond.

Corrugated Iron.
Berlin Iron Bridge Co
Cincinnati Corrugating Co.
Sykes Steel Roofing Co

Cranes.
Whiting Foundry Equipment Co.

Crucibles, Graphite, Etc.
Denver Fire Clay Co.
Dixon, Jos. Crucible Co.
Stedman's Foundry & Machine Works.

Cyanide.
Roessler & Hasslacher Chemical Co.

Diamonds.
Bishop, Victor, & Co
Lexow, Theodor
New York Diamond Drill Co.

Diamond Drills.
Bishop, Victor, & Co.
Bullock Mfg. Co., M.C.
Lexow, Theodor
New York Diamond Drill Co.
Sullivan Machinery Co.
(See Air Compressors and Rock Drills.)

Draughtsmen.
Young, Wm. R.

Drawing Materials
Aloe, A. S. Co.
Besley, Chas. H., & Co.
Dietzgen, E. & Co.
Heer, Peter
Keuffel & Esser Co.
Lietz Co
Mahn & Co.
(See Engineering Instruments.)

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

Dryers.
Brown, Horace F.
Cummer, F. D. & Son Co.
Denv. Eng. Wks. Co.

Dump Cars.
Denver Eng. Works Co
Hendrie & Bolthoff Mfg. Co.
Hunt Co., C. W.
Fraser & Chalmers
Truax Mfg. Co.

Educational Institutions.
Arizona School of Mines.
Columbia University.
Columbian University.
Chicago School of Assaying.
International Correspondence Schools
Lehigh University.
Mass. Inst. of Technology
Michigan Mining School.
Missouri School of Mines.
Rose Polytechnic Institute.
Worcester Polytechnic Inst.

Electrical Batteries.
Macbeth, James, & Co.

Electrical Machinery and Supplies
Besley, Chas. H., & Co.
Card Electric Co.
Denver Eng. Wks. Co.
Electrical Engineering Co.
General Electric Co.
Jeffrey Mfg. Co.
Link Belt Mach. Co.
Okonite Co., Ltd.
Repauno Chem. Co.
Walker Co.
Westinghouse Elec. Mfg. Co.

Elevators, Conveyors and Hoisting Machines.
Brown Hoist. & Conv. Mach. Co.
Caldwell, H. W., & Co.
California Wire Wks.
Cooper, Hewitt & Co.
Crook, W. A., & Bros. Co.
Denver Eng. Wks. Co.
Electrical Engineering Co.
Fraser & Chalmers.
Hunt, C. W., Co.
Jeffrey Mfg. Co.
Link Belt Mach. Co.
Nelsonville Foundry & Machine Co.
Vulcan Iron Works.
Watkins, L. E.
(See Wire Rope Tramway and Machinery.)

Emery Wheels
Besly, Chas H. & Co.
New York Belting & Packing Co., Ltd.

Engineers, Chemists, Metallurgists
See Directory Pages 4, 5 and 6.

Engineers' Instruments and Supplies.
Aloe, A. S. Co.
Buff & Berger.
Bullock & Crenshaw
Dietzgen, F., & Co.
Fauth & Co.
Gurley, W. & L. E.
Heer, Peter.
Keuffel & Esser Co.
Lietz Co.
Mahn & Co.

Engines.
American Engine Co.
Bullock, M. C. Mfg. Co
Fraser & Chalmers.
Hercules Gas Engine Co.
Lidgerwood Mfg. Co.
Philadelphia Eng. Works, Ltd.
Risdon Iron Works.
Stilwell-Bierce & Smith-Vaile Co
Tod, William & Co.
Union Iron Works
Webster, Camp & Lane Mach. Co.
(See Machinery.

Excavators
Bucyrus Steam Shovel & Dredge Co.
Marion Steam Shovel Co.
Souther & Co.
Vulcan Iron Works.

Fire-Brick and Clay
Chur, A. T.

Furnaces
Brown, Horace F.
Dodge Mining Mch Co
Denver Fire Clay Co.
Hoskins, Wm.
Moore, S. L., & Son Co.
Pollock, W. B. & Co.
(See Machinery.)

Fuses.
Climax Fuse Co.
Ingersoll-Sergeant Drill Co.
Standard Fuse Co.

Gas Engines.
Hercules Gas Engine Co.
Norman, J. J., & Co.

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

Gauges, Recording, &c.
Bristol Co.

Gearing
Besley, Chas. H., & Co.
Chester Steel Cast. Co.
Denver Eng. Wks. Co.
Fraser & Chalmers.
(See Machinery.)

Grease, Graphite, Etc.
Besley, Chas. H., & Co.
Dixon, Jos., Cruc. Co.

Heavy Machinery
Denver Eng. Works Co.
Fraser & Chalmers.

Hose, Rubber, Etc.
New York Belting & Packing Co., Ltd.

Injectors.
Jenkins Bros.
Penberthy Injector Co.

Insulated Wires and Cables.
Okonite Co., Ltd.

