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AND

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CONTENTS.

In our issue of March 6th we gave a notice of the preliminary summary of the mineral production of Canada for 1896, issued by the Geological Survey of that country. We credited Mr. Brophy as "statistical assistant to the survey" with the report, but to be accurate we should have stated that the reports on mineral statistics and development of Canada are prepared by the "Section of Mineral Statistics and Mines" under the direction of Mr. E. D. Ingall, M. E., who is the officer in charge, Mr. L. L. Brophy acting as assistant in the collection and preparation of the figures.

While Bostonians are considering the value of Butte & Boston as an investment they might look into the claims of the Gregory-Bobtail combination which is taking up a number of old Gilpin County, Colorado, mines, with the expectation of earning dividends where none were earned before. The parties who brought out the Gold Coin mine—many of them excellent and reputable business men—are, we understand, interested in the new enterprise. It may not be amiss to remind these gentlemen, who are not mining experts, that while "plain business management" in the mining industries is very desirable and even essential to success, it is not all that is necessary to make dividends. It will not put ore in a worked-out mine nor for that matter will it put dividends in an ore too poor to pay expenses.

We have received the official returns of the gold production of Tasmania through the courtesy of the Mines Department of that colony. The figures as corrected vary very little from the estimate given in our number for January 2d last. The total output for the year was 62,586 crude ounces, equivalent at the value given to 55,258 fine ounces of gold, or $1,142,295. As compared with the year 1895, this shows an increase of 6,340 fine ounces, or $131,160, an improvement of 13 per cent. The gain came chiefly from increased activity in the quartz mines, and the Mt. Lyell copper-silver mine contributed some share, as its ore carries an appreciable amount of gold.

We have now received the complete official returns of five of the seven Australasian colonies, and the corrections from the remaining two will probably be small in amount. The figures show that the total gold production of Australasia in 1896 reached $44,455,000, putting it some way in advance of the Transvaal. The increase over 1895 would be $1,661,000, or 3·9 per cent., a very considerable gain. The present indications are for a further improvement during the current year.

The striking differences between English and American conditions in coal mining are illustrated in a communication in the London *Electrical Review* from Mr. A. L. Steavenson, a large operator in England. He admits that it would be a good plan to get out more coal by machine methods, thus producing it cheaper, selling it cheaper and improving the demand, but adds that "you can only use machinery where you have a long straight face of coal, as in the longwall system of working; and that is not suited to many districts, for various reasons; you must have suitable stone and plenty of it, to build the pack-walls to maintain the roads open where the coal is all taken out. Then some of us have no objection to small coal; we have to crush it to make good coke, and here the advantages of getting a larger percentage of round coal, which is the chief gain in using machinery, is lost."

In America probably not one mine in fifty of those using machines is worked on the long-wall system. In one particular, at least, Mr. Steavenson is in advance of American operators, as he hauls 14,000 tons of coal a week, and pumps large quantities of water against 600 feet head without using any coal for fuel, all his steam being generated by the heat from the coke ovens, which is here usually wasted.

The production of zinc seems to increase more rapidly than the consumption of the metal in Europe as well as in this country. The Silesian works have maintained their output and last year increased it slightly. The product of the Italian and Spanish mines has increased, especially the latter. The Vieille Montagne Company, in Belgium, has been extending its operations, acquiring new mining properties and enlarging its works. The complaint is now made that the general industrial activity in Europe has not been followed by the increase in the price of spelter which has been shown in the case of almost all the other metals. There has been no agreement among the producers for two years past, and production has not been limited. There is no prospect at present of a new convention, and even if the output should be reduced there is always the probability that any increase in price will result in heavy importations of American spelter.

The world's production of spelter in 1893 is estimated at 418,460 long tons, an increase in five years of 62,615 tons, and in ten years of 124,058

tons. The following table shows the estimated output for two years past, in long tons:

	1895.	1896.
Rhine, Belgium and Holland	172,135	179,730
Silesia	94,015	95,875
Great Britain	29,495	25,880
France and Spain	22,895	28 450
Austria	8,355	9,255
Poland	4,960	6,165
Total, Europe	331,855	345,355
United States	73,088	73,105
Total	404,943	418,460

The figures for Europe are given by Messrs. Henry R. Merton & Company, whose estimates are generally accepted as very close. Those for the United States in 1896 are estimated by the American Metal Company. For 1895 they are those given in *The Mineral Industry*, Volume IV.; and the corrected figures collected for Volume V. will shortly be published.

The Butte & Boston.

Has the memory of the Merced already faded from the Beaneaters' recollection that the reorganized Butte & Boston should be received with some apparent favor? The new company is organized with a capital stock of $2,000,000 in $10 shares, and a bonded indebtedness of $1,500,000, but no disinterested information is given concerning the value of the property. So far as we can learn there has not been published any expert report on the mines or reduction works of the company, though it is said the mines were examined by Mr. C. W. Goodale, mining engineer, who, rumor has it, found reserves worth no more than $200,000, and by Captain Couch, who is said to have found but little more than this modest value. It is also stated by experts that the reduction works are old-fashioned and will require a large expenditure to bring them up to modern requirements. The directors of the new company are: A. S. Bigelow, Thomas Nelson, Leonard Lewisohn, Chas. Van Brunt, Edward P. Perkins, Clarence H. Bissell and Edgar Buffman. Several of these gentlemen were connected with the Merced, of unsavory memory, and some were organizers of the original Butte & Boston, which last year went down in debt and dishonor, while some are connected with Old Dominion which came out a year or so ago at $35 and is now quoted about $12 a share. Such experiences should not be altogether forgotten

The Ebb of the London Mining Craze.

London, the great financial center of the world, for some years past has had one of the wildest and most unreasoning of mining crazes that has ever visited that curiously gullible constituency, and it has offered such an exceptionally profitable occasion for the shrewd and conscienceless promoter that all kinds of people, high and low, became promoters or "tooters" of mining companies. So great, indeed, was the temptation to become rich by simply gathering in the money of fools that a great number of "eminently respectable" and "conservative" individuals easily allowed the use of their names in doubtful and sometimes in actually dishonest enterprises. While the boom was on and all were growing richer day by day by the simple process of marking up the quotations of mining stocks everything was lovely, and reputations and the morality of business ways, especially those that had brought fortunes, were unquestioned. Now for nearly a year there has been an ebb in the tide of the London mining craze, and the strand is found to be littered with wrecks, both moral and financial. The ebb of the tide has by no means ceased yet: indeed it has still a long way to fall, so that the wrecks exposed to view to-day are few in number compared with what will be found a little later on.

It requires no clairvoyant to see or prophet to foretell a hard and bitter time coming for many of the "eminently respectable" citizens of the great money center. So far has the disillusion process progressed and so familiar even now are the wrecks of reputations that the inevitable spirit of suspicion is aroused and knavery and dishonesty are assumed to exist in every case where a sudden or heavy decline has taken place in any mining stock. Presently no reputation will stand above the universal skepticism, and the fawning tools, the willing tooters, the venal newspapers, and even the sanctimonious brethren who closed their eyes to doubtful practices while filling their pockets with their proceeds, will now turn against the "eminently respectable" leaders. Already the newspapers are opening their broadsides on them, and more is to come. The criticisms will in many cases be just, though belated, but in such times criticism is not discerning and the innocent suffer with the guilty. We were going to say "the many innocent," but perhaps should we investigate we might find the numbers diminish as did those of the righteous men in Sodom when Lot began to count them.

The Grand Central Mine.

The reflections given above find justification in some remarks in recent issues of the *Financial News*, of London, on the Grand Central Mining Company, floated there some months ago by the Exploration Company. It appears that Captain Mein, the well-known and able mining engineer who recently examined, for the second time, the Grand Central mines in Mexico, cabled February 27th to London as follows: "Main pay shoot pinching in depth. Monthly production of £12,000 should be maintained eight months. Estimated amount of ore in sight 40,000 tons. Consider prospects good for finding other payable bodies. Report sent by mail to-day." This is certainly a discouraging report from a mine concerning which Captain Mein, after his first examination in November last, cabled as follows: "The mine will produce the same as at present time for nine months (*i. e.*, £10,000 net profit per month). The profits will be $80,000 when finished improvements. There are 80,000 tons of ore in sight in the mine. Cannot estimate life of mine. Must await further developments. No signs of giving out."

The *Financial News* very naturally refers as "an unpleasant eye-opener" to the reports of so distinguished an expert as Captain Mein, which in November stated "the ore in sight" as 80,000 tons, and three months later as 40,000 tons, though only 9,000 tons had been extracted in the interval. No doubt Captain Mein's full report will explain the difference.

In July last Mr. John B. Farish, the well-known mining engineer of Denver, Colo., reported that the ore in sight amounted to 62,250 tons of a gross value of $1,868,750.

Mr. J. H. Lukach, managing director of the Exploration Company, writing to the *Financial News*, March 1st, says that Mr. Henry Janin, the eminent mining engineer, examined the property at the same time as Mr. Farish and made also an "exhaustive report of a highly favorable character," but so far as we know no report by Mr. Janin was ever published, a fact which perhaps was accountable for the rumors at the time that Mr. Janin's report was not of "a highly favorable character" and that he found even then "the pay shoot pinching in depth." This rumor may or may not have been well founded, but it is certain that the public was entitled to see Mr. Janin's report and if the rumor of his opinion was well founded he should get credit for seeing or foreseeing what it required some eight months for others to recognize.

The mine is reported to have produced £18,000 in October, and again in November; £15,000 in December, £13,000 in January, and, it appears from Captain Mein's report, that it can be counted on for £12,000 a month for the next eight months, or a total gross value of about £350,000 ($1,750,000)—a sum remarkably near the amount of Mr. Farish's estimate, assuming no new ore opened since July last. The cost of extracting this value is said to be about £7.000 a month, or a total of, say, £80,000.

We are in no way called upon to defend or apologize for the Exploration Company, which has brought out some very poor as well as some very good properties. It is not immaculate, and it has laid itself open to serious criticism in some cases, but it is, nevertheless, not only the most powerful and successful of the London promoting syndicates; it is also one of the most careful and upright in its methods. It has usually shown much care in investigating the enterprises it has brought out and has given them an admirable management, well illustrated in the case of the Alaska Treadwell mine. In the Grand Central case the Exploration Company had the mine examined by competent and trustworthy experts, Messrs. Janin and Farish, before purchasing, and on two occasions since by Captain Mein. Had it published Mr. Janin's report—whether unfavorable or favorable—and issued a prospectus by which the directors would have assumed some responsibility for the representations made, no serious complaint could be urged against it.

The capitalization as compared with demonstrated value may be considered high, but it was still far below that of nine-tenths of the mines floated in London, and there were and still are great possibilities in the property. That the stock immediately went to a premium which even reached 300 per cent. (from par to £3) is rather an evidence of the high esteem in which the Exploration Company is held, for so successful have been its issues that when it announces a new company, all the share brokers and dealers urge their clients to apply for shares that "are sure to go to a premium" and consequently they go to a premium without much regard to their intrinsic value.

It is quite natural that those whose business it is to make money by floating mines will invariably get all they can for their property and help along the boom from which they have so much to gain and the *Financial News* is one of the many agencies frequently employed by them to attain their ends.

We notice this case not because it offers any serious ground for complaint but because it illustrates the usual course of events when a market bubble has burst and that every disappointed investor is eager to find

scapegoats on whom can be unloaded the blame for financial losses which are properly chargeable to individual folly and rapacity.

NEW PUBLICATIONS.

THE MECHANICAL ENGINEERING OF POWER PLANTS. By Frederick R. Hutton, New York; John Wiley & Sons. Pages, 726; illustrated. Price, $5.

The title given this book is too comprehensive, since there is nothing in it which can be applied to those power plants which are operated by water-power or wind-power, and a work which, at thisday, entirely ignores the gas engine certainly cannot be held to cover the whole field of power. The book is simply a treatise on the steam engine and boiler. As such it is, of course, chiefly a compilation, since, as Professor Hutton himself says, to have been original would have frustrated the main purpose of his book, which was to serve as a text-book for advanced students. As a text-book on the steam engine it has many excellent points, and deserves careful study. The descriptions of various classes of engines are generally clear, though it is to be regretted that illustrations of a better class have not been used. Those in the text are generally good, but some of the larger engravings are not of a class which should have been used in so pretentious a book.

In the section on boilers, considerable space is given to water-tube boilers; more, in fact, than in most books, which usually have little to say on this important subject. The remarks on boiler construction are generally good, though more might have been added on the somewhat difficult subject of staying, which too many authors are careful to avoid. The concluding chapters, on the care and management of engines and boilers, are usually practical.

RECEUIL DES PROCÉDÉS DE DOSAGE POUR L'ANALYSE DES COMBUSTIBLES, DES MINERAIS DE FER, DES FONTES, DES ACIERS ET DES FERS. By G. Arth. Paris, France; Georges Carré & C. Naud. Pages, 314; illustrated. Price (in New York), $2.80.

This work gives the standard and well-known methods used in the analysis of iron ores, iron and steel, and in the analysis and estimation of the value of fuels. The book is especially intended for students and also for those engineers who wish to acquire a knowledge of the subjects treated, and care has been taken to explain the principles upon which the different processes are based. The apparatus used and the methods followed are carefully explained and illustrated, sufficient detail being given to enable the student to follow the processes fully. To the descriptions, accounts of the results which can be obtained are added, with many notes from the personal experience of the author and from the work actually accomplished by others.

As to the methods described, preference has naturally been given to those of French chemists. The analysis of iron and steel includes much that is based on the experience at the laboratory of the great Creusot works. Many German chemists are also cited; some English and a few American. The French authorities include such names as Carnot and Osmond, and care seems to have been taken to present to the student only approved methods.

About one-fourth of the book is devoted to the analysis and testing of fuel, about one-fourth to the analysis of iron ores and nearly all the remainder to the analysis of iron and steel. The closing chapter treats of the analysis of slags, and especially of basic slags, which are now of considerable commercial importance.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

The Manual of Statistics, 1897. New York; Charles H. Nicoll. Pages, 500. Price, $3

Theorie und Praxis der Analytischen Elektrolyse der Metalle. Von Dr Phil. Bernnard Neumann. Germany; Wilhelm Knapp. Pages, 224 illustrated. Price, inNew York, $2.45.

The Designing and Construction of Storage Reservoirs. By Arthur Jacob. Revised and extended by E. Sherman Gould. New York; D. Van Nostrand Company. 1897. Pages, 138; illustrated. Price, 50c.

Department of Mines and Agriculture, Sydney: Records of the Geological Survey of New South Wales. Volume V., *Part* II., 1897. Sydney, N. S. W.; Government Printer. Pages, 112; with nine plates. Price, in New York, 53c.

Anderson's Maps: Squaw Creek Mining District, Okanogan County, Washington. Scale 1,500 ft. to an inch. Price, $1. *Money Creek, Miller River and Buena Vista Mining Districts, King County, Washington.* Scale, 2,000 ft. to an inch. *Showing North Half of Colville Reservation, Washington.* Scale, 2 miles to an inch. Price, $1.50. *Stillaguamish Mining District, Snohomish County, Washington*, 1897. Scale, 2,000 ft. to an inch. Seattle, Wash.; compiled and published by the O. P. Anderson Map and Blue Print Company, Incorporated.

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.

Hartsfeld's National Ore Reduction Company.

Sir: Noticing the article on Hartsfeld and the National Ore Reduction Company in the *Engineering and Mining Journal* of March 6th, I beg to say that, being misled by the array of responsible names on the circulars, etc., of this outfit, I accepted from the St. Louis office of that company and Mr. C. L. Hartsfeld an advertisement for my paper, which, occupying considerable space, ran up to quite a sum of money. I have never been able to collect one cent, in spite of every effort to do so, and all reports regarding them have been bad. I think that you are doing an excellent work in exposing such through the columns of your valuable journal. Another paper in this city was similarly caught.

C. H. M. Y AGRAMONTE,
CITY OF MEXICO, March 12, 1897. Proprietor *Anglo-American*.

Sales of American Steel Rails for Europe.

Sir: In your issue of February 20th you refer to a repotted sale of steel rails to English railways, but after enquiries in this country we have failed to obtain any confirmation of the rumor, and the *Times* in its money article of to-day says: "We are authorized to state that there is no foundation for the report which has lately appeared in certain newspapers that the London & Northwestern Railway have purchased, or intend to purchase, American steel, or steel rails, for use upon their line."

JAMES & SHAKSPEARE.
LONDON, March 6, 1897.

[Notwithstanding this denial of the *Times*, we have reliable information that large lots of rails have actually been sold here for export to Europe; though details of these transactions are not made public. There is no doubt that an export movement has begun on a large scale and every probability that it will continue.—ED. E. & M. J.]

Photography Through Wood.

Sir: Under another cover I send you a sheet of paper which for three years lay untouched on the top of a lot of books and papers directly under the lid, but not touching it, of a common red pine box. The boards were tongued together of rough undressed red pine, and the box stood in the window facing east, in my stamp mill at Big Bar Bridge, Amador County, Cal. It struck me that you might be able to place it in the hands of some person to whom it might prove of use in the investigation of the action of light through opaque substances. R. W. PETRE.
BALTIMORE, MD., March 9, 1897.

[The sheet accompanying this letter is an ordinary mine report blank, printed—but not written—on paper of the quality generally used for such purposes, and evidently not sensitized in any way. On the back of this sheet is a perfect photograph of the board, showing the grain of the wood very clearly and beautifully, in a light brown tint, very similar to that which the pine itself would have after long exposure. The joint between two boards is shown, and several spots, which apparently might be of ink or grease on the box, are plain. Altogether, it would be difficult to made a painting ordrawing of the board which would represent it so clearly as this. We regret that it is not possible to reproduce this sheet for the benefit of our readers. It is a most remarkable specimen, and the action of the light through the boards of the box seems difficult to explain.—EDITOR E. & M. J.]

Paying Load of Ocean Steamers.—According to a calculation worked out by the *Revue Scientifique* of Paris, the proportion of paying load to total displacement of a steamship in 1840 was only 10%. That is the hull, engines and fuel carried formed 90% of the weight of the vessel. In 1850 the paying load had risen to 26%; in 1860, to 33%; in 1870, to 50%. At the present time the Atlantic steamers show an average of 55% paying weight. The advance since 1870 has been comparatively slow, chiefly because much higher speeds are now required.

Developing the Norwegian Iron Mines.—A syndicate has undertaken the extension to the Norwegian coast of the Lulea-Gellivara Railway, which permitted the working of the Gellivara iron deposit in Sweden; and this extension will permit of working the Luossavara and Kirunavara deposits which have been proved to far exceed that of Gellivara in value. In 1882, the construction of a similar line was conceded to an English company, which, however, only made the section between Lulea and Gellivara, because objections were made in Sweden to the whole line being in foreign hands; and eventually the section constructed was taken over by the State, and it has proved one of the best paying lines. The projected extension from Gellivara to Kirunavara is 105 km., or 65 miles long; and the distance from the latter to the terminus on the Ofotenfjord is 181 km., or 112 miles.

Injuries to Eyes of Iron Workers.—In the mining and foundry district of Bochum, Prussia, Dr. Nieden reports having treated during the years 1885-94, 5,443 patients engaged in such occupations, of whom more than 68 per cent. were cases of injury to the eye in their calling—iron and foundry workers showing a large predominance in this respect over miners. Of 3,723 iron and foundry workers treated for eye injuries, 2,805 were for the left eye and only 1,639 for the right, or a relative proportion of 56 to 44; and as a similar proportion held good in each separate year, the conclusion arrived at is that in such work the danger to the left eye is really greater than that to the right. Even more marked, in fact, was the proportion in respect to the severe cases, the left eye being quite lost in 17 cases, the right eye in seven.

Carbide of Calcium in Great Britain.—In consequence of the growing importance of carbide of calcium, and the fact that the mere contact of moisture with this material causes a dangerous evolution of the highly inflammable gas known as acetylene, the British Home Secretary has caused inquiries to be made into the subject, with the result that an Order in Council was made on February 26th, under the 14th section of the Petroleum Act, 1871, bringing carbide of calcium within the operation of that act. Accordingly, from the date on which such order comes into force, April 1st, 1897, it will be unlawful to keep carbide of calcium, except in virtue of a license to be obtained from the local authority under the Petroleum Act. Any local authority to whom application may be made for a license to keep carbide of calcium can, if it is desired, obtain, on application to the Home Office, a memorandum showing the character of the risks to be guarded against, and containing suggestions as to the nature of the precautions likely to be most effectual for securing safety.

GOLD MINING IN GEORGIA.

Written for the Engineering and Mining Journal by William M. Brewer.

During the last week in February, I visited the mining districts of Georgia, situated westerly from Atlanta, locally known as the Tallapoosa and Villa Rica districts, the former being located in Haralson County and the latter in Carroll County. The Royal mine, which was formerly known as the Camille, is the only location in the Tallapoosa District on which gold-bearing ore in paying quantities has been discovered. The geological formation at the Royal is very similar to that which predominates immediately northwest of Arbacoochee in the Alabama District, some 30 miles in an air line to the southwest.

The country rock which forms the hanging wall of the ore body is apparently an altered eruptive rock, containing epidote, chlorite, quartz and zoisite, so far as can be determined with the aid of an ordinary lens, and corresponding with the schist which has been traced through the crystalline area of Alabama, and which is found in that State bordering the semi-crystalline slates ("Ocoee," Dr. Safford; "Talladega," Dr. Smith), on the southeast. This schist occupies the same relative position with regard to these slates at the Royal mine, and although I did not see any exposure of the footwall in the underground workings, yet it is quite possible that such is formed by the semi-crystalline slates, and if so the ore body would properly belong to the contact vein class, because it would occur at the contact of this schist and the slates. A microscopical examination of the country rock would be necessary before this point could be determined beyond all donbt.

The old mine workings which were opened previous to the purchase of this property by the present company consisted of a series of pits sunk from the surface, many years back, by a Mr. Holland, the discoverer of the property, who mined the saprolite for placer gold, with the aid of sluices and long toms, and treated some free-milling ore in a 10-stamp mill. After the material which produced values by this system of mining had been practically exhausted, the property passed into the hands of a syndicate, of which ex-State Treasurer Burke, of Louisiana, was a member, and deeper mining was commenced. This syndicate erected an expensive hoisting and pumping plant, as well as a 20-stamp quartz mill, with eight Frue vanner concentrating tables. Inclined shafts were sunk on the ore body, and some drifting was run on the 75-ft. level. In 1890 all work was abandoned. Since then two or three efforts were made to reopen the mine and resume operations before the present owners purchased the property, but each of these attempts resulted unsatisfactorily.

In 1895 the present owners came into possession, and Professor Thies, of the Haile mine, South Carolina, was employed to make an examination and report. This report was published in brief in the form of a correpondence over Professor Thies' signature in the *Engineering and Mining Journal* of March 14th, 1896. The organization of a stock company followed, and large quantities of the capital stock found a ready market in Michigan and other Northern States. Additional 20 stamps were added to the mill, together with two 6-ft. Frue vanners; a Huntington mill 5 ft. in diameter, with two Triumph concentrators, was erected; a dynamo, 150 voltage, was installed; two roasters, 50 ft. × 9 ft., were built; together with a chlorination plant, equipped with two 2-ton barrels, filters and precipitating tanks, storage vats, etc.

The exploitation of the workings was continued beyond the point reached by former operators, and at the time of my visit I found the following conditions existed: In the west drift on the 75-ft. level (this is the deepest level I visited by means of the incline shaft or slope, and although I have heard that this slope was carried to a deeper level, yet I have never had an opportunity of exploring such, and was given to understand that below the 75-ft. level no ore had been mined), I was able to see why the former operators had failed to expose the ore body which is now being mined. During a brief visit to this property in 1894, with Captain Fisher, formerly superintendent of the Creighton Mining and Milling Company in Cherokee County, Ga., my attention had been directed to a horse of barren quartz, which had apparently taken the place of the ore body, and which when exposed had caused the suspension of operations; but the extension of the drift has proven that ore occurred beyond this horse, and it is from stopes run on this level, upward from the drift that ore is being mined at present. Material is being taken out for a thickness, in some stopes, of almost 20 ft. This material is sent to the mills and it is claimed yields about 25% of its assay values from amalgamation, the balance being contained in the sulphurets, which are treated by chlorination. The composition of this ore body is lenticular stringers of quartz and pockets of sulphurets in a body of saprolite, of which a large proportion appears to be decomposed feldspar. There are narrow seams of a brownish-colored material which are thoroughly oxidized, but most all the quartz is heavily sulphuretted. I am unable to state what proportion of the thickness of this body carries values, or what is the average value per ton saved from the treatment of the entire thickness. An undetermined (so far as I could see) thickness of ore has been left in the roofs of the stopes, because the decomposed condition of the hanging wall rendered them unsafe, unless close timbering was done. I do not know whether this portion of the ore body left for roof carries any value or not. On this level I found 236 ft. of drifting to the westward and 169 ft. to the eastward.

In addition to these workings I examined a vertical three-compartment shaft which has recently been sunk in a southerly direction from the incline. At a depth of 105 ft. I found the ore body had been struck and at a depth of 118 ft., which was the bottom of the shaft at that time, this ore body had not been entirely crosscut. This body of ore is composed of a hard white quartz, quite heavily sulphuretted; 75% of whatever value is carried by it will certainly be found in refractory condition and possibly even a larger proportion. I am unable to state the value per ton of this ore, or indeed of any of the material mined. When drifts are run from a level at the bottom of this vertical shaft, an opportunity will be afforded to measure up the quantity of ore in sight.

Both the Huntington and stamp mills were running during my visit, and the plates showed that gold was being caught; but I would not like to risk any guess as to the grade of the ore from the appearance of the plates even, because they were so much softer than I have been accustomed to see in the Western mills that it would be impossible to make any estimates unless after a long and close study.

The fact that only about 1¼ tons of ore per day per stamp were being crushed in the stamp mill, and only about 12 tons per day in the Huntington mill (as I was informed by officials of the company), struck me as not being the best policy, because while more gold may be saved by fine pulverization, yet the pulp as discharged on the concentrators cannot be in as good a condition for treatment by reason of the excess of slimes and light weight of the fine sulphurets, which would cause them to be carried off in suspension. With coarser screens the crushing capacity should be increased 100% at least, and even if the results were not quite as much value per ton by amalgamation, yet the loss would, or should, be caught with the concentrates. The milling and concentrating capacity at this property is sufficient for treating 140 or 150 tons per day, while the capacity of the chlorination plant is sufficient to treat all the concentrates from such a quantity of ore, even if the proportion was 10% of the ore tonnage.

In the Villa Rica District I found that the extensive plant which the late Dr. Hardy had shipped from Boston in 1895 had been torn down and a 10-stamp mill substituted. The present superintendent has sunk a vertical shaft 90 ft. deep, and at the time of my visit was tunneling in the hope of crosscutting the vein, which occurs in the saprolitic formation on the surface. When it is considered that the company commenced operations on this property early in 1895, and that on February 24th, 1897, no ore body had been exposed at a depth of even 90 ft., and that someone has paid out vast amounts to meet pay rolls and for machinery, I may be excused for the statement that someone has certainly shown great lack of management, as opposed to great confidence exhibited by the stockholders. But if the results of Captain Douglas' present efforts are successful then this property may yet be classed among the producing mines.

I shall not yet give any description of the other prospects in this district until after another visit, because some good work is apparently being done at several points near by, but satisfactory results have not yet been determined.

CAST COPPER OF HIGH ELECTRIC CONDUCTIVITY.

Cast copper has hitherto been considered so greatly inferior in electric conductivity to rolled copper as to be practically unavailable for use in construction of those parts of electrical apparatus in which high conductivity is essential. According to an article by Mr. Harold P. Brown in the *Electrical Review* of March 3d, this objection to cast copper has been overcome by a new process of casting, the details of which are not published, the resulting product being known as "MB copper." It is said that Mr. Thomas A. Edison is interested in the development of the process and that the copper will be manufactured under his supervision. Comparative tests made by Mr. Brown on samples of commercial "tempered" cast copper, MB cast copper and rolled copper showed that the MB copper had a conductivity of from 92·3 to 97·5% of that of the rolled copper, while that of the "tempered" cast copper was only from 23 to 30%. The test bars were cylinders 25 in. long and 0·8 in. in diameter, provided with enlarged terminals at each end, to which were amalgamated and coated with the Edison flexible solder. Analysis of the three bars showed the commercial cast copper to contain 99·15% of copper, the rolled bars 99·83% and the MB copper 99·85%. From tests of similar samples the tensile strength of the commercial cast copper was 19,000 lbs. per square inch., while the MB was 30,000 lbs., or practically the same as rolled copper. In the tests currents of from 100 to 1,500 amperes were used, the latter being three times the proper current for the section of the bars. The electrical drop was measured in millivolts, and the rise in temperature also was recorded for each current.

A good deal of mystery is made as to the preparation of the MB copper, but it seems to be simply a very pure grade of casting copper, care being taken to prevent any admixture of oxide or of iron.

A California Electric Company.—A corporation to be known as the Southern California Power Company was recently organized at San Bernardino, Cal., with a capital stock of $1,000,000. The principal stockholders are Henry Fisher, of Pittsburg, Pa., and H. H. Sinclair, president and manager of the Redlands Electric Light & Power Company. The purpose of the company is to develop power from the Santa Ana River, by taking water at junction of Bear Creek and Santa Ana River and carrying it in a cement ditch and tunnels about four miles, thus securing a fall of 1,000 to 1,100 ft. The power will be transmitted by pole line 75 miles to Los Angeles. It will be the longest line and the highest voltage (30,000 volts) in use in the world. The line will run through San Bernardino, Pomona, Ontario and Pasadena and will supply power to these towns. It is proposed to deliver power into Los Angeles by January, 1898.

Manganese Ore in Alabama.—According to a paper recently read by Mr. W. M. Brewer before the Alabama Industrial and Scientific Society, only a few deposits of manganese ore have been so far discovered in Alabama. These are confined chiefly to Cherokee County, and have never been producers on a commercial scale. A few sample cars were shipped from Pleasant Gap station, on the East Tennessee, Virginia & Georgia Railroad. This was mined in the vicinity of Rock Run, in Cherokee County. There are surface indications of the occurrence of deposits in sections of the same county, in close proximity to the brown iron-ore deposits; but little prospecting has been done in recent years, and consequently the supply of manganese ore in the State is an unknown quantity, although in many sections the brown iron ore is manganiferous to a very appreciable extent. Especially so is this the case on the property of the Clifton Iron Company, in Talladega County, where the percentage of manganese in the brown ore was so large as seriously to interfere with the manufacture of car-wheel pig iron in the charcoal furnaces.

A BLOSSOM FROM THE "BOOM" DESERT.

Written for the Engineering and Mining Journal by Edmund C. Pechin.

The wild "New Town" craze which swept the South between 1889 and 1892, while now only a matter of history, was to many deserving people the saddest incident of their lives, because their all was involved. It is almost beyond belief how many persons, led on by a flaming prospectus and the glib tongues of artful promoters, in combination with Pullman car excursions and the proper supply of apple-jack, were made to believe that corn fields and potato patches could be converted into industrial towns peopled with busy artisans, with town lots at a big premium and pockets full of money lying around everywhere. The illusion faded quickly and entirely, and scores have settled back to arduous toil, rendered more hopeless by not only the loss of years' accumulations, but the burden of debts they cannot pay.

Curiously and properly enough, as a rule, the promoters have been ruined as well as their victims, as early successes led to reinvestment and loss. In the aggregate millions were invested and lost, because, with some few exceptions, the money was too widely scattered to secure any substantial results. It would be folly to attempt to enumerate the town undertakings even along the line of the Norfolk & Western Railroad, with which the writer is most familiar, but in the dreary desert of buried hopes one can here and there stumble across some fairly attractive blossom which promises a healthy plant.

One of the most singularly attractive spots in the Great Valley of Virginia, is Max Meadows, in Wythe County, 8 miles from Wytheville. Situated at an altitude of 2,000 ft. above the sea, great stretches of fertile meadows lie along both banks of Reed Creek, a bold and never failing stream of pure water. Adjoining these are low undulating hills, with a background of mountains. The climate is superb, the soil fertile—blue grass is indigenous and generous crops and fat cattle abound.

Early in the '90's with the Virginia Development Company as sponsor, a town was laid out, the inevitable hotel and blast furnace built, and a sale of lots made. It is only justice to the promoters to say that a very large amount of their own money was expended in improvements before lots were offered, and as compared with many other places reasonable prices were asked. The blast furnace was completed about the time the reaction had begun, and stood idle until 1895, when it was leased by the Pulaski Iron Company, and run for about nine months.

In the height of the excitement, the Crescent Horse Shoe Company was organized, for the manufacture of horse and mule shoes under certain patents, and since spike machines and puddling furnaces have been added. Through all the four last dreary and anxious years the mill has never stopped, but has steadily increased its business. The main building is 225 × 90 ft., the puddle mill 100 × 90 ft. and the spike and horseshoe building 190 × 90 ft. The company is now running a 9-in. bar mill with three heating furnaces, four double puddling furnaces, three spike machines and two horseshoe machines. The capacity of the plant per day (double turn) is 60,000 lbs. of bar iron, spike rods or horseshoe blanks on the 9-in. mill, 55,000 lbs. of puddle bar, 10,000 lbs. of spikes, and 15,000 lbs. of horse and mule shoes. It makes bars in rounds and squares up to 4½ × 1 in., horse and mule shoes in 28 different weights, railroad and T-spikes of any size, and boat spikes up to 8 × $\frac{9}{16}$ in. Two hundred men are employed, mostly whites, with families. I was told that there was not a vacant house in the place, and that during the last three years the building of the attractive houses and cottages which one sees on every hand, had gone on uninterruptedly. There are several large stores of unusual excellence in the place, supplying every necessary and many articles of luxury. A large cooling room, where fresh meats can be had at any hour of the day, is an unusual accompaniment of so small a place.

One of the first and wisest outlays by the promoters was the establishment of a pumping station near the mill, the completion of a large reservoir on a high hill near by, and the laying of water-mains through the graded streets where the lots were laid out. As a consequence, every house in the village, be it large or small, is furnished with a copious supply of excellent water from a brooklet fed by springs. The place is too small as yet for an organized fire department, but the normal pressure in the mains will throw water above any building in the settlement.

The furnace is by long odds one of the very best in the South in design. It is 17 × 75 ft., equipped with three Whitwell stoves 20 × 70 ft., with a completed foundation for a fourth; 14 double flue boilers 54 × 30 ft., with two flues 18 in., two Allis engines, 42-in. steam cylinder, 60-in. stroke, and 84-in. blast cylinder, fitted with Corliss valves. The engine-house is large enough to take another engine, being 40 × 60 ft.; the pump-house adjoining is 20 × 40 ft. All of the flues are overhead and the chimney-stack 175 ft. high, with 10 ft. internal diameter. The cast-house is 150 × 75 ft., allowing all iron to be handled by daylight, in addition to slow cooling. The stock-house is 280 × 130 ft. Three tracks run on trestles 20 ft. high through the stock-house and 400 ft. beyond. In addition there is a track on the stock-house floor level whereby material can be handled directly from cars into the charging barrows.