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

Joint Fittings.
Tight Joint Co.

Lead Linings for Chlorination Tubs.
Raymond Lead Co.

Locomotives.
General Electric Co.
Hunt, C. W. Co.
Porter, H. K., & Co

Lubricators.
Asbestos Paraffine Co
Detroit Lubricator Co.

Machinery, Dealers in Mining, Milling and Other Machinery
Allis, Edw, P., & Co.
Bacon, E. C.
Besly, Chas. H., & Co.
Blake, T. A
Bradley Pulverizer Co.
Bullock, M. C., Mfg. Co.
Caldwell, H. W., & Co.
Card Electric Co
Colorado Iron Works.
Connersville Blower Co
Crook, W. A., & Bros. Co.
Denver Mg. Mach. Co.
Denver Eng. Wks. Co
Dodge Mg. Mach. Co.
Field, F. R.
Fraser & Chalmers.
Hammond, Mfg. Co.
Hendrie & Bolthoff Mfg. Co.
Hercules Gas Engine Co.
Ingersoll-Sergeant Drill Co.
Jeffrey Mfg. Co.
Jessop, W., & Sons, Ltd.
Leyner, J. Geo.
Lidgerwood Mfg. Co.
Krupp, F.
McCully, R.
McKiernan Drill Co.
Mecklenburg Ir. Wks.
Merralls' Mill Co.
Montgomery, J. H. Mach. Co.
Moore, Sam, L., & Son.
Nelsonville Foundry & Machine Co.
New York Diamond Drill Co.
Norwalk Iron Wks. Co.
Parke & Lacy Co.
Philadelphia Eng. Wks., Ltd.
Pollock, Wm., B., & Co.
Risdon Iron Works.
Stedman Fdy. & M. Co.
Scoville, H. H., & Co.
Stearns-Roger Mfg. Co.
Sullivan Mach'y Co.
Tod, Wm., & Co.
Truax Mfg. Co.
Union Iron Works.
Vulcan Iron Works.
Walb'rn-Swens'n Co.
Walker Co.
Webster, Camp & Lane Mach. Co.
Westinghouse Elec. Mfg. Co.

Manganese Steel.
Taylor Iron & Steel Co.

Metal Dealers
American Dev. & Mg. Co.
American Metal Co.
Am. Zinc-Lead Co.
Baker & Co.
Bath, Henry & Son.
Besly, Chas. H., & Co
Bridgeport CopperCo.
Cherokee-Lanyon Spelter Co.
Cookson & Co.
Elliott's MetalCo., Ltd.
Eureka Co.
Foster, Blackett & Wilson.
James & Shakspeare.
Johnson, Matthey & Co.
Lambert's Wharf. Co.
Lewisohn Bros.
Mathison Sm'lting Co.
Matthiessen & Hegeler Zinc Co.
Montana Ore Purchasing Co.
Orford Copper Co.
Pass, C., & Son, Ltd.
Phelps, Dodge & Co.
Picher Lead Co
Raymond Lead Co.
State Ore Samp'g Co.
Tod, William, & Co.
Vivian, Y'nger & Bond.

Metallurgical Works and Ore Purchasers' Processes
American Dev. & Mg. Co.
Amer. Zinc Lead Co.
Baker & Co
Balbach Sm. & Ref. Co.
BaltimoreCopperWks.
BridgeportCopperCo.
Canadian Copper Co
Con. Kas. City S. & R. Co.
Cookson & Co.
Denver Eng. Wks. Co.
Elliott's MetalCo., Ltd.
Electro Cyanide Gold & Silver Extr'on Co.
Foster, Blackett & Wilson.
Fraser & Chalmers.
Kendall Gold & Silver Extraction Co.
Matthiessen & Hegeler Zinc Co.
Ledoux & Co.
Montana Ore Purchasing Co.
Newark Pulv'ng Wks.
Orford Copper Co.
Pennsyl. Salt Mng. Co
Ricketts & Banks.
Russell Process Co.
State Ore Sampling Co
Walburn-Swenson Co.

Mine Cars
Denver Eng. Wks. Co.
Hendrie & Bolthoff Mfg. Co.
Hunt, C. W., Co.
Nelsonville Foundry & Machine Co.
Whiting Foundry Equipment Co.
(See Machinery.)

Mine, Mill and Smelters' Supplies.
Denver Eng. Wks. Co.
Dodge Mining Machinery Co.
Gates Iron works.
Parkh'st & Wilkinson.
Roessler & Hasslacher Chemical Co.
Stieren, William E
(See Machinery.)

Mining and Land Companies.
American Dev. & Mg. Co.
Atlantic Mg. Co.
Arizona Copper Co.
Copper Queen Con. Mg. Co.
Detroit Copper Mg. Co.
Eureka Co.
Rio Tinto Copper Co.

Nickel.
Canadian Copper Co.

Ore Cars.
Truax Mfg. Co.

Ore Roasters
Brown, Horace F.
Cummer, F. D., & Sons Co.

Ore Testing Works
Hunt, F. F.
Ledoux & Co.
Montana Ore Purchasing Co.
Ricketts & Banks.
Robertson, W. F.
Simonds & Wainwright
State Ore Sampling Co

Packing and Pipe Coverings.
Asbestos Paraffine Co
Brandt, Randolph.
Jenkins Bros.
Hine & Robertson.
New York Belting & Packing Co., Ltd.
Wyckoff & Son, A.

Perforated Metals.
Aitcheson, R., Perf. Metal Co.
Fraser & Chalmers.
Harrington & King Perforating Co.

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Phosphor-Bronze.
Phosphor-Bronze Smelting Co.

Pile Drivers.
Bucyrus Steam Shovel and Dredge Co.
Ingersoll-Sergeant Drill Co.

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

Platinum.
Baker & Co.
Johnson, Matthey & Co.

Powder.
Atlantic Dynamite Co.
Ingersoll-Sergeant Drill Co.
Laflin & Rand Powder Co.
Lau, J. H., & Co.
Repauno Chem. Co.

Pressure Blowers.
Connersville Blower Co.

Publications.
American Fertilizer.
Arms & Explosives.
Australian Mg. Stand.
Bullionist.
Denver Republican.
El Minero Mexicano.
Electrical Plant & Electrical Industry
Financial Times
Indian Engineering.
Ir'n & C. Trade Review
McNeill's Code.
Mining Journal.
Scientific Pub. Co.
So. African Mg. Jour.
Zeitschrift fur Practische Geologie

Pumps
Blake, Geo. F., Mfg. Co.
Cameron, A. S., Steam Pump Works.
Denver Eng. Wks. Co.
Fraser & Chalmers.
Jeanesville Iron Wks
Stilwell-Bierce & Smith-Vaile Co.
Tod, Wm., & Co.
Worthington, Henry R.

Quarrying Machines.
Ingersoll-Sergeant Drill Co.
Rand Drill Co.
Sullivan Machinery Co.

Quicksilver.
Eureka Co.

Railroads.
Atchison, Topeka & Santa Fe Ry.
Chicago & N. West. R. R.
C. B. & Quincy R. R.
Denver & Rio Grande R. R.
Denver, Leadville & Gunnison Ry
Florence & Cripple Creek R. R.
Illinois Central R. R.
Midland R. R. of Kentucky.
Rio Grande Southern R. R.
U. P., D. & G. R. R.

Railroad Supplies and Equipment.
Hunt, C. W., Co.
Porter, H. K., & Co
Robinson & Orr.
(See Machinery.)

Regulators, Damper, Heat, Etc.
Eddy Valve Co.
Jenkins Bros.

Rock Drills. (See Air Compressors.)

Roofing
Berlin Iron Bridge Co.
Cincinnati Corrugating Co.
Phelps, Dodge & Co.
Shiffler Bridge Co.
Sykes Steel Roofing Co

Rubber Goods.
New York Belting & Packing Co., Ltd.

Screens.
Aitcheson, R., Perf. Metal Co
Denver Eng. Wks. Co.
Fraser & Chalmers
Harrington & King Perforating Co.
Link Belt Machinery Co.
Ludlow-Saylor Wire Co. (See Machinery.)

Second Hand Machinery.
Hine & Robertson.
Robinson & Orr.

Separators.
Dodge Mining Machinery Co.

Shoes and Dies
Chester Steel Cast. Co
Chrome Steel Works.
Crescent Steel Co.
Denver Eng. Wks. Co.
Fraser & Chalmers

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

Smelting and Refining Works.
Balbach S. & Ref. Co.
Baltimore Cop'r Wks.
Bridgeport Copper Co.
Con. Kas. City S. & R. Co.
Elliott's MetalCo., Ltd.
Mathison Smelting Co.
Orford Copper Co.
Penn. Salt Mfg. Co.
Penn Smelting and Refining Works.
Phosphor-Bronze Smelting Co.

Steel Rails, Castings, Rolls, Drill Steel
Bethlehem Iron Co.
Carpenter Steel Co.
Chester Steel Cast. Co.
Chrome Steel Works.
Crescent Steel Co.
Moore, S. L., & Son Co.
Robinson & Orr.
Pollock, Wm. B. & Co.
Taylor Iron & Steel Co
Jessop Wm. & Son Ltd.
(See Metal Dealers)

Tanks.
Denver Eng. Wks. Co.
Gates Iron Works.
Walker Co.
Williams Mfg. Co.

Telegraph Wires and Cables
Okonite Co., Ltd.,

Tools
Besley, Chas. H., & Co.
Pratt & Whitney Co.

Tubes
Besley Chas. H., & Co.
Pollock, Wm. B. & Co.
Williams Bros.

Tubing-Rubber
New York Belting and Packing Co., Ltd

Turbine Water-Wheels
Leffel, Jas., & Co.
Pelton Water Wheel Co.
Stilwell-Bierce & Smith Vaile Co

Valves
Eddy Valve Co.
Jenkins Bros.