The iron is carried out from the cast-house by an overhead tram with suspended cradles, thus keeping the cast-house floor free from tracks or other obstructions. The pig when unloaded from the cradle is dropped on breakers and broken, then properly graded and piled, ready for handy and cheap loading, on two long sunken tracks running the length of the iron yard one on each side. It would be difficult to devise a more rapid and cheap method of handling iron.

When in blast the ordinary weekly run of the furnace was over 800 tons on a 40 to 42% mixture. The best week's work was 920 tons and the output during the whole blast was almost entirely foundry of high grade and attractive appearance. The weak point in the furnace, otherwise very complete, is the Brown skip hoist; notwithstanding that it has the Scott & Kennedy attachment for distributing the stock it has not worked satisfactorily with the ores used, the furnace with every effort made to avoid it, working faster on the front than in the rear. It will be a small matter to put in a vertical hoist, and then this will be a first-class plant in every respect. Although now idle, it is carefully watched and everything about it protected.

The pertinent question arises, why was this extensive furnace plant located at Max Meadows?

Draper's Mountain, about two miles back of the place, is a bold ridge running from the east side of Reed Creek some 15 miles to Pulaski. On the northerly flank of this ridge at its base, the float or brown hematite ore can be traced, and it was currently received as Potsdam ore. At Clark's Summit, seven miles distant, at the time of the building of this furnace, the Consolidated Mining Company was operating a mine which was yielding from 2,000 to 3,000 tons a month of an excellent brown ore. At the lower end of Draper's Mountain this same ore was not only showing on the surface in the shape of heavy float and boulders, but up the hillside a mass of ore some 15 ft. high was exposed, and locally known as the "Great Outburst." Following the mountain around to Reed Creek a number of shallow cuts and pits showed apparently large quantities of ore, but different in appearance and quality. The former, known as the Henson ore, gave as follows for lump:

	1	2
Iron	47·22	49·42
Silica	17·85	11·59
Manganese	1·27	1·42
Phosphorus	0·12	0·30

The sulphur in all of the brown ores of this region is extremely small. These analyses were strictly representative of the Clark Summit ores, which worked well in the furnace, making an excellent foundry iron. The other ores, known as Locust Hill, gave very different results. The numbers represent different openings, running over a considerable area.

	1	2	3	4
Iron	42·55	40·40	45·90	45·73
Silica	14·32	22·16	11·45	15·41
Manganese	6·73	1·45	3·85	2·44
Phosphorus	0·39	1·48	1·27	0·57

It may be noted here, that in the brown ores along the Blue Ridge, great local variations in the manganese and phosphorus contents take place, and that, as a rule, the high manganese is found near the surface and in pockets. Both of the above ore deposits were bought by the Furnace Company, and a narrow-gauge railroad 3½ miles long built from the furnace to the Henson mines. As the Locust Hill property was threatened with litigation, nothing was attempted there. The title has since been judicially confirmed. It was the intent to supplement these local ores with the limestone ores from Cripple Creek, on the North Carolina extension, and gossan ores from Carroll County, a haul for both of about 32 to 40 miles. Limestone was close at hand and the proposed fuel was of course Pocahontas coke, with a 103 mile-haul.

The furnace was completed about the time the bubble was distended to bursting point; but, irrespective of this, a severe and unexpected disappointment had been encountered. The Clark Summit ore suddenly gave out. A mass of solid high-grade ore, fully 25 ft. high on the face and several hundred feet long, was replaced throughout by a face of tough, yellow clay. Test tunnels driven through this clay shortly struck a solid ledge of what was at first supposed to be ore, but it proved only a ferruginous sandstone, 30 to 33% in iron and 35 to 40% in silica. Messrs. McCreath and d'Invilliers had sometime before, in their book on the *Mineral Wealth of Virginia* called attention to the fact that the measures in Draper Mountain were faulted, and that the sub-carboniferous had been interjected into the No. 2 limestones, but in the excitement at the time this had been overlooked. The Clark Summit and Henson ores were sub-carboniferous, and, like these ores elsewhere in Virginia, notably on the Clinch Valley Extension, beyond Graham, in extremely limited quantities, notwithstanding large showings on the surface. A modern washing plant and mining camp, which had been established at the end of the narrow gauge at Henson, was only in use for a short time when it was found that the ore supply was too scanty and expensive to work. No attempt was made at the time to work the Locust Hill ores, as the title was still clouded.

I do not have Messrs. McCreath and d'Invilliers' book by me but my recollection is that they suggest that these ores may be in No. IV. or the Medina sandstones. I do recall that these gentlemen stated that the disturbed conditions in Draper Mountain warranted a fuller and more exhaustive investigation. When in 1895 it looked as if the iron business was on the point of revival, the Pulaski Iron Company leased the furnace, which then had some 20,000 tons of ore in stock, and adding to this the gossans and limonite, both limestone and mountain, from Cripple Creek, ran the furnace very successfully as far as quality and quantity were concerned, and only stopped when business conditions became so adverse. What little forge iron was made worked admirably in the horseshoe works, being low in phosphorus and extremely low in silicon, giving a strong, smooth muck and finished bar, as indeed all the brown ore irons do.

To one familiar with blast furnace practice it is a sad sight to see a splendid plant standing unused. Whether this and other idle Virginia furnaces have a future is a subject too large now to be considered. What the writer has tried to do is to show one bit of salvage from the "boom" wreck; one apparently wise application of "boom" money and what might have been accomplished, if instead of moving old broken down and worn out plants, and insolvent owners to every cross roads in the South, one fitting and good enterprise had been established and maintained at a proper point. An industrial nucleus might have been formed around which in time other and cognate enterprises would have surely gathered, There is much in the South that can yet be saved with a proper effort.

Underground and Overhead Trolleys.—In nearly all our larger cities the use of the overhead trolley system for street railways is allowed with the understanding that it shall be replaced with a better system when the better system appears. In many cases this is made conditional in the charters. The cost of underground conduit installations is greatly in excess of overhead construction work, and the companies using the overhead line are naturally not enthusiastic in developing the success of the more expensive system. In fact it is almost certain that in some cases, at least, their influence has been in an opposite direction. The underground conduit system was tried in Boston in 1888 and taken out as a failure. If it had succeeded, and all Boston's streets so equipped, the extra cost to the West End Company would have been enormous.

VEIN-WALLS.

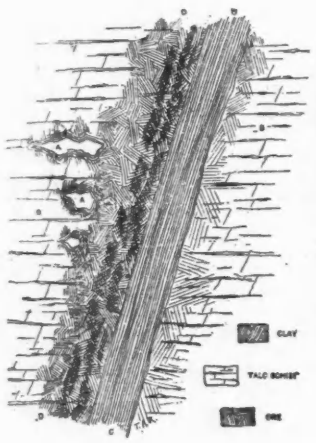
By T. A. Rickard.

In this paper, which was read before the American Institute of Mining Engineers, Mr. Rickard says that from time immemorial the fissure vein has been held the simplest type of ore-deposit. The ores which carry the valuable metals have been supposed to occur mainly in fissures, cleaving the rocks in diverse directions, and the noblest type of vein has been deemed that which cut across the country independent of its structure, whether evidenced as bedding, foliation or cleavage, and which was identified with rents produced in the rocky crust of the earth. As so conceived, the vein was a fissure filled with ore, extending through the country for a varying distance, and continued downward to a depth more or less proportionate to its longitudinal extent. The vein-material was bounded by an encasement of rock, and those immediate surfaces which limited it on either side were called "walls." These primary conceptions have become modified by the experience of modern mining in widely separated regions. The study of lode-formation has led to the recognition of notable departures from the supposed normal structure of the veins of Saxony and Cornwall, the homes of early economic geology.

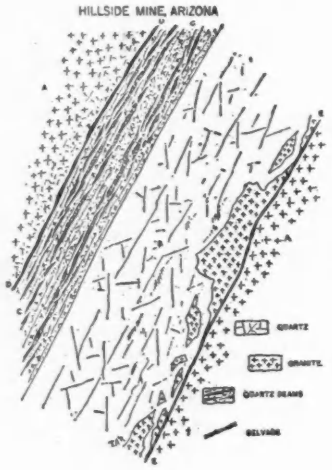
Typically the walls of a vein are conceived as parallel rock-planes enclosing the ore, the upper one being called the "hanging," and the lower the "foot-wall." Walls are rarely alike. Even where a vein traverses a homogeneous formation, such as a massive crystalline rock, it is usually found that the surface which bounds it underneath differs from that which limits it overhead. This is to be ascribed to the effect of the agencies which brought about the deposition of the ore. The action of underground waters tends at first to affect both equally; but in many cases probably the solutions, as they slowly ascend along the line of fissuring, are prevented from penetrating into the encasing rock by the occurrence of an impermeable covering of clay, due to abrasion, which may line either wall, but, because of gravity, generally accompanies the under one. Similarly we are justified in supposing that the deposition of a mineral deposit may form a coating which would serve to protect the foot-wall from the corroding effects of chemical action. The activity of the mineral-bearing current thus becomes diverted in its greatest intensity toward the upper wall, where the decomposition of the rock-surface may be followed by its disintegration so as to cause the exposure of fresh faces for further dissolution.

Illustrations of these conditions may be seen in Figs. 1 and 2. The first is reproduced from a sketch made in the lower level of the Union & Companion mine at Cornucopia, Union County, Oregon. It represents the breast of the north drift on the west vein. The country, a fine-grained granite, is not visibly altered under the foot-wall; but along the hanging it exhibits an alteration of its more soluble ingredients. There is a slight selvage, *D*, separating the granite from the pay-ore, *C*, which is about 10 in. thick, and consists of ribbons of quartz, impregnated with pyrite and alternating with strips of altered country. A distinct parting, unaccompanied by any apparent selvage, divides this streak of ore from one, *B*, below it, which is twice as thick, but much less gold bearing. This part, *B*, of the vein consists of white quartz, carrying occasional patches of pyrite, and marked by large inclusions of slightly altered country, arranged along the foot-wall, where a thin selvage separates them from the outer granite. The evidence of vein-structure embodied in this figure permits diverse interpretations. The upper pay-streak, *C*, appears to us to be country rock, in place, decomposed, fractured and silicified, with accompanying precipitation of gold. The central wall may have been the original hanging wall. The present foot-wall is sufficiently distinct; but the occurrence of the pieces of enclosed country leads us to believe that at an earlier stage the foot-wall was broken and irregular; the shape and position of the fragments of rock now lying upon it being such as to render it doubtful that they could have been detached from the hanging.

FIG. 2.



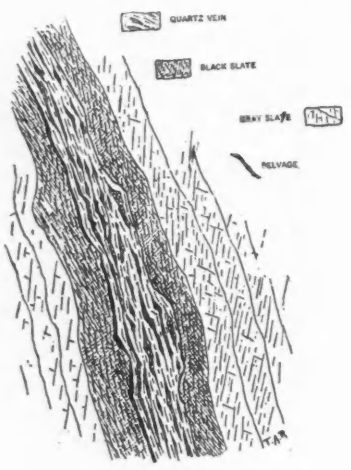
HILLSIDE MINE, ARIZONA



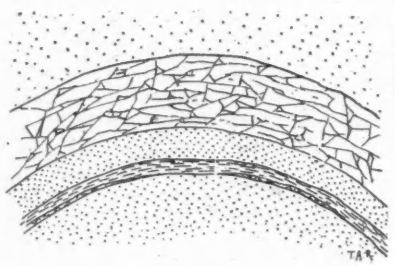
UNION AND COMPANION MINE, OREGON.

FIG. 1.

FIG. 4.



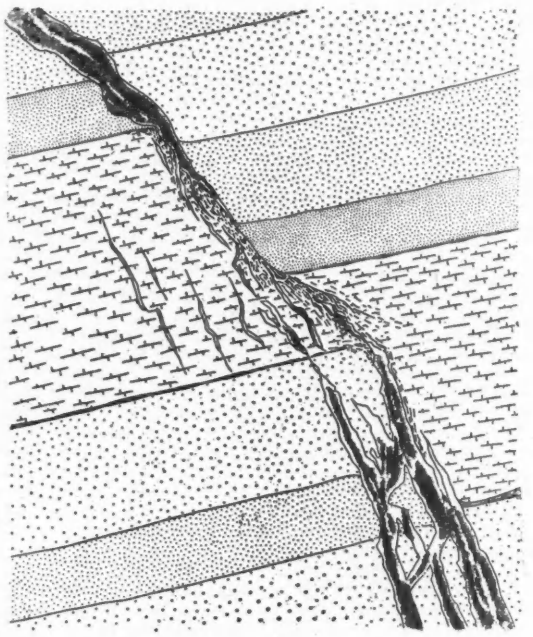
BONANZA VEIN, OREGON.



JOHNSON'S MINE, VICTORIA.

FIG. 5.

FIG. 3.



ENTERPRISE MINE, COLORADO.

Fig. 2 was drawn in the No. 4 level, north, of the Hillside mine, Yavapai County, Arizona. The lode occupies a strong fissure, cutting almost vertically through the nearly horizontal layers of a quartzose talc schist, *B B*. The original line of fracturing is probably now occupied by the seam, *C*, 6 in. thick, of white talcose clay, covering the foot-wall. The ore-bearing portion, *D*, of the lode is formed by an irregular mineralization of the hanging-wall country, extending to a distance of from 15 to 18 in., and presents an intricate medley of quartz, pyrite, zinc-blende and a little galena, carrying about 1 oz. gold and 25 oz. silver per ton. The most noteworthy feature of the section is the occurrence in the hanging, on the outer confines of the main ore-streak, of several irregular cavities, *A A*, whose inner surface is covered by a series of silicious coatings, evidently deposited by mineralizing waters that have circulated through them. Along the outcrop of the lode, at Wikiup Point, there occur hollows in the schists, of a character similar to those above described, and of such a shape as to suggest that their origin was due to the removal, by waters carrying carbonic acid, of certain portions of the country, rendered soluble by the segregation of lime. As the fourth level nearly follows the water-level of the mine, and the silicious encrustations were stained with iron oxide, the formation appears to have been due to what Posepny called the Vadose circulation. On the other hand, the impregnation of the hanging-wall country by sulphides cannot be ascribed to oxidizing waters, and must have taken place at an earlier period, when the surface was relatively more distant.

The lode follows a fissure formed along the axis of a synclinal bend in the schists, and often very noticeably reproduces the structure of the country which it has in part replaced, the ore breaking along lines cor-

responding to the almost horizontal foliation of the schists. The width of the ore is very irregular. That occasionally found under the clay seam is rarely rich enough to mine, the main pay-streak being that portion of the vein bounded underneath by the clay and extending into the hanging until the mineralization becomes so meager that "ore" becomes "country-rock."

When a vein occurs in a formation composed of several kinds of rock it may cut across the lines of parting and be labeled a "true fissure"; or it may conform to them, and become a "bedded vein," if the two beds happen to be similar, or a "contact-vein," if they are dissimilar. It is evident that, when a vein crosses the bedding of a series of sedimentary rocks, the differences between the enclosing walls at any given place will depend upon the thickness of the beds traversed, and the extent of the faulting of the country along the line of the fissure. When the faulting is slight, the change in the wall-rock will be practically simultaneous for both sides of the vein; while, when the dislocation is equal to, or exceeds, the thickness of the members of a series of dissimilar beds so intersected, the opposing walls may be entirely dissimilar. This is illustrated in Fig. 3.

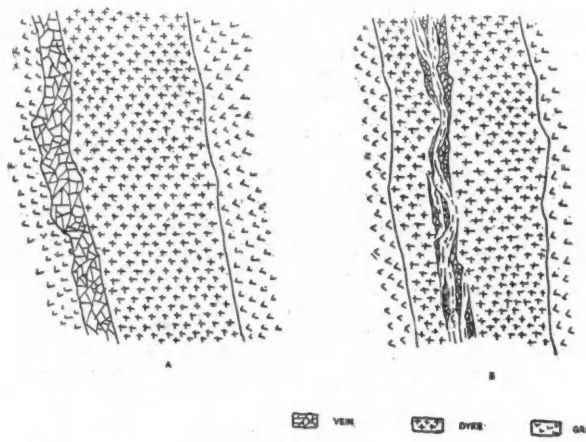
Fig. 3 represents the breast on August 14th, 1894, of the north drift of the Jumbo No. 2 vein, on the Group tunnel level, in the Enterprise mine, at Rico, Dolores County, Colorado. The vein follows a fault-fissure through a series of lower carboniferous shales, limestones and sandstones. The throw of the fault, along which the ore has been deposited, is about 2 ft.; the thickness of the prominent bed of limestone is 3 ft., and the section shown in the figure covers 7 ft. × 6 ft. It is characteristic of the veins in this mine that they split up and become impoverished in lime, while in the sandstone, on the contrary, they usually become clean-cut, compact and richly ore-bearing, as is the case at the top of the drift represented in the figure. In traversing the lime, the selvage following the line of fissuring is very noticeable; but in the sandstone, particularly where the vein splits, the ore is "frozen," that is, has no evident parting separating it from the encasing rock.

Of the change observable in the character and value of the mineral ingredients of a vein in its passage from one kind of rock into another, one of the best-known examples is that of the old Dolcoath mine in Cornwall, where the vein in leaving the clay-slate (killas) and penetrating the granite, changed from a copper-bearing into a tin-bearing lode. On Newman Hill, Rico, Colo., the veins of rich gold and silver-bearing ores are noticeably affected by the character of their rock-walls. This inter-dependence between country and ore has been used as an argument in support of the now crippled lateral-secretion theory. It has been suggested that this relation, often noticed in vein mining, points to the derivation of the ore from the enclosing rock, and that some formations have an enriching effect, because they have been the source of the valuable metals now found in the veins penetrating them. But as Cotta long ago suggested, the influence of the physical texture and chemical composition of the country, as facilitating the deposition of the ore, may explain this phenomenon. The former would affect the rate of cooling and the formation of adhesive crusts. The latter would act by direct chemical precipitation. In the case of veins which lie along the bedding-planes of sedimentary rocks, the dissimilarity between the enclosing walls may not go further than a slight difference in the grain of two beds of sandstone, the color of two beds of slate, etc., or it may reach the more marked diversity presented by rocks as entirely unlike as a quartzitic sandstone and a soft slate. Fig. 4 represents a gold vein, following the bedding of, and encased by a band of black slate, which is in turn flanked on either side by light gray slates. The ore consists of ribbons of quartz, mingled with strips of included country, and separated from the outer slates by a selvage, faint on the hanging, but strong on the foot-wall. The drawing was made July 3d, 1895, in the upper level of the Bonanza mine, Baker County, Oregon.

The comparatively straight walls of ordinary vein-mining occasionally give place in veins of the bedded class to surfaces having a marked curvature. Such walls characterize the saddle-reef, a type of lode structure common in only two known mining districts, namely, Bendigo, in Australia, and Waverly, in Nova Scotia—unless it be true, as is now stated on good authority, that the Broken Hill lode in New South Wales, is also a saddle-reef. In these regions gold-bearing quartz is found along the bedding planes of folded sedimentary rocks. While anticlinal folds (or saddles) alternate with synclines (inverted saddles or troughs) experience has shown that the ore-deposition is mainly confined to the former. Such a formation will offer many striking features, because of the occasionally very regular curvature of the walls. I remember, for instance, standing in the stopes just above the 980-ft. level in the Johnson's mine at Bendigo, and seeing the foot-wall curve underneath like the top of a boiler, while the hanging arched overhead like a Roman bridge. This was the apex of a saddle, as illustrated in Fig. 5, reproduced from a sketch made at the time. The lode is seen to consist of white quartz about 2½ ft. thick, separated from the overlying sandstone by a very regular parting of black clay. Underneath is about 1 ft. of sandstone, then a dark seam of slate from 5 in. to 6 in. thick, whose parting from the next bed of sandstone is marked by streaks of quartz, thinning out both east and west. The downward continuation of such a formation (the "legs of the saddle") presents the appearance of an ordinary bedded vein, usually marked, however, by a noteworthy want of persistence of ore in depth.

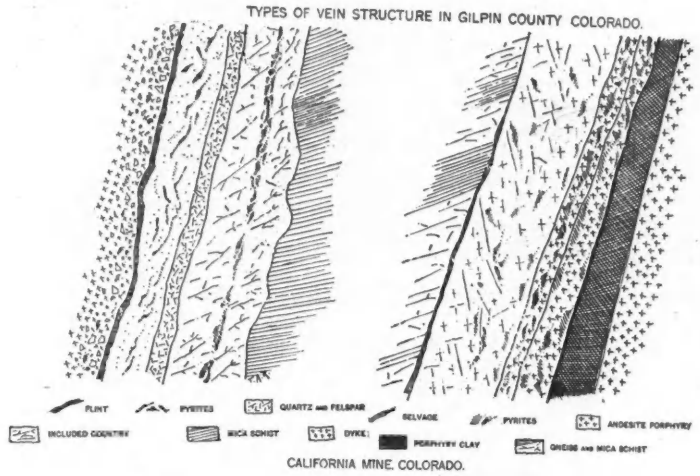
Many veins follow the contact between eruptive dikes and the metamorphic or sedimentary formations which they have penetrated. The dikes of quartz-andesite porphyry traversing the granitoid gneiss of the earliest mining districts of Colorado (in Boulder, Gilpin and Clear Creek Counties) offer many examples of this type of vein structure. In such cases the mineralization may often be found to have spent itself on the more soluble porphyritic igneous rock, rather than upon the less soluble metamorphic. The walls of such veins will vary, as the ore deposition has followed either fractures along the immediate contact, or those which ramify into the body of the dike, or those again which cut across the latter, where its irregular outline has been an obstacle to the main line of

FIG. 6.



TYPES OF VEIN STRUCTURE IN GILPIN COUNTY COLORADO.

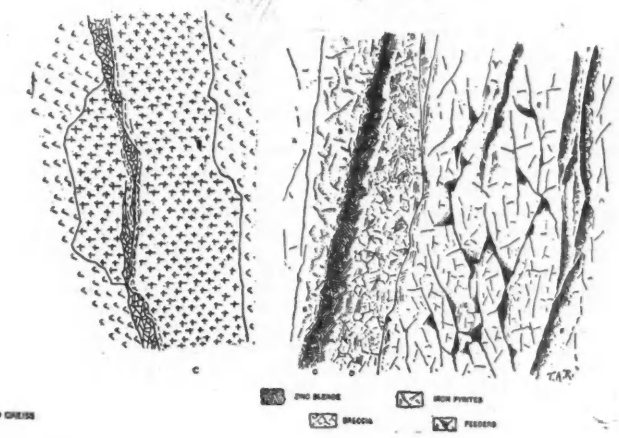
FIG. 7.

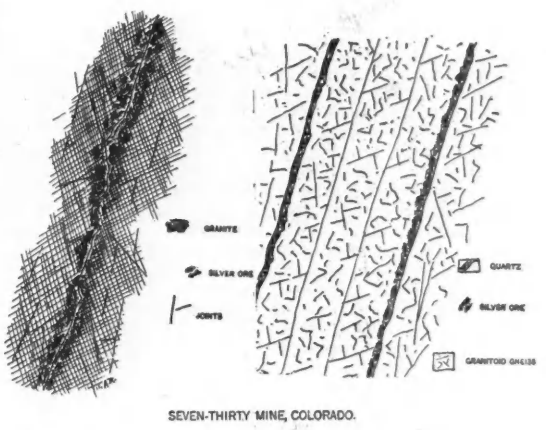


CALIFORNIA MINE, COLORADO.

FIG. 8.

FIG. 10.





SEVEN-THIRTY MINE, COLORADO.

FIG. 9.

FIG. 11.

fissuring. These ideas are illustrated in the diagrams *A*, *B* and *C*, Fig. 7.

The California mine, in Gilpin County, Colorado, offers many examples of such vein-phenomena. Figs. 7 and 8 represent the western ends of the 2,000-ft. and the 2,100-ft. levels, as seen on July 13th, 1892. In the first the vein is seen to lie between mica-schist, on the foot, and porphyry, on the hanging. The porphyry forms part of a dike, 17 ft. thick, of dacite or quartz-andesite, and is both brecciated and much decomposed near the lode, from which it is separated by a dark band of flint, which consists of small fragments of porphyry cemented together by a very dark chalcedonic quartz. Underneath this there are 5 in. of white kaolinized porphyry, containing threads of iron and copper pyrites. Next comes 1½ in. of quartz and feldspar intermingled; then a band of included country, part gneiss and part mica-schist, which is subdivided by a streak of pyrite. Finally there is an irregular foot-wall; the load-filling shading off into the soft mica-schist which underlies the vein. The lower level, shown in Fig. 8, exhibits a marked difference. The lode has crossed the dike, and the porphyry forms the foot-wall. Next comes a thickness of 6 to 8 in. of white, soft, decomposed porphyry, then a black selvage, with slicken-sides on the lower side. Then come two bands of mineralized porphyry, separated by thin partings. The main width of ore consists of about 2 ft. of lode-filling traversed by patches and streaks of pyrite. Fragments of porphyry can also be recognized in it. This is separated from the overhanging gneiss and mica-schist by a selvage of varying thickness.

In the neighboring Indiana claim, the California vein exhibits certain changes, the most evident of which are the absence of selvages, the indistinctness of its limits and the brecciation of the vein filling. This is suggested in Fig. 9, which represents the breast of a stope above the 800-ft. level west, as observed November 13th, 1895. The enclosing country, *A A*, is a granite almost destitute of mica. The part *B* is bespattered with pyrite. The best ore is a seam, *C C*, of black zincblende lining the hanging-wall. *D* is evidentally brecciated. The larger part of the section consists of slightly altered country (*E E*) reticulated with seams of blende, following joint-fractures. The foot-wall of the vein is considered to be under the bands of zincblende and copper pyrites occuring along *F F*. The entire width is about 4 ft. The lode has departed from the dike, with which it is so closely associated in the neighboring mine; but the workings show that it meets this dike at intervals, and is benefited by the intersection. That the vein follows the line of a fault can be seen by examining the walls of the 2,000-ft. level in the California mine, more particularly at points between 350 and 450 ft. west of the shaft, where the lode has left the dike entirely, and is encased in the gneiss and mica-schist. The country rock on the two sides of the drift is not the same. The extent of the throw of the fault, however, could not be measured.

In the course of the foregoing descriptions of lode-structures, mention has been repeatedly made of the occurrence of clay selvage, following sometimes one, sometimes both, of the walls of a vein. This "clay" may occasionally be material precipitated from solution: ordinarily it is only crushed rock. It frequently incloses exquisite mineral specimens, because its soft consistency has permitted untrammeled crystalline growth. Most examples of well-developed crystals of native gold have been discovered under such conditions. This is the case at Cripple Creek, Colorado, where the gouge or clay has been dried and hardened near the surface, and as a crumbly earth, made purple by the presence of fluorite, carries beautiful crystals of gold pseudomorphic after sylvanite and calaverite. The exquisite leaf-gold specimens, for which Farncomb Hill (Breckenridge, Summit County, Colorado.) is so famous, are found imbedded in talcose clay. Large pieces of pure argentite are often found in such an environment, as at the De Lamar mine, in Owyhee County, Idaho. Wire-silver also has been found in comparatively large amount encased in such a "mud" in many Leadville mines, notably at the Crown Point, in 1886. By reason of their opposition to the passage of water such seams of clay protect the rock surface of vein-walls, and underneath them there will occasionally be found comparatively fresh and unaltered rock having beautifully polished faces or slicken-sides.

Many veins have no defined walls, but graduate imperceptibly into the inclosing country, and are bounded only by the commercial value of the material mined. Such veins are to be seen, for instance, in the mountains that overlook Silver Plume, Clear Creek County, Colorado. Fig. 10 represents a sketch made May 27th, 1892, from the 300-ft. level of the Seven-Thirty mine. A fracture penetrating the metamorphic granite carries ore on both sides, which diminishes in richness as it spreads into the incasing country. The joints in the granite are evident. In this mine the so-called walls are often simply two parallel veins (rich, but very small), separated by clean, hard country. This is illustrated in Fig. 11, which was obtained from the same level about 1,000 ft. further east. The granitoid gneiss is traversed by two streaks of ore, of which the one to the right is much the richer. Between them there are at least two well-marked parallel fractures devoid of ore. The vein to the left has a thin selvage, under which there is a streak of quartz carrying a little silver ore; but the companion vein to the right follows a fracture, unaccompanied by any selvage, whose upper side is impregnated with about 3 in. of tetrahedrite, galena and polybasite.

Where ore is absent in the Seven-Thirty mine, the walls are apt to be particularly well defined; and when there is any thickness of rich silver bearing mineral present, the walls are scarcely to be distinguished, and the rock is hard to break, because it is destitute of convenient partings. The large veins carrying gouge are found to be uniformly poor, except where they meet the very narrow rich streaks which constitute the resource of the property. The Seven-Thirty vein proper is only 2½ in. thick, but it is very persistent through the midst of hard crystalline rocks, and it has, for 20 years, proved very productive.

In many mines one vein only is exploited, and crosscutting the country in search for parallel lodes is entirely neglected. In others, a crosscut is stopped as soon as it reaches the further wall of the particular vein it was started to reach. Both these unwise practices are founded upon a misconception of lode structure, due to a narrow interpretation of the early teachings of economic geology, which lays a misleading emphasis upon the definition and clean-cut boundaries of so-called "true fissure-veins." The fact is, as daily observation proves, that there are walls within walls, and walls beyond walls; and that to follow closely any particular hard, smooth-rock surface, with the idea that it is the utmost limit of ore occurrence in any particular mine, is to be blind to the realities of geological structure.

(*To be concluded.*)

ABSTRACTS OF OFFICIAL REPORTS.

Atlantic Mining Company, Michigan.

The report of this company for the year ending December 31st, 1896, shows that the production of mineral was 6,449,600 lbs., which yielded 75·88%, or 4,894,228 lbs. of refined copper, for which an average of 10·84c. per pound was realized. The receipts for copper sold were $530,667; interest received, $494; total, $531,161. The working expenses at mine were $394,379; smelting, freight and all other expenses $64,830, making a total of $459,209, and leaving a profit of $71,952. To this is to be added $3,185 received for stumpage on the company's property, making a total of $75,137.

The following expenditures were also made during the year: Construction account at mine, $20,772; at mill, $20,668; on railroad, $4,068; paid for timber lands, less sales, $1,218; a total of $46,726. Deducting this, the receipts over expenditures in 1896 were $28,410. The surplus from 1895 was $150,875, making the net surplus December 31st, 1896, $179,285; from which a dividend of $1 per share ($40,000) was paid February 10th, 1897.

The directors say: "Although the removal of our stamping operations to the new site on the shore of Lake Superior had been effected by the close of 1895, yet much remained to be done to perfect the plant and put it in good working condition, and to complete the railroad connections and equipment. This work, and the completion of the new shaft, which has been constructed from the surface to the bottom of the mine through the old workings, with the equipment for operating it, have absorbed a large portion of the earnings of the year, but this expenditure could not be avoided if the output of the mine is to be increased, or even maintained at the rate of the past few years.

"The quantity of rock stamped was 371,128 tons against 331,058 tons in 1895, the total cost per ton of rock treated being increased about 5c., mainly by an advance in the wages paid of about 10%; but the yield of the rock was only 13·19 lbs. per ton against 14·60 lbs. in the previous year, and thus the cost per pound of copper has also been materially increased. During the past 10 years the yearly average of yield of our rock has fluctuated between 12·3 lbs. of copper per ton as the minimum and 14·6 lbs. as the maximum. The balance sheet shows assets at the close of the year as follows: Cash, $33,934; copper bills and copper on hand, sold, $94,436: coal, wood and supplies at mine, $48,511: merchandise in store at mine, $46,920; accounts receivable, $2,038; total, $225,839. The liabilities were: Agents' drafts, $2,500; indebtedness at mine, $35,293; accounts payable, $8,761; total, $46,554, leaving the balance of assets $179,285, as above."

A general summary of results is as follows: Ground broken in openings and stopes, 20,629 fathoms; rock stamped, 371,128 tons; product of mineral, 6,449,600 lbs.; product of refined copper, 4,894,228 lbs. The yield of refined copper per cubic fathom of ground broken was 237 lbs.; the yield of rock treated, 13·19 lbs. per ton, or 0·66%.

The expenses for the year, which are given in the report in very full detail, are divided as follows:

	Amount.	Per ton of rock. Cents.	Per lb. copper. Cents.
Mining	$216,929	58·45	4·43
Surface expenses	66,716	17·98	1·36
Transportation to mill	18,423	4·96	0·38
Stamping and separating	92,311	24·87	1·89
Total mine expenses	$394,379	106·26	8·06
Freight, smelting and marketing	64,830	17·47	1·32
Construction	46,726	12·26	0·96
Total expenses	$505,935	135·99	10·34
Total value of product	531,161	143·00	10·84
Net returns	$25,226	7·01	0·50

The report of Mr. F. McM. Stanton, agent in charge at the mine, says that No. 1 shaft has been extended to the 18th level and No. 3 to a point 53 ft. below the 26th level. A movement in the hanging wall in the 13th level, north of No. 1 shaft, increased the inflowing water so that a pump of greater capacity had to be put in. The mine and machinery have been kept in good order and a surplus of ore kept ready to hoist. At the mine a combination shaft and rock house was erected at No. 3 A shaft and fitted with two 18 × 24 in. Blake crushers and machinery necessary to run them. Suitable rock bins were provided and railroad connections made to the main line. An addition was made to the compressor house and in it placed a 16½ × 30 in. Rand duplex compressor. This was done for the purpose of relieving the old compressors, so that a thorough overhauling could be given them. The milling plant is completed, but at present sufficient rock cannot be hoisted from the mine to supply the mill to its full capacity. Two more 150-H. P. boilers were placed in the boiler house, making eight in commission and completing the plant as originally designed. An electric plant has been installed, lighting the mill, shops, store and location with 250 incandescent lamps and six arc lamps. North of the mill building an iron covered oil house, 20 × 20 ft., has been erected. A turntable was placed near the entrance to the boiler house so that fuel cars run by gravity through the boiler house from the upper to the lower track, and fuel will be handled directly from the cars to the boilers. The rock bin trestle at the terminus of the railroad has been extended 100 ft. to facilitate the handling of long trains.

Mr. Stanton says: "No appreciable change in the character of the vein is discernible. The ground in the bottom of the mine looks fully up to the average in productiveness. The maintenance of higher wages, which were adopted in the latter part of 1895, has appreciably increased the costs in all departments. Being unable as yet to make a harbor at the mill site, fuel and supplies have to be transported over the railroad from the dock at Portage Lake, a distance of 12 miles. This, of course, increased the cost of fuel over that of the previous year."

This is, nevertheless, a wonderful example of economical work,

THE NORDBERG HOISTING ENGINE AT THE BOSTON & MONTANA MINES.