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

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

Water-Wheels.
Leffel, James, & Co.
Pelton Water Wheel Co.
Stilwell-Bierce & Smith-Vaile Co.

Well Drilling Machinery.
Sullivan Mach'y Co.
Williams Bros.

Wharfage.
Lambert's Wharfage Co.

Wheels, Car.
Chester Steel Cast. Co.
Taylor Iron & Steel Co.

White Lead.
Cookson & Co.
Foster, Blackett & Co.

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

Wire Rope & Wire
Besley, Chas. H., & Co.
Broderick & Bascom Rope Co.
California Wire Wks.
Carpenter Steel Co.
Cooper Hewitt & Co.
Hunt, C. W., Co.
Phelps, Dodge & Co.
Roebling, J. A., Sons & Co
Ropeways Syndicate
Trenton Iron Co.

Wire Rope Tramway.
Brown Hoist. & Conv. Machine Co.
California Wire W'ks.
Colorado Iron Works.
Denver Eng. Wks. Co
Fraser & Chalmers.
Hunt, C. W., Co.
Roebling, J. A., Sons & Co.
Ropeways Synd., Ltd.
Vulcan Iron Works.

POSITIONS VACANT.

FREE ADVERTISING

Inquiries from employers in want of Superintendents, Engineers, Metallurgists Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

The labor and expense involved in ascertaining what positions are open, in gratuitously advertising them and in attending to the correspondence of applicants, are incurred in the interest and for the *exclusive* benefit of *subscribers* to the ENGINEERING AND MINING JOURNAL.

☞ **Applicants should inclose the necessary postage to insure the forwarding of their letters.**

1468 WANTED--A MAN WHO IS A THOROUGHLY competent Mechanical Draftsman and Chemist, who is willing to start with low wages, where chances for advancement are good; steady position. Address, stating references, experience and salary expected, XY, ENGINEERING AND MINING JOURNAL.

1472 WANTED—A FIRST-CLASS MILLwright accustomed to quartz mill for mine in Central America. Contract three years. Give terms and references. Address MILLWRIGHT, ENGINEERING AND MINING JOURNAL.

1473 WANTED—A GOOD BLACKSMITH for mining camp in Central America. Must understand mule shoeing. Contract three years. State terms and references. Address BLACKSMITH, ENGINEERING AND MINING JOURNAL.

1475 WANTED — MINING ACCOUNTant in California, age about 30, unmarried and Scotch preferred. Undeniable references as to personal character and practical experience. Able to arrange and control the accounts, returns and general commercial business of a large concern. Good salary to a first-class man. Address CALIFORNIA, ENGINEERING AND MINING JOURNAL.

1476 WANTED—A FIRST-CLASS ASsayer and ore sampler, also as assistant manager and engineer in the operating of a large deposit of manganese of the kind known as "wad" or "bog." Address with full particulars, references, etc. PRINCIPAL, ENGINEERING AND MINING JOURNAL.

1477 WANTED.—A PRACTICAL MINING engineer and metallurgist to take charge of a gold mine and mill in one of the Northern States. Send references and name salary wanted. Address M. & R. Co., ENGINEERING AND MINING JOURNAL.

1478 WANTED--A FIRST-CLASS ASSAYER for custom sampling works in the Northwest; experience and credentials of the best class indispensable; acquaintance with the business of custom sampling would be an advantage. Reply, stating record, references and salary, to NORTHWEST, ENGINEERING AND MINING JOURNAL.

1479 WANTED—ASSAYER AND CHEMIST to take charge of laboratory connected with copper-smelting works in the East. Undeniable references as to ability must be given. Address, stating experience and salary wanted, COPPER, ENGINEERING AND MINING JOURNAL. tf

1480 WANTED — A SUPERINTENDENT who understands handling mica. Apply with particulars, etc., MICA, ENGINEERING AND MINING JOURNAL. tf

1481 WANTED—A COMPETENT MINing manager, by an American company, to develop a gold mine near Rat Portage, Ontario, Can., and erect a stamp mill if everything proves satisfactory; must assay and have knowledge of chemistry; age about 40 years; reference to persons in New York, Philadelphia or Cleveland; state salary. Address C. P. E., ENGINEERING AND MINING JOURNAL.

1482 WANTED—TWO TECHNICALLY educated young men for electric furnace work residing in or near New York City. Work is hard and exacting, but chances good for right men Reply fully. Address ELECTRON, ENGINEERING AND MINING JOURNAL.

1483 WANTED—A SUPERINTENDENT to erect and manage a dynamite factory. Must have had successful practical experience in this line. Address DYNAMITE, ENGINEERING AND MINING JOURNAL.

SITUATIONS WANTED.

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

A MINING ENGINEER WILL BE OPEN to engagement in a few weeks. Good references, including present employers. Specialties, millwright work and treating low grade ores. Practical assayer and surveyor, owning outfit. Can repair pumps or engines, if possible to be repaired First-class mechanic; understands all details of mining and milling. Address MILLWRIGHT, ENGINEERING AND MINING JOURNAL. No. 17,487, Aug 29.

A GRADUATE MINING ENGINEER NOW under engagement with well-known mining company desires change. Has been continuously engaged for past 20 years with the most successful mines in the West in every capacity. Best reference. Address WEST, ENGINEERING AND MININC JOURNAL. No. 17,462, Sept 26.

WANTED — POSITION AS RESIDENT manager or superintendent; 15 years' practical experience; now with the largest company in Northern Mexico as mine superintendent; Spanish American country preferred; highest recommendations. Address AMERICANO, ENGINEERING AND MINING JOURNAL. No. 17,432, Aug. 29.

A CIVIL ENGINEER WANTS TO REPRESent manufacturers of mining and other machinery and supplies in the south and west part of the United States. Address C. E., ENGINEERING AND MINING JOURNAL. 17,466. Aug. 29.

CHEMIST AND ASSAYER, SIX YEARS in responsible positions, now in charge of a Lake Superior laboratory, desires position in Southwest. Refers to present employers. Address "V," Box 399 Ironwood, Mich. No. 17,468, Aug. 29.

POSITION WANTED—BY YOUNG GRADuate engineer. Has had one year's experience in active mining, mostly in Colorado. Can assay, survey, keep books, etc. Best of references. Address J. F., ENGINEERING AND MINING JOURNAL. No. 17,473, Sept. 5.

WANTED—POSITION BY METALLURgical chemist, four years' experience in silver, lead and copper smelters. Mexico or West preferred. Address C., Box A, Globe, Ariz. No. 17,474, Aug. 29.

WANTED—POSITION BY MINING ENgineer and metallurgist. Several years' experience in gold, silver and copper mining. Can do his own assaying and surveying. Address E B., Box A, Globe, Ariz. No. 17,475, Aug. 29.

PRACTICAL CHEMIST AND METALLURgist, familiar with the cyanide leaching process, wants a position; best reference. Address H. P. C., ENGINEERING AND MINING JOURNAL. No. 17,478, Aug. 29.

WANTED--POSITION, LONG AND varied experience in opening and working mines of coal, gold, silver, copper, lead and zinc ores; in concentration, smelting and milling; in planning and erecting works; in examination of mining lands. Address H. C., ENGINEERING AND MINING JOURNAL. No. 17,489, Oct. 10.

WANTED—SITUATION AS CHEMIST. ASsayer or assistant, by a young engineer of thorough experience and education; neat, accurate, reliable and not afraid of work; correspondence solicited. Address ACTIVE, ENGINEERING AND MINING JOURNAL. No. 17,490 Sept. 5.

YOUNG CHEMIST AND ASSAYER DEsires position. Can draught, survey and handle men. Not afraid of hard work. Best of references. Address VOLENS, ENGINEERING AND MINING JOURNAL. No. 17,494. September 8.

MINING ENGINEER AND METALLURgist, graduate of Lehigh University, '95, desires a position with reliable mining company. Address LEHIGH, ENGINEERING AND MINING JOURNAL. No 17,488, Aug. 29

WANTED—POSITION BY ASSAYER AND Millman, experienced in concentration, amalgamation and cyanide. Address T., ENGINEERING AND MINING JOURNAL. No. 17,496, Sept. 1.

MINE BLACKSMITH—A FIRST-RATE MEchanic, able to do well everything, from setting diamonds in a drill to the heaviest forging. An excellent, industrious, sober man. Desires a permanent position, where he will get high wages—which he will earn—and have good educational advantages for his children. He has the very best references. Address BLACKSMITH, ENGINEERING AND MINING JOURNAL.

Contracts Open.

TREASURY DEPARTMENT, OFFICE SUPERvising Architect, Washington, D. C., August 8th, 1896.—Sealed proposals will be received at this office until 2 o'clock p. m., on the 8th day of September, 1896, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except heating apparatus) of the U. S. Post Office Building at Youngstown, O., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Youngstown, O. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Erection and Completion (except heating apparatus) of the U. S. Post Office building at Youngstown, O.," and addressed to WM. MARTIN AIKEN, Supervising Architect. Orig.

ELECTRIC LIGHT PLANT.—Sealed proposals will be received by the Board of Water and Light Commissioners of the village of Mohawk, N. Y., up to 12 o'clock, noon, of September 10, 1896, for the furnishing and erecting in place: One 100-H. P. compound engine, tandrom style; one 50-H. P. compound engine, tandrom style; one 100-H. P. return tubular horizontal boiler; one jack shaft and stand and coupling clutch; pulleys, as per plan; one 50-arc light dynamo; one 60-kw. alternator, complete. Switchboard and appliances, belts, piping, transformers, meters, etc., etc., also 230 poles and about six miles of wire and pole line, complete string, lamps and all appurtenances to perfect a first-class job, according to plans and specifications, which may be seen or had by applying to C. O. MAILLOUX, 150 Nassau street, N. Y., Electrical Engineer, or of Water and Light Commissioners, Mohawk, N. Y., Lock Box 54, to which all proposals and bids, sealed, should be sent. The commissioners reserve the right and privilege to reject any or all bids.