This engine was built for the Boston & Montana Consolidated Copper and Silver Mining Company, and is of the double quarter-crank type, the steam cylinders having Corliss valves. The characteristics of the hoist are that the reels are driven each by an independent friction clutch, these clutches being operated by independent steam cylinders, as are also the reversing gear and the brakes that are applied to the reels. The operating cylinders are controlled by levers located on a central platform, which is between the engine frames and above the same, so that the operator has a complete view of the machinery under his control. The shaft is supported in the center by a bearing.

The reels are loosely mounted on the crank-shafts and are provided with two sets of cast-iron arms to hold the rope, each set being connected around the outer circumference. One of these sets is extra heavy, and is designed to serve as a support for the brake rim forming part of the reel. The reel and its spiders are made in halves securely bolted together. A phosphor-bronze bushing is fitted to the center for supporting the reel on the shaft and forming a bearing for it to rest on. The arrangement is such that the bushing can be removed without taking the reel to pieces.

Clamps are provided for clamping the rope to the reel center, there being four to each reel. The clamps are arranged so that when they are put on the first turn-over they will run on a true cylindrical surface. The friction clutches used to drive the reels are of an axial type, the friction surfaces being set radially, while the motion of the movable parts of the clutch is parallel to the axis of the shaft. The driven ring of the clutch is bolted inside of the brake ring, forming a firm support for the latter against the pressure of the brake. The driven ring is gripped by driver rings mounted on very heavy driving spiders: the spiders also carry the clutch operating toggles that bring the rings together to grip the driven ring or force them apart in disengaging. The design is such that the grip has an even pressure all around, or so that the wear can be readily taken up and this pressure be kept even. The toggles are operated from a large sliding piece on the engine shaft, which, in its turn, is operated by a rock shaft, levers and collar. The rock shaft is mounted on strong bearings and brackets supported by the engine frame, and is operated by a steam device, as above mentioned. The friction surfaces of the driving rings are lined with bass-wood. The brake on each reel is of the type known as the Post brake. The shoes are suspended on heavy carriers mounted on the foundation plates, the suspension being made in such a manner as to obtain an even clearance around the brake when it is disengaged, thus preventing undue heating and wear. There are two sets of levers and drawbars for drawing the brakeshoes together, one at the top and one at the bottom. The levers are of steel and the drawbars of hammered wrought iron. The shoes are made of wood, three sections to each shoe, all sections being interchangeable. The wood can readily be removed by loosening a few bolts. The drawbars are fitted with turnbuckles that permit of ready adjustment in the brake.

The brake actuating device is of the Nordberg patent type, in which a dead weight is used for applying the brake and a steam cylinder for relieving the same. The valves of the hoist being of the Corliss type, the reversing gear must be such as to give exactly the same motion when the engine is running over as when running under. As this result cannot be accomplished by a link motion, the following device is used: There are four spur wheels, one of which is driven by parallel rods and eccentrics from the main shaft. This gear drives a second, and this in turn a third one; and the third drives a fourth and last gear which is keyed on a shaft that is parallel to the main shaft, and which extends between the two engine frames. At the end of this shaft are placed the cranks that give motion to the wrist-plates on the cylinder. The centers of the four gears form the four corners of a parallelogram. The second and third can be raised and lowered by a steam device which causes the circumference of the fourth gear, and with it the shaft to which it is keyed, to advance or retard, in relation to the position of the cranks, the effect being the same as if the eccentrics were set forward or back on the engine shaft.

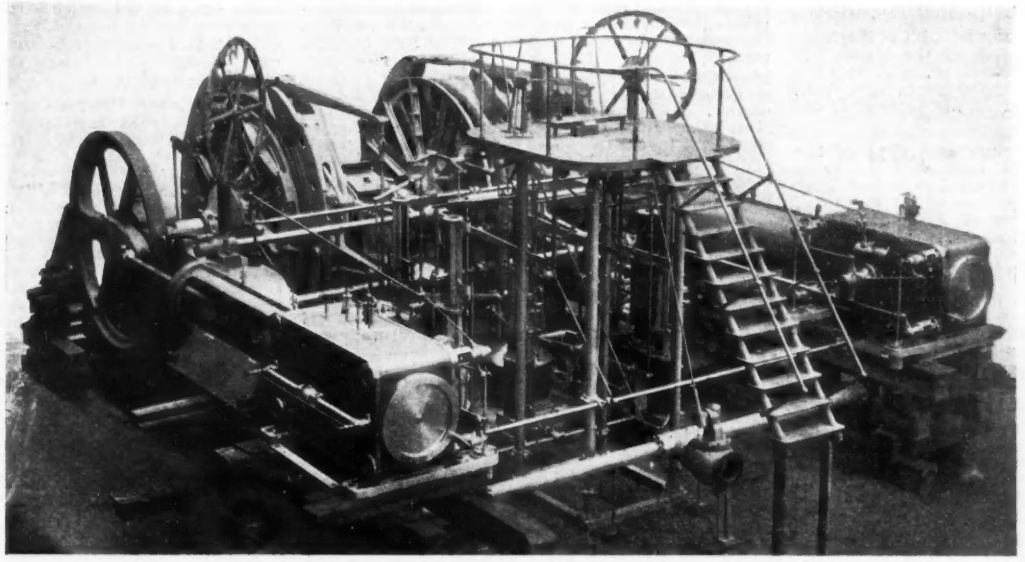
The cranks are of a balanced disk type, having the periphery turned and band-brakes applied thereto. These brakes are operated by a mechanism controlled by the foot of the operator on the platform.

The platform is supported on wrought-iron columns independent of any other part of the machine. The throttle lever is located in the center of the platform and is arranged so that a motion parallel to the shaft operates the reversing gear, all the movements of the engine being controlled by this one lever. On each side of this lever are the clutch and brake operating levers respectively. All are sensitive in their action and require little effort on the part of the operator. The cut-off mechanism is operated by the same lever as the throttle valve.

The steam devices for operating the brakes, clutches, etc., as above mentioned, are all exactly alike and their parts interchangeable. They consist of steam cylinders 5-in. diameter by 24-in. stroke, supplemented by an oil-resisting cylinder directly above, the diameter of which is 4 in. and the stroke 24 in. The steam cylinders are jacketed with live steam and covered with plastic covering enclosed in a neat lagging of steel. The valve admitting steam to the cylinders is located at the bottom so as to act as a drain. This feature, together with the steam jacket, causes the cylinders to respond instantaneously to the movement of the hand levers. The connection between the hand lever and the valves is such as to compel the motion of the lever and the pistons of the operating gears to correspond, producing the same result as if the clutches, brakes and reversing gear were operated directly by hand.

The oil valve opens and closes simultaneously with the steam valve. In its open position the two ends of the oil cylinder are brought into communication with each other, while in the closed position the communication is shut off so that the cylinder and its piston form an efficient lock to prevent the slightest movement of the steam piston when the valve is closed.

A polished steel tank is furnished and placed on the platform. This tank is filled with oil and piped to the bottom of each oil cylinder, there being an air vent with suitable valve at the highest point of the oil cylinders. By this means any leakage of oil can be quickly replaced.



NORDBERG HOISTING ENGINE, BOSTON & MONTANA MINE.

The miniatures are 5 ft. in diameter and are driven by a worm cut on the hub of the reel. The station marks on these miniatures are adjusted in a groove cut in the dial. The center bearing is of heavy design and of such height as to reach below the bottom of the reel. It is fitted with quarter boxes lined with genuine babbitt and adjustable in any direction.

The engine frames are of the hollow girder type, the main bearing and the guides being in one casting. The cylinders are bolted to the bell end of the frame. They are cast of remelted iron and are heavily covered with plastic non-conducting material, which is incased in a neat lagging of steel. The crossheads are of very heavy type and are fitted with cast-iron shoes lined with genuine babbitt metal. The connecting rods are of the Nordberg solid-end type, fitted with patent brasses. By-pass valves for landing the cages are provided on each cylinder and controlled from the platform.

The engine is designed to lift a load of 4,000 lbs., excluding the cage, at the rate of 1,500 ft. per minute. The cylinders are 20-in. diameter, by 60-in. stroke, and the reels will take 2,000 ft. of 5 by $\frac{7}{8}$-in. rope.

The engine was designed by Mr. B. V. Nordberg and built by the Nordberg Manufacturing Company, Milwaukee, Wisconsin.

A New Fluorescent Material.—An Amsterdam chemist, Dr. Van Melkebeke, has discovered a fluorescent material, which, it is claimed, is superior to any now in use. It is a compound fluoride of uranium and ammonium, and can be furnished at a reasonable price.

Coal in Bechuanaland.—Recently, says the *South African Mining Journal*, the discovery of coal in Khama's country was announced. The last advices state that the strike was made quite accidently; a party of well sinkers employed by the Imperial authorities came upon the seam at a depth of 70 ft. while boring for water. The coal is reported to be of first-class quality, and is estimated to occur over a large area. As the site of the find is close to the railway route the value of it cannot well be over-estimated—especially in view of the exploitation of the mineral belts of the Tati District.

PERSONAL.

MR. JOHN TIERNEY, superintendent of the Allison Ranch mine, Cal., has severed his connection with the company.

MR. J. J. DALY, of the Daly-West mine at Park City, Utah, is in Mexico on a combined business and pleasure trip.

MR. NORWOOD JOHNSON, of Washington, Pa., field superintendent of the Manufacturers' Natural Gas Company, has resigned after 11 years' service.

MR. L. G. HARDY, a well-known mining operator of Salt Lake City, Utah, has returned from Cassia County, Idaho, where he made an inspection of the Jennie mine, on Connor Creek.

MR. J. F. LANSING, who has been for nearly a year past commercial manager of the Trail smelter, has accepted a position with the Montana Ore Purchasing Company at Butte, Mont.

DR. J. P. HALE, of Charleston, W. Va., accompanied by MR. GEORGE SMITH, a prominent coal mine operator of the same place, has been in Rowan County, N. C., looking over the mines with a view to investing.

MR. JOSIAH TRERISE, late surveyor for the Boston & Montana Consolidated Copper and Silver Mining Company, has accepted the position of superintendent of the Montana Ore Purchasing Company's mines at Butte, Mont.

DR. F. W. IHNE, mining engineer of Chicago, has gone to North Carolina, where he will examine gold, copper and graphite properties for Chicago capitalists. On his return Dr. Ihne will go to Alabama and Colorado to examine mining properties.

MR. DEWARREN H. REYNOLDS, of Cumberland, Md., has been elected a director of the Manor Big Vein Coal Company at Shaw, W. Va., to fill a vacancy caused by the resignation of MR. WM. COULSON, who has disposed of his interest in the company.

MR. B. M. DUNSHEE, late superintendent of the Combination mine, at Black Pine, 12 miles from Phillipsburg, has taken charge as foreman of Blue Jay, Pennsylvania and Silver Bow mines in Butte, Mont., belonging to the Boston & Montana and Butte & Boston Mining companies.

MR. AUG. J. BOWIE, JR., of San Francisco, has returned from the East, and will begin the practice of his profession in this State. Mr. Bowie graduated with honors at Harvard, and later at the Massachusetts Institute of Technology took degrees in both electrical and mining engineering at the same time, and with honors.

MR. WILLIAM C. SQUIER, of Rahway, N. J., has presented to Princeton University his large and valuable collection of minerals obtained from the iron and zinc mines of New Jersey. Mr. Squier has been engaged for many years in forming this collection, and it contains many specimens which it would be difficult or perhaps impossible to duplicate.

OBITUARY.

JOHN G. JACKSON, surveyor, civil engineer and astronomer, died at his home in Hockessin, Del., on March 12th, aged 80 years.

W. C. HARRINGTON, auditor of the Virginia Coal and Iron Company at Big Stone Gap, Va., and one of the pioneer and best known developers of Southwest Virginia, died March 5th.

DANIEL B. FISHER died at Leesport, Pa., on March 14th, aged 78 years. He was formerly extensively engaged in the iron mining and timber business. Over 35 years ago he began coal operations on a large scale. Later he became proprietor of the Windsor Furnace, and was a large shareholder in the Northampton Iron Company and Thomas Coal Company.

GUSTAV SUTRO died on March 11th at San Francisco, Cal., aged 69 years. He was born in Aix-la-Chapelle, and went to California in 1853. He was closely identified with the street cable roads and electric light works of San Francisco, as well as other companies. He was president of the Safety Nitro Powder Company, and during his management consolidated it with the Giant Powder Company, of which he was a director.

GEN. GEORGE J. MAGEE, president of the Fall Brook Railway Company, died in Nice, France, on March 11th, aged 57 years. He was on his way to Egypt in search of improved health. He was born in Bath, N. Y., and graduated from Princeton University in 1860. Upon the death of his father, John Magee, he assumed the presidency of the Fall Brook & Blossburg Coal Company, which owned large tracts of bituminous coal lands in Tioga County, Pa. The development of these fields and the increase of the Fall Brook Railway from a fifteen mile line to a great connecting line between the New York Central and Philadelphia & Reading Railway has been his life work.

RICHARD UREN, a pioneer resident of the Michigan copper country, died March 10th, at Ripley. He was born in Cornwall, England, in 1835. In 1851 he emigrated to Houghton where he worked as a miner from 1851 to 1855, when he formed a copartnership with his brother in a lease of the Copper Falls mine, Keweenaw County. After the expiration of this lease, in 1859, he engaged as mining captain of the same mine until 1863, when he associated himself with Messrs. Dunstone and Blight in the manufacture of safety fuse at Eagle River. In the same year he was appointed agent of the Madison, Winthrop and Dana mines, and in 1864 also assumed the superintendency of the Pewabic and Franklin mines. He resigned in 1868 and went to California, where he established a safety-fuse factory. He returned to Portage Lake in 1872, and leased the Pewabic and Franklin mines and operated them until July, 1874. He was next agent for the Madison mine. In 1877 he went to the Black Hills and became interested there in gold mining. Returning to Lake Superior he purchased an interest in the Lake Superior Native Copper Works, of which he was secretary and treasurer. His last labors in the field of mining were while connected with the Wolverine.

PROFESSOR JAMES JOSEPH SYLVESTER died March 15th in London, England. He was born in London in 1814, and was educated at the Royal Institution, Liverpool, and at St. John's College, Cambridge, where he passed the Senate House examination as second wrangler, but was not permitted to graduate because of religious disabilities. He became Professor of Natural Philosophy at University College, in London, and afterward came to this country, where he was made Professor of Mathematics in the University of Virginia. After an interval of ten years he returned to England and accepted the Chair of Mathematics at the Royal Military Academy at Woolwich. Five years later he became a professor at Johns Hopkins University at Baltimore. In December, 1883, he was elected Savilian Professor of Geometry and Fellow of New College, Oxford, England. He was a prolific contributor to journals of a scientific nature, and was the founder and first editor of The American Journal of Mathematics. He introduced into England Peaucellier's Method of Linkages, on which he lectured before the Royal Institution, and in December, 1885, in a lecture before the University of Oxford, he made known his newly discovered theory of reciprocants, which gave rise to a vast body of special literature.

SOCIETIES AND TECHNICAL SCHOOLS.

SOCIETY OF CHEMICAL INDUSTRY, NEW YORK SECTION.—At the meeting held at the College of Pharmacy, on March 19th, a paper by S. F. and H. E. Peckham, "On the Anaysis of Asphaltum," was read.

ENGINEERS' CLUB OF CINCINNATI, O.—At the January meeting of the club Mr. W. M. Hall entertained the members with "Some Notes on the Testing of Cement." At the February meeting Mr. A. O. Elzner read a paper on "The Use of Concrete in Superstructure."

ENGINEERS' CLUB OF PHILADELPHIA.—At the meeting on March 20th, at 1122 Girard street, the paper to be presented is "The Queen Lane Division of the Philadelphia Water Supply System. Part V.—The Construction of the Reservoir." On behalf of the late Mr. Amasa Ely, Mr. John C. Trautwine, Jr., will present an account of this work.

JOHNS HOPKINS UNIVERSITY.—Sir Archibald Geikie will deliver six lectures on the principles of geology at this university, April 21st to 27th. The lectures will be given in the geological laboratory at 5 p. m., and a public lecture will be given on the evening of April 27th. This lectureship is established in memory of the late Prof. G. H. Williams. After the lectures arrangements have been made for a four days' excursion (April 28th to May 1st). The typical geological localities of Maryland will be visited, and an opportunity will be afforded to examine the several formations of the Coastal plain, the Piedmont plateau and the Appalachian region.

CIVIL ENGINEERS' CLUB OF CLEVELAND, O.—The annual meeting was held March 9th. The annual reports of the retiring officers showed the finances of the club to be in excellent condition, and indicates a net gain in membership of twenty-eight. The total membership of the club is now 191. The retiring president delivered his annual address, "The Early History of Instruments and the Art of Observing in Astronomy and Civil Engineering." The following officers were elected for the ensuing year: President, James Ritchie; vice-president, C. M. Barber; secretary, F. A. Coburn; treasurer, Hiram Kimball; librarian, A. Lincoln Hyde; first director, John W. Langley; second director, Wm. C. Jewett.

INDUSTRIAL NOTES.

The Richmond (Va.) Locomotive Works has resumed operations with a large force of workmen.

The E. & G. Brooke Iron Company's puddling mills, at Birdsboro, Pa., resumed operations on March 15th.

The Wharton Furnace at Port Oram, N. J., has gone out of blast, but will probably be started up again shortly.

The New River Mineral Company, it is reported, will soon blow in its furnace at Ivanhoe, Va., which has been out of blast for repairs.

The Parkesburg Rolling Mills at West Chester, Pa., have started operations on double time, and all departments are in full blast day and night.

No. 2 furnace of the Cole furnace plant at Sheffield, Ala., of which J. J. Gray is manager, was put in blast March 15th, after having undergone thorough repairs.

The Tennessee Coal, Iron and Railroad Company will cease making iron at Cowan, Tenn. The fine plant at that place will be removed to Birmingham, Ala. The work of removal began last week.

The Pottstown (Pa.) Iron Company, at the annual meeting of stockholders elected the following directors: B. S. Janney, Sr., Andrew Wheeler, Austin Heckscher, Theodore H. Morris, George T. Barns, Charles E. Henderson and H. A. Berwind.

The Lackawanna Iron and Steel Company's south mill, at Scranton, Pa., shut down on March 13th for an indefinite period. Its resumption will depend on the future orders for steel rails. The north works are still running, but are likely to shut down at any time.

The Birmingham (Ala.) Rolling Mills' sheet mill, which was put in about 18 months ago and remained idle after two months' operation, has resumed, giving work to nearly 50 men. The new puddling mill is also in operation. Altogether about 500 men are employed.

Messrs. Fraser & Chalmers, of Chicago, publish a catalogue describing the Anaconda axles. Within two years past between 3,500 and 4,000 of these axles have been put in use in Montana and other Western States, and British Columbia. Users find them cheap, simple and easy to care for, and "repeat" orders are numerous.

The Pettingell Powder Company has been incorporated under the laws of Colorado. The capital stock is $400,000, and the directors are: George D. Kimball, C. C. Walter, C. J. Clark, George L. Kimball and J. J. Walter. Principal offices will be in Denver. The company proposes to manufacture and sell powder for blasting and other purposes.

The Victoria Furnace Company has secured a charter as a reorganization of the Virginia Iron and Railway Company, owner of the furnace at Goshen Bridge. The capital stock is not to exceed $500,000. H. D. Turney, of Columbus, O., is president; Decatur Axtell, of Richmond, Va., vice-president; Vincent Ferguson, of Columbus, O., secretary.

W. A. Clark, the Montana mine owner and capitalist, has established the W. A. Clark Wire Company works at Elizabeth, N. J. The company has a nominal capital of $200,000, and will manufacture all kinds of copper wire. It is understood that the new company has already contracted with one of the great electrical companies for the delivery of a large amount of wire.

The American Diamond Rock Drill Company, New York, has recently shipped one of its underground prospecting and mining drills to the Astinol Company, Villa Rica, Georgia. Another of these drills is in hand for the Boston & Montana Consolidated Copper and Silver Mining Company, of Montana, and in the shops a drill of like capacity, but mounted on bed-plate, has just been completed for the Lawrence Cement Company, New York.

Theodore H. Colvin, of Providence, R. I., has commenced work on his new foundry building, which will be 102 ft. wide and 180 ft. long, and will be a complete and modern foundry building in every respect. The central portion, 50 ft. wide, will be served with a 20-ton traveling crane, and at distances of about 25 ft. in the length of the building will be placed 5-ton jib cranes swinging from the central portion of the building over the molding floors in the wings, which extend along both sides of the building and are 25 ft. wide. The entire framework of this building will be steel. The roof covering is to be slate. The steel work is being furnished and erected by the Berlin Iron Bridge Company, of East Berlin, Conn.

Several well-known Pittsburg bankers and stockholders in the Carborundum Company visited Niagara Falls recently and looked over the company's plant. The result of this visit, according to General Manager Edward G. Acheson, is a decision to duplicate the present plant at once and ask the Niagara Falls Power Company for another block of 1,000 electrical horse-power. It is not likely that this power can be secured for several months yet, but in the meantime preparations are being made for building additional electrical furnaces. One of the near possibilities, Mr. Acheson is reported as stating, is the formation of a new company and the erection of a factory in Niagara Falls for the manufacture of carborundum paper and cloth.

The Central Iron and Steel Company, Harrisburg, Pa., is the result of the consolidation of the iron and steel manufacturing interests of the McCormicks and Baileys, in that city, which will go into effect on May 1st. The companies consolidating are the C. L. Bailey Company, the Central Iron Works and the Paxton Rolling Mills. The plants

comprise three rolling mills, a universal mill and a flanging plant. The capacity for manufacturing, ship-building, bridge and construction is very great, two of the mills being the largest in the country. The incorporators of the new company are as follows: Charles L. Bailey, Hon. J. Donald Cameron, James McCormick, Edward Bailey, Vance C. McCormick, G. M. McCauley, of Harrisburg, and William H. Wallace and J. Frederick Kernochan, of New York.

The Rand Drill Company is complimented in a recent issue of a Canadian paper, which contains a despatch from Rossland, B. C., regarding the christening and starting up of a large Rand compressor recently installed in the Le Roi mine at that place. The compressor will be known as the "Senator" and is to be used for running all the pumps and hoists at the mine in addition to operating 40 drills. It is described as a beautiful piece of mechanism, fitted with the latest type of mechanical air valves, automatic governors, etc. It has the distinction, furthermore, of being one of the three largest compressors in use in the great northwest. The machine is a Rand air compressor of the latest improved type with Corliss compound condensing engine; size of steam cylinders 22 × 40 × 48 in. stroke; air cylinders, 22 × 34 × 48 in. stroke, with intercooler. The Rand Drill Company, New York, builder, reports a steadily increasing demand for its compressors and drills for mining purposes, and claims that it makes the most efficient, economical and durable machines for this class of work on the market.

TRADE CATALOGUES.

The Semi-Steel Company, King & Anderson Company, Chicago, proprietors, has issued a pamphlet which contains information in regard to semi-steel, including a general description of the metal, a few certificates showing tensile and transverse strength, testimonials from a few prominent firms, and a list of the grades of semi-steel made for different requirements. Semi-steel is a combination of various elements that will insure strength and solidity, the basis of which is low carbon steel, this mixture being homogeneous by alloy of secret formula. The tensile strength of semi-steel is given as 35,000 lbs. to 40,000 lbs. according to mixture, as against 20,000 lbs. for cast iron. The elastic limit is twice that of gray iron, and the metal is easily machined. A list of the different classes of castings in which semi-steel is valuable includes gearing, clutches, cross-heads, press frames, rams, plungers, cylinders, pistons, rocker arms, crank shafts, dry sand rolls, cylinder linings and propeller wheels.

NEW PATENTS.

UNITED STATES.

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

WEEK ENDING MARCH 9th, 1897.

578,340. PROCESS OF EXTRACTING PRECIOUS METALS FROM THEIR ORES. William A. Koneman, Chicago, Ill. The process consists in wetting the ore, in a pulverized condition, with just sufficient cyanogen-containing solution to moisten the ore and reduce the mass to the condition of mud, maintaining the saturated ore in a quiescent state for a prolonged period, then diluting the mass and subjecting it to agitation, separating the resultant solution from the ore by filtration, and finally precipitating the precious metal from the solution.

578,341. PROCESS OF RECOVERING PRECIOUS METALS FROM CYANIDE SOLUTIONS CONTAINING THEM. William A. Koneman, Chicago, Ill. The process consists in subjecting the solution to contact with an alloy composed of lead and zinc, and in which lead is the preponderating metal in weight.

578,351. CHROME BRICK. Niven McConnell, Munhall, Pa. A brick containing chrome ore, a refractory clay and alkali matter.

578,357. CRUSHING MACHINE. Leroy S. Pfouts, Canton, O. Crusher of the oscillating jaw type.

578,378. ANNEALING KILN. Edward Walsh, Jr., St. Louis, Mo. The articles to be annealed traverse the kiln by means of traveling bars and cams.

578,383. PIGMENT. Rudolf Alberti, Magdeburg, Germany. Patented in Germany, July 6th, 1894. No. 80,751; in England, February 6th, 1895, No. 2,636, and in Austria, March 8th, 1895, No. 45/812. The process for the manufacture of paint pigment consists in heating a mixture of sulphate of zinc and calcium carbonate (or calcium oxide or barium carbonate) gradually to a moderate temperature until decomposition takes place and the resulting volatile matter is almost entirely volatilized, and in afterward grinding the substance.

578,405. HOISTING AND CHARGING APPARATUS FOR BLAST FURNACES. Julian Kennedy, Pittsburg, Pa. The combination of a chute in a top-closing plate, and a valve arranged to close the chute, the valve being provided with means for tilting the same in opposite directions.

578,415. INGOT-MANIPULATOR. George W. McClure, Pittsburg, Pa. The combination of opposite lever-arms, rollers mounted in stationary bearings upon the arms, a finger-bar platform resting directly upon and carried by the rollers, and means for swinging the lever-arms.

578,429. STONE-CUTTING MACHINE. Charles W. Theil, Chicago, Ill. The combination with the frame, the cutter and the platen, of hydraulic devices for operating the platen, and means for controlling the inlet and discharge of the hydraulic devices.

578,457. PROCESS OF AND APPARATUS FOR SIMULTANEOUSLY PRODUCING AMMONIA, SODIUM HYDROXIDE AND CHLORINE. Carl Kellner, Vienna, Austria-Hungary. Patented in Germany July 14th, 1893, No. 80,300; in Switzerland July 14th, 1893, No. 7,023; in Belgium July 14th, 1893, No. 105,556; in England July 14th, 1893, No. 13,722; in Sweden July 14th, 1893 No. 5,505; in Norway July 14th, 1893. No. 3,651; in France July 15th, 1893, No. 231,554; in Italy September 30th, 1893, XXVII. 34,522, LXVII. 453, and in Austria-Hungary October 22d, 1893, No. 37,778 and No. 58,881. The process consists in decomposing the chloride forming an amalgam, and imparting to the amalgam a gyrating motion toward a central point.

578,465. PROCESS OF MANUFACTURING METALLIC ALLOYS. Charles Parnacott, Putney, England. Patented in England December 13th, 1895, No. 23,950. The process consists in melting the nickel and clearing it from impurities, adding the magnesium in minute charges, stirring the mass with plumbago rods, then adding an equal quantity of copper, the whole being well mixed, admixing with this mass a fused portion of copper, iron and cobalt, well stirring the material, then applying spelter and stirring with a charred wooden rod until the material is thoroughly mixed and the dross and impurities are on the surface, removing the impurities and pouring the alloy into molds.

578,510. DOOR FOR COKE-OVENS. Charles W. Garland, McDowell, W. Va. Assignor of one half to C. W. Shafer, Keystone, W. Va. An oven-door comprising the upper and lower pairs of doors hinged at their outer edges and provided with perforations, the lower doors being provided at their upper and lower edges with openings, and the removable linings detachably interlocked with the doors, forming intervening spaces between them and the doors.

578,548. APPARATUS FOR MAKING SULPHURIC ACID. Louis Deruelle, St. Louis, Mo. Assignor to the Laclede Fire-Brick Manufacturing Company, same place. An earthenware chemical ring comprising a cylindrical body and inwardly projecting alternating long and short radial corrugations disconnected from each other so as to provide free flanges.

578,633. PROCESS OF REDUCING ALUMINUM. Frank A. Gooch, New Haven, Conn. The process consists in fusing together sodium fluoride, the oxide of aluminum and a suitable hydrous chlorine compound of aluminum, and passing an electric current through the fused mass.

578,665. METALLURGICAL FURNACE. William J. Thomas, Canal Dover, O.; Hannah Thomas, Administratrix of said William J. Thomas, deceased. The combination of the furnace, the boiler, the hearth, the air and gas flues connected with the hearth or hearths, a flue between the boiler and furnace by which to conduct the surplus heat to the boiler and valve controlled connections between the flue and the air and gas flues.

578,685. PROCESS OF AND APPARATUS FOR PRODUCING CALCIUM CARBIDE. Elwin R. Whitney, Manchester, N. H. The process consists in mechanically compacting fragmentary charcoal into separate columns and moving them longitudinally toward each other, utilizing them as electric conductors for the formation of an arc, and feeding a mixture of pulverized lime and pulverized charcoal into and through the arc.

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 manufactures in each line.

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

GENERAL MINING NEWS.

OIL EXPORTS.—The Bureau of Statistics, Treasury Department, reports the exports of mineral oils from the United States in February, 1897, as follows: Crude, 85,325,287 gals.; naphthas, 10,270,387 gals.; illuminating, 505,754,968 gals.; lubricating and paraffin, 33,790,993 gals.; residuum, 440,622 gals.; total, 635,582,257 gals. For the two months ending February 28th, 1897, the exports of mineral oils amounted to 133,384,509 gals., which compares with 135,650,009 gals. in 1896, a decrease of nearly 9·9%.

ALABAMA.

We have received from Dr. Eugene A. Smith, State Geologist and secretary of the Alabama Industrial and Scientific Society, the following statement of outputs in the State for January, 1897: Tons coal mined, 416,858; tons coke made, 92,112; tons iron ore mined, 132,713; tons pig iron made, 60,352. The statement says: "This being the first month, an effort to obtain these statistics has been made; the returns, including the totals are imperfect and represent only about 75% of actual production for January in Alabama."

ALASKA.

ALASKA JUNEAU GOLD MINING COMPANY.—Extensive mining operations are contemplated by this company. Its property is located in the Silver Bow Basin, and as noted in the *Engineering and Mining Journal* of February 6th, was bought from Charles D. Lane and Archibald M. Campbell by Capt. Thomas Mein, of the Exploration Company, of London; Alfred Beit, of Wernher, Beit & Company, London, and Robert Duncan, Jr., superintendent of the Alaska Treadwell mines, in their individual capacities. These gentlemen have reincorporated the company under the laws of West Virginia. They have placed the capital stock at $5,000,000, three-quarters of which will be held abroad, and $1,000,000 of which, it is estimated, will put their plans in working shape.

It is said the mines have been profitably worked 180 ft. deep. Tests will be made, and if the vein holds out, a 500-stamp mill will be erected. The value of the ore mined on the property last season is reported at $6.81 a ton.

ARIZONA.

GILA COUNTY.

OLD DOMINION COPPER MINING COMPANY.—The Boston *Herald* of March 17th says: "Out of 150,000 shares of Old Dominion stock outstanding two people command 94,000 shares, and of this amount a New York director holds 78,000 shares. We understand that the holdings of this stock are strong enough to warrant drastic action as respects the railroad extension to Globe, and that as Mr. Garland, the president of the railroad company, owns the teaming interest, and does not come to terms with Mr. Huntington, there is some discussion among the owners of the mine as to the advisability of closing the Old Dominion mine until the railroad extension question is settled."

(From an Occasional Correspondent.)

BLACK WARRIOR COPPER COMPANY.—The Black copper shaft is down 320 ft., but owing to a flow of water sinking has been stopped and timbering, or catching up the grounds, is now being done. Two members of the company who live in New York have been here, and their visit is of significance. It is anticipated that the company will now erect reduction works to treat their ore.

CONTINENTAL.—Since the English syndicate obtained the controlling interest of this group of mines three shifts have been working on a tunnel and shaft. At 34 ft. in the center shaft, a chute of cuprite and copper glance has been struck assaying well in copper and silver. This shaft is perpendicular, and the vein dips 25° from the vertical. Although it was anticipated that water level would have to be reached before any large bodies of ore would be found, it has now been proven that there are rich sulphide ore bodies between the oxidized cropping and water level. The ores carry an abundance of flux, and therefore are desirable for the copper plants now in operation in Globe mining district, whose ores are rather silicious. The tunnel now is in about 150 ft. and when completed will be 300 ft. long and is expected to tap the vein at 160 ft. and connect with the shaft. Then, having ample air, the sinking in the shaft will continue to 150 ft. At the 50-ft. level a crosscut each way shows ore drifts on the vein are being driven with good results. Twenty men are now working at the property.

OLD DOMINION COPPER MINING COMPANY.—The rectangular water-jacket furnace at this company's plant is running with a full force, reducing from 125 to 150 tons of ore every 24 hours, and turning out black copper. Another water-jacket, with a similar capacity, is being erected, and will probably be blown in in two or three weeks.

UNITED GLOBE COPPER COMPANY.—This company is now running one 36-in. round water-jacket furnace, and a Herrshoff's flat oval furnace, capacity 125 tons per 24 hours, is soon to be completed. The rope tramway is now in running order.

CALIFORNIA.

BUTTE COUNTY.

(From Our Special Correspondent.)

MAGALIA.—This drift mine, 3 miles northeast of Magalia, consists of 1,100 acres. The upper part was worked out a distance of 3,000 ft., when a new shaft 510 ft. in depth was sunk and a complete outfit for hoisting and pumping erected. The large air compressor is run by a 10-ft. Pelton wheel under a 160-ft. head; the hoist is run by two 6-ft. Pelton's. There is also a rock-breaker and arastra and about 800 ft. of sluice. The water is now pumped by compressed air, re-heated below by steam, to the 300-ft. level, where it is discharged through the old works to the creek. Two No. 7 Hooker and a large duplex compound Worthington pump are used.

SPRING VALLEY GOLD MINING COMPANY.—The Cherokee hydraulic mine, owned by this company, has, owing to the anti-debris decision, been idle for some time. P. L. Vincent, of Cherokee, has leased the property to work over the old bedrock again. He employs 42 men and has permission from the Debris Commission to work, having built a dam 10 miles down the river.

CALAVERAS COUNTY.