DREDGING.—U. S. Engineer's Office, Army Building, New York.—Sealed proposals for dredging 413,000 cu. yds., more or less, material from Harlem River and Spuyten Duyvil Creek, on line Harlem River improvement, and for furnishing materials and workmanship for construction of about 890 linear feet cribwork revetment for protection of west side of cut through meadow south of Fordham Bridge, will be received here until 12 m., September 19th, 1896. Information furnished on application. G. L. GILLESPIE, Colonel Engineers.

DREDGING PLANT.—U. S. Engineer's Office, Morgan Building, Buffalo, N. Y.—Sealed proposals for furnishing dredging plant at Niagara River will be received here until 11 a. m., Sept. 7th, 1896 Information furnished on application. T. W. SYMONS, Major Engineers.

BRIDGE.—Sealed proposals will be received at the office of Board of Street Sewer and Drain Commissioners, Norfolk, Va., until 6 p. m., Aug. 31st, 1896, for the construction of the superstructure of a highway bridge across Smith Creek, in this city. Information furnished on application to W. T. BROOKE, City Engineer for Board.

DREDGING.—U. S. Engineer Office, Savannah, Ga.—Sealed proposals for dredging in Darien Harbor, Ga., Brunswick Harbor, Ga., and Inside Water Route between Savannah, Ga., and Fernandina, Fla., will be received at this office until 12 m., city time, on the 8th day of September, 1896, and then publicly opened. Specifications, blank forms and all available information will be furnished on application. O. M. CARTER, Captain Corps of Engrs., U. S. A.

COAL AND WOOD.—Sealed proposals will be received by the Board of Education, Bayonne, N. J., until Tuesday evening, September 1st, 1896, for furnishing 270 gross tons of Lehigh coal; one half to be stove size and the other portion egg size. Also 12 cords of wood; one-half oak and one-half best Virginia pine; both coal and wood to be delivered in bins in the cellars of several school-houses. The Board reserves the right to reject any or all bids. R. T. HEWITT, Secretary.

JETTIES.—U. S. Engineer Office, Savannah, Ga.—Sealed proposals for constructing jetties at Cumberland Sound, Ga., will be received here until 12 m., city time, September 8th, 1896, and then publicly opened. Information furnished on application. O. M. CARTER, Captain Engineers.

DREDGING.—U. S Engineer Office, Newport, R. I.—Sealed proposals for breakwater construction at Nantucket, Mass., and dredging at New Bedford, Mass., and Newport and Wickford, R. I., will be received here until 11 a. m. (Standard time), September 4th, 1896, and then publicly opened. Information furnished on application. D. W. LOCKWOOD, Major Engineers.

ELECTRIC LIGHT PLANT.—Sealed proposals will be received by the Village Council of Greenwich, O., until 2 o'clock, noon, Wednesday, September 2d, 1896, for the construction and equipment of a complete electric light plant; one 25-arc light dynamo, one 500-light alternator, one 75 H. P. engine, 21 arc lamps, all necessary wiring, transformers, appliances, etc., etc., all to be constructed in connection with new waterworks. Privilege will be granted to bid on entire steam power plant. Rights reserved to reject any or all bids. Information furnished on application. BURTON J. ASHLEY, Engineer, 511 Opera House Building, Chicago, Ill.

LANDS AND MINES FOR SALE.

J. F. CROSETT,
Secretary, Gold Mining Exchange,
No. 628 Sacramento Street, San Francisco, Cal.

GOLD MINES FOR SALE.
On Pacific Coast. Correspondence solicited.

FOR SALE—Gold and Silver Mine in Montana

Now paying nicely. Cheap for cash, or part cash and short option. "No money no go." For full particulars, etc., etc., address

SLEDGEHAMMER,
ENGINEERING AND MINING JOURNAL.

IMPORTANT.
To be sold, the Mineral Property called
"DIOS TE GUIE,"
producing Silver and Gold, situated in the Section of Yepachi, Municipality of Famosachic, in the District Guerrero, State of Chihuahua, Mexico, by the Rascon Hermanos Co., of Nuevo Leon, Rayon District, State of Chihuahua, Mexico.
For information as to price and conditions of sale apply to RASCON HERMANOS.

GOLD DIVIDENDS.
If you want a paying **Gold Mine**, for a fraction of its value, write at once to
BOOTH & BRINTON, Portland, Ore.

FOR SALE.
MONO MINE, UTAH.

NOTICE OF SALE OF MINING PROPERTY.