JUPITER CLAIMS.—Two parties are now laying claim to this property, which is located some four miles north of Angels' Camp. It consists of about 300 acres of placer ground, water rights from the Stanislaus River, 20 miles of ditches, 600 ft. of flume and some hydraulic machinery, gathered together by the consolidation of several small companies. The Jupiter Gravel Mining, Water and Electric Company, represented by W. A. Keefer, with post-office address at Angels' Camp, is organized with a capital stock of $21,000,000 and appears to be in present possession. On the other hand the Jupiter Consolidated Deep Blue Gravel Hydraulic Mining Company, organized under the laws of Tennessee, with $42,000,000 capital stock, having Dr. Ruth E. Newlands and Charles Blanding as active representatives, also lays claim to the property. The patents are, we are informed, in the name of W. A. Keefer. It is said that both parties are trying to

dispose of stock in San Francisco and in the East. Under present conditions and at any rate until the dispute over the title is settled, the best course is to let the stocks of both companies severely alone.

(From Our Special Correspondent.)

EL ENCINO.--This mine, in Chili Gulch, four miles south of Mokelumne Hill, which was flooded with water a short time ago, has been drained off to the drain tunnel level. This tunnel has been driven toward the old workings for a distance of 150 ft., and will be continued until they are tapped. No gravel will be taken out until the mine is entirely freed of water.

MELONES CONSOLIDATED.—At these mines, on Carson Hill, the Stanislaus shaft is down 360 ft., and rich ore has been uncovered in the Reserve shaft at a depth of 160 ft. Crosscutting will be commenced at a depth of 225 ft.

KERN COUNTY.

(From Our Special Correspondent.)

RANDSBURG DISTRICT.—The J. I. C. mine, owned by the Osborn Bros., Fugard & Ragsdale; the Big Wedge, owned by the Osborn Bros., and the Excelsior, owned by Barton Bros. & Fairfield, lying north of the Butte, Wedge and Kenyon mines, have been sold to J. J. Brown, of Denver, Colo., for $32,500.

MODOC COUNTY.

MINIETTA.—It is reported that J. J. Gunn has opened up a valuable body of silver ore in this mine, at Lookout. The face is 30 ft. wide.

NAPA COUNTY.

NAPA CONSOLIDATED QUICKSILVER MINING COMPANY.—This company's statement for the three months ending February 28th shows earnings amounting to $40,800. The expenses were $21,640 and the net earnings $19,160. From this a dividend of 10c. per share, payable April 1st, has been declared; this will require $10,000, leaving a balance of $9,160 to surplus.

NEVADA COUNTY.

PITTSBURG.—Operations on an extensive scale will soon be resumed at this mine.

PLACER COUNTY.

HIDDEN TREASURE.—A 75-H. P. electric power plant will soon be erected at this mine and the scale of operations increased.

SAN BERNARDINO COUNTY.

(From Our Special Correspondent.)

SOUTHERN CALIFORNIA POWER COMPANY.—This company has been organized with a capital of $1,000,000 to develop power from the Santa Ana River to be transmitted by pole line 75 miles to Los Angeles for lighting and railroad companies. Work is to begin about April 1st.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

ALABAMA.--The double-compartment shaft at this mine, two miles southwest of Quartz Mountain, has reached a depth of 220 ft. An 8-ft. vein has been exposed, which shows free gold and a fair percentage of sulphurets. No crosscutting or drifting has been done, but a level will be run at the 300-ft. The old mill is to be replaced by a modern one at an early date.

BLACK OAK GROUP.—These mines, near Soulsbyville, are being worked on a large scale. A rich vein 14 ft. in width is reported to have been uncovered on the 900-ft. level. A 10 stamp mill is now crushing and 10 more stamps will soon be added. Forty-five men are employed.

JUNCTION.—The following is from the report of Superintendent W. H. Storms, to the directors of the company: "In prospecting this claim thus far, one shaft has been sunk 37 ft. and substantially timbered, and another has been sunk 25 ft. and a 25-ft. drift run. The vein is from 14 in. to 30 in. wide, and is white granular quartz with a few boulders. It prospects from $2 to $20 per ton. Between shafts Nos. 1 and 2 are six prospect holes, in each of which the fissure is found, and in only one place was there no quartz. The lowest was $7 50 and the highest $9 by assay in free-milling quartz, with but a small percentage of sulphurets, and can be cheaply mined and milled. It is my belief that $5 rock will pay all the expenses when operating this vein in its present condition. At seven places where the vein is exposed in a distance of 200 ft. its width is an average of 18 in. The best chute so far known is just south of shaft No. 1, dump samples assay $9.50 per ton." This mine is located on the Yost Ranch, one mile south of Soulsbyville. A small steam hoisting plant has been shipped to the mine and is now being set up so that work in the future will be more rapid than heretofore.

SOULSBY.—At this mine, at Soulsbyville, drifts are being run from the 200-ft. level. The vein is from 18 in. to 24 in. in width and assays well. An air compressor to work the Burleigh drills is being put in. Ten stamps are crushing and 30 men are employed.

COLORADO.

BOULDER COUNTY.

EL DORADO TUNNEL, MINING AND MILLING COMPANY.—This new corporation has a capital stock of $2,000,000, with 200,000 shares of $10 each. Its officers are: W. H. Nicholson, president; J. L. Rice, vice-president; William H. Coe, secretary; J. H. Nicholson, cashier National State bank; Boulder, treasurer. The company owns 17 full lode claims in Gold Hill and Sunshine districts and a tunnel and mill site of 5 acres in Sweet Home gulch. The mouth of the tunnel is directly opposite the Emancipation mine, and will cut the best mining claims in the districts. The tunnel is now 200 ft. long, and has encountered the El Dorado vein.

MELVINA.—A shipment of 8 tons of first, second and third class ore from this old mine has been run at the Omaha & Grant smelter and yielded an average of about $186.70 to the ton. The first-class ore, of which there were 300 lbs., ran 95·2 oz.; two tons of the second class 18·15 oz., and six tons of the third class 4·25 oz. D. G. Peabody is lessee of the mine. The ore chute from which this ore was taken was discovered in the 300-ft. level, and the drift in the 400-ft. level has been run 100 ft. on the ore. In the upper level the vein was traced a distance of 200 ft.

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From our Special Correspondent.)

CALEDONIA.—On this property, on the west slope of Gold Hill, it is proposed to sink the shaft another 100 ft. The vein shows about 15 in. of good grade ore.

CHRISTMAS.—This mine, on Bull Hill, is still idle. It is reported that the mine has been leased as a whole.

CRIPPLE CREEK SAMPLING COMPANY.—This concern, owned by Messrs. Tutt & Penrose, recently built a new sampler on the line of the Midland Terminal Railway. The sampler is 50 ft. wide by 250 ft. in length. The machinery, engines, boilers, etc., were furnished by the E. P. Allis Company, of Milwaukee. The company sold its old works to a local company known as the Rio Grande Sampling Company, and is now undergoing thorough repairs. This sampler is located along the tracks of the Florence & Cripple Creek Railroad and has a capacity of 200 tons a day.

ENTERPRISE MINING COMPANY.—The Dolly Varden, owned by this company and located on the north slope of Raven Hill, recently made a shipment of 60 tons after a rest of two years.

GOLD DOLLAR.—This mine, on Beacon Hill, recently shipped 4 tons of ore which yielded $83 per ton. Shipments now are at the rate of 5 tons a day from a shaft less than 30 ft. deep, worked by 12 men. The grade of ore is close to $70 per ton.

GOLDEN CYCLE MINING COMPANY.—The Legal Tender, owned by this company, has an output of 1,000 tons a month. The shaft has been sunk 360 ft. The number of men employed is 62.

INDEPENDENCE.—This mine, on Battle Mountain, had an output last month of 520 tons of its usual high-grade ore.

ORE OUTPUT.—In January there were 7,474 tons of smelting ore, at $75 per ton, value $560,550, and 10,410 tons milling ore, at $27, value $281,070; total for the month, $841,620. In February there were 6,532 tons of smelting ore, at $80 per ton, value $522,560, and 11,478 tons milling ore, at $25, value $286,950; total for the month, $809,510. February was a short month, which accounts for the decrease. During the month, the London & Cripple Creek Reduction Corporation, Limited, commenced work and treated 300 tons. The mill is known as the "Page Mill" and is located at Florence. The Hartzell amalgamating and concentrating mill at Anaconda also was at work. The Cranmer Bros. are erecting a stamp mill at Arequa at the mouth of Gold Standard Tunnel. The Gold Geyser Mill, an electric process, made an initial run this month.

ORPHAN BELL.—The Maloney lease on this property has found a vein fully 5 ft. wide and smelting ore is being sent at the rate of 15 tons a day of from 3-oz. to 4-oz. ore. Twelve pounds and a half were sold at the rate of $132 a pound, the richest ore yet mined.

PHARMACIST.—The north and south ends of this claim, on Bull Hill, have been leased, reserving 900 ft. of the central portion where the new vein is being mined. The north end has been leased at royalties of 20%. This is the part from which the old company moved $250,000, and is now 656 ft. deep. Four cars were shipped the past week.

RAVEN.—This mine, on Raven Hill, gives employment to 64 men. The shaft has been sunk nearly 400 ft. The Raven Hill tunnel has been driven 2,076 ft., and has not yet intersected the east basalt vein. The Raven vein when found at a depth of 740 ft. was larger than at the 300-ft. level. The output keeps at the rate of 70 to 80 tons of 3-oz. ore. During the week there has been quite a commotion in mining circles, caused by the rumor that the Elkton vein has dipped into the Raven ground and that preparations are being made for a big legal fight. It is the writer's impression that there will be no fight. The matter will undoubtedly be compromised when the time becomes ripe.

SQUAW MOUNTAIN TUNNEL.—This tunnel has now penetrated the hill some 1,600 ft. Shipments are being made regularly by sub-lessees from the different veins encountered when driving the tunnel. The ore is from 4-oz. to 6-oz. grade.

GUNNISON COUNTY.

MARBLE QUARRY.—Near the east end of the Pitkin townsite Charles F. Tolliver has located a claim on which there are three kinds of marble—gray, white and black. The marble is close grained, without grit, and is susceptible of a high polish.

HINSDALE COUNTY.

UTE & ULAY.—The first shipment of ore made from these mines, near Lake City, since July last, has been sent to the Philadelphia smelter at Pueblo. Three carloads of concentrates comprised the shipment. An estimate of the values is 60% to 62% lead, 20 oz. silver and ⅛ oz. gold. Messrs. Nicholson and Newell, the lessees of the properties, are pushing work actively. Seventy men are employed in the mines and mill.

LAKE COUNTY.

NEW ELKHORN MINING COMPANY, LIMITED.—Manager F. Robbins, of this company's mine at Leadville, reports that during December the Plummer shaft was sunk 62 ft., giving a total depth of 302 ft. No ore contact has been found. During the month no work was done upon the Leasehold properties.

(From Our Special Correspondent.)

LEADVILLE STRIKE.—As announced in the *Engineering and Mining Journal* last week the labor difficulties have been settled by the calling off of the unwarranted strike that has given this camp such a setback since last June. Only a few weeks ago I called attention to the fact that money for the union was growing very short and that many of the miners were preparing to leave it. Matters grew steadily worse and at a special meeting of the union the strike was declared off. Of course the leaders and some of the most hot-headed members counselled otherwise. It can be said for Eugene V. Debs, who was present at the meeting, that he told the men their cause was lost and that it was best to declare the strike off at once and take their chances. There were no terms specified with the motion to declare it off. There is a much better feeling here now that the strike is ended and it can safely be predicted that a large number of the old men will find places here as the downtown and other properties resume. There are, of course, many men who will never get a job again in this camp. It can be said that the managers welcome the change and while they have steadily refused to sign any agreement with the union they will now deal fairly and honestly with the men who were led for so long a time by irresponsible leaders.

As to the work to be inaugurated, but little can be definitely stated at this time. Properties have been resuming in all sections for some time and a great deal of work is under way. Of course the most important new step will be the starting up of the Bon Air, Bohn, Weldon, Coronado and other mines in the section known as "the downtown group." This group was at the time of the strike shipping over 700 tons of ore daily and employing hundreds of men. For many months it has lain idle and the shafts are now full of water.

Readers of the *Engineering and Mining Journal* will recall the fact that a very important pumping proposition has been drawn up through which all of the downtown mines will divide the pumping expenses. I learn from a number of the downtown managers that this ironclad agreement is nearly entirely signed and that in a short time the work will be finished. It will likely take 30 days yet before the pumps are started and when they do start up it will take from 60 to 90 days to pump out the water. While the actual condition of affairs will not show a great change at once it is already evident that a much easier feeling exists and that the camp will gradually stride forward to the front rank where it was before the strike of June 19th, 1896, was inaugurated. As a result of the strike the community has lost at a low estimate directly and indirectly over $2,250,000.

BIG SIX.—The lessees on this property are meeting with pronounced success. During the past 10 days the output of the mine has been greatly increased owing to the opening up of several very good pockets of mineral. The shaft is down 225 ft. and a good body of ore has been opened up at this depth, running ½ oz. in gold and from 40 oz. to 50 oz. silver.

LOWER HENRIETT.—The new company, which took hold of this ground some weeks ago, is pushing work rapidly and 40 tons a day of fine carbonate ore is being shipped. Work is being carried on at the 400-ft. level and it is the intention to begin shipping also from the iron bodies in this ground at an early day.

MIDNIGHT LEASING COMPANY.—These people have just leased from John Harvey all of the mining property in Big Evans gulch, which belongs to the Sherwin Mining Company, including all of the Katy and parts of the Midnight and Mosquito lodes. The lease is for 2½ years.

MOLINE MINING COMPANY.—These people are operating on the William Wallace, on an extensive scale. It appears to be the opinion that this company will arrange with the Small Hopes people to do its pumping.

PERSEVERANCE.—It is learned from Captain Parker, who is in from the St. Kevin district, that a rich strike has been made in this mine. The shaft in which the present work is being conducted is down but 55 ft. and a fine fissure vein has been encountered. The hanging wall is porphyry and the foot wall granite, the vein being 8 ft. between walls. Several assays show the mineral to be first-class shipping stuff assaying ¾ oz. gold, and 45 oz. silver. But little development can be expected in

this district until after the heavy snows are melted.

REX.—Readers of the *Engineering and Mining Journal* will call to mind the excitement created in this camp several years ago by the big find in the Rex property in Iowa Gulch, the ore chute being located by a diamond drill, and disclosing a gold chute that is supposed to be the continuation of the Lillian. It is learned that a lease has just been given on this mine by the owners to a syndicate of Eastern capitalists. The new company, which has not yet filed articles of incorporation, will be known as The Keystone Mining Company, and W. A. Johnson, of Leadville, will be the manager. The machinery on the property has been purchased from the old lessees, but additional machinery is to be ordered at once. When the old lessees encountered the gold ore chute a shaft was at once put down. However, just as mineral was encountered, a great flow of water and sand came in and drowned out the pumps. From the summer of 1895 up to date the Rex has been a dead issue. The old shaft is down 350 ft., the big station pump is under water 300 ft. and it will take some time to pump it out. The shaft shows 362 ft. prophyry, 6 ft. talc, a sheet of 13 ft. of intrusive prophyry, 9 ft. of contact and 30 ft. of gold ore. The bottom of the shaft is in this ore, as assays made at the time of closing down showed that it carried from 18 oz. to 47 oz. gold. The drill after going through the first ore body encountered 50 ft. of lime and then passed through a sulphide body, thus showing two characters of ore. The lease secured by the Keystone covers 55 acres of ground and runs for 5 years. The company is headed by Chicago people who are prepared to spend $50,000 if necessary to get at the ore.

OURAY COUNTY.

(From Our Special Correspondent.)

BACHELOR MINING COMPANY.—This property, about four miles from Ouray, has been obliged to lay off a large portion of its force, owing to the exhausted condition of its ore bodies. A raise is being driven from the Khedive tunnel to meet a shaft going down from the lower Bachelor level, and in future the product will find vent to the surface by means of the Khedive tunnel. Stopes are also being driven, in order to open up more ground in the lower levels, upon the completion of which it is expected the force will be reinstated.

CLEOPATRA MINING AND MILLING COMPANY.—H. W. Fowler, president of this company, has let a contract for the driving of 375 ft. in the Cleopatra tunnel, about a mile north of Ouray. Large bodies of low-grade gold ore are exposed. A tramway is to be erected from the mine to the Fowler smelter. On March 13th bids were closed for the construction of the Fowler smelter, Mr. Walter Reynolds securing the contract. The plant will be located on the company's ground, about a mile north of Ouray, and will be designed to treat low-grade gold, silver and copper ores by a new matting process. The building will be 65 ft. × 90 ft., two stories in height, and the company offices will be situated within a short distance of the works. The company has already closed contracts with a large number of low-grade properties for their products, which together with the output of the Cleopatra, owned by the company, will supply the smelter for several years. The heads of the various departments will be experienced smelting men already in the employ of Mr. Fowler in other sections. The contract calls for the completion of the building by April 20th, and the company hopes to begin active smelting operations by June 1st. The entire plant is estimated to cost $50,000.

GRIZZLY BEAR.—An important strike has just been made in this property, owned by Geo. R. Hurlburt, which proves the continuity of the ore body from the upper to the lower levels. The ore is of high grade, and is in large quantities.

GUSTON.—A strike of rich ore has been made in this mine, at Red Mountain, in one of the lower levels, disproving statements to the effect that the Guston was entirely exhausted.

HANCOCK.—Superintendent Richardson, of this mine, in Imogene basin, has awarded to Flynn & Billesbach a contract for driving the old tunnel 300 ft. further.

JONATHAN.—Fuller & Meyers, who have secured a working interest in this property, adjoining the American Nettie, are following a rotten porphyry dike, on one side of which is a small streak of rich gold ore. The objective point is a fault, indicated by surface formation about 50 ft. beyond the breast of the tunnel, where it is expected a cave of ore similar to those found in the O. & N. will be opened up.

LLOYD.—This property is located on the southern slope of Mt. Hayden, two miles from Ouray. A rich strike of gold ore was made March 6th in a 100-ft. upraise. The ore is found in a pocket several feet in diameter and is being sacked and stored until the roads become passable.

O. K.—The tunnel on this group, in Poughkeepsie gulch, is to be driven an additional 100 ft., when, it is expected, the main ore body will be cut. The tunnel is following a 9-in. streak of quartz, bearing gold in paying quantities.

SLIDE.—Swaim & Johnson, operating this mine, 3 miles north of Ouray, under a six months' lease, have struck excellent ore, and are now sinking a shaft from the lower level.

PITKIN COUNTY.

LITTLE ANNIE MINING COMPANY.—This company, of Aspen, at its recent meeting, accepted the resignation of directors Max. Gerstle, Thomas E. Bean and Benjamin Ferris, whose holdings had been transferred to B. Clark Wheeler, and in their places elected B. Clark Wheeler, O. I. Wheeler and T. G. Lyster. B. Clark Wheeler was also chosen general manager to succeed Mr. Bean.

SAN MIGUEL COUNTY.

(From Our Special Correspondent.)

ATTICA.—This property is now under lease and bond to Denver parties, B. L. Berkey, agent for the Gates Iron Works in that city, having charge of the development work being prosecuted. A crosscut tunnel over 500 ft. in length recently cut the vein at a depth of 820 ft. below the surface, and an upraise is in progress from the intersection to the upper workings, which will afford good ventilation and drainage as well as open up ore for development and extraction. The pay streak is from 12 to 16 in. wide and runs on the average $75 per ton in gold and silver, but principally gold. Pockets have been encountered where the mineral carried 6 oz. gold per ton in carload lots. A mill will be constructed this spring for treatment of the ore. The mine lies at the foot of Silver Mountain, Ophir.

DUQUESNE GOLD AND SILVER MINING AND MILLING COMPANY.—On the group of properties on the west side of Howard's Fork of San Miguel River, near Ames Post Office, where the superintendent, J. H. Schofield, resides, a force of men is driving a tunnel to intersect a vein from 12 to 16 ft. wide, carrying both gold and silver. It is in a distance of over 400 ft. and about 350 ft. more remain to be driven before reaching the objective point.

MT. WILSON MINING COMPANY.—The Silver Pick property, together with four others, comprising one of the most valuable groups of mining claims in the Mt. Wilson district, is owned by this company, composed principally of Connecticut capitalists, which expects to put a force of about 20 men to work in a few days. The ore carries from $50 to $200 in gold per ton, and when the 10-stamp mill is running it concentrates from 40 to 45 tons every 24 hours. The mine and mill employ 150 men during spring, summer and fall.

NANCY HANKS GROUP.—These claims are located in the Saw Pit District and are being marked under lease and bond. A 500-ft. crosscut tunnel driven from the surface, intersected a blanket vein of ore 4 ft. in thickness, lying on top of the lime contact, when in this distance, and shipments to smelters are now being made at regular intervals. Drifting on the Nancy Hanks is directed toward the Lizzie G., an adjoining claim on the northwest, for the purpose of cutting an ore chute in that mine. After the mineral is found the Lizzie G. product will be handled through the workings of the former property.

NORTH AMERICAN EXPLORATION COMPANY.—This company has an option on the Eldorado Group, and is employing a small force of men under the superintendence of L. C. Leslie, the owners to develop and open it up.

SUFFOLK.—There are four outfits leasing on different levels of this property, all of whom are taking out and sending down to the Suffolk 40-stamp mill rich free-milling gold ore for treatment. The mill is now under lease to Ed. Parry, a well-known millwright, who is doing general custom work. The mineral runs from $20 to $82 per ton on the plates. The Suffolk-Globe Company has let a contract to George Southard and Arthur Loveday for driving a tunnel 500 ft. on the vein, 200 ft. beneath the lowest of the upper workings. They are in about 200 ft., and have struck a rich body of gold ore.

TERRIBLE.—This property and the Butterfly are owned by K. Benson, of Silverton, who recently returned from Denver, where he purchased machinery for a concentrating plant.

TOM BOY GOLD MINES COMPANY.—The Mountain Chief, on the same vein and adjoining the Belmont, contiguous to the Tom Boy on the west, was recently purchased by this company for a consideration of $125,000. There is about 200 ft. of drift on the vein from the Belmont workings and it shows up ore similar in character and equal in value to that of the Tom Boy itself.

IDAHO.

OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—Mr. D. B. Huntley, the manager of these properties at De Lamar, reports as follows for the month ending January 31st, 1897: Crushed (wet), 4,043 tons; crushed (dry), 3,639 tons; assay value of pulp, $17.71, of which $15.06 was gold and $2.65 silver; assay value of tailings, $4.96, of which $4.28 was gold and $0 68 silver; percentage saved, total, 71.99%; Doré bars produced, 10; number ounces fine gold produced, 1,902; number ounces fine silver produced, 15,055·8; value of gold produced, $38,042; value of silver produced, at 65c. oz., $9,786; ore sales (estimated), $1,050; miscellaneous revenue, $55. total receipts, $48 933; expenses, $42,638; estimated profit for the month, $6,295. Owing to the depression in silver mining as well as to the lessened product of the company's mines, the wages of the miners was, on February 1st, reduced from $3 50 to $3 per day. The miners accepted the reduction. A series of experiments with the Pelatan-Clerici process having been satisfactorily concluded, additional plant has been ordered to complete an installation having a capacity of 50 tons daily.

SHOSHONE COUNTY.

BUNKER HILL & SULLIVAN MINING COMPANY.—This company contemplates continuing the tunnel which was commenced in 1890 by D. A. Clement, who was the manager of the property. It had been run between 500 and 600 ft. at the time of the troubles in that section and the work has not been continued since that time. A 40-drill compressor plant was purchased recently. The work when completed will be about 1½ miles in length and at 1 mile is expected to tap the big vein running through that section. At the mine it will tap the vein 700 ft. below the present lowest level. The mill at Kellogg, it is said, has a capacity for handling 600 tons of ore daily. F. W. Bradley is the manager of the property and will make his headquarters at San Francisco. Frederick Burbidge is the mill manager and he will take the active management of the company's property. J. E. Branscome is the superintendent of the mine.

ILLINOIS.

(From Our Special Correspondent.)

COAL FREIGHT RATES.—Beginning March 1st the freight rates on coal for the territory within a radius of 50 miles of St. Louis, have been reduced from 45c. to 35c. per ton. This has caused quite a change in the price of coal laid down in East St. Louis.

MACOUPIN COUNTY.

(From Our Special Correspondent.)

CONSOLIDATED COAL COMPANY.—The Gillespie mine of this company is now producing coal, the mine fire which broke out some months since having been extinguished.

ELLSWORTH COAL COMPANY.—The old Verden shaft, lately purchased by this company, of Chicago, has been closed, all employees paid, and the mine turned over to the original owners, Graham & Starne.

MENARD COUNTY.

(From Our Special Correspondent.)

CHICAGO & KANSAS CITY COAL COMPANY.—Mr. Richard Sneddon recently purchased an interest in this company, at Petersburg, and assumes the management of the mine at that place, succeeding John Hanlon, who filled the position during the past five years.

ST. CLAIR COUNTY.

(From Our Special Correspondent.)

DANK BROTHERS.—These mines, near Belleville, have been flooded by water and all operations have ceased.

IOWA.

CARROLL COUNTY.

GRAPHITE DISCOVERY.—A 14-in. vein of graphite of remarkable purity is said to have been discovered about 5 miles south of the town of Coon Rapids.

KENTUCKY.

COAL PRODUCTION.—Mr. C. J. Norwood, Chief Inspector of Mines of this State, reports the production of coal from the mines of the State as below, in short tons:

	Bituminous.	Cannel.	Total.
1893	3,258,712	43,538	3,202,250
1894	2,899,692	57,503	2,957,195
1895	3,138,023	69,747	3,207,770
1896	3,128 818	54,661	3,183,479

There was a decrease in 1896 of 9,205 tons, or 0·3%, in bituminous; of 15,086 tons, or 21·5%, in cannel; and of 24,291 tons, or 0·8% in the total. The average value of bituminous coal at mine in 1896 was 75·11c. per ton; of cannel, $2.68 per ton.

MICHIGAN.

COPPER.

FRANKLIN MINING COMPANY.—The problem of sand room for the Franklin mine for five years to come has been solved by permission being granted by the government to run the waste into the bay just east of the Highland Smelting Works, says the *Red Jacket News*. Here is room for a long time, for the water is deep and the bay is a fairly large one. To reach this bay and have sufficient elevation for the launder, another sand pump, similar to the one put in a year or more ago by Superintendent Pope, will be necessary. The first sand pump has done the work of raising 12,500 tons of water and sand daily to a sufficient height, 10 or 12 ft., to carry it beyond the Standard Oil Company's dock, and no trouble has been had with it. The second pump will raise the water so that it will carry some 1,200 ft. further down the lake past the Highland Smelting Works.

KEARSARGE MINING COMPANY.—At the annual meeting in Boston, March 16th, the old directors and officers were re-elected as follows: President, Charles Van Brunt; directors, A. S. Bigelow, Leonard Lewisohn, Thomas Nelson, William E. Parnall; secretary and treasurer, A. S. Bigelow.

RIGG.—The company owning this copper mine, in Ontonagon County, has decided to resume operations, which were suspended 10 years ago. About $50,000 will be spent in new machinery, sinking a fourth shaft and extending the drifts far enough westward to open up new mines.

MISSOURI.

(From Our Special Correspondent.)

GRANBY MINING AND SMELTING COMPANY.—This company held its annual election of officers in St. Louis, Mo., on March 9th. D. D. Barns, of St. Joseph, is president; L. C. Nelson, St. Louis, vice-president; Elias S. Gatch, secretary and treasurer. The directors are D. D. Barns, L. C. Nelson, L. C. Burns and E. S. Gatch. The company owns a zinc smelter at Pittsburg, Kan., and a lead smelter at Granby, Mo. They also own large tracts of mining land in Jasper and Newton counties, Mo., and nearly all their mines have been for years, and at the present time are, producing large quantities of both lead and zinc ores.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The past week has been all that could be asked for March weather, and the buyers took advantage of the good roads to buy large quantities of both lead and zinc ores. The highest price paid for zinc ore was $21.50 per ton for one carload of Joplin ore, and a large number of carloads were sold at $21 per ton in nearly all the camps, and the average price was higher in proportion to the number of tons sold. The top price for the corresponding week last year was $23. Lead ore sold up to Friday at $18.25 per thousand pounds, falling 25c. to $18 delivered. The same week of 1896 lead ore opened at $17.25 and closed at $17.

The following are the sales of zinc and lead ores for the week ending March 13th: Joplin zinc, 1,370,640 lbs.; lead, 234,880 lbs; value, $17,934. Carterville zinc, 840,960 lbs; lead, 261,060 lbs.; value, $12,250. Webb City zinc, 641,440 lbs.; lead, 39,610 lbs.; value, $6,486. Galena zinc, 3,470,000 lbs.; lead, 792,110 lbs.; value, $45,498. Aurora zinc, 517,000 lbs.; lead, 35,000 lbs.; value, $3,471. Oronogo zinc, 231,350 lbs.; lead, 16,320 lbs.; value, $2,658. Alba zinc, 33,200 lbs.; value, $349. Totals for the district: Zinc, 7,104,590 lbs.; lead, 1,378,980 lbs.; value, $88,646. District totals for ten weeks: Zinc, 60,559,980 lbs.; lead, 13,025,750 lbs.; value, $703,509.

BLAIR, ROBINSON & COMPANY.—Charles Reed, the superintendent, is steadily beating the water on the company's lease at Midway. As soon as the water is out, they will start up their plant, and expect to make 90 tons of zinc ore a week, as they were doing before the water drove them out.

COCK ROBIN COMPANY.—The new plant made its first week's run and made and sold 75,750 lbs. of zinc ore and 48,430 lbs. of lead.

GRAY WOLF COMPANY.—This company, on the Conner land at Webb City, sold 24,000 lbs. of lead ore last week and has a carload of zinc ore in the bins. In one day they cleaned 10,000 lbs. of lead ore out of 59 tubs of dirt.

HACKER, MEAKER & COMPANY.—This company has leased 80 acres of the John Sullinger land between Chitwood and Cottonwood Hollows in which large quantities of lead and zinc ores are being produced.

KENO MINING COMPANY.—This company has bought the Joe Aldrich steam concentrating plant and secured a lease on 7½ lots in Chitwood Hollow surrounding the plant and half the Meeker lot. They have three ore-bearing levels, viz., at 104, 120 and 132 ft. The company consists of A. J. Sheffield and J. F. Hatch, of Grigsby, Ill., and Chas. A. Gitchell, of St. Louis; the latter gentleman will have the entire management.

MADELINE POLLARD COMPANY.—This company, on the Granby land, in Leadville Hollow, has opened up a large face of zinc ore in hard ground, and last week they turned in over 45 tons of zinc ore at $21 per ton.

MARET, HOOVER & COMPANY.—J. Maret, D. C. Hoover, E. J. Pratt and C. W. McAbee leased the 40 acres Rothenberger, northeast of the brick yard at Midway. They drilled two holes, and in the second hole at 87 ft. a fine run of zinc ore was struck and at 100 ft. rich dirt was still being penetrated.

NYE & COMPANY.—H. Nye and Julius Tuchband, of Chicago, Ill., have purchased the 40-acre tract of the Holden land, and will have the ground drained in a short time. This land has been a large producer of lead and zinc ore in the past.

SHANNON, CAYLOR & COX.—They have sold the Hocus Pocus plant and mine on the Granby land to Rafael Estrada, a former Cuban, and it is reported the consideration was $7,500, and he took possession last Monday. The plant makes from 6 to 8 tons of high-grade zinc ore every 10 hours. The shaft is 100 ft. deep with good ore in the bottom. Two drifts have a good face of ore in each that is 50 ft. wide and 40 ft. high.

SOUTH JOPLIN MINING COMPANY.—This company is producing as much lead and zinc ores as usual. The timbers burned out in some of the drifts will not be replaced. Last week's turn-in was 35 tons of zinc ore.

TUCHBAND & MOORE.—They have secured an 80-acre lease on the Murphy land, which has been a large producer. Over $300,000 worth of ore has been taken out and only 10 lots have been worked. The ore is found from 20 ft. to 90 ft. in open ground and is easily worked.

WAKE UP COMPANY.—At the company's mine, on the Bolen lease, near Blendsville, they have been sinking their shaft deeper and at 140 ft. struck good pay dirt and are still sinking.

ZENITH MINING COMPANY.—On the Bolen land, at Spring City, they have been running their plant steadily, and last week turned in 54,370 lbs. of zinc ore and 2,970 lbs. of lead ore. They are drifting at 130 ft. on a 25-ft. face of ore.

MONTANA.

(From Our Special Correspondent.)

MINING LEGISLATION.—A bill was passed at the last session of the State Legislature to go into effect June 1st, 1897, which renders it unlawful for any corporation or person to work, through any vertical shaft where mining cages are used, to a greater depth than 300 ft, unless said shaft shall be provided with iron bonneted safety cage, to be used in the hoisting and lowering of the employees thereof, said cage to be provided also with sheet iron or steel casing not less than one-eighth of an inch in thickness, or wire netting of not less than one-eighth of an inch in diameter; doors to be made of the same material shall be hung on hinges, or may be made to slide, and shall not be less than five feet high from the bottom of the cage, and said doors must be closed when lowering or hoisting men. The safety apparatus must be of sufficient strength to hold the loaded cage at any depth to which the shaft may be sunk. The iron bonnet of the aforesaid cage must be at least three-sixteenths of an inch thick, and must cover the top of such cage in such manner as to afford the greatest protection from anything falling down said shaft. All violations of this law are punishable by fine of not less than $300 nor more than $1,000. The object of the bill is to prevent as far as possible all accidents which occur while lowering or hoisting men. Many lives have been lost which would have been saved, had the cages been provided with a casing or doors as mentioned above. Representative Evans, the author of the bill, is a blacksmith, and states that these casings can be placed on any cage in a convenient and permanent manner at a cost of from $25 to $35.

DEER LODGE COUNTY.

GOLD COIN.—Superintendent W. T. Morgan recently struck the ledge in this mine, in the Cable district west of Anaconda, in a crosscut from shaft No. 2 and cut through the ore 14 ft. The ore is gold-bearing, free milling and of good grade. Three shipments of amalgam were made during the month of February.

JEFFERSON COUNTY.

NEW ELKHORN MINING COMPANY, LIMITED.—Manager Walter S. Kelley, of this company's mine at Elkhorn, reports 1,175 tons of ore raised from the mine during December. The result of the month's operations is as follows: Estimated value of bullion shipped, $24,755; surplus on November shipments, $569; net value of bullion, $25,324; returns from ore shipped, $6,226; total receipts, $31,550; current expenses, $25,280; profit for December, $6,270.

SILVER BOW COUNTY.

MONTANA ORE PURCHASING COMPANY.—Butte dispatches state that a mortgage has been filed with the County Recorder on all the property of this company to secure an issue of $1,500,000 in 6% bonds, having 20 years to run. The issue of the bonds was authorized at a recent meeting of the stockholders, and the proceeds are to be used to buy new property and extend the operations of the company.

(From Our Special Correspondent.)

ANACONDA COPPER MINING COMPANY.—At the Anaconda mine the output of 400 to 500 tons per day is easily maintained. A lease has been granted on the Grant Extension fraction to Swett & Metcalf, who are sinking a shaft from the surface. They have machinery on the ground powerful enough to hoist from a depth of 500 ft. At the High Ore No. 1, a body of smelting ore 60 ft. wide on the 1,200-ft. level is furnishing its quota of ore for the smelter. At the High Ore No. 2 the shaft is down 1,600-ft. with crosscutting in progress on the bottom. At the Modoc all work above the 1,000-ft. level is suspended for the present. Hoskin & Company have secured a lease on the west end of this claim; they have machinery on the ground to put down their new shaft as fast as possible. At the Mountain Consolidated both shafts are down to the 1,300-ft. level; at the No. 2 shaft a streak of ore 15 ft. wide was encountered in cutting the station. This is considered a stringer from the vein. At the Never Sweat the shaft is down below the 1,400-ft. level with sinking still in progress, the ore on the 1,200 and 1,300-ft. level is from 80 ft. to 100 ft. wide. At the St. Lawrence the shaft is down below the 1,300-ft. level, and it is said that the mine is looking better than ever on the 1,200-ft. level. The foundation for the new hoisting engine on the south side of the shaft is almost completed.

HENRY GEORGE.—At this mine, located on Gaylord street, south of Park, in Butte City, the shaft is down 190 ft. The lessees, Mills & Company, have already spent over $7,000 on the property. They will soon start to crosscut and expect to cut the vein in less than 50 ft., which they know contains pay ore in both ends of their ground.

NEVADA.

LYON COUNTY.

DOUGLAS MILL.—This mill and reduction works, at Dayton, have been leased by Peck Brothers, who have purchased the Douglas ore tailings deposit east of the mouth of Six-Mile Canyon. The Peck process will be adopted in working the tailings. The deposit contains over 500,000 tons and shows an average assay value of $7 per ton.

STOREY COUNTY.

POTOSI MINING COMPANY.—At the annual meeting held in San Francisco on March 10th, the old directors were re-elected, excepting D. C. Bates, who retired in favor of E. Gauthier. Thomas Cole was elected president, Charles E. Elliot secretary and H. M. Gorham superintendent. An assessment of 20c. per share was levied.

VIRGINIA MINERS' UNION.—At the last semi-annual meeting the following officers were elected for the term: President, P. Brannan; vice-president, W. W. Dunn; recording and financial secretary, J. F. McDonell; treasurer, John L. Finnegan; conductor, Thomas O'Toole; finance committee, Jacob Baumann, James P. Kennedy, E. P. A. Pyne; board of library directors, J. J. McKinnon, J. M. Quine, M. S. Flynn, Dennis McMahon, T. J. Moran; delegates to the Western Federation of Miners' convention, W. W. Dunn, William O'Leary, L. Pingalia, W. C. Morrison.

STOREY COUNTY—COMSTOCK LODE.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—The official report of the work done for the week ending March 5th is as follows: 1,000 level—An east crosscut has been advanced 28 ft., showing clay separations and fine lines of quartz. 1,550 level—The double compartment incline upraise has been carried up 18 ft. on the stope along the footwall above this level. The ore streak has been continuous through this opening, but narrowed to 4 in. in the west face in the south half of the opening, assaying $36 per ton. The ore streak in the north half of the opening in the west face shows a width of 18 in., assaying $26.35 per ton. Above this streak in the face there are narrow lines and streaks of ore assaying from $20 to $30 per ton. We have removed from this level to our surface ore bins the ore which was stored in the drift, amounting to 13 tons, assaying per mine car samples $198.75 per ton. 1,650 level—On the ninth floor, at a point 60 ft. above the sill floor of the level we have worked north and south along the footwall on the ore streak, which is 3 ft. wide. We have extracted from this opening 38 tons of ore, assaying $36.14 per ton. 1,750 level—From the thirteenth floor at the north end of the stope in old ground of the former workings, we have extracted 18 tons of ore; the average assay value per samples taken from the cars in the mine was $21.05 per ton. The total extraction of ore for the week amounted to 69 tons; the average assay from samples taken from cars when raised to the surface was $50.90 per ton.

HALE & NORCROSS MINING COMPANY.—At a meeting of the board of directors held in San Francisco last week Jeremiah Lynch resigned as president and director and M. W. Fox was elected in his place. A. Krause and A. Geberding also resigned as directors and their places were not filled.

At the annual meeting of the stockholders, on March 10th, an injunction issued by the Superior Court on suit of M. W. Fox was served, restraining a number of people holding stock of the Hale & Norcross Mining Company as trustees from voting at the annual election. Fox alleged that Alvinza Hayward had entered into a conspiracy to get control of the company, and that he held the proxies of the stockholders. He contends that the stock should not be voted because it does not show for whom it is held in trust. The meeting was adjourned for a week, pending further proceedings. It is said that Charles Grayson, one of the parties enjoined, held proxies for 86,500 shares out of a total of 112,000.

NEW MEXICO.

SANTA FE COUNTY.

PLACER PROPERTY SOLD.—Col. J. A. Wood, of Kansas City; J. B. Brosseau and Rudolph Wosslick, of Chicago, have purchased of J. Williams, manager of a Kansas City placer company, 40 acres of placer ground in Old Timer gulch, near San Pedro, paying $16,000 therefor. It is understood that deep wells will be sunk at once to supply water for washing. Tests made by the purchasers are said to show gravel to yield $1.25 per cu. yd.

NEW YORK.

STATE MINING LAWS.—State Factory Inspector O'Leary reports the success of the new mining rules, which he and Mine Inspector King formulated last fall, and which have been posted in all the mines of the State since September 1st last. The rules were eight in number, and were designed to prevent accidents among the workmen in the mines. One of the worst troubles that superintendents of the mines had to contend with was that miners were sometimes more or less under the influence of liquor while on duty. Other rules are to prevent careless or dangerous acts by workmen. The mine superintendents and owners long had attempted to remedy the evils, but were unable to do so. With the exception of the talc mine disaster at Gouverneur, which was unavoidable, there has not been an accident reported under the new rules since December 1st last. Two years ago, when there was no inspection, there were 27 deaths by accident in the mines, while those reported last year number only eight.

WASHINGTON COUNTY.

NATIONAL RED SLATE COMPANY.—This company, of Middle Granville, has been incorporated with a capital stock of $30,000, and the directors for the first year are Benjamin Williams, Gomer B. Will-

iams, D. B. Williams and Edward Willis, all of Middle Granville.

OHIO.

MEIGS COUNTY.

JOHN E. WILLIAMS COAL WORKS.—These works, at Minersville, were sold last week at sheriff's sale to Fred Stalder, of Athens, for $8,000.

MONROE COUNTY.

FISHER OIL COMPANY.—In the Benwood pool this company has drilled in its test well on the Schambaugh farm and has a good producer. At 8 ft. in the sand the pay was reached and the well started to flow at the rate of 10 bbls. an hour.

UTAH.

BEAVER COUNTY.

EUGENE.—This claim is located 6 miles west of Milford, in the North Star mining district, and is owned by Angus Buchanan and J. Forgie. The shaft has been put down 65 ft., from which point the owners are drifting on the footwall. Recently a streak of ore 14 in. in width was encountered, and assays show the presence of considerable silver and lead.

PIUTE COUNTY.

AURORA MINING COMPANY.—At the annual meeting held in Salt Lake City on March 6th the following directors and officers for the ensuing year were elected: John Kirkman, president; Charles F. McKay, vice-president; John Wells, secretary and treasurer; John D. Spencer, William G. Hoggan, John Gallagher and Joseph Moss. The property owned by the company is located near the Dalton mine at Marysvale, and the directors are now letting the contract for 50 and 100 ft. of tunnel work.

WASHINGTON.

OKANOGAN COUNTY.

BLACK JACK.—A 4-ft. vein of copper, gold and silver ore has been struck in this mine. The tunnel, which is now in 150 ft. has been running for the last 60 ft. on the footwall. A crosscut has been driven to the hanging wall, uncovering a seam of quartz well mineralized for its whole width of 4 ft.

PIERCE COUNTY.

TACOMA SMELTING AND REFINING COMPANY.—The smelter was built in 1889, with a capacity of 160 tons per day for the two furnaces, which are in the main building, a structure 120 ft. × 160 ft. in size. The sampling works is three stories high and 60 ft. × 80 ft. in size. The roasting furnace is 100 ft. × 100 ft. The company employs an average of 70 men, with a monthly pay-roll of $5,750. The officers of the company are: George Browne, president; Walter Oakes, vice-president; W. R. Rust, secretary and treasurer; F. W. Clark, superintendent. The gross weight of ore received in 1896 was 29,164,799 tons, upon which $62,204 freight was paid to the Northern Pacific Railroad, and $18,621 to steamers. The output for the year was 23,584 oz. gold, 448,504 oz. silver, 5,012,410 lbs. lead and 223,026 lbs. copper, of a total value of $921,934.

WEST VIRGINIA.

MONONGALIA COUNTY.

H. C. FRICK COKE COMPANY.—This company has bought a tract of 1,476 acres of coal land in Union District. The land formerly belonged to the Fairchance Furnace Company, and is underlaid with a seam of coking coal.

WISCONSIN.

IRON—GOGEBIC RANGE.

COMMONWEALTH IRON COMPANY.—This company has given up work at the Bessie mine, near Humboldt. Explorations, it is said, proved that the ore body was not of sufficient extent to warrant further operations.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

KOOTENAY DISTRICT.

CALIFORNIA.—This claim, located near New Denver, has been bonded by Daniel Simpson, of Buffalo, N. Y., for $62 500. Ten per cent. was paid in cash; $30,000 is to be paid on July 15th, and the balance on October 1st. The owners were A. J. Marks, B. G. Van Houten, J. Morino and James A. McDonald.

TRAIL CREEK DISTRICT.

(From Our Special Correspondent.)

LE ROI MINING COMPANY.—The new hoist at the main shaft will be ready for work at the end of March. There are fully 160 men at work, and recently the bunkers were filled, necessitating the shutting of the mine for a day. The average output of this mine since the beginning of the year has amounted to 700 tons of ore per week.

ORE SHIPMENTS.—The total quantity of ore shipped from the Trail Creek mines from January 1st to March 6th, inclusive, was 10,328 tons of smelting ore and 1,036 tons of milling ore. The total value of ore exported from West Kootenay for the months of January and February of this year amounted to $1,400,913.

GERMANY.

PRUSSIA.

COAL PRODUCTION.—The output of coal in Prussia for two full years has been as below, in metric tons:

	1895.	1896.
Coal	72,621,405	78,976,528
Lignite (brown coal)	29,126,396	21,977,959
Total	92,747,801	100,954,497

The increase in coal last year was 6,355,133 tons, or 8 8%; in brown coal it was 1,851,563 tons, or 9·2%. In 1896 there were 285 mines or openings producing coal and 370 producing brown coal or lignite. The brown coal mines are generally smaller operations. Their average output last year was 59,400 tons each, while the average for the coal mines was 298,000 tons, or about three times as great.

INDIA.

MYSORE.

COLAR GOLD FIELD.—The production reported for February was 30.420 oz. gold, and for the two months ending February 28th it was 60,332 oz The output of the leading mines in February was: Champion Reef, 9,971 oz.; Mysore, 9,523 oz.; Ooregum, 4,671 oz.; Nundydroog, 4,242 oz.; Coromandel, 1,025 oz. All of them show a gain in February, as compared with January.

MEXICO.

CHIAPAS.

CHIAPAS MINING COMPANY.—At the annual meeting in London recently the reports showed that during the year 1896 there were 14,581 tons of ore worked, producing 749 tons of concentrates having an assay value of 3·85 oz. gold, 47·95 oz. silver and 32·85% copper to the ton. These concentrates were sold for £31 18s. per ton. In addition there was 1,312 oz. gold obtained by working the tailings in the stamp mill. The mill was stopped for six weeks on account of the unusually dry season. Two important works have been started at the mine—a drainage tunnel to carry off the water from the present workings, and a shaft intended to prove whether the ore bodies continue in depth. The present workings show well, a new ore body having been opened. The net profit for the year was £3,447, which was applied to dividends on the preferred stock.

DURANGO.

LUSTER MINING COMPANY.—At a special meeting of this company, held in Pittsburg, Pa., recently, the increase of the capital from $400,000 to $1,000,000 was authorized, and the board was empowered to dispose of the property to a foreign syndicate, with which negotiations have been pending for some time.

ONTARIO.

RAT PORTAGE DISTRICT.

RAT PORTAGE MINING EXCHANGE.—The Board of Directors of this exchange, acting in co-operation with the Board of Trade of Rainy River district, have issued a circular calling a convention of all interested in mining pursuits, as inventors or otherwise, to be held at Rat Portage on April 6th, 7th and 8th, for the purpose of suggesting and discussing measures for diffusing information, inducing the investment of capital and otherwise furthering the progress of mining development in Western Ontario. "The Relations of Capital and Mining" will receive special consideration, as well as subjects such as "The Successful Treatment of Ores," "Cost of Opening Mines," "The Machinery Best Adapted for the Efficient and Econonomical Working of Mines," "The Facilities for Carrying on Mining Operations." The geological and mineralogical features of the region will be discussed by men of experience. The officers of the Rat Portage Mining Exchange are: George Drewry, president; J. E. Rice, first vice-president; C. W. Chadwick, second vice-president; C. S. Morris, secretary, pro tem.

LATE NEWS.

ALASKA MEXICAN GOLD MINING COMPANY.—This company reports the clean-up for the month of February as follows: Period since last return, 28 days; bullion shipment, $25,292; ore milled, 11,245 tons; sulphurets treated, 281 tons; of bullion there came from sulphurets $9,590. The working expenses for the month were $22,216, leaving a profit of $3,076. The bullion return was $2.25 worked, and the expenses $1.98, leaving the net return $0.27 per ton.

JAMES BLAIR died in Scranton, Pa., March 18th, aged 90 years. He was a brother of John I. Blair, of Blairstown, N. J. Mr. Blair was the oldest bank director in the United States. He helped to found the Belvidere National Bank at Belvidere, N. J., nearly 40 years ago, and was one of the founders of the Scranton Savings Bank. He was a large stockholder and for years one of the directors of the Delaware, Lackawanna & Western Railway Company.

DE LAMAR MINING COMPANY, LIMITED.—The following return for the month of February from the mines at De Lamar, Idaho, is made: Crushed during the month, 3,545 tons; bullion produced in the mill, $41,770; estimated value of ore shipped to smelters, $700; miscellaneous revenue, $95; total produce, $42,565. The total expenses were $38,030, leaving a profit for the month of February of $4,535.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, March 19.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending March 12th, 1897, compared with the corresponding period last year:

	1897. Week.	1897. Year.	1896. Year.
Pennsylvania Railroad	62,952	783,244	759,170

PRODUCTION OF BITUMINOUS COAL in tons of 2,000 lbs. for week ending March 12th, and for years from January 1st, 1897 and 1896:

Shipped East and North:	1897. Week.	1897. Year.	1896. Year.
Allegheny, Pa.	46,578	428,915	447,172
Barclay, Pa.	308	8,665	9,837
Beech Creek, Pa.	71,959	732,486	711,692
Broad Top, Pa.	9,248	79,522	89,151
Clearfield, Pa.	78,646	958,216	929,275
Cumberland, Md.	78,962	634,545	411,412
Kanawha, W. Va.	180,425	‡50,544	616,392
Phila. & Erie	621	140,052	10,556
Pocahontas Flat Top	†71,242	71,242	511,835
Totals	437,989	3,704,187	3,736,722

‡ For week ending February 28th.
† For week ending February 13th.

Shipped West:	1897. Week.	1897. Year.	1896. Year.
Monongahela, Pa.	20,811	258,402	182,364
Pittsburg, Pa.	32,015	383,989	382,331
Westmoreland, Pa.	42,757	365,736	362,109
Totals	95,583	1,008,127	926,804
Grand totals	533,572	4,712,314	4,663,526

Production of coke on line of Pennsylvania Railroad for the week ending March 12th, 1897, and year from January 1st, 1897, in tons of 2,000 lbs.: Week, 88,490 tons; year, 888,134; to corresponding date in 1896, 995,873 tons.

Anthracite.

The anthracite coal trade is very dull, a condition which is, however, not to be wondered at when the governing circumstances are taken into consideration. The weather is not at all wintry, and the consumption of fuel has been considerably lessened in consequence.

Buyers are expecting concessions in prices to be openly announced, and some of the producers stand ready to grant them, on the ground that it is better to get a little less money per ton, but to sell a good many more tons than they have been doing. Even on the present restricted output of 2,500,000 tons per month they are obliged to stock much of the coal up because the market is u able to absorb it. They argue that it would be far more profitable to dispose of all this coal and much more besides at a slightly lower figure than is being held to now. Such a proposed circular would be about as follows, f. o. b. tidewater, including the usual 15c. commission: Broken and chestnut, $3.50; egg, $3.75, and stove, $4 per ton. In June these prices would be increased 25c. a ton, making them equal to the present (July) circular. By August or September another 25c. increase could be made. The interests that are opposed to spring prices this year desire to so shape the coal business that the average price realized at tidewater for the year on the domestic sizes—chestnut, egg, stove and broken—shall be $4 per ton. Now that the trade has by the greatest effort approached, yet by no means reached, this point, they are loath to allow it to recede, believing the old difficulties will be in the way again when the advance is to be made. So far as can be learned, the probability is that the present circular will not be altered.

The figures that have been given out as the tonnage for the month of February are 2,519,000 tons, a remarkably close observance of the predetermined output. Taken in connection with the January figures, however, it gives, in round numbers, 360,000 tons above the 5,000,000 tons basis for the two months.

Bituminous.

In the Eastern soft coal trade there is not much change to note this week. Trade continues in about the same volume that our last issue noted, but although the tonnage showings have not decreased to any extent, there is a feeling of dullness which is probably due to lack of continued improvement, which the season of the year rather leads people to expect. There have been some rumors during the week of a further reduction in rail tariffs by the Pennsylvania Railroad, but it is thought these reductions, if made, are upon certain classes of trade which does not affect the general bulk. The one thing that it seems to point out is that the Pennsylvania Railroad is prepared to make further reductions in its tariff, if necessary. It is understood that $1.30 f. o. b. Philadelphia and $1.90 f. o. b. the New York harbor shipping port has been made on coals coming to tidewater over this road, and one would think that this must call for as low a freight as any railroad would care to name on the same mileage. It is said that the Chesapeake & Ohio has been putting West Virginia coal at Newport News at a freight rate of 90c. a ton.

There have not been any very large contracts taken this week that we can hear of, though there have been a number of small ones close up. The far East consuming territory remains quiet, indicating that winter stocks have not yet been used up, and that the consumer desires to clean them up fairly well before starting in on the new season contracts recently made. Trade this side of Cape Cod is

quieting down, the action showing, if anything, a sufficient quantity of coal in consumers' hands or en route for present purposes, the demand lacking the snap and go that it contained a few weeks past.

New York harbor trade is about the only tidewater business that holds its own, sufficient orders apparently coming into the hands of shippers to take care of coal consigned to the New York harbor shipping ports, these consignments not having been curtailed to any extent that we can hear of up to this writing. All-rail trade is fairly active, coal coming forward on it in about the usual volume. Shipments at the shipping ports are very prompt, vessels arriving there being generally loaded within 24 hours. The operators have fair stocks of coal on hand to meet the requirements at the shipping ports, though some of them, it is believed, have more than what is usually allowed them by the individual railroad over which they ship.

Transportation is good and up to schedule time, shippers being able to count fairly well on the arrival of coal when due. Car supply is up to all demands, though there continue to be difficulties in procuring promptly some kinds of cars for specific shipments on the smaller class of all-rail shipments. In the coastwise vessel market there is a scarcity of vessels; there being very little business for the East doing, however, this has not affected the market except in the way, possibly, of stiffening rates. The most demand seems to come from Norfolk, Newport News and Baltimore.

We quote current rates of freight from Philadelphia to Boston, Salem and Portland, 70c.; Providence, New Bedford and other Sound ports, 60c.; Portsmouth, 70@75c.; Wareham, 80c; Lynn, 80c.@$1; Newburyport, 85c.; Bath, 75c. Five and ten cents above these rates is charged from the lower shipping ports.

NOTES OF THE WEEK.

The new tariff bill presented to Congress this week changes the rates on bituminous coal from 40c. to 75c. per ton of 2,240 lbs., on slack from 15c. to 30c. per ton and on coke from 15% ad valorem to 20% ad valorem. Anthracite coal remains free of duty.

The Pittsburg & Lake Erie Railroad Company reports for the year 1896 that its total tonnage of coal carried was 4,572,070 tons, of which 3,216,904 tons was coal originating on the line of the road, while the balance of 1,355,166 tons was coal received from connecting lines. Of the total tonnage carried 3,534,867 tons were delivered to other roads—chiefly to the Lake Shore at Youngstown and to the Erie Railroad—while the balance of 1,037,203 tons was consumed on the line of the railroad. The total coke carried was 1,278,749 tons, of which 914,903 tons were made on the line of the road, and 363,846 tons received from connecting roads. About half the coke carried—635,074 tons—was delivered to furnaces on the line of the roads, the balance—643,673 tons—being turned over to connecting roads, chiefly to the Erie Railroad.

Buffalo. March 18.

(From Our Special Correspondent.)

Anthracite coal is in fair demand for local use and near-by points. No changes in quotations, and none expected yet. The weather has been and continues cold. High winds prevailed for three days; last Friday, for many hours, we had a humming 76-miles-per-hour gale! A regular Buffalo zephyr!

Bituminous coal is in fair request by manufacturers who have a slight advantage over dealers, as stocks here are quite large. Prices, however, are reported as being unchanged.

The Rochester & Pittsburgh Company has received from the Buffalo Street Railway Company the contract for about 1,500 tons of soft coal at a price not stated. This quantity is about the year's consumption of the company.

No indications of what lake freights westward on coal will open at. The wind has broken the ice considerably, and large fields are going down Niagara River.

The Buffalo gas companies have contracted for the street lighting of the city for a term of five years at 80c. per 1,000 cu. ft.

Pittsburg. March 18.

(From Our Special Correspondent.)

Coal.—There has not been much change in the mining situation during the week. The river miners of the valley have been engaged in a strike for an advance in their rate of pay; at present it looks as if they would be successful. The rate has been 2c. a bushel in the lower pools and 1½c. in the fourth, which, it is generally agreed, is not enough. On Monday Captain S. S. Brown, who operates the big coal works at Boston, Pa., on the Youghiogheny, granted the men from 2c. to 2½c. per 100 lbs. Some 300 men went to work at the advance; this makes four firms that pay the advance, and others are expected to follow. The late rise brought up an immense fleet of empties which are now in the various pools ready to be filled. The outlook favors a general resumption in the pools. In the railroad district very little activity is shown, and little improvement is to be expected before the opening of spring navigation, when the struggle for a higher mining rate will begin also. The hope of the operators for a lower rate on coal from Pittsburg to the lake ports has proved futile.

About 2,500 acres of coal and timber land in Preston County, W. Va., near the Pennsylvania State line, are reported bought by James Hare. The consideration was $24,000, and a cash payment of $14,000 was made

Connellsville Coke.—Coke workers are preparing to migrate, as the exhaustion of the Connellsville field is said to be near at hand. At all events producers are casting their eyes on the coking region south of the Youghiogheny, and in West Virginia, which makes good coke, but not as good as the Connellsville article. The exhaustion of the Connellsville coke region is a matter that is already beginning to excite speculation, and new fields are being sought.

Coke production fell short of expectation, but over 100 ovens have been fired up, and the shipments show an increase of 3,000 tons. The prospect is certainly very encouraging, and every indication points to a big trade ahead. The additions to the active list last week were not up to expectations. Summary of the region shows 11,034 ovens in blast, with 7,817 idle; there were 105 ovens added to the active list. The production of the region for the week, estimated upon the ovens drawn, amounted to 165,434 tons against 106,138 tons the preceding week, being a decrease of 704 tons.

In the running order of the 11,034 ovens in blast 2,801 ovens made six days, 7,090 made five days, 913 made four days, 180 made three days, and 50 ovens seven days. The Semet Solvey plant made an average of 5·15 days. The shipments of coke from the region amounted to 6,808 cars, an increase of 160 cars over the previous week. The shipments were: To Pittsburg, 2,670 cars; to points west, 3,050; to points east, 1,088 cars; total, 6,808 cars. Prices are very uncertain.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, March 19, 1897.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Mar. 20, 1896. F'ces.	Tons.	Mar. 19, 1897. F'ces.	Tons.	From Jan., '96. Tons.	From Jan., '97. Tons.
Anthracite.	51	33,270	31	18,600	404,078	210,086
Coke.....	137	162,670	108	147,500	1,953,339	1,570,414
Charcoal...	19	5,360	18	5,550	59,180	63,986
Totals ...	207	201,300	157	171,650	2,416,917	1,844,486

The iron market has had a quiet week, and the general disposition is to wait further developments before increasing production. Sales of Bessemer pig have been reported light everywhere, but there is a slightly increased movement in foundry irons. The only department showing much sign of activity is in bridge and structural material; it is understood that a good deal of construction work will soon be in hand, especially in the East. The West does not show much improvement as yet.

The rail market is quiet, and is experiencing rather a reaction from the late activity. Few new contracts are reported, and it is even said that some of the contracts made at the lowest rates were speculative in their nature and that there may be re-sales before long. This is quite possible, but still lacks confirmation.

Exports have been checked a little by rising ocean freight rates, though pig iron continues to go abroad. Our British contemporaries are inclined to doubt the placing of orders there for American steel rails; but we have the best authority for saying that large contracts for rails for export to Europe have actually been taken, though naturally the particulars are not given by the companies which will make the rails.

The Lake iron ore producers have not yet reached an agreement, and their meeting has again been postponed, this time until Tuesday, March 23d. Lower prices than last year's are still generally expected.

The new tariff bill proposes no important changes in the present rates of duty on iron and steel.

NOTES OF THE WEEK

The annual meeting of the Tennessee Coal, Iron and Railway Company was held in Tracy City, Tenn., last week, when the following directors were chosen: N. Baxter, James T. Woodward, Walter S. Gurnee, Sr., Walter S. Gurnee, Jr., Albert B. Boardman, C. C. Baldwin, Jas. Swann, C. M. McGhee, Oliver H. Payne, John G. Moore, Cord Meyer, J. J. McComb, Augustin T. Smythe, John P. Adger, Jr., James Bowron, David Roberts, A. M. Shook.

The new freight rates on pig iron and steel billets to Western points are as below to leading points:

To:	Pittsburg. Billets.	Pig	Youngstown. Billets.	Pig.	Cleveland. Billets.	Pig.
Chicago....	$2.50	$2.20	$2.10	$1.80	$1.90	$1.60
Cincinnati.	1.90	1.70	1.50	1.30	1.40	1.30
Detroit....	1.80	1.75	1.40	1.35	1.25	1.20
Duluth ...	4.90	4.10	4.50	3.70	4.30	3.50
Louisville.	2.60	2.40	2.20	2.00	2.10	2.00

Wheeling takes Pittsburg rates and Lorain takes Cleveland rates. All rates are per ton for carload lots of 12 tons per car minimum.

New York. March 19.

The only line to show any improvement this week is structural material. Many dwelling-houses are being erected in New York, and a number are projected for the coming spring. All these call for considerable iron and steel in a finished state. There is to be built on the northwest corner of Liberty street and Broadway an office building 11 stories high which will cost about $400,000. A contract for 5,000 tons of steel has been awarded to Riter & Conley, of Pittsburg, this week by the Great Northern Railroad Company for a grain elevator at Buffalo, N. Y. Some orders have been taken for bridge material, and a few contracts will doubtless be closed soon

Several fair-sized orders for steel rails have been taken. Among the contracts we note that obtained by the Maryland Steel Company from the Canadian government, amounting to about 4,000 tons. The price is thought to have been $20 per ton, delivered, which would make the cost at mill about $17 or $18 per ton. Some electrical railway companies in the East are contemplating the extension of their roads, which will bring out many orders for rails and fastenings.

We note that several fair sized orders were taken this week for cast-iron pipe, and among the contracts pending is one in New York City for 5,000 tons. This is to be awarded next Tuesday. The Hawaiian Consul advises us that the contract for 4,140 ft. of 12-in. cast-iron water pipe and castings will probably be awarded shortly.

The Water Board of Baltimore, Md., has awarded two contracts to Thomas D. Boswell, for 800,000 lbs. of special castings at 1¾c. a pound, and for 270,000 lbs., at 2¼c. A contract was also awarded to the Central Transfer Company for hauling 20,000 tons of pipe.

There was introduced in the State Senate recently a bill which provides for the construction of a viaduct across Jerome Park reservoir from Jerome avenue to Sedgwick avenue. This viaduct will be used as a public street.

Our local export trade shows no further improvement as regards steel rails and pig iron, and although inquiries are being received here, immediate business is not looked for in view of the conditions ruling transportation. Freight rates hold firm, and are considered too high by shippers of pig iron. South American business is promising, especially for machinery manufacturers.

Pig Iron.—The market continues quiet, with a few inquiries for high phosphorus iron in the hands of makers. Consumption of foundry iron is nearly at a standstill, and only small orders are being received for special irons. Stocks in the hands of Eastern foundrymen are large, while there is little prospect for increased immediate consumption.

There are no changes to note in regard to prices this week, but it is probable that they can be shaded. Quotations for Northern brands are $12@$12.50 for No. 1 foundry; $11.50@$11.75 for No. 2 foundry; $10.75@$11 for No. 2 plain, and $10.50@$11 for gray forge. For Southern iron we quote: No. 1 foundry, $11.50@$12; No. 2 foundry, $10.75@$11; No. 3 foundry, $10.25@$10.75; No. 1 soft, $10.75@$11; No. 2 soft, $10.50@$10.75; forge, $10.25@$10.50; basic pig, $11@$11.50. All prices are for tidewater delivery.

Cast-Iron Pipe.—Business is fairly good, and orders are coming in more frequently. Prices, however, remain uncertain.

Spiegeleisen and Ferro-Manganese.—This market is void of any orders, and prices remain unchanged, as follows: Ferro-manganese, 80% imported, $46.50@$47 per ton, New York; spiegeleisen, 20%, $19@$19.50, same delivery.

Steel Billets.—Local ordering is small at the present time, and prices are $15.50@$16 at mill.

Merchant Iron and Steel.—The market shows some inquiry this week, and we quote: Common, 1·05@1·10c.; refined, 1·15@1·25c.; soft steel bars, 1·15@1·25c. Other quotations are: Steel hoops, 1·37½@1·40c., base; steel bands, 1·30@1·40c., base; steel axles, 1·60@1·75c.; links and pins, 1·60@1·70c.; tire steel, 1·70c.; spring steel, 1·95@2·15c. All prices are for delivery on dock New York.

Plates.—Business continues small in volume, and we quote for universal mill plates 1·20@1·20c. For steel plates prices are: Tank, 1·20@1·30c.; boiler shell, 1·35@1·45c.; flange, 1·45@1·55c.; firebox, 1·65@1·75c., according to quality. Charcoal iron plates are 2·25c. for shell, 2·75 for best flange and 3·25 for firebox. Rivets are 3@3·25c. for iron and 2·10@2·25c. for steel. Prices are for tidewater delivery.

Structural Iron and Steel.—Business is increasing, and we quote for angles, 1·20@1·30c.; tees, 1·60@1·70c.; channels, 1·70@1·80c. The price of beams, New York delivery, is 1·7 c. for ordinary sizes, 1·85c. for 20-in., and 1·95c. for 24 in., car lots. For small quantities 0·05@0·10c. higher is asked.

Steel Rails and Rail Fastenings.—Standard section steel rails are quoted at $20 at mill.

Quotations for rail fastenings are: angle-bars, 1·15@1·25c.; spikes, 1·60@1·65c.; bolts, 1·85@1·95c. for square nuts and 1·90@2c. for hexagon nuts.

Wrought-Iron Pipe.—Business was quiet this week, without change in quotations. Discounts are as follows for plain pipe, out of store: 1⅛ in. and over, 67, 10, 10, 10, 10 and 10%; 1¼ in. and under, 57, 10, 10, 10, 10 and 10%. Galvanized pipe, 1⅛ in. and over, 55, 10, 10, 10, 10 and 10%; 1¼ in. and under, 50, 10, 10, 10, 10 and 10%. For fair-sized orders these discounts are made with an additional 5 and 7%, according to quantity. Boiler tubes, 1 in. to 2¼ in., 70, 10 and 5%; 2½ in. up, 75 and 5%. Cold-drawn seamless steel tubes, 60%.

Nails.—The market for wire nails continues somewhat active in presence of another rise in price to

$1.70@$1.75 per keg, New York delivery. However, there is a possibility that this increase will be lost in the near future. Cut nails, while they remain unchanged in price, are suffering from severe competition. Prices quoted are $1.25 base at mill; $1.35@$1.45 per keg for large lots in New York, and $1.45@$1.50, same delivery for smaller quantities.

Old Material.—Business has been better this week, and prices are firmer. There is an increased inquiry for old iron and steel rails. It is reported that 1,200 tons of old iron tee-rails were sold this week for export at $12.50 per ton, delivered to vessel at this port. Some 3,000 tons were also sold for shipment to Western and Southern points. Quotations for old iron rails are $12@$13 per ton, and $10.50@$11.50 for old steel rails.

No. 1 wrought scrap shows an improving demand, and yard scrap is valued at $10.50@$11.50 per ton, New York. Sales reported are 1,000 tons of railroad scrap.

Cast Scrap.—The market continues unchanged, and prices for good machinery scrap are $10@$11 per ton; ordinary cast scrap, $8.50@$9; stove-plate and mixed, $7@$7.50. Old car wheels are $10.50@$11 per ton.

Buffalo. March 17.

(Special Report of Rogers, Brown & Co.)

Several fair sized contracts have been made by local furnaces for delivery covering the next month or two, but by making a concession on the prices mentioned below. There have been a few contracts for Southern iron let in the past week, and prices of metal from the South seem to be firm, although on a slightly lower basis than those ruling for some little time past. As the larger consumers of foundry iron find business increasing they are more inclined to take hold. Inquiries have been more numerous and although they do not all result in orders, yet it has a tendency to cause a much better feeling among the local melters. We quote below on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $12; No. 2 strong foundry coke iron, Lake Superior ore, $11.50; Ohio strong softener No. 1, $12; Ohio strong softener, No. 2, $11.50; Jackson County silvery No. 1, $14.25; Southern soft No. 1, $11.50; Southern soft No. 2, $11; Lake Superior charcoal, $14.

Cleveland. March 17.

(From Our Special Correspondent.)