Notice is hereby given that the undersigned, Receivers of the Charter Oak Life Insurance Company, acting under authority and in pursuance of an order passed on the 12th day of June, 1896, by the Superior Court of Hartford County and State of Connecticut, will, between the hours of 12 o'clock, noon, and 2 o'clock P. M. on Saturday, the 29th day of August, 1896, at the west front entrance to the City and County Building, in the City and County of Salt Lake, in the State of Utah, offer for sale, and sell at public auction, to the person or persons who shall make the highest bid therefor for cash, upon delivery of the deed therefor by said Receivers, within thirty days after said sale, all the right, title and interest vested in, and which they now as Receivers as aforesaid have, of, in and to the following described mining claim and machinery, and tunnel claim and other property connected therewith, situate in Ophir Mining District, Tooele County, State of Utah, described as follows, to wit:

That certain mining claim situate in said district commonly known as and called the Mono Mine, being more particularly described as follows, to wit: Mineral entry No. 105 in the series of the Land Office at Salt Lake City, Utah, designated by the Surveyor-General as lot No. 46, containing 3.67 acres of land, more or less, and according to the return on file in the General Land Office in said City of Salt Lake, described and correctly described, with magnetic variation at 16° 30′ east, as follows, to wit: Beginning at corner No. 1 a post marked No. 1, Lot No. 46, thence south 83° 30′ east, 1,600 feet to corner No. 2 a post marked No. 2, Lot No. 46, from which a fir tree 17 inches in diameter marked B. T. bears north 71° 30′ west at the distance of 21.5 feet; thence from said corner No. 2 north 6° 30′ east 100 feet to corner No 3, a post marked No. 3, Lot No. 46, from which a fir tree 17 inches in diameter, marked B. T., bears north 76° west at the distance of 13 feet, and U. S. Mineral Monument No. 6 a fir tree 17 inches in diameter, marked U. S. M. No. 6 on the south side, and U.S. Mineral Monument No. 6 on a board nailed on the east side bears north 59° west at the distance of 462 feet; thence from said corner No. 3 north 83° 30′ west 1,600 feet to corner No. 4, a post marked No. 4, Lot No. 46; thence south 6° 30′ west 50 feet to a point from which discovery stake bears north 83° 30′ west, at a distance of 800 feet, 100 feet to the place of beginning. A description of which is also found recorded in the Recorder's office in said county of Tooele, in Book BB of records on pages 632 to 636, inclusive. Nevertheless, however, reserving and excluding therefrom all that part thereof "which is situate east of the center of the ravine crossing said premises nearest the eastern boundry thereof, which ravine is further designated and identified as the one in which a living spring rises a short distance above the north boundary of said premises." Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in any wise appertaining, including all hoisting works, engines and machinery, tailings and property therein and thereon

Also in the same district and nearby the same, and once worked in relation to said mine, that certain mining tunnel commonly known and called in that vicinity "The Ætna Tunnel."

Upon such sale being so made and the purchase money paid, said Receivers will convey said property to the purchaser within thirty days after said sale.

Dated this 7th day of July, 1896
ISAAC W. BROOKS & EDMUND A. STEDMAN,
Receivers as aforesaid.
MARSHALL & ROYLE, Salt Lake City, Utah,
Attorneys.
GROSS, HYDE & SHIPMAN, Hartford, Conn.,
Attorneys.

**MINER,
GEOLOGIST,
BUSINESS MAN,**
See page 7.

MACHINERY AND SUPPLIES FOR SALE.

SECOND-HAND RAILS.

If you have any Rails which are in good condition to relay—or if only good to be used as scrap—write us; we buy both kinds.

ROBINSON & ORR,
No. 419 Wood Street, Pittsburgh, Pa.

BARGAINS in Electrical Machinery. All Guaranteed and of Standard Make. One 325-light Jenney; one 325-light Mather, multipolar compound; two 360-light United States; one 425-light Westinghouse; one 450-light Thomson-Houston, H. I.; one 450-light Edison, 25 K. W.; one 500-light Western Electric; one 540-light Edison, 30 K. W.; one 550-light Mather, compound wound; one 600 light Western Electric, compound wound; two 1,000-light Standard, multipolar, compound wound; one 950-light Mather, 55 K. W., compound; one 1,000-light Mather, 60 K. W., compound. Also Dynamos for Incandescent and Arc Lighting, Alternators, Power Generators, Arc Lamps, Transformers, Instruments and Supplies. Send for our Bargain Sheet. CHAS. E. GREGORY CO., 47 & 49 South Jefferson St., Chicago, Ill.

FOR SALE CHEAP.

SOUTHER STEAM SHOVEL, 1¼ cubic yards dipper, in good working order.

E. A. HERMANN,
1900 South Compton Ave.,
St. Louis, Mo.

RELAYING STEEL RAILS.

FOR SALE.—150 Tons 16-lb. first-class Steel Rails; also Rails in any quantities from 20-lb. to 65-lb. always on hand.

BLOCK-POLLAK IRON COMPANY,
922-4 Marquette Building, CHICAGO, ILL.

FOR SALE—Several Kellogg Bunsen vapor lamps, nearly new and in good condition. Apply to M. C., ENGINEERING AND MINING JOURNAL.