Iron Ore.—The officers of the Bessemer Ore Association have postponed, for the sixth time, the date of the meeting at which prices are to be fixed for the year and allotments made. The announcement is now made that the association's annual session will be held in this city next Tuesday. The Cleveland members of the pool are not of the opinion that the numerous postponements of the annual meeting indicate that an agreement is unlikely. One reason assigned for the delay of the association is that there is no strong demand for ore at present, and therefore but little business could be transacted even if the price was fixed. The vessel owners of this city are unhappy. They say they fear a 70c. freight rate from the head of the lakes and a dull season until July. During the past week a few small sales of ore lying on the docks were made. The following are the nominal quotations: Standard hard speculars, Bessemer quality, $4.50@$5; standard hematites, Bessemer quality, $4@$4.50; standard hard hematites, non-Bessemer quality, $3.50@$4; standard soft hematites, non-Bessemer quality, $2.50@$3.25.

Pig Iron.—The volume of business transacted in pig iron during the past week has been very small. The demand is slight, but the quotations remain unchanged. They are: Lake Superior charcoal, $13.50; Bessemer, $11@$11.25; No 1 strong foundry, $11.65; No. 2, $11.15; No. 1 Ohio Scotch, $11.15; No. 2, $10 65; Mahoning and Shenango Valley neutral mill irons, $9.75@$10; Mahoning and Shenango Valley red short mills, $9.75@$10.

Pittsburg. March 18.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business during the week developed no decided activity. Buyers evidently seem to be halting between two opinions; the tendency in most branches of trade, however, was toward continued improvement. There were further additions to the number of mills and furnaces in operation, and the advent of spring gives promise of increased activity, at least in the near future. The industrial recovery will be a most encouraging feature of the situation. The iron and steel trade movement is steadily improving; new business in some lines has been quieter as a consequence of the active trade during the second half of February, but in other departments there is a fair demand, and the general tendency of prices is in the direction of greater firmness. In pig iron small buyers find little difficulty in securing such supplies as they may need at prices closely in line with those quoted for large lots. There is more or less negotiation for export going on, but the matter of ocean freights checks business.

The leading producers of iron are not so willing as a few weeks ago to offer concessions to secure business; buyers are equally averse to contracting much in excess of current events so long as general business is quiet, and there is a probability of existing prices being maintained for the present. Should there be a stiffening in prices the next few weeks there would undoubtedly be a heavy business done by consumers who have been holding off.

Mr. Felton, president of the Maryland Steel Company, says that the mill will be run by its owners as soon as it can be gotten ready, and adds that the Pennsylvania Steel Company will hardly make any more T-rails at Steelton, as it cannot produce them at a profit at the Steelton rail mill and will send the T-rail orders to be rolled at Sparrow's Point. Orders for street rails, of which the company has made a specialty, will be made at Steelton. Mr. Felton sets at rest the rumors that have been in wide circulation about a deal between that company and the big Pittsburg firm for the furnishing of all steel billets for Steelton.

The market continues to move along steadily, showing but little change in leading articles. Bessemer about holds its own; the principal sales were confined to Valley iron; prices ranged $10@$10.20, according to time of delivery. Pittsburg furnacemen are indifferent about selling at present prices, preferring to wait and take the chances of the market. Billets are in fair demand; sales range $15.50@$16. Mill iron is neglected and demand light.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
5,000	Bessemer, May, June, July Valley	$10.15
5,000	Bessemer, June, July, Valley	10.20
5,000	Bessemer, May, June, July, Valley	10.15
2,000	Bessemer, April, May, Valley	10.10
1,750	Bessemer, Mar., April, Pitts.	10.05
1,500	Bessemer, April, May, Valley	10.00
1,000	Mill Iron, Mar., April, Pitts.	9.70
1,000	Mill Iron, June, Pitts.	9.50
1,000	Bessemer, Mar., April, Pitts.	10.60
1,500	Bessemer, April, May, Pitts.	10.65
500	Mill Iron, April, Pitts.	9.45
500	Bessemer, Mar., Pitts.	10.55
100	No. 2 Foundry, Pitts.	11.40
56	No. 2 Foundry, Pitts.	10.75
56	No. 2 Foundry, Pitts.	11.40
28	No. 2 Foundry, Pitts.	11.35
28	No. 2 Foundry, Pitts.	11.40

CHARCOAL.

125	No. 2 Cold Blast, Pitts.	$22.00
125	No. 2 Cold Blast, Pitts.	22.00
50	Cold Blast, Pitts	22.50
50	No. 2 Foundry, Pitts.	15.50
28	No. 3 Foundry, Pitts.	15.50

BLOOMS, BILLETS, SLABS.

2,000	Billets, April, May, Pitts.	$15.65
2,000	Billets, March, April, Pitts.	15.70
1,000	Billets, March, April, Pitts.	16.00
1,000	Billets, March, April, May, Pitts.	15.50
500	Billets, March, April, Pitts.	15.50

SKELP IRON.

500	Narrow grooved, Pitts	$1.15 4 m.
400	Narrow grooved, Pitts.	1.15 4 m.
300	Sheared, Pitts.	1.35 4 m.

SKELP STEEL.

600	Shear'd, Pitts.	$1.10 4 m.
600	Wide grooved, Pitts.	1.00 4 m.
250	Narrow groov'd, Pitts.	1.00 4 m.

STEEL WIRE RODS.

3,300	5-gauge, Delivered, Pitts.	$21.00
1,000	5-gauge, Delivered, March, April, Pitts.	21.25
1,000	5-gauge, Delivered, Pitts.	21.50

SHEET BARS.

1,000	Delivered, Pitts.	$18.25
500	Delivered, Pitts.	18.75

MUCK BAR.

550	Neutral, delivered, Pitts.	$19.50

BLOOMS, BILLETS, BAR ENDS.

700	Billet ends, Pitts.	$12.00

FERRO-MANGANESE.

150	80%, delivered, Pitts	$16.00

RAILS AND SCRAP MATERIAL.

1,000	Steel Rails, gross, Pitts	$10.50
200	Wrought scrap, gross, Pitts.	12.00
100	Cast scrap, gross, Pitts	9.25
100	Wrought turnings, net, Pitts.	6.50
100	Cast borings, gross, Pitts.	6.50

Philadelphia. March 19.

(From Our Special Correspondent.)

Pig Iron.—Taking the market all through, conditions are better. The big stir in Southern irons is felt even here, and within two days there have been quite a number of inquiries, partly due to the slight drop in prices and partly to the fact that certain brands are likely to soon be sold up. Brokers now say big transactions are close at hand and that advantage will be taken of the very low prices. A half-dozen big sales have been made in foundry stuff and steel material. No 1, of good brand, was taken at $12.75, No. 2 at $11 50 and forge at $10@$10.50, although for certain iron a higher range prevails.

Steel Billets.—Now that manufacturers have bought about all the billets they need, they are slow to offer even $17.50, which brokers and agents of steel mills do not think would be accepted at this time Billets are quoted at $18, but the sales are few, and nothing clear on the business can be gathered.

Merchant Bars.—The same hapless condition continues, and may continue for some weeks to come. The manufacturers are disheartened over the slow development of what they supposed would be a good spring trade. Refined bars could be had in large lots just now at a lower price than has been quoted.

Sheet Iron.—What promised to be an active market suddenly collapsed, and even the deliveries from store fell below expectation since Monday.

Pipes and Tubes.—Some well-posted parties claim there is a better condition of business this week, but if so it must be confined to one or two mills, and their managers decline to give particulars.

Skelp.—There have been no developments since last week.

Merchant Steel.—The improvement in merchant steel is altogether of a retail nature that does not make a strong impression at mills.

Plate.—We lost the big Buffalo order, but there have been quite a number of small orders that lead the trade to look for better things. Office building work will help our structural iron interests considerably. The bitter competition in progress is felt even in the prices at which small business is taken.

Structural Material.—The month of March has disappointed the local trade. Constructing engineers claim, as they have all along, that this season's building will give the structural mills, when work does start, a good deal more to do than last year. Our people say all their orders are for unimportant quantities. Angles are quoted at 1·20c. and under, beams and channels at 1·70c. and upward.

Steel Rails.—The information to-day is meager and unsatisfactory. There is even a dearth of rumors. The rail offices are poor places for fresh news. Outsiders hear of possibilities of attractive proportions, but actual sales are confined to small lots

Old Rails.—Old iron rails are quoted quiet at $13 and old steel rails at $11.50.

Scrap.—Some steel axles brought $12.75. Railroad scrap is scarce. Some parties who have it hold it at high prices, so buyers think.

Cartagena, Spain. March 2.

(Special Report of Barrington & Holt.)

Iron and Manganiferous Ores.—During the past four weeks more ore has been shipped from this port than during a similar period for the last four years. In the month of February 40 cargoes were moved, 23 of which were of various qualities of manganiferous ores, 14 of dry ore and three of magnetic ore. This Cehegin magnetic ore, introduced and shipped by us to the United Kingdom during the present year, is turning out very satisfactorily, and assays 62·50% metallic iron in the dry, with only about 1·05% moisture. There is at present a large demand for low-grade manganiferous ore containing 3 to 5% manganese; also for ore on a basis of 36% iron, 10% manganese and 11% silica, of which a sufficient supply cannot be mined to meet the demand.

We quote for ordinary 50% Portman ore, 5s. 8d@6s. 2d. per ton; special low phosphorus, 5s. 11d.@6s. 8d.; special iron ore, 7s. 2d; specular iron ore, 60% iron and guaranteed under 0·03% phosphorus, 9s. 3d; magnetic ore containing 60% iron, 10s 9d. For manganese ore we quote: No. 1, 20% iron and 20% manganese, 15s. 8d; No. 2 B, 25% iron and 17% manganese, 12s. 4d.; No. 2, 30% iron and 15% manganese, 11s. 4d; No. 3, 3 % iron and 13% manganese, 10s.; No. 4, 38% iron and 10% manganese, 9 . 2d.

Other Ores.—Shipments in February included 3,980 tons of blende to Antwerp, and 150 tons of ocher to Liverpool.

METAL MARKET.

NEW YORK, Friday Evening, March 19, 1897.

Gold and Silver.

Prices of Silver per Ounce Troy.

March.	St. Ex.	London Pence.	N. Y. Cts.	Value of $1.	March.	St. Ex.	London Pence	N. Y. Cts.	Value of $1.
13	87¼	29 1/16	63⅜	.490	17	87	28 5/16	62⅛	.481
15	87¼	28 15/16	63	.487	18	87	28 5/16	62⅛	.482
16	87	28⅝	62	.480	19	87	29⅛	62⅝	.483

Owing to the uneasiness in the Eastern exchange market, occasioned by the apprehension that Japan would shortly legislate herself on the gold basis, the price of silver during the past week declined quite rapidly, buyers withdrawing from the market, and concessions in price were required from hour to hour to secure purchasers. For the time silver has steadied itself at 28 1/16@28⅝d., awaiting developments.

The United States Assay Office in New York reports the total receipts of silver at 115,000 oz. for the week.

Average Monthly Prices of Silver

In New York and London, per ounce Troy, from January 1st, 1897, and for the years 1896 and 1895.

Month.	1897. London. Pence.	1897. New York. Cents.	1896. London. Pence.	1896. New York. Cents.	1895. London. Pence	1895. New York. Cents.
January	29·74	64 79	30 69	67·13	27·96	59·69
February	29 68	64·67	31 01	67·67	27·47	59·90
March	....	....	31 34	68·40	28·33	61·98
April	....	.....	31·10	67 92	30·39	66·61
May	.....	.....	31·08	67·88	30·61	66·75
June	.....	.....	31·46	68·69	30·47	66·64
July	.....	.....	31·45	68·75	30·48	66·75
August	.....	.....	30·93	67·34	30·40	66 61
September	.....	.....	30 19	65·68	30·54	66·90
October	.....	.....	29 68	65·05	30·89	67·64
November	.....	.....	29·46	64 98	30·79	67·42
December	.....	....	29·70	65·24	30·40	66 47
Year	.....	.....	30·67	67·06	29·53	65·28

The New York prices are always per fine ounce, or ounce of pure silver; the London quotation is per standard ounce, or for metal ·925 fine.

Gold and Silver Exports and Imports

At all United States ports. February, 1897, and years from January 1st, 1897 and 1896:

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
Feb..	$336,697	$544,700	$16,457	$282,468	I. $474,021
1897..	708,641	1,001,321	86,864	491,523	I. 797,342
1896..	12,750,226	21,927,029	12,003	279,020	I. 9,443,820
SILV.					
Feb..	4,060,362	762 942	66,158	1,568,369	E. 2,395,209
1897..	8,658,116	1,640,0 9	223 061	3.443,519	E. 3,797,649
1896..	10,275,618	2,469,564	123.515	2,822,560	E. 5.107,019

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 March 19th, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$121,450	$128,943	$800,768	$38,950	E. $754,325
1897..	1,033,811	981,678	8,596,745	417,902	E. 8.2o0,976
1896..	9,978,885	16,075,824	8 869,413	408,486	E. 2 353,588
1895..	28,463,201	11.644,111	6,8:2,873	292,989	E. 23.328,974
1894..	5,823,152	2.742,512	10,175,104	391,018	E. 12,864,726

Of the gold exported for the week $87,750 went to France, and the balance to the West Indies; of the silver $3,693went to Central and South America, and the remainder to London. The gold and silver imported came from Cental America and the West Indies.

FINANCIAL NOTES OF THE WEEK.

But little change is to be noted this week and there is a general disposition to wait the action of Congress on the Tariff bill, which is introduced in the House to-day. Withdrawals of goods from bond have been heavy, in anticipation of higher duties. A very common suggestion among business men is that it would be a good idea to equalize matters by cutting down expenses rather than by increasing revenue, but no one expects that Congress will take that view.

The money market in New York continues overstocked, though the movement towards that city from the interior has been less in amount. The banks are all loaded with deposits, however, and are doing their best to find use for the money. There is no indication at present of any exports of gold, and the banks as well as the Treasury are increasing their specie.

The February report of the Bureau of Statistics of the Treasury Department shows a slight falling off in the export movement, but the figures were still large. The total merchandise exports in February were $79,773,398, and the imports $59,193,868, showing a balance of exports amounting to $20,579,530. For the eight months of the fiscal year from July 1st to February 28th, the statement is as follows:

	1895-96.	1896-97.
Exports	$602,666 873	$734,950,525
Imports	541,194,833	422,471,885
Excess, exports	$61,472,040	$312,478,640
Add excess of exports, silver		22,038,241
Total		$334,516,881
Less excess of imports, gold		65,800,665
Apparent balance		$268,716,216

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

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:

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$85,271,100
1896	.....	.....	60,845,100
Bank of England	$198.402,725	.....	198,402,725
1896	245,574,720	.....	245,571,720
Bank of France	383,336,800	$245,438,100	628,774,900
1896	390,932,724	249,619,014	640,551,738
Imp. Bank of Germany	.....	.....	231,675,000
1896	.....	.....	235,310.000
Austro-Hungarian Bank	154,646,500	63,096,000	217,742,500
1896	128,630,000	63,615,000	192,245,000
Netherlands Bank	13,162,000	34,715,000	47,877,000
1896	13,118,000	34,563,000	47,681,000
Belgian National Bank	.....	.....	20,992,000
1896	.....	.....	19,406 000
Bank of Spain	42,642,000	53,733,000	96,375,009
1896	40,022,000	51,683,000	91,705,000
Bank of Italy	61,795,000	11,695,000	73,490,000
1896	61,380,000	10,240,000	71,620,000
Imp. Bank of Russia	564.200,000	.....	564,200,000
1895	491,150,000	.....	491,150,000

The return for the Associated Banks of New York is of date March 13th; all the others are of March 18th, except the Bank of Italy, February 10th, and the Bank of Russia, February 1st-13th. 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.

The statement of the United States Treasury on Thursday, March 18th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Mar. 11.	Mar. 18.	Changes.
Gold	$151,069,395	$151,313,264	I. $243,869
Silver	18,320,084	18,380,9 0	I. 60,846
Legal tenders	13,930,973	19,772,663	I. 5,841.690
Treasury notes, etc..	26.785,301	27,614.387	I. 859,086
Totals	$210,105,753	$217,111,214	I. $7,005,491

Treasury deposits with national banks amounted to $16,379,030, a decrease of $18,797 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $117,314,280. Against these are held in the Treasury $10,042,048 coined standard silver dollars and silver bullion purchased at a cost of $107,272,232, making a total of $117,314,280.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending March 13th, gives the following totals, comparisons being made with the corresponding weeks in 1896 and 1895:

	1895.	1896.	1897.
Loans and discounts	$489.004.000	$466,526,900	$505,912,500
Deposits	518,496,500	489,8 9,500	578,693,800
Circulation	12,295,500	11,234,800	16,211,300
Reserve:			
Specie	67,573,600	60,845,100	85 274.100
Legal tenders	79,649,300	83,056.100	112,262.900
Total reserve	$147,222,900	$143,901,200	$197,537,000
Legal requirement	129,624,125	122,452,375	144,673,450
Surplus reserve	$17,598,775	$21,448,825	$52,863,550

Changes for the week this year were increases of $3,850,700 in loans and discounts, $1,232,700 in deposits, and $212.400 in specie; decreases of $194,900 in circulation, $2,597,600 in legal tenders, and $2,693,375 in surplus reserve,

The Bank of Russia continues to accumulate gold steadily. The amount of its holdings on February 1st last as compared with January 1st, 1895 and 1896, is reported as below:

	1895.	1896.	1897.
Issue department	$274,900,000	$351,550,000	$390,650,000
Banking department	30,050,000	21,750,000	73,445,000
Total, Bank	$304,950,000	$373,300,000	$464,095 000
Government gold	156,100.000	117,750,000	100,105,000
Total	$461,050,000	$491,050,000	$564,200,000

The total amount of bank notes on February 1st was 1,121,280,000 roubles, of which the bank held 92,110,000 roubles, leaving in circulation $1,029,170,000 roubles, or about $491,401,600 at current rates.

Shipments of silver from London to the East for the year up to March 4th are reported by Messrs. Pixley & Abell's circular as below:

	1896.	1897.	Changes.
India	£819,298	£816 600	I. £27,302
China	129,900	44,512	D. 85,388
The Straits	76,482	35,493	D. 40,989
Totals	£1,025,680	£926,605	D. £99,075

Arrivals for the week this year were £195,000 in bar silver from New York, and £30,000 from the West Indies, a total of £225,000. Shipments for the week were £129,000 in bar silver to India, £5,000 to Hong Kong, and £29,600 in coin to Australia; also £19,962 in Mexican dollars to Hong Kong, a total of £183,562.

The Indian banks are in a much stronger position, as far as cash reserves are concerned, and the demand for money for transmission has consequently been less active. The usual 40 lakhs of Council bills were offered but the tenders were all below 15d. per rupee and were rejected by order of the India Council. Subsequently the Council sold some 15 lakhs of special transfers at 15.09d. per rupee. The action of the Council is taken to mean in London, that an attempt will be made to keep the exchange value of the rupee up to 15d. Of course this will be possible as long as conditions in India remain as they are at present, but a change may doubtless make it necessary to place bills at offered rates whatever they may be.

Prices of Foreign Coins.

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

	Bid.	Asked
Mexican dollars	$ .48	$ .49½
Peruvian soles and Chilean pesos	.44	.46
Victoria sovereigns	4.86	4.90
Twenty francs	3.86	3.90
Twenty marks	4.74	4.80
Spanish 25 pesetas	4.78	4.85

Other Metals.

The new tariff bill, as introduced in the House of Representatives, makes several changes in duties on metals. Antimony, now free, is to be taxed ¾c. per lb.; copper, now free, 1c. per lb. On lead, the proposed changes are increases in the duties, on lead in ores from ¾c. to 1c. per lb.; on pig and bar lead and lead bullion, from 1c. to 2c.; on lead in sheets, pipe or other manufactured forms, from 1¼c. to 2¼c. per lb. On zinc or spelter in pigs or bars the duty is to be increased from 1c. to 1¾c. per lb.; in sheets from 1¼c. to 2¼c. On quicksilver it is proposed to increase the duty from 7c. to 10c. per lb. On nickel no change is proposed from the present rate of 6c. per lb. On aluminum in ingots or bars no change is made from the present rate of 10c. per lb., but sheets, tubes, etc., are to be charged 15c. Of course the bill may be materially changed and amended before it passes.

Copper.—The market has been rather dull, with very little desire on the part of consumers to do anything, and with hardly any business done the tendency has been toward easier prices. Lake copper is nominal at 11¾c., while electrolytic copper has suffered perceptibly, and we have to quote for cakes, wirebars or ingots 11⅛@11¼c., and cathodes from 10¾@11c. In casting copper a very limited business has been done at about 11@11⅛c. Exports are still smaller than during the preceding months, and exporters complain that the bids received from Europe are rather below the ideas of holders here.

In Europe, where the political situation continues unsettled, prices for speculative brands, as well as for refined copper, have given way further, and g. m. b.'s have now receded to nearly the opening price of the year, which was £49 12s. 6d.@£49 15s., the advance of nearly £2 established in the meantime haing been lost. The closing quotations are £49 15s.@£49 17s. 6d. for spot, and £50 2s. 6d.@£50 5s. for three months prompt. For refined and manufactured we quote: English tough, £52@£52 10s.; best selected, £52 15s.@£53 5s.; strong sheets, £60 10s.; India sheets, £56 10s.; yellow metal, 4 1/16d. While consumption abroad appears to be quite good, buyers operate very carefully. The statistics for the first half of the month show an increase of 1,700 tons.

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, with the exports from the United States for February and the two months ending February 28th:

	February.	Two mos.	
	1897	1895	1897
Production fine copper, long tons:			
Reporting mines in U. S.	16,119	31,188	33,056
Pyrites and outside sources U. S.	700	2,400	1,4 0
Reporting foreign mines	7, 41	13,93)	13,836
Total production, long tons	24,060	47,518	48.292
Exports from U. S., fine copper	8,836	16,461	18,507

For the two months this year the United States production shows a small increase, 868 tons, or 2·6%. The exports continue large, showing a gain of 2,043 tons, or 12·4% for the two months.

Tin.—The continual fall in silver has not failed to react on tin, and rather lower prices have again been established. The arrivals have been rather heavy, but the bulk thereof has been at once transshipped. Shipments from the East continue rather large, and for the present a material improvement in the statistical position is not to be expected. We have to quote for spot and March 13¼@13⅜c., and for delivery up to July, 13⅛@13⅜c.

The opening quotation in London was £59 17s. 6d. @£60 for spot, but afterward prices declined somewhat, and to-day the market closes £59 12s. 6d.@£59 15s. for spot and £60 5s.@£60 7s. 6d. for three months prompt.

The exports of tin from the Straits Settlements in January, 1897, are reported as below in tons of 2,240 lbs., comparison being made with the same month in 1895 and 1896:

	1895.	1896.	1897.
To United States	200	1,902	625
" Great Britain	2,187	1,216	1,000
" European continent	1,210	1,169	1,286
" China	107	200	45
" India	211	399	116
Total tons	3,915	4,886	3,072

There was a marked decrease this year, especially in shipments to the United States.

Lead rules exceedingly firm and good business has again been done, which would have been even larger, but for the reluctance on the part of producers and refiners to offer larger quantities. We have to quote for spot and near-by delivery, 3 40@3 42½c. New York, while in St. Louis a good business has been done at from 3⅛@3·17½c.

The European market is dull and lifeless, and Spanish lead in London is quoted £11 10s.@£11 11s. 3d., and English lead 5s. higher.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is quiet and unchanged. Missouri brands are worth 3·15@3·17½c., and argentiferous brands 3·20c. Demand is rather light, and offerings are only of a moderate nature.

Spanish Lead Market.—Messrs. Barrington & Holt write from Cartagena, Spain, under date of March 2d, as follows: The average local quotation for pig lead on wharf has been 62·37 reales per quintal of lead, which, taking exchange on London at 31·46 pesetas per £1, is equivalent to £11 1s. 11d. per ton of 2,240 lbs. f. o. b. Cartagena, silver having been paid at the rate of 14·87 reales per ounce. Exports for the month have been: To Marseilles, 2,091,061 kg.; to United Kingdom ports, 2,667,016 kg.; total, 4,758,077 kg. For lead ores we quote: Potters' ore, 8s. 9d. per cwt.; Linares sulphide, 78%, 6s. 8d.; Linares carbonate, 50%, 4s. 6d. per cwt.

Spelter has been quiet, and there appears to be more metal offered. We have to quote 4⅛@4,15c., New York and 3⅞@3·90c., St. Louis.

The foreign market has been steady, and good ordinary brands in London are quoted £17 5s., with specials 2s. 6d. more.

Antimony is dull and unchanged. Cookson's 7¼c.; Hallett's, 7⅛c.; U. S. Star, 7c.

Nickel.—Business continues moderate, but prices are unchanged. We quote for ton lots 33@36c. per lb., with 37@39c. for smaller orders. London prices are steady at 14@15d. for large orders and 15@16½d. for small lots. The New York price is about on a parity with London, allowance being made for the duty of 6c. per lb. here. The Paris quotation is 4 fr. per kilo, equivalent to about 36c. per. lb.

Platinum.—There is no change to be noted 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 quotations, 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, 52c., 54c. and 56c. per gram. Wire and foil are 49c., 50c. and 51c. per gram. The current retail price for crucibles is 60c. per gram.

Quicksilver.—The New York quotation has been increased $1.25, and is this week $39.75 per flask. The London price has been raised 5s. to £7 5s. per flask, with £7 3s. 9d. named from second hands.

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 ingots for re-melting, per lb	37@42c.
No. 2, 94% pure, " " "	31@34c.
Ingots from scrap, per lb	30c.
Rolled sheets, per lb	46c. up.
Aluminum-nickel casting metal, per lb	25@40c.
Bismuth, per lb	$1.30@$1.80
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.

Variations in price depend chiefly upon the size of the orders.

Average Monthly Prices of Metals

In New York, for the years 1897 and 1896; in cents per pound.

Month.	Copper.		Tin.		Lead.		Spelter.	
	1897.	1896.	1897.	1896.	1897.	1896.	1897.	1896.
Jan.	11 75	9·87	13·44	13 02	3·04	3 08	3·91	3·75
Feb.	11·92	10·64	13·59	13 44	3·28	3·19	4·02	4·03
March	.....	11·03	.....	13·30	.....	3·14	.....	4 20
April	.....	10·98	.....	13·34	.....	3·07	.....	4·07
May	.....	11·15	.....	13·54	.....	3·03	.....	3·98
June	.....	11 67	.....	13·59	.....	3·03	.....	4 10
July	.....	11·40	.....	13·63	.....	2 96	.....	3·97
August	.....	10 98	.....	13 49	....	2·73	.....	3 76
Sept.	.....	10·66	.....	13·15	.....	2·77	.....	3·60
October	.....	10 66	.....	12·94	.....	2·80	.....	3·72
Nov.	.....	11·23	.....	13·09	.....	2·96	.....	3·99
Dec.	.....	11·28	.....	12·96	.....	3·04	.....	4·14
Year	.....	10·88	.....	13·29	.....	2·98	....	3·94

Imports and Exports of Metals.

New York.*	Week, Mar. 11.		Year, 1897.	
	Expts.	Impts.	Expts.	Impts.
Aluminum, boxes	293	.....	609	.....
Antimony ore....short tons	.....	13	.....	95
" regulus, " casks	.....	.....	.....	81
Brass, old.....short tons.	19	.....	113	95
Copper, fine .....long tons	†450	38	13.255	353
" matte .. " "	†422	.....	2,788	111
" ore..... " "	.....	.....	.....	.....
" sulphate.. " "	906	.....	2,995	.....
Iron ore..... " "	.....	.....	.....	.....
" pigs, bars, rods..... " "	180	.....	1,956	1,419
Iron pyrites..... " "	.....	.....	.....	2,670
" sulphate..... " "	.....	.....	.....	.....
Ferro-mangan'se " "	33	.....	200	52
Ferro-silicon..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	463	.....	889
Spiegeleisen..... " "	.....	33	.....	309
Lead bullion..... " "	†726	1,287	6,513	9,183
" pigs and bars " "	.....	.....	.....	.....
Magnolia metal.. " "	.....	.....	57	.....
Nickel..... " "	.....	.....	118	5
Steel, billets, rods. " "	831	362	3,605	4,687
Tin..... " "	†88	350	488	2,427
Tin dross..... " "	.....	.....	28	.....
Tin and black plates, boxes.	.....	11,325	.....	197,214
Zinc dross.....long tons	25	.....	99	.....
Zinc (spelter).....long tons	†22	.....	1,115	784

*Metal Exchange Reports. † Week ending March 18th.

Philadelphia.††	Imports.	
	Week, Mar. 12.	Year, 1897.
Antimony, casks	.....	2,700
Copper ore, long tons	624	624
Ferro-manganese, long tons	33	33
Ferro-silicon	.....	.....
Iron ore, long tons	3,100	47,322
" pig " "	.....	.....
" pyrites, long tons	.....	.....
" and steel scrap, long tons	.....	.....
Manganese ore, long tons	5,950	5,950
Spiegeleisen " "	.....	.....
Tin " "	.....	125
Tin and black plates, boxes	.....	3,961

†† From New York Metal Exchange Reports.

Baltimore.**	Week, Mar. 18.		Year, 1897.	
	Exp.	Imp.	Exp.	Imp.
Bismuth metal, cases	.....	.....	.....	.....
Chrome ore..... long tons	.....	.....	.....	.....
Copper, fine..... " "	261	.....	6,996	.....
" matte..... " "	.....	.....	.....	.....
" sulphate .. " "	30	.....	1,112	.....
Iron ore	.....	23,009	.....	54,703
" pigs, bars, ingots, blooms. " "	.....	.....	80	858
Iron oxide..... bags	.....	.....	.....	.....
" pyrites.....long tons	.....	.....	.....	.....
Ferro-manganese " "	325	.....	1,086	.....
Ferro-silicon..... " "	.....	.....	.....	23
Lead..... " "	.....	.....	20	.....
Limestone.....short "	.....	.....	.....	.....
Manganese metal,long "	.....	.....	21	2,860
Spiegeleisen ..... " "	.....	.....	.....	360
Steel..... " "	.....	.....	660	197
Steel wire, bundles.....	.....	.....	283	3,492
Tin, long tons.....	17	.....	184	191
Tin and black plates, boxes	.....	664	.....	7,932
Zinc (spelter) long tons....	.....	.....	2	.....

**From our special correspondent.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, March 19.

Heavy Chemicals.—The proposed increase of tariff rates on certain heavy chemicals has made a very active trade in them. This is particularly true of chlorate of potash, which we have heard quoted as high as 10c.; the figures below are, however, those generally named, and they will be shaded on large contracts. Chemicals not affected by the new tariff schedule remain inactive, and prices are unsteady upon them. The figures for hyposulphite of soda given below are purely nominal.

We quote: Caustic soda, 60%, $2.10@$2.15; 70, 74@76%, $1.80@$2 per 100 lbs. Alkali, 58%, 60@65c. for 50-ton lots and over, and 70@80c. for smaller quantities; 48%, $1@$1.20 for jobbing lots. Caustic soda ash, 48°, $1.50@$1.70. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.57½@$1.70 per 100 lbs. Bicarb. soda, English, 1·75c. per lb.; American, bulk, $1.50@$3.50 per 100 lbs., according to make. Sal-soda, English, 60@65c.; American, 55@65c. (in barrels), 80c. (in kegs) per 100 lbs. Hyposulphite of soda, 1·60@1·80c. in casks; 1·70@1·95c. in kegs. Chlorate of potash, 8¾@9c., according to quantity.

Acids.—There is a continued activity in the purchases for textile mills in anticipation of the change in the tariff. A further advance is probable in acid prices because of an increase in the price of salt, which particularly affects muriatic acid. Acetate of lime is 10c. per 100 lbs. higher, which has caused an advance in acetic acid. Quotations per 100 lbs. in New York and vicinity in lots of 50 carboys or over are as follows: Acetic acid, commercial No. 8 (in barrels), $1.40@$1.50; in carboys, $1.50@$1.65; redistilled, 28%, in bbls., $1.70@$1.80; in carboys, $1.90@$2.05; muriatic acid, 18°, 75@85c.; 20°, 85@95c.; 22°, $1.15@$1.25, according to make and quantity. Nitric acid, 36°, $3.50@$4; 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°, 85c.@$1 in carload lots, 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.—The dullness in this market continues, and quotations show a decrease from a week ago. Best unmixed seconds on spot can be obtained for $19.75@$20, and these figures are also the quotations on arrivals. Thirds are $1 per ton less.

Fertilizing Chemicals.—There has been more or less buying during the past week, but mostly for immediate needs, as manufacturers do not feel disposed to buy ahead. The conditions generally are quiet. The advance in the price of potash salts on April 1st is having the effect of making buyers place their orders now. The new tariff law proposes a duty of $10 per ton upon sulphate of ammonia. The present duty is an ad valorem rate, and the change will mean an advance of $3 to $4 per ton over the present market prices.

Sulphate of ammonia, gas liquor, $2.32½ for shipment, and $2.30 for spot; bone, $2.15@$2.20 per 100 lbs. Dried blood, high grade Western, $1.75 per unit New York; f. o. b. Chicago, $1.50 per unit; low grade, fine ground, Western, $1.47½@$1.50 f. o. b. Chicago. Azotine, $1.70@$1.75 basis New York. Concentrated phosphate (30% available phosphoric acid), 57½c. per unit. Acid phosphate, 13%@15%, av. P_2O_5, 54@65c. per unit at sellers' works in bulk. Dissolved bone black, 17%@18% P_2O_5, 85c. per unit. Acidulated fish scrap, $10, and dried scrap $19.50@$20, f. o. b. fish factory. Tankage, high grade, $14@$14.25 per ton; concentrated, $1.35 per unit, f. o. b. Chicago; New York, $19@$20; low grade, $18@$19. Bone tankage $19@$20; ground bone, $21@$23. Bonemeal, $20@$22.50.

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

Double Manure-Salt: 1·01c., basis of 48% chlorate high grade (basis 90%), 1·99½@2·03c., in bulk, 24@36% per unit O. P., 36½@38c.

Muriate of Potash: We quote: 1·75c. at New York and Boston, 1·76½c. Philadelphia, Baltimore and Norfolk, and 1·81½c. Charleston, Savannah, Wilmington and New Orleans, for 80@85% basis of 80%, in lots of 50 tons and upward.

Kainit.—Invoice weights, as taken at port of shipment, per ton of 2,240 lbs., testing 12·4% actual potash, equivalent to 23% sulphate of potash, $8.55. Actual weights, ex-vessel at port of New York per ton of 2,240 lbs. (testing as before), $8.80.

These prices for the potash salts and kainit are for contracts made before April 1st; after that date they will be 3c. per 100 lbs. higher.

Nitrate of Soda.—Conditions are about the same as they were last week, and prices have not changed. A fair amount of business is doing. For spot sales, 1·90@1·92½c. is asked, to arrive, near by, 1·87½c., and for shipment, 1·82½.

The Permanent Nitrate Committee's public statistical circular for March, as issued in London, states: Nitrate of soda—1. Total exports to Europe, February, 1,270,000 quintals; loading for Europe, March 1, 614,000 quintals. 2. Imports, Europe, February, 107,750 tons. 3. Deliveries, Europe, February, 170,280 tons. 4. Visible supply, Europe, March 1, stocks and afloat, 590,000 tons.

Charleston, S. C.

(From Our Special Correspondent.)

The shipments of phosphate rock from this port for the month of February, 1897, were as follows, comparison being made with the corresponding period one year and two years ago:

	1895.	1896.	1897.
Crude rock (2,240 lbs.)	11,663	13,540	11,020
Ground rock (2,000 lbs.)	.....	100	.....
	11,663	13,640	11,020

The decrease this year was 643 tons as compared with 1895, and 2,620 tons as compared with 1896.

High-grade land rock can now be bought at $3, f. o. b. mines Ashley River, and river rock, 5d. per unit, delivered United Kingdom port.

Liverpool. March 10.

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

Since our last advice, it is stated that Brunner, Mond & Company have arranged to purchase the works of the Cheshire Alkali and Salt Company. The price of ammonia soda has been advanced 5s. per ton for the home trade.

Soda ash is unchanged for export business, but for home consumption the price of ammonia ash has been put up 5s. per ton. For export, prices vary considerably according to market, and nearest ranges for tierces according to market may be called about as follows: Leblanc ash, 48%, £4@£4 5s. per ton; 58%, £4 5s.@£4 10s. per ton, net cash. Ammonia ash, 48%, £2 15s.@£3 10s. per ton; 58%, £3@£3 15s. per ton, net cash. Bags 5s. per ton under price for tierces. Special terms are made for American business.

Soda crystals are in fair demand at £2 5s.@£2 7s. 6d. per ton, less 5% for barrels and 7s. less for bags.

Caustic soda is in better request, and practically nothing offering outside the Union at present. Nearest spot range, as to market, we quote about: 60%, £6 3s. 9d.@£6 5s. per ton; 70%, £7 3s. 9d.@£7 5s. per ton, net cash; 74%, £8 2s. 6d.@£8 5s. per ton; 76%, £8 15s.@£9 5s. per ton, net cash.

Bleaching powder is quiet at £6 15s.@£7 per ton, net cash, for hardwood packages, as to destination.

Chlorate of potash is nominally quoted at 3¾d.@3⅞d. per lb., but nothing doing to test the market.

Bicarb. soda is moving off at £6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is strong, and advanced to £8 7s. 6d.@£8 10s. per ton less 2½% for good gray, 24% and 25% in double bags f. o. b. here, as to quality.

Nitrate of soda is steady, at £8 7s. 6d.@£8 10s. per ton, less 2½% for double bags f. o. b. here, according to quality.

Carb. ammonia, lump, 3d. per lb.; powdered, 3¼d. per lb., less 2½%.

Valparaiso, Chile. Jan. 30.

(Special Report of Jackson Brothers.)

Nitrate of Soda.—The fortnight opened with fair demand for steamer parcels and for vessels on owners' account, but the European market having again receded for prompt deliveries, owing to a severe winter, prices for present shipments have also been affected and do not allow of new business with current rates of freight. A fair business, however, has been done in refined nitrate for future shipments. We quote 95% for February and March delivery at 5s. 9d., April 5s. 8½d., May 5s. 8d., and 96%, 5s. 10½d. for any delivery. The price of 5s. 9d. with 16s. 9d. freight stands in 7s. 3d. per cent. net cost and freight without purchasing commission. Sales for the fortnight amounted to 556,000 metric quintals.

MINING STOCKS.

Complete quotations will be found on pages 298 and 299 of mining stocks listed and dealt in at:

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

NEW YORK, Friday Evening, March 19.

The stock market this week was not very active, and prices showed a declining tendency. At the Consolidated Stock and Petroleum Exchange the Comstocks were exceedingly dull. Consolidated

California & Virginia and Mexican were the only two stocks dealt in. The former recorded dealings in 100 shares at $1.20, a drop of 20c. in price from last week, and Mexican, 100 shares at 32c. The California stocks were also very quiet. Standard Consolidated sold 200 shares at $1.65, a falling off in price of 10c., as compared withthe closing quotation last week. Brunswick Consolidated sagged notably during the week, selling 6,600 shares at prices ranging from 13c. on March 13th to 7c. at the close to-day. This stock dropped in price from 18c. in January to the present level.

Trading in Colorado stocks at this Exchange was fair, and among those which were sold outside of the Cripple Creek group are Leadville Consolidated with sales of 12,200 shares at 9@11c., and Small Hopes, with dealings in 900 shares at 50@55c.

Business on the new Mining Exchange is said to look more promising, and some heavy transactions are reported. Annetta, of Colorado, which was quoted at 35c. some time ago, has declined steadily until at the close to-day it sold for 10c., with large tradings. On the other hand, there has been a steady rise in the price of Golden San Juan from 7c. on day of listing to 20@22c. now. We also hear that money has been raised in Chicago for the purpose of building and operating a smelter at Ouray, Colo., which will treat the pyritic ores from the Golden San Juan property.

There have been several sales of Eagle this week at $1.27½. The treasurer of the Eagle Gold Mining Company says that a London syndicate is desirous of closing negotiations for the purchase of this property. The present lease will expire on April 15th.

Sales were also made of Japan at $2.87½, which is a drop of 12½c. from last week's closing. Russell, a gold stock of North Carolina, is selling at 31@32c., and shows transactions of several thousand shares. The Cripple Creek stocks were not so active this week. Argentum-Juniata opened at 27c., rose to 29c. then receded to 26c., and closed at 28c., with sales of 1,300 shares. Portland ruled steady at 79c., and shows transactions of 200 shares. Cripple Creek Consolidated opened at 10@11c., and then rose to 12c., reacting to 11c., but rising again to 12½c. and to-day it closed at 11c.; sales aggregated 3,700 shares. Pharmacist hovered between 13c. and 14c.

There was called on the exchange to-day the common and preferred stocks of the Senator Mining and Milling Company of Colorado, California and Arizona. Sales amounting to 5,000 shares were made of the preferred stock at $8. This stock carries a dividend of 6% per annum. The company is capitalized at $5,000,000 in 500,000 shares, of which $3,000,000 is in common stock, and the balance in preferred stock. The bonded indebtedness is $3,000,000 (6% for 20 years).

Boston. March 18.

(From Our Special Correspondent.)

At the close of last week there was a fairly good tone to the market, and prices of most of the stocks improved, but within a few days much of this advance has been lost, and the market closes rather dull. Arnold has been fairly active, advancing from $3¾ to $3¾, and closing $3½. Atlantic gained from $20½ to $22½, with later sales at $21¾. Calumet & Hecla holds its own remarkably well at $330, within $10 of the highest point. Centennial gained from $8⅜ to $9, and later went back to $8¼. There is talk of a $2 50 assessment to come shortly, in order to push work at the mine vigorously. Franklin has gained $½ to $11½, with sales about every day of the week. Humboldt has appeared in the market after a long absence, selling 45@60c This mine is located at Keweenaw Point, and the company has a large territory, but it has never been worked to any extent—scarcely prospected. Osceola declined from $34 Thursday last to $31½ the next day. Later the stock rallied to $33⅜ and then off to $31½. Quincy declined from $111¼ to $109½ and scrip $102 to $100. Tamarack sold off from $121 to $118½ and closed $119. Tamarack, Jr., advanced from $16½ to $18¼. Tecumseh was unchanged at $3 and little doing. Wolverine hangs around $10, with the last sale at $9¾ per share.

Boston & Montana has had a lively week, advancing at first from $121⅝ to $129 (highest yet) and then steadily declining to $124¾, closing $125½. Butte & Boston sold up from $16⅜ to $20, which includes the third installment of $2.50 per share, leaving $2.50 to be paid April 15th. Later the stock declined to $18¾, closing at that asked. Old Dominion had another bad break from $15½ to $12, with a rally later to $14¼, at which it closed.

The Gold stocks continue to attract little attention, although prices average somewhat higher. Gold Coin has been fairly steady at $3¾@$3⅞. Merced advanced from $9 to $10, with a fairly active demand. Pioneer is slightly firmer around $5¾@$6. The delay in the promised report keeps this stock without movement. Santa Ysabel declined from $14 to $12¾, with a rally to $13½ later.

The market this afternoon was generally lower and not so active in the special stocks. Centennial broke to $7¼. Gold Coin was specially active, with sales of over 5,000 shares and a rise from $3.81¼ to $4.06¼, then dropped back to $3.87½ per share.

Cleveland. March 17.

(From Our Special Correspondent.)

So far as actual transactions are concerned the mining stock market in this city has been quiet during the past week. Many of the investors are waiting until the Bessemer Ore Association fixes the price of ore for the season and makes the allotments, before placing their money in iron stocks. The quotations have shifted somewhat during the past few days. Last week Pittsburg & Lake Angeline was held at $70, but this week $75 is offered for it. Jackson and Cleveland-Cliffs have declined slightly, and Lake Superior has advanced. Minnesota stock has not been on the market for several days.

Salt Lake City. March 13.

(Special Report of James A. Pollock.)

The mining stock market was fairly active, and a decided improvement in quotations may be noted in some stocks. The tone of the market was undeniably healthy, and there is a strengthening tendency in the high-grade stocks. Ajax was again lower, and sold down below last week's prices. Anchor and Alliance both remained without feature. As was stated by me would be the case, Bullion-Beck has declared its March dividend in the sum of $50,000, or 50c. per share. The stock went off the amount of the dividend at the close, with only limited dealings. Buckeye was a fraction stronger, with no heavy business. Although the mines are looking very well, Daly was no stronger than last week; in fact, the feeling was one of depression. An immense snowslide on March 7th did considerable damage to Daly No. 1 hoisting works and caused a suspension of operations at the plant. Only limited offerings were recorded. Daly-West was not very active and quotations were practically unchanged. Dalton & Lark did little business. Asking quotations were unchanged with bidding lower. Dalton was lower. Dexter reported a strike and the stock moved up several points, with little business really done. Nothing was done in East Golden Gate. It has not been announced as yet what the future policy of the company will be. Four Aces sold lower. Galena was about unchanged. Geyser-Marion was in fair demand, with prices about unchanged. Horn Silver was not active; in fact, it never is on this market, there being so few local sellers. Little Pittsburg was active at advancing figures. Mercur has declared its regular dividend, payable on the usual date. The stock sold up to and above $7, and remained practically unchanged, even after the dividend books closed. The tendency is upward. Mammoth recovered very materially and at the close was passing $2. Northern Light did not fluctuate widely. Ontario was offered at lower figures than for some weeks, while buyers were not numerous. Richmond-Anaconda sold at last week's bidding prices. Rover was materially stronger, on encouraging reports from the properties. Sunbeam was fairly active at unchanged figures; Silver King has paid its March dividend, while Sacramento passed its payment for this month. The latter stock was offered down. Sunshine was not very active, and prices remained unchanged. Swansea made good advances and sold at better figures than for some weeks. Tetro sold slightly lower.

San Francisco. March 13.

(From Our Special Correspondent.)

The market opened quietly this week, with light business, but little change in prices. The 25c. assessment levied by the Consolidated California & Virginia had been generally expected, and its announcement on Monday had very little effect on the quotations for the stock. The weekly reports of the Comstock companies showed nothing new.

Later in the week the market was dull, with a general weakening of prices. The Hale & Norcross row did not affect matters favorably and there was a general tone of disgust with the whole matter. The week closed with a dull market and a general tendency to lower prices.

Some quotations noted are: Consolidated California & Virginia, $1.30@$1.35; Chollar, 93@96c.; Ophir, 88@89c.; Hale & Norcross, 84@86c.; Confidence, 84@85c.; Best & Belcher, 70@75c; Potosi, 30@33c. There was some dealing in Standard Consolidated $1.55@$1.60.

The mining, milling and other corporations on and around the Comstock disbursed the following sums, for February, 1897: Hale & Norcross (estimated), $1,300; Andes (estimated), $1,200; Consolidated California & Virginia, $9,615; Mexican, $1,588; Ophir, $200; Best & Belcher, $1,727; Gould & Curry, $1,075; Alta, $1,033; Utah, $392; Occidental, $1,529; Brunswick Exploration Company, $6,437; Crown Point, $1,405; Yellow Jacket, $1,204; Confidence, $423; Challenge, $190; Belcher, $2,269; Segregated Belcher, $332; Imperial, $140; Savage, $2,000; Bullion, $925; Chollar, $3,917; Potosi, $1,156; Union Shaft, $2,176; Sierra Nevada, $664; Alpha, $694; Overman, $1,000; Caledonia, $500; Nevada Mill (estimated), $2,500; Electric Light (estimated), $500; Water Company (estimated), $3,000; Quartz mills (estimated), $5,000. Total, $58,001.

The Rosario Mining Company, of Mexico, has declared a dividend amounting to $15,000, payable March 15th.

Mining assessments falling delinquent this month amount to $118,450, of which Nevada mines call for $82,450, California mines $9,000, Arizona mines $25,000, and an Alaskan mine $2,000.

The Consolidated California & Virginia Mining Company has levied an assessment of 25c. per share, delinquent April 13th.

The Horse Shoe Bar Consolidated Mining Company, of Placer and El Dorado counties, has levied an assessment of 10c. per share, delinquent April 17th.

Spokane, Wash. March 12.

(From Our Special Correspondent.)

The market for mining stocks opened rather listlessly this week, while bids and offers on the Stock Exchange were weak. A change for the better, however, was felt on Wednesday and at the close there was manifest an increasing interest in business.

The stock to record the heaviest sales was Great Western, of Trail Creek, 11,000 shares at 15@15½c.; Reservation comes second, with 4,000 shares at 7¼c., and Helen (unlisted) third, with 3,500 shares at 3c.

Of the higher classed stocks there was a sale of 500 shares of Hall Mines at $6.50 in London, England. I might mention that the Hall Mines stock is listed on the London Exchange, and on March 5th sold for £1⅝, a price much lower than was received on our board.

There were also sales of 1,000 shares of Cariboo, a dividend payer, at 48c., 250 shares of Josie at 48¾c. and 1,000 shares of Iron Mask at 38½c. Rossland, Toronto and Montreal are numbered among the places on whose account stocks were purchased.

A fair volume of business was done in the very low-priced stocks, and some large lots are said to have been sold.

Total sales this week were 39,300 shares.

Mr. E. Young, of Colorado Springs, was proposed and indorsed for membership on March 8th by two of the Stock Exchange brokers.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, March 11.

There has been some excitement caused by the proposal to make all new mining companies which are organized for operation in this province pay up 10% portion of their nominal capital, but the strong opposition will undoubtedly defeat it for the present session at least. The times, it is urged, are not favorable to the enactment of stringent legislation. Much interest centers in the pending decision of the Paris Bell mining case, which, it will be recollected, was decided in the lower courts in favor of the Nelson & Fort Sheppard Railway Company, and which was appealed to a higher court by the defendants. It seems that heretofore the Appellate Court has held that hanging and foot walls are not necessary to prove the right to locate a mineral claim. This was not conceded in the court below, and this concession is regarded as favorable to the defendants.

London. March .

(From Our Special Correspondent.)

The South African mining market is falling to such a low level, both as regards business and quotations, that even the most optimistic man in the city is beginning to lose all hope and is becoming seriously alarmed. There are absolutely no buyers, and there are, comparatively speaking, very few sellers. Everybody who is able to hold on is supporting the market loyally; but as there are a great number of people who are unable to take up their commitments, and also a great many nervous people who desire to clear out before things get worse, there is of course a certain amount of selling. Directly there are any public offers of shares the prices fall, and nothing that the supporters of the market can do is able to drive the price up again.

Perhaps Chartered are the only shares which keep fairly steady, the other leading shares in the market all showing falls. For instance, the Consolidated Gold Fields have fallen to £6 and Rand Mines to £15, as compared with £18 and £45 respectively at the height of the boom, 18 months ago. Primroses are now only £2¾ as compared with £8, and Buffelsdoorns are below £1, as compared with £9 at the height of the boom. These falls are to be attributed to a variety of causes, but at present the most potent factor of the market is the anxiety as to the political future of the Transvaal. The parliamentary enquiry so far has not done Mr. Rhodes any harm, but it has shown up the method of government pursued by the Boers. The latest freak of the Transvaal government in quarreling with its own judges is causing great dissatisfaction in England, and even the most sober-minded Englishman is beginning to think that at no distant time the Boer government will have to go. Everything points to a severe struggle in the Transvaal, and that being the case, it is felt that the present time is not a suitable one for speculating in Transvaal gold mines

It may be supposed that the continental nations are backing up the Transvaal in its dispute with England, but so far as France is concerned this is not the case. French speculators and investors are far too heavily involved in South African mining shares to take sides against the mining interests, and so to depress their own possessions. Germany also would be acting against its own interests in stirring up dissensions, because German capitalists and bankers are much interested in the Transvaal mining industry, though not perhaps to the same extent as the French.

The West Australian mining section has not suffered very much from the depression in Africans, but, of course, the amount of business done is comparatively small. The Great Boulder people tried to stir up some enthusiasm by publishing news about further valuable strikes on their property, but the actual buying that resulted did not amount to much.

The Indian section has been the only healthy part of the market. The most interesting feature of this section has been the increase in the output of Coromandel. The returns for February of this mine show a production of over 1,000 oz., and the increase in the reserves and the approaching completion of the new plant hold out a promise of a very substantial increase in production in the near future.

The New Zealand section has been extremely dull. The company promoted by the Exploration Company called the Consolidated Gold Fields of New Zealand has been in very bad odor during the week, not because of any adverse report received, but in sympathy with the collapse in Grand Central, of which details are given hereafter.

In the American section interest has centered round two different points: Firstly, the publication of the prospectuses of new companies in British Columbia and British Guiana, and, secondly, the announcement of adverse news from the Grand Central Mine, of Mexico. The latter has had a very depressing effect on all American business, and very serious reflections are made both in the press and privately on the promotion and subsequent tactics pursued by the Exploration Company. It will be remembered that the Grand Central Company was formed during last summer to take over the Minas Prietas property in Mexico, after it had been examined by Messrs. Farish & Janin.

The shares were sold at a substantial premium, and while the selling was going on first-class reports were sent from the mine. Even so recently as November last Captain Mein, one of the directors, sent booming reports confirming previous opinions and announcing very large bodies of ore in sight. It comes as a surprise, therefore, to receive a cable this week from Captain Mein reducing his previous estimate of ore in sight by one-half, announcing that the ore bodies are pinching out in depth and that the monthly profits are substantially decreasing. It is too early as yet to enter into an analysis of the present state of the mine and its history. It is best to wait until the arrival of Captain Mein's written report, which will arrive here in the course of a week or two.

British Columbia has come before the public this week by the publication of a prospectus of a company called The Gold Fields of British Columbia, Limited. This company must not be confused with another company called the New Gold Fields of British Columbia, Limited, which was referred to in your issue of February 13th. The two companies are bitter rivals, but their methods of doing business do not differ very much. The Gold Fields of British Columbia, Limited, is promoted by Ernest Grant Govan and Frederick William North, two gentlemen who made an unsuccessful attempt to float the War Eagle property in London. The mining properties, which are to be taken over by the Gold Fields of British Columbia, Limited, are certainly very extensive, but their intrinsic value is doubtful. One group consists of 10 mineral properties forming part of the Albert Canyon and the Downy Creek group—the Waverley, Oldham, Tangier, Detroit, Nethercluny, Vancouver, Strandberg, Spider and Fly. The second group consists of 16 claims formerly belonging to the Channe Mining Company, and situated on Vancouver Island — Bobby Burns, Hetty Green, Daniel Webster, Seattle, Highlander, Estero, Joe Jefferson, Poodle Dog, Black Swan, Tom Moore, Ingersoll, R. E. Lee, Nancy Hanks, Belmont, Olga and Picnic. The third group consists of the Chrome Valley auriferous gravel claims in the Similkameen District of British Columbia. The value of these gravels is not stated, but from independent information I have reason to believe that they are worth practically nothing. The fourth group consists of properties in Rossland District—the Flossy L. and Little Darling claims, situated directly west of the War Eagle and Le Roi. These claims, however, are outside the shipping belt. The fifth group consists of the claims Little Flo, Victoria, the Handy and the Prospector, situated four miles from Rossland. The sixth group consists of the claims known as the Confederation, Oswego, Eureka, New Dominion, Queen of the Hills, Sholto and Golden Chariot, situated in the northern division of West Kootenay. The prospectus also mentions that town sites have been acquired on Thurlow Island and at Albert Canyon, and mention is made of options on other properties which have been secured. If your readers know anything about any of these properties they will do English investors a service if they would communicate the information to you. I may add that the mining engineers who have reported on these properties are W. J. Waterman, James M. Kellie, member of the provincial Parliament; A. P. Cummins, of Donald, B. C., and Perry Leake, of Revelstoke.

A company called the Tasmanian Copper Company, Limited, is being floated in London to acquire the Rosebery mines, situated on Mount Black in the North Dundas mining district of Tasmania. The mines are about 15 miles north of Mount Lyell copper mines and are apparently in the same mineral belt. The developments have exposed nearly two million tons of ore, the average contents of which are about 3⅛% copper, 0·2 oz gold and 9 oz. silver to the ton. The property is being managed at present by Mr. Pherson Ekberg, an experienced Australian miner. The promoters of this company are gentlemen connected with the Montana mine and the group of silver mines of which the American Belle is one. These gentlemen are, as most Americans well know, Messrs. John Darlington, Dyson Weston and F. P. Crowther The prospectus of the Tasmanian Copper Company is extremely well drawn up and differs in a very marked degree from the usual London prospectus.

Paris. March 7.

(From Our Special Correspondent.)

The political outlook still affects our market very strongly, and added to the Eastern complications is the possibility of a change of ministry at home as the result. There is a strong popular feeling in favor of Greece, but financial circles generally disapprove of anything which tends to political change and possible complications.

Meantime, mining stocks are generally neglected and this special market is quiet. The fluctuations in foreign securities engage the speculators, and investors will not move for fear of a general overturn and new confusion.

Partly for this reason, and partly because they are already very high, the metallurgical shares are either stationary or have shown a slight reaction. The only speculation this week has been in the Russian group, which is much stronger than one would expect. The coal stocks are generally a little lower, though the reports of production are very good.

The lead and zinc shares have been quiet, with rather a tendency to weakness. Malfidano and Vielle Montagne both record lower prices. Huanchaca (silver) is a little higher, though the management is still having trouble over the water in the mine. Le Nickel has gained a little in price; the annual meeting of the shareholders is called for March 15th.

Copper stocks continue to hold their ground, and these shares are just now more active and stronger than any in the market. They all show little change in prices, even some slight gains. Boleo especially holds the high quotations which it has lately reached.

The market for Transvaal gold shares is absolutely dead. One can hardly say that prices are lower, for there are no sales. The Rhodes inquiry reports have made a very unfavorable impression here, and one hardly knows what result to look for in Parliament. The accounts from South Africa are not favorable. Our people have quite ceased to place any confidence in the accounts sent from London by the South African clique.

The movement of coin and bullion in the month of January is reported by the Ministry of Commerce as below:

	Imports. Francs.	Exports. Francs.	Excess. Francs.
GOLD:			
1896	13,121,756	11,872,613	Im. 1,249,113
1897	31,921,946	7,256,153	Im. 24,665,793
SILVER:			
1896	13,392,079	3,776,196	Im. 9,615,883
1897	6,302,757	3,716,699	Im. 2,586,058
MINOR COINS:			
1896	4,500	71,100	Ex. 66,600
1897	9,900	317,700	Ex. 307,800

The minor coins include copper, bronze and nickel coins, chiefly of the Latin Union. These are given at their face or coinage value in the table.

I hope I may have better news to send you soon. Business has been so good here that it seems a pity to have it disturbed. But what will you have? There must be changes or we should all grow rich and uninteresting. AZOTE.

MEETINGS.

Bingham Tunnel Company, at 125 South Main street, Salt Lake City, Utah, on March 31st, at 3 p. m.

Boojum Gold Mining Company, annual meeting, Bank Block, Colorado Springs, Colo., on April 5th, at 2 p. m.

Consolidated Morning Star Mining Company, at the office of the company in Butte, Mont, on March 25th, at 2 p. m.

Diamond Consolidated Mining Company, at 161 South Main street, Salt Lake City, Utah, on March 29th, at 10 a. m.

Favorite Gold Mining Company, at Hagerman Building, Colorado Springs, Colo., on April 5th, at 3 p. m.

Golden Treasure Mining Company, at 77 Commercial Block, Salt Lake City, Utah, on March 31st, at 10 a. m.

Gypsy Queen of Mercur Mining Company, at 322 South Main street, Salt Lake City, Utah, on March 27th, at 7.30 p. m.

May Day Mining and Milling Company, at 23 Central Block, on April 9th, at 3 p. m.

Mutual Benefit Mining and Leasing Company, at Colorado Springs, Colo., on April 10th, at 4 p. m.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dirq.	Sale.	Am.
Alma	Cal.	1	Mar. 13	Mar. 29	.05
Alpha Con.	Nev.	18	Apr. 5	Apr. 27	.05
Alta Silver	"	55	" 8	" 29	.05
American Quartz	Cal	1	Mar. 22	" 12	.01
Andes Silver	Nev.	43	" 8	Mar. 31	.10
Anita Gold	Cal.	13	Apr. 2	Apr. 20	.05
Banner	Idaho.		Mar. 19	Mar. 29	.01
Belcher Silver	Nev.	54	Apr. 6	Apr. 27	.25
Best & Belcher	Nev.	61	Mar. 2	Mar. 23	.25
California	"	11	" 30	Apr. 17	.01
Central Eureka	"	4	Feb. 27	Mar. 23	.03
Central G. & S.	"	8	Mar. 2	" 23	.02½
Channel Bend	"	6	" 12	Apr. 3	.02
*Con. Cal & Va.	Nev.	8	Apr. 13	May 3	.25
Con. Imperial	"	38	Mar. 23	Apr. 13	.01
*Emerald	Utah.		Apr. 15	May 4	.00½
Eureka Con.	Cal.	7	Feb. 25	Mar. 20	.05
Eureka Con.	Nev.	14	" 23	" 15	.25
Fish Springs	Utah.		Mar. 27	" 24	.04
Golden Fleece	Cal.	19	" 30	" 24	2.00
Gold Valley	Cal.	5	" 24	Apr. 8	.10
*Horseshoe Bar Con.	"			" 17	.10
*Idaho Gold	Utah.			Mar. 24	.03½
Jupiter Gravel	Cal.	1	Mar. 3	" 23	1.00
Kentuck Con.	Nev.	13	" 23	Apr. 14	.05
Little Pittsburg	Utah.	12	" 17	" 5	.01½
Live Oak & Minuett	Cal.	12	" 17	" 5	.01½
Lone Hill	"		" 20	" 15	.01½
Marguerite	"	5	Feb. 25	" 8	.10
Mexican	Nev.	58	Apr. 7	" 29	.20
Mineral Hill	Cal.	1	Mar. 15	" 13	.05
Occidental Con.	Nev.	26	" 16	" 6	.10
Ophir Silver	"	70	" 10	Mar. 30	.25
†Orleans	Cal.		Apr. 14	" 5	.20
*Potosi	Nev.	47	" 14	" 3	.19
Reward Gold	Cal.	18	Mar. 11	" 27	.02
*Sevier	Utah.		Apr. 3	Apr. 19	.04
Sierra Nevada	Nev.	112	Mar. 6	Mar. 26	.20
Silver King	Ariz.	16	Mar. 1	Mar. 29	.25
Snowflake	Utah		" 29	Apr. 29	.01
Soulsby Con. G.	Cal.	6	" 6	Mar. 23	.05
Sunbeam Con.	Utah	8	" 10	" 27	.01
Troy	Alaska	3	Mar. 9	" 26	.10
*Undine	Utah.		" 20	Apr. 5	.00½
Ybarra Gold	Mex.	7	" 22	" 8	.05

*New assessment.

DIVIDENDS.

NAME OF COMPANY.	Current Dividends. Date.	Am't.	Paid since Jan. 1, 1897.	Total to date.
Aetna Con. Q	Mar. 20	$10,000	$50,000	$90,000
Alaska-Mexican			18,000	191,031
Alaska-Treadwell			75,000	3,100,000
*Anchoria-Leland			12,000	42,000
Arizona Copper			48,000	
*Atlantic Copper			40,000	740,000
*Bald Butte			5,000	475,000
*Boston & Montana			450,000	5,375,000
*Bullion Beck	Mar. 20	50,000	170,000	2,117,000
*Calumet & Hecla			1,5 0,000	48,350,000
Cariboo	Mar. 4	16,000	16,000	140,965
*Centennial Eureka	" 15	30,000	90 000	1,950,000
*Charleston			10,000	150,000
*Coronas			4,5 0	9,500
Daly	Mar. 1	37,500	37,500	2,925,000
Della S			10,000	60,000
*Elkton Con			45,000	211,960
*Florence	Mar. 1	3 606	10,818	125,318
Galena			5,000	71,000
*Garfield-Grouse			12,000	24,000
*Gold Coin			15,000	120,000
*Golden Fleece			6,000	569,179
*Hecla Con			30,000	2,175,000
*Highland			2 ,000	3,244,918
*Homestake	Mar. 25	31,250	93,756	6,181,250
Hope	" 1	10,000	20,000	672,252
*Idaho			40,000	132,000
*Iowa Gold			5,000	65,000
Isabella	Mar. 25	56,250	56,250	258,750
Last Chance			20,000	40,000
*Le Roi			75,000	325,000
*Mercur	Mar.	25,000	75,000	650,000
Mont. Ore Pur. Co.			40,000	520,000
*Morning Star	Mar.	12,000	36,000	486,000
Napa Con	Apr. 1	10,000	20,000	830,000
*N. Y. & Honduras Rosario	Mar. 15	15,000	45,000	727,500
Ontario	" 1	15,000	30,000	13,385,000
*Osceola			50,000	2,122,500
*Portland	Mar.	30,000	90,000	953,000
*Princess			5,000	45,000
*Quincy			400,000	9,070,000
Ramoler-Cariboo	Mar.	20,000	20,000	20,000
*Reco			100,000	137,500
*Sacramento	Mar.	5,000	15,000	22,000
*Silver King	"	37,500	112,500	975,000
*South Swansea			15,000	22,450
Standard Con.	Mar. 23	20,000	20,000	3,737,868
Swansea			5,000	26,500
*Utah			2,000	175,000
*Victor	Mar. 15	20,000	60,000	765,000
Totals		$454,106	$4,130,218	$113,593,951

†February dividend paid.

NOTE.—This table does not give all the dividends paid by mining companies, as it is impossible to obtain a complete list of dividends declared. Many companies are close corporations and refuse to give the information. Readers of the *Engineering and Mining Journal* will confer a favor on the publishers if they will notify the *Journal* of any errors or omissions in the above table.

STOCK QUOTATIONS.

NEW YORK.*

Name of Company.	Location.	Par val.	Mar. 13. H.	Mar. 13. L.	Mar. 15. H.	Mar. 15. L.	Mar. 16. H.	Mar. 16. L.	Mar. 17. H.	Mar. 17. L.	Mar. 18 H.	Mar. 18 L.	Mar. 19. H.	Mar. 19. L.	Sales
Alamo	Colo..	1											.05		500
Anaconda	"	1									.52				300
Anchoria-Lel'd.	"	1													
Annetta	"	1									10				7,000
Argentum-Jun..	"	5	.27		.29		.26		29		.28				1,300
Belcher	Nev..	100													
Best & Belcher..	"	100													
Bodie	Cal..	100													
Breece	Colo..	25													
Brunswick	"	1	.13	.12			.12	.10	.09	.07	.07				6,600
Chrysolite	"	50													
Comst.T. Bonds	Nev..	100													
Con. Cal. & Va..	"	100					1 20								100
Con. Imperial	"	10													
Creede & C. C.	Colo..	1					.06								500
Cripple Cr. Con.	"	1	.11	.10	.11		.12		.11		.12⅛	.12	.11		3,700
Crescent	Utah.	25													
Crœsus	Colo..	1													
Crown Point	Nev..	100													
Dalton & Lark..	Utah..	1													
Deadwood	S.Dak	25													
Eagle	Colo..	5													
Elkton	"	1	1.23		1.27		1.35		1.29				1.22	1.21	1,050
Fanny B	"	1													
Favorite	"	1													
Garfield Grouse	"	1													
Geyser	Utah.	5													
Gold Cliff	Colo..	1							.13						200
Gold Coin	"	5	3.50						3.50		3.75		3.87		840
Gold Explor	"	1													
Gold & Globe	"	1					.2								100
Golden Fleece..	"	1													
Gold San Juan.	"	1			.20⅜	.20⅛	.21⅛	.20⅜	.21	.20⅞	.21	.20½	.22	21	29,100
Hale & Norcross	Nev..	100													
Homestake	S.Dak	100													
Horn Silver	Utah..	25											1.79		2 0
Iron Silver	Colo..	20	.39		.40										1,300
Isabella	"	1					.50								300
Jack Pot	"	1	.07⅛		.06¼								.08		1,800
Japan	"	10			2 88								2.75	2.90	1,300
Jefferson	"	1													
King & Pemb	Ont	10			.27		.28	.27							1,700
Lacrosse	Colo..	10													
Leadville Con	"	10			.10		.11	.10	.11	.10	.10	.09			12,200
Little Chief	"	50							.20						300
Mercur	Utah.	25													
Mexican.	Nev..	100									.32				100
Mollie Gibson	Colo	5	.35		.34		.23				.25	.24	.26	.24	1,800
Mono	Cal	100													
Moulton	Mont	5													
Mt. Rosa	Colo..	1					.10		.11¼	.11					600
New Haven	"	1													
Old Dominion..	Ariz..	25													
Ontario	Utah.	100													
Ophir	Nev..	100													
People's	Colo	1													
Pharmacist	"	1	.13				.13		.13		.14		.14		2,900
Phœnix Con	Ariz..	100			.04		.06	.05			.06				7,600
Portland	Colo..	1									.79				200
Potosi	Nev..	100													
Quicksilver	Cal..	100													
" pref.	"	100													
Red Bird	Colo..	1													
Red Mountain..	"	5	.27¼	.24	.27	.25			.26				.25		3,500
Russell	N. C..	1	.32	.31	.31⅛	.31	.31⅛	.30⅞	.31	.30⅛	.32	.31	.33	.31	47,500
Senator pref	Colo..	10											8.00		5,000
Sierra Nevada..	"	100													
Sm. Hopes Con.	"	20					.55	.50							900
Specimen	"	1													
Standard Con..	Cal..	100									1.65				200
Syndicate	"	100													
Union	Colo..	1													
Union Con	Nev..	100													
Utah Con	"	100													
Victor	Colo..	5													
Work	"	1			.06⅜	.05⅛									400
Yellow Jacket..	Nev..	100													

*Official quotations. Sales, Consolidated Exchange, 42,600 shares; New York Stock Exchange, 10,100 shares; New York Mining Exchange, 85,170 shares. Total, 149,870.