MISCELLANEOUS WANTS.

MINING ENGINEER.—Preliminary reports on mines to determine advisability of extended investigation; assists upon large examinations; intricate surveying and geological work for lawsuits; thorough experience; abundant references; Anglo-American code. Address JOHN H. MEANS, 1016 Pine street, San Francisco, Cal.

EXPORT TRADE.

Young man (32 years old), German by birth and education, with technical college training, having been connected with United States and South American industrial enterprises during the last 12 years and speaking the three languages (English, German and Spanish) fluently, desires to facilitate trade relations between the United States and South and Central America by periodical visits to the chief centers of trade in those countries and the establishment of branch agencies, *at his own expense.* Correspondence with firms desirous to extend their trade to foreign countries is solicited. Reference is made by permission to Dr. R. W. Raymond, 13 Burling Slip, New York City; and other first-class references will be given on request. Address EXPORT, ENGINEERING AND MINING JOURNAL.

DIVIDENDS.

ISABELLA GOLD MINING COMPANY.
COLORADO SPRINGS, Colo., August 10th, 1896.
DIVIDEND NO. 8.

A dividend of ONE CENT PER SHARE ($22,500) has been declared, payable August 25th, 1896, to stockholders of record August 18th, 1896.

The stock transfer books will be closed August 18th, 1896, at 3 o'clock p. m., and will be re-opened on the morning of August 26th, 1896.

PERCY HAGERMAN,
Vice-President and Treasurer.

ONTARIO SILVER MINING COMPANY,
MILLS BUILDING, 15 Broad St.,
NEW YORK, Aug. 17, 1896.
DIVIDEND NO. 205.

A dividend of TEN (10) CENTS PER SHARE has been declared, payable at the office of the company, San Francisco, or at the transfer agency in New York, on August 31st.

Transfer books close on August 25th.

LOUNSBERY & CO., Transfer Agents.

AMERICAN DEVELOPING & MINING COMPANY.

OFFICE—INTER-MOUNTAIN BLDG.
BUTTE, MONTANA.

Mines Leased, Bonded, Bought, Developed and Operated.

Correspondence from Owners of Mining Properties and Parties Seeking Mining Investments solicited. . . . .

—References on Application.—
Moreing & Neil's Code Used.
Cable Address, - ADAMCO, BUTTE.

HANDBOOK
—OF—
GOLD MILLING.
—BY—
HENRY LOUIS.

A scientific exposition of the subject, yet not too technical for practical men. The mechanical principles of the stamp mill and the chemical facts of amalgamation are treated of in a very clear and concise manner.

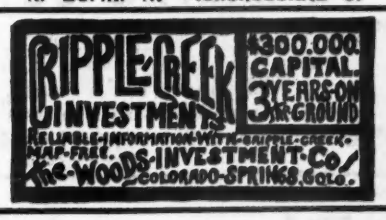
Bound in Cloth. Illustrated. Price $3.25
THE SCIENTIFIC PUBLISHING CO.,
253 Broadway, New York

"ARMS & EXPLOSIVES."
A Technical and Trade Journal. Published on the First of the Month.
A Journal for Manufacturers of Guns, Explosives, Fuses, Etc.; for the Allied Retail Trades, and for Colliery Proprietors, Quarry Owners and Mining Engineers.
Subscription, 7s. per annum, Post Free.
EDITORIAL AND PUBLISHING OFFICES:
EFFINGHAM HOUSE, ARUNDEL ST., STRAND
London, England.

The Financial Times

THE LEADING ENGLISH FINANCIAL PAPER
THE FINANCIAL TIMES gives the best and most trustworthy information upon all market movements and its comments are PERFECTLY INDEPENDENT. It is universally regarded as an authority upon Banking and Insurance matters.
DAILY, ONE PENNY. Post free to any part of the world, £2 12s. per annum.
Offices: 13 MOORGATE STREET, LONDON, E.C.

ZEITSCHRIFT FÜR PRAKTISCHE GEOLOGIE
mit besonderer Berücksichtigung der
Lagerstättenkunde.
In Verbindung mit einer Reihe namhafter Fachmänner des In- und Auslandes herausgegeben
von Max Krahmann.
Monatlich ein Heft von etwa 40 Seiten mit Uebersichtskarten, Profiltafeln u. s. w.
Preis des Jahrgangs von 12 Heften M. 18,—
Probehefte und Prospekte stehen auf Verlangen gern zur Verfügung.
Verlag von Julius Springer
in Berlin N. Monbijouplatz 3.



HELP THE BLIND
Steam Plants running in the OLD-FASHIONED way.
Our CATALOG is yours for the asking, and describes and prices UP-TO-DATE GOODS.
STEAM SEPARATORS, OIL EXTRACTORS, FEED WATER HEATERS, DAMPER REGULATORS, "EUREKA" PACKING, COIL WORK, ETC.
HINE & ROBERTSON CO.,
50 Cortlandt Street, NEW YORK