BOSTON. MASS.*

Name of Company.	Location.	Par val.	Mar 12. H.	Mar 12. L.	Mar. 13. H.	Mar. 13. L.	Mar. 15. H.	Mar. 15. L.	Mar. 16. H.	Mar. 16. L.	Mar. 17 H.	Mar. 17 L.	Mar. 18. H.	Mar. 18. L.	Sales.
Ætna	Cal..	5													
Anaconda	Colo..	1													
Arnold	Mich..	25	3.50	3 38	3.63	3.50	3 75	3.50	3.75		3 50	3 43	3.25		1,655
Atlantic	"	25	21 00	20.00	21.25		22.00	21.50	22.50		21.75				565
Bonanza	Nev..	100	.50		.50				.50	.47⅛	.50		.50	.47⅛	3,600
Bost. & C. C	Colo..	1													
Bost. & Mont.	Mont.	25	122⅝	121¾	124¼	122⅝	128	12 ¾	129	126⅝	127⅝	124¼	126½	124⅝	11,482
Butte & Bost	"	25	16 63	16 38	17 00	16.75	20.00	19 38	20.00	19 50	19 75	19.13	19.25	18 88	22,425
Cal. & Hecla	Mich.	25			380		380		380		380				61
Centennial	"	25	8 75	8 38	8 75	8.50	9.00	8.75	9 00	8.50	9.00	8 50	8.50	‡7.25	10,128
Dominion Coal.	N. S.	100			8 50	8.25	8 25	8.13	8.00	7 38	8.00	7 50	7 25	6.75	7,867
do. pref.									80.00						10
Franklin	Mich..	25	11.00		11 00		11.00				11 50				193
Gold Coin	Colo..	1	3.75		3.75		3 75		4.00	3 75	3 75		4.00	3 75	8,910
Humboldt	"	1					.52½	50	55	.52½	.60				3,200
Illinois Steel	Ill.	100	35.75		35.50	35.00			35.00						840
Kearsarge	Mich.	25	18.00		18.25	18.00	19.00	18.00	18.50	18.25	18.25	17.38	18 25	18 00	2,637
Lake Sup. Iron.	"	25													
Merced	Cal.	15	9.00				10 00	9.50	10.00	9.75	10.25	9 50			1,165
Napa	Cal..	7													
National	Mich..	25											‡6.38		100
Old Dominion..	Ariz	2	15 25	14.75	15.00	14 75	14 75	14 50	14 00	12 25	13.75	13.25	14.25	13.50	4,575
Osceola	Mich..	25	32.50	31.50	33.50	32.50	33.75	33 00	33.50	32.75	33 25	31.75	32 50	31.50	2,3 9
Pioneer	Cal..	10	5.75				6 00	5.75			6.00	5.63	6.00	5.75	2,330
Quincy	Mich.	25	110		110		110		110		110		110	109⅛	236
do. scrip	"		101	100⅛	100		100		100¼				100⅛		288
Santa Rosa	Cal..	10													
San. Ysabel (G.)	"	5	14.00	13.50			13.75	13.50			15 25	12.75	13 50	13.38	529
Tamarack	Mich	25			120		121	120	120		120	118⅛	119	118	138
Tamarack, Jr.	"	25									18 25	17.50	18 25		395
Tecumseh	"	25	3 00						3.00		3.00				750
Westingh.E.&M	Pa.	50													
do. pref.	"	50			51.50	51.00	51.38	51 00			51.50	51.00	51.25		51
Wolverine	Mich..	25	10.13	9 88	9.88		10 13	10.00	10 13	9 75	10.00	9.75			895

*Official quotations Boston Stock Exchange. ‡Ex-dividend. Total sales, 87,325.

COLORADO SPRINGS, COLO.

Name of Company.	Par val	Mar 8. H.	Mar 8. L.	Mar. 9 H.	Mar. 9 L.	Mar. 10 H.	Mar. 10 L.	Mar. 11. H.	Mar. 11. L.	Mar. 12 H.	Mar. 12 L.	Mar. 13. H.	Mar. 13. L.	Sales.
Ajax	$1													
Alamo	1	.04⅞				.04⅜		.04⅞		.04⅜				14,000
Am'ric'n C	1													
Anaconda.	5	.55	.54	.55¼	.55	.55	.54⅛	.55	.54⅛	.54¼	.53⅜	.54	.53¼	22,377
Aola.	1													
Arg'ntumJ	2	.29⅛	.28⅝	.29		.29	.28⅜	.29⅝	.28	.29	.28⅜	.28⅜		13,650
Bangkok	1													
Bankers	1													
Banner	1					.02		.01⅛		.02		.02⅜	.02⅛	44,000
Ben Hur	1													
Blue Bell	1													
Bob Lee	1	.008½	.008											2,500
Bost. & C.C.	1													
Buckhorn	1													
Colo.C.&M.	1													
Columbine.	1													
Copper M	1													
Cr. & C. C.	1							.05⅛	.05					3,000
C. C. Con.	1	.10⅛								.10⅝	.10¼	.10¼		7,000
Cr.Cr.Exp.	1													
Crœsus	1													
Des Moines	1			.03⅜		.02⅛	.02	.02						21,000
Elkton	1	1 38⅛	1.33¼	1.33⅛	1.26⅜	1 27	1.26	1.27	1.25⅜	1.26⅛	1.25⅛	1.27	1.26	50,475
Enterprise.	1													
Fanny R	1			.07		.07⅜				.07⅜	.07⅛	.07⅜	.07¼	7,000
Favorite	1			.06		.06				.06⅛				4,000
Franklin	1					.005		.004						3,000
Garfield-G.	1													
Gold. Age	1													
Gold. E'g'e	1													
Gold Fl'ce.	1													
Gold & Gl..	1													
Gold King.	1													
Gold Stand	1													
Gould	1													
Grotte	1													
Henrietta..	1													
Humboldt.	1													
Ida May..	1													
Ingham,C..	½													
Iron Clad..	1													
Isabella.	1	.51⅛	.49	.50	.48	.48⅜	.48⅛	.49⅛	.48⅜	.48⅜	.47⅜	.47⅝	.47	80,?75
do.stamp.	1	.48⅛		.47⅜	.47⅜	.47⅛		.48	.47⅜			.46⅛		6,750
Jack Pot	1	.07⅝	.07¼	.07⅝	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅜	.07⅝			32,000
Jefferson..	1													
Keystone..	1													
Ladessa	1													
L'nc'ln B'y	1													
LottieGib..	1													
Marion	1							.004						3,000
Matoa.	1							.08⅛						1,000
Mollie G	5	.30⅛	.29⅝	.30⅛	.29	.29	.28⅜	.29⅛	.28⅜	.29	.28⅜			13,300
Monarch	1													
Mt. Rosa	1	.10¼	.10⅜	.10⅛		.10		.10½		.10				7,900
Mutual	1													
Nugget	1													
Ophir	1													
Oriole	1			.01⅛		.01⅜						.01⅝	.01¼	9,000
Orphan B.	1													
Pappoose	1													
Pharmacist	1	.12⅜	.12⅛	.12⅛	.12⅜	.12⅞				.12⅞		.12⅞		13,500
Pilgrim C	1							.01						11,900
Portland	1	.88		.90	.89⅛	.86	.80	.88⅛		.79	.78			950
Reno	1													
Sacrameto.	1													
Silver St	1													
Specimen	1			.06		.06				.05⅛				2,500
Sq'w Mt.T.	1													
Temonj	1													
Trachyte	1	.01⅜				.01⅞		.02				.13¼		6,000
Union	1	.22		.21⅜	.21⅛			.20⅞		.20				15,400
Virginia M.	1													
Work	1	.07	.06⅛			.07		.07¼	.07⅜	.07⅛	.07			18,800

Official quotations. Total shares sold listed, 414,577; unlisted, 1,035,283.

INDUSTRIAL, COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Mar. 13. H.	Mar. 13. L.	Mar. 15. H.	Mar. 15. L.	Mar. 16. H.	Mar. 16. L.	Mar. 17. H.	Mar. 17. L.	Mar. 18 H.	Mar. 18 L.	Mar. 19. H.	Mar. 19. L.	Sales
Balt. & Ohio	100	16⅛		16¼	16									450
Ches. & Ohio.	100	17⅞	17⅜	18⅛	17⅞	18⅜	18	18¼	18	18⅜	18	18½	17¾	22,717
Col.C.& I.Dev	100													
Col. Fuel & I.	100			20⅛		21⅛		21⅜		22	21⅛			720
Col.,H.V.&Tol	100	4½		4½	4⅜			4	3⅛					1,300
do. pref.	100													
Col. & H.Coal	100													
Del. & Hud. C	100	110⅛	109¼	109⅛		109⅜	109⅜	109⅛	109¼	109⅜	109⅛	109	107⅞	2,319
Del., L. & W..	50			155¾	155⅛	157½	157			157				1,245
General Elec.	100			35		35⅛	34⅜	35⅛	34⅜	35⅜	34⅝	34⅜	34	6, 92
Lake Erie&W	100							17⅛						100
do. pref.	100	68⅛								68⅜		67		210
Morris&Essex	100							165						28
Nat'l Lead	100	25⅛	24⅜	25⅞	25⅜	2?⅜	25¼			25¼		24¼	23⅛	6,72?
do. pref.	100			91⅛	91¼	91⅛		91⅛		91⅜	91⅛	9.¼		1,127
N. J. Central..	100	95⅛	94⅛	95⅛	93⅛	94⅜	93⅜	94	93¼	95	9?⅛			17,108
N. Y.,L.E.&W	100													
do. pref.	100													
N.Y.,Ont.&W.	100	15				14⅜		14⅜	14⅝	15	14⅜	14⅝		3,125
N.Y.,Susq.&W	100	9		9		8⅛								240
do. pref.	100	25¾		25¾		25⅝		26⅛						938
Norfolk & W.	50													
do. pref.	50			26¾		27⅛				28				269
Phila. & Read.	50	25¾	25⅛	2?⅜	25⅛	2?⅜	21⅞	24⅞	24⅛	25⅜	23½	24	23⅛	38,184
Tenn. C. & I..	100	28⅛	28⅜	28¾	28	28⅜	27⅝	28⅜	27⅜	28¼	27	28	27¼	7,031
do. pref.	100													
Wheel. & L. E	100			1⅛		1⅝		1⅜	1⅛	1½	1¼	1⅛	1	2,705
do. pref	100					4¼		4⅜	4					91

* Official quotations N. Y. Stock Exchange. Total shares sold, 113,543.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Mar. 12.	Mar 13	Mar 15.	Mar. 16.	Mar. 17	Mar. 18.
Alta	Nev.	100	04	.04	.04	04	04	04
Belcher	"	100	.18	.18	.19	.18	.19	.19
Belle Isle	"	100						
Best & Belcher	"	100	.70	70	.67	.68	.68	.68
Chollar	"	100	.98	.95	.97	.97	1.00	1.00
Con. California & Virginia	"	100	1.35	1 30	1 25	1.25	1.25	1.20
Crown Point	"	100	.18	.21	.22	20	.20	.20
Gould & Curry	"	100	.31	.31	.31	.31	.31	.30
Hale & Norcross	"	100	.87	.86	.82	.82	.87	85
Mexican	"	100	.27	.26	.26	.26	.28	28
Nevada Queen	"	100						
Ophir	"	100	.91	.90	.89	.88	.91	.91
Potosi	"	100	.34	.32	.31	.31	.35	.33
Savage	"	100	.31	.33	.31	.29	.31	.30
Sierra Nevada	"	100	.25	.25	.26	.27	.27	.26
Standard	Cal.	100	1.60	1 60	1.60	1.55		1.80
Union Con.	Nev.	100	.29	.27	.28	.27	.28	.27
Utah	"	100	.05	.05	.06	05	07	.05
Yellow Jacket	"	100	.25	.26	.29	.29	28	27

*Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Mar. 18.

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	38	39	Ore Knob	"	10		
G. Cr'k Coal.	"	100	106	107	Silver Valley	N. C.	5		

*Official quotations Baltimore Stock Exchange.

CLEVELAND.

Name of Company.	Par value.	Mar. 17. Bid.	Mar. 17. Ask.	Name of Company.	Par value	Mar. 17. Bid.	Mar. 17. Ask.
Aurora	$25		$4	Lake Superior	$ 5		$3?
Chandler	25	$35	40	Minnesota	100		
Cleveland-Cliffs Iron	100		40	Pittsburg & L'ke Angeline	25	$75	
Jackson	25		70	Republic	25	10	12

BRITISH COLUMBIA. Week ending March 13.

Name.	Selling price.	Name	Selling price.	Name.	Selling price.
Bound'y Creek:		**Trail C'k** (con.:)		**Trail C'k** (con.):	
Old Iron Sides	$0.15	Big Three	$0 13	Josie	$0 50
C'p McKenney:		Blue Bird	.10	Jumbo	.50
Cariboo M.& S.Co.	.50	Butte Gold-Copper	.03	Josie Mac	.05
Ainsworth & Nel-		Br. Can Gold Fields	.40	Kootenay, London	.10
son Dis.:		Caledonia	.10	Le Roi	7.50
Dellie M. & M. Co	.15	California	.15	Lily May	.18
Colville Res.:		Colonna	.25	Little Darling	.05
Burton	.03	Commander	.15	Mabel	.05
Fidelity G & C.Co	.05	Crown Point	.50	Mayflower	.12½
Joe T. Gold M. Co.	.05	Deer Park	.20	Monita	.13½
Mountain View	.06	Enterprise	.18	Monte Cristo	.15
Idaho District:		Eureka Con	.05	Morning Star	.07
Daisy Group	.10	Evening Star	.12½	Northern Bell	.15
Dardanelles	.20	Georgia	.15	O. K	.30
Oro Pinar Placer	.06	Gertrude	.10	Palo Alto	.08
Slocan Dis.:		Good Hope	.05	Phœnix	.10
Idler	.10	Great Western	.15	Poorman	.08
Noble Five Con	.63	Hattie Brown	.10	Red Eagle Lee	.12
Rambler Con	.50	Helen	.03	Red Mt View	.10
Reco	1.30	High Ore	.05	Rossland Red Mt	.20
Slocan Star	2.62	Homestake	.08	St. Elmo	.08
Wonderful Group	.10	Imperial	.05	Silver Bell	.10
Revelstoke:		Iron Mask	.50	So. Cross & Wolver. C.	.15
Orphan Boy	.07	Iron Coat	.12	St. Paul	.10
Trail Creek:		Iron Horse	.18	West Le Roi	.17
Alberta	.15	Ivanhoe	.05	White Bear	.12

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

LONDON. Mar. 5.

Name of Company.	Country.	Product.	Authorized capital.	Par value. £ s. d.	Last dividend. Amt. s.d.	Date.	Quotations. Buyers £ s. d.	Sellers £ s. d.
N'th Americans:								
Alaska-Mexican	Alaska	Gold	£200,000	1 0 0	0 4.8	Jan., 1897	1 8 9	1 11 3
Alaska-Treadwell	"	"	1,000,000	5 0 0	1 6	" "	4 17 6	5 2 6
De Lamar	Idaho	Gold& silver	400,000	1 0 0	1 0	Nov., 1896	6 6	7 6
Hall Mines	BritishCol	Cop.&Silver	250,000	1 0 0	......	......	1 7 6	1 12 6
Montana	Montana	Gold&silver	660,000	1 0 0	0 8	June, 1896	5 6	4 6
Palmarejo	Mexico	" "	800,000	1 0 0	......	......	1 3	1 9
Pinos Altos	"	" "	100,000	1 0 0	......	......	1 3	3 9
Plumas-Eureka	California	Gold	281,250	2 0 0	0 6	Oct., 1896	2 6	5 0
Richmond	Nevada	G'ld,sil.,le'd	270,000	5 0 0	1 0	Dec., "	10 0	15 0
Sierra Buttes	California	Gold	245,000	2 0 0	0 6	Apr., "	2 6	5 0
Springdale	Colorado	"	260,000	4 0	0 2	Sept., 1894	3	6
S'th Americans:								
Colomb. Hydra'lic	Colombia.	Gold	75,000	1 0 0	1 0	July, 1895	6 3	8 9
Frontino & Bolivia	"	"	140,000	1 0 0	1 3	Dec., 1896	1 5 0	1 10 0
St. John del Rey	Brazil	"	562,000	1 0 0	xn	Jan., 1895	15 0	17 6
Copper:								
Anaconda	Montana.	Cop. & Sil.	6,000,000	5 0 0	5 1½	Nov., 1896	5 16 3	5 18 9
Cape Copper	So. Africa	Copper.	600,000	2 0 0	3 0	Dec. "	2 7 6	2 12 6
Copiapo	Chile	"	200,000	2 0 0	1 6	" "	2 0 0	2 5 0
Mason & Barry	Portugal	Cop.& sulph	1,050,000	4 0 0	£1 cp	Dec. "	2 7 6	2 12 6
Rio Tinto	Spain	Copper	3,250,000	10 0 0	18 0	Nov., "	26 2 6	26 7 6
Tharsis	"	"	625,000	2 0 0	7 0	April, "	6 10 0	6 15 0
Australians:								
Bayley's Reward	W.Au't'lia	Gold	600,000	1 0 0	0 4	Dec., 1894	2 3	2 9
Broken Hill Prop.	N.S.Wales	Silver	384,000	8 0	1 0	Feb., 1897	2 12 6	2 15 0
†Mt. Morgan Gold	Qu'ns'and	Gold	1,000,000	1 0 0	0 6	" "	3 5 0	3 10 0
South Africans:								
British S.Africa Co	So. Africa.	Lands &Ex.	500,000	1 0 0	xn.	Jan., 1897	2 2 6	2 5 0
City & Suburban	Transvaal	Gold	1,36[illegible]	4 0 0	2 0	" "	3 5 0	3 10 0
Crown Reef	"	"	30,000	1 0 0	12 0	Oct., 1896	9 5 0	9 15 0
De Beers	CapeCol'y	Diamonds	3,950,000	5 0 0	£1	Jan., 1897	27 13 9	27 16 3
Ferreira	Transvaal	Gold	90,000	1 0 0	30 0	" "	15 10 0	16 0 0
Geldenhuis Est.	"	"	200,000	1 0 0	2 6	Oct., 1896	2 5 0	2 7 6
Henry Nourse	Witw'sr'd	"	125,000	1 0 0	6 0	Jan., 1897	5 7 6	5 12 6
Heriots (New)	"	"	115,000	1 0 0	4 0	" "	6 7 6	6 12 6
Jagersfontein	OrangeF.S	Diamonds	1,000,000	5 0 0	6 0	Sept., 1896	8 10 0	8 15 6
Langlaagte Estate.	Transvaal	Gold	500,000	1 0 0	3 0	Jan. 1897	3 7 6	3 12 6
Primrose (New)	"	"	300,000	1 0 0	xrts.	Sept., 1896	2 17 6	3 2 6
Robinson	"	"	2,750,000	5 0 0	5 0	Jan., 1897	6 17 6	7 2 6
Sheba	"	"	850,000	1 0 0	x-rts	Feb., "	1 16 3	1 17 6
Sim. & Jack (New).	"	"	5,000,000	5 0 0	......	......	3 2 6	3 7 6
Wemmer	Witw'sr'd	"	80,000	1 0 0	15 0	Jan., 1897	5 17 6	6 2 6

† Dividend pending. ‡ Ex-dividend.

PARIS. Week ending March 5.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	80.00	2,035.00	1,990.00
" " Firminy	"	" "	3,000,000	500	85.00	1,780.00	1,765.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	810.00	810.00
" " la Marine	"	" "	20,000,000	500	37.50	1,050.00	1,060.00
" " Longwy	"	" "	......	500	35.00	890.00	875.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	120.00	115.00
Ansin	France	Coal	......	......	170.00	4,905.00	4,945.00
Boleo	Lower Cal.	Copper	......	500	65.00	1,590.00	1,660.00
Briansk	Russia	Coal & Iron	......	......	......	1,292.50	1,310.00
Bruay	France	Coal	3,000,000	400	700.00	26,500.00	26,475.00
Callao	Venezuela.	Gold	32,200,000	125	......	4.25	4.25
Cape Copper	S. Africa	Copper	......	50	1.50	65.00	61.50
Champ d'Or	"	Gold	......	25	......	26 00	27.00
Courrieres	France	Coal	600,000	300	160.00	1,630.00	1,630.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	730.00	[illegible]
Dombrowa	Russia	Coal	......	500	......	585.00	[illegible]
Dynamite Centrale	France	Explosives	......	500	12.50	515.00	505.00
Fraser River	Brit. Col'mb	Gold	......	......	......	42.25	44.00
Huanchaca	Bolivia	Silver	......	125	5.00	67.00	66.00
Huta-Bankowa	Russia	Iron & steel	......	......	......	3,300.00	3,345.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	107.00	98.00
Laurium	Greece	Zinc & lead.	16,300,000	500	40.00	665.00	655.00
Lautaro	Chile	Nitrates	......	125	......	150.00	150.00
Malfidano	Italy	Zinc	12,500,000	500	40 00	1,020.00	1,020.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	12.00	675.00	672.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	77 .00	763.00
Nickel	N.Caled'nia	Nickel	12,720,000	500	30.00	218.00	220.00
Paccha-Jazpampa	Chile	Nitrates	......	......	......	22.00	22.00
Penarroya	Spain	Coal, etc.	......	500	65.00	1,650.00	1,640.00
Rebecca	Colo'do, U.S.	Gold	......	......	......	9.50	9.00
Rio Tinto	Spain	Copper	81,250,000	250	27.65	689.00	690.00
Robinson	S. Africa	Gold	......	125	12.50	205.00	202.00
Saint Elie	Fr. Guiana	"	4,000,000	25	......	35.00	35.00
Salines de l'Est	France	Salt	......	500	20.00	325.00	320.00
Sels Gem. de la Rus. Mer	Russia	" etc	......	......	......	601.00	599.00
Tharsis	Spain	Copper	......	50	8.75	174.00	174 00
Vielle Montagne	Belgium	Zinc	9,000,000	80	20.00	530.50	531.00

MEXICO. Week ending Mar. 4.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Closing.
Amistad y Concordia	Hidalgo	9,600	$0.7	......	$25	$30
Angustias	Guanajuato	2,400	10.00	......	510	540
Arevalo y Anexas	Hidalgo	......	10.00	......	360	300
Asturiana y Anexas	Zacatecas	2,500	10.00	......	220	210
Bartolome de Medina	Hidalgo	2,000	3.50	......	150	100
Carmen	"	1,100	7.75	......	350	400
Castellana y SanRam	Tepic	2,448	3.00	......	100	80
Cerro Colorado	Chihuahua	15,000	......	$1.00	10	10
Cinco Senores y An.	Guanajuato	2,000	25.00	......	950	910
Concepcion y Anexas	S. Luis Potosi	2,700	......	......	180	100
El Oro	Guanajuato	500	......	......	40	60
Guadalupe	"	10,000	2.00	......	200	180
Luz de Maravillas	Hidalgo	1,100	......	......	160	200
Pabellon	"	1,000	27.89	......	180	200
Purisima de los Com.	Zacatecas	2,400	......	......	10	5
Real del Monte	Hidalgo	2,554	10.00	......	1,000	900
Rosario y Anexas	Durango	4,800	......	......	50	60
San Francisco	Hidalgo	2,000	3.00	......	290	300
S. Ped. Chalchihuites	"	1,000	2.00	......	100	80
San Rafael y Anexas	"	1,200	20.00	......	930	900
do. free stock.	"	1,200	14.00	......	450	400
Sta. Maria de la Paz	S. Luis Potosi	2,400	......	......	480	500
Soledad	Hidalgo	960	7.50	......	425	440
Sorpresa	"	960	5.00	......	250	300
Trinidad	Guanajuato	2,000	......	......	60	50
Tlauzingo	Puebla	2,400	......	......	30	40
Union	Hidalgo	2,000	8.00	......	300	350
Zaragoza	"	1,100	......	......	15	15
Zomelahuacan (gold)	Vera Cruz	5,000	......	......	100	100
Zona Min. de Pozos.	Guanajuato	2,400	......	1.50	15	20

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.* Jan. 30.

Name of Company.	Capital.	Share value. Nominal	Paid up.	Last Dividend.	Prices. Bid.	Asked.	Last sale
Arturo Prat	$3,300,000	$100	$100	1 per cent.	$3 ½	$30¾	$30¾
Caracoles	315,000	100	100	5 "	......	......	......
Descub. de Huantajaya	1,000,000	100	100	3 "	......	......	......
Huanchaca de Bolivia	8,000,000	25	25	4 "	37½	38	37½
Oruro	800,000	200	200	......	340	350	350
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	......	......	......
Todos Santos	2,000,000	100	100	1 "	16	16½	16
Nitrate Cos:							
Agua Santa	3,000,000	50	50	7 "	150	152	150
Antofagasta	2,000,000	200	200	5 "	148	150	148
Union	3,000,000	200	500	......	45	48	48

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

SHANGHAI, CHINA.* Feb. 19.

Name of Company.	Country.	No. of shares.	Value. Par.	Paid up.	Last dividend. Date.	Amount.	Price.
Jelebu Mg. & Trad.	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 1.61
Punjom Mg. Co., Ltd.	"	60,000	4	3.75	......	......	" 6.57
do. pref	"	30,000	1	1	......	......	" 2.26
RaubA'lian G.Mg. Co.	"	200,000	£1	18s. 10d.	Dec., 1893	0.21	" 8.04
Sheridan Con.Mg. Co.	Colorado, U.S	30,000	Taels 100	Taels 100	......	......	" 3.00

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

DENVER, COLO.*

Name of Company.	Par val	Mar. 8. B.	A.	Mar. 9. B.	A.	Mar. 10. B.	A.	Mar. 11. B.	A.	Mar. 12. B.	A.	Mar. 13. B.	A.	Sales.
L'd Mines														
Anaconda	$5	.55½	56	.55½	.57	.55⅜	.55⅝	55	.55⅛	54½	.55	.53⅜	.53¾	14,100
Bangkok	1	03	...	.03⅜	.03¼	.03	...	03	.04	03¼	03½	.03	.03⅝	2,500
Bankers	1	.09⅜	.09⅜	.09⅛	.09½	09	09⅝	08⅞	.09⅛	.08	.09¼	.08⅜	.08¾	3 000
Big Six	1	.06		...	...	.07	.08⅜	07	.09	.06	.10	.06	...	1,000
Garf. Gr	1	.06⅜	.08½	.06⅜	07½	.06⅜	.07½	.06⅜	...	.06⅜	...	06	.07½	7,000
Gold Fleece	1	...		.30	.40	...	...	...	.45	.30	.40	.30	.40	100
Gold Stand.	1	.05⅜	.06	.05⅝	.06⅛	.05⅝	.05⅝	.05⅛	.05⅜	.05⅜	.05⅜	.05½	.05⅜	71,000
Insley	1	.004	.005	0 4	.005	.0 3	.004⅜	.004	.005⅛	.004¼	.004½	004	.004½	8,000
Iowa	1	40	41	.40	4	42	.43	.44	.45	...	.50	...	.50	600
Isabella	1	.49⅜	.50⅛	.48½	.49⅛	.48⅛	.49	48⅛	49¼	.47⅜	.48	.48¼	.49	22,200
Jefferson	1	...		...		...								...
Mollie Gib.	5	.31	.31½	.30	.31½	26	.29⅜	.27	.29	.27	...	25	.32	10
Mt. Rosa	1				...	...		...						...
Peoples	1	.02⅛	.03½	.02	...	.02	.02⅝	.02	.02⅛	.02⅜	.02½	.02⅛	02⅛	3,000
Pharmacist	1	...	...	...	...	...	...	...	...	...	...	...	...	...
List. Pr.														
Agate	1	...	...	001	.001¼	.001	.001½	.001⅛	.003	.001¼	...	001	.001¼	20,000
Aola	1	.01⅜	.01½	.01⅜	.01⅛	01⅜	.01½	.01⅜	.01⅛	.01⅜	...	.01⅜	.01¼	6,000
C. C. Imp.	1	...	...	...	...	...			...	...		...	...	...
CannonBall	1	.003½	.003⅜	003⅜	.004	.003¾	.004	0 4		.004	.005	.005	.005½	87,000
Defender	1	...	...	.004	.005	...	...	004	.006			0 4⅜	.005½	2,000
Dictator	1	001	...	.001¼	.001½	001	.001½	.001¼	.001⅛	.001	.001½	.001¼	.001⅛	5,000
Dixie	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Eclipse	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Finance	1	.004½	.007	.004⅜	.008	.004⅛	007¼	.004⅛	.006	.004	.004¼	.004¾	.004⅛	143,000
Findley	1	...	...	...	...	.01⅛	.01⅝	...	...	...	...	...	...	10,000
Gene Field	...	001	...	...	...	.001⅜	...	001⅜	.002	.001⅜	.002	001⅜	.001½	19,000
Gold Field	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold. Hope	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold Queen	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gregory	1	.002⅛	003	0 2¼	.003⅛	.002½	.003¼	.002⅛	.003	002⅛	.003	.002	.002⅛	16,000
Hecla	1	...				...		...		...		...		...
Illinois	1	.007	.008⅜	0.07⅜	.008⅛	.007⅛	.007⅜	.007⅛	.007⅜	.008	008½	.008	008⅛	13,000
Internat'l	1	.001¼	.001⅜	001⅛	001⅛	001¼	.001⅛	.001½	.002	...	...	...	...	10,000
Justine	1	.001	...	.002	...	.002	...	002	.003	.002	...	.002	...	10,000
Kimberly	1	...		...		...	...	...	...	...	...	...	...	...
Linc. Boy	1	.00⅜	.001¼	...	...	...		...	...	.001	.001⅛	...	...	4,000
Millionaire	...	...	...	...	...	...		...	...	...	...	...	...	...
Puritan	1	...	...	...	...	...		...	...	...	...	...	...	...
Q'n Victoria	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Reno	1	.03⅜	.03⅜	.03⅜	03½	.03⅜	.03⅝	.03⅛	.03⅜	.03¼	.03⅛	.03	03⅝	13 500
Royal Age	1	...	...	.002¾	.003	002	.002⅜	.002¼	.004	...	.003	.002¾	003	14,000
Sentinel	1	.001¼	001⅛	.001⅛	.001¾	.001⅛	001⅜	001	001½	.001	...	.001¼	002	30,000
Three H's		.003¼	003⅛	003¼	.003⅛	.003¼	.003⅛	0 03¼	.003⅛	0.03¼	.003⅛	.002¾	.003¼	87,000
Unity	1	...	.004	...	...	.001⅜	.002	.001	.005	...	...	...	.003	1,000
Unl. Act.														
Alamo	1	.04⅞	.05⅛	05	.05½	04⅞	.05½	.04⅝	.05⅛	.04⅜	.05⅛	.04⅝	.05⅛	1,500
Arcadia	1	.007½	...	.006⅛	...	.008	.009	.008¾	...	...	.01		01	9,000
" Con.	1	.05	.05¼	.05	.05⅛	05	.05⅛	.04⅜	.05⅛	04⅞	.05¼	.04¾	...	1,000
Ben Hur	1	04⅞	0 ¼	.04⅜	.04⅞	.04⅜	.05⅛		...	...	...	.04¾	.05	4,500
Bob Lee	1	.009	.009⅛	.008	009	.008¼	009	008	.009¼	.007	.009⅛	.007½	.010	500
Bost. & C.C.	1		...		...	...			...	.005	.01¼	.006¼	.007	3,000
Chimb'razo	1	.005	.006	.004¾	.005½	.004	.005	.004½	.005¼	.004¾	.005	.004⅜	.005	8,000
C. C. Con.	1	.10	.11	.10	.10⅛	.09⅝	.10⅞	.09	.11	.1	.10⅛	.10	.10¼	5,500
C. K. & N.	1	0.09⅛	.012⅛	.010	.010¾	.010	.010⅜	.010	[illegible]	[illegible]	.010¾	.009¾	.010⅛	1,000
Elkton	1	1.33½	1.34⅜	1.25	1.32	1.28½	1.30	1.26⅛	1.27	1.24½	1.27	1.26⅛	1.28	1,500
Hayden G.	1	...	...	...	...			...		...		...	.01¼	5,000
Lit. Dorritt	1	...	...	...	.001	...	.001	.001⅜	.001⅛	.001¼	.001	...	...	1,000
Marion	1	...			...	...	...	.004½	...	...	...	...	...	1,000
Old Gold	1	006⅛	.006⅝	.006⅜	007	.007	007¼	.007¼	.007½	.007	.007¼	007	.007¼	57,000
Santa Fe	1	001¼	.001⅛	001	001⅛	.001	.001¼	.001	.001⅛	.001	.001⅛	.001	.001⅛	19,000
Squaw Mt.	1		...		...		...	...		...	...	.02⅜	...	6,000
Tamarack.	1	.02⅝	.02⅜	.02⅝	.02¾	.02⅛	...	...	.02⅝	.02⅛	...	02⅛		91,000
Union Gold	1	.22	.24	.21⅜	22¼	.21⅛	22¼	.20	.20¾	...	.21	.20	.20⅛	1,100
Va. M.	1	.06⅛	.06⅜	.06⅛	.06⅜	.06⅛	.05⅞	.06¾	.07	.06⅛	.06⅜	.06½	.06⅝	136,000
Wire Gold	1	...	...	...	...	...	...	...	...	...	...	...	...	...

* Official quotations Colorado Mining Stock Exchange.
Shares sold, listed, 618,100; unlisted, 355 600. Total, 973,700.

SALT LAKE CITY, UTAH.* Week ending March 13

Stocks.†	Par value.	Bid.	Asked.	Actual selling price.	Stocks.†	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.67½	$0.70	$0.70	Horn Silver	$25	$1.75	$2.25	......
Alliance	1	.15	.35	......	Little Pittsburg	5	.03	.03⅛	$0.03⅛
Am. Nat. Gas	......	.01	.02	02	Lucky Bill	10	.15	.20	17½
Anchor	20	1.00	1 20	1.20	Malvern	2½	.20	.25	......
Annie	1	......	.10	......	Mammoth	25	2.00	2.05	2.00
Bogan	1	.05	.07½	......	Mercur	25	6.95	7 15	7.00
Brick Con.	......	.46	.60	......	Morgan	125	.18	.23	.20
Bullion Beck & C.	10	9 50	10 00	10.00	Northern Light	5	80	84	82
Buckeye	......	14	14½	.14½	Ontario	100	9.75	10.50	10 25
Centen'l Eureka.	50	57.50	62.50	......	Overland	5	.20	.40	......
Dalton	5	02⅜	.02½	.02⅜	Rover	10	.45	.47½	.45
Dalton & Lark	1	20	.22	.20	Silver King	20	17.00	18.50	18 25
Daly	20	4.75	5.25	5.00	Sioux Con	10	80	1.00	......
Daly West	20	7.90	8.05	8.00	Sunshine	10	.65	.70	.65
Dexter.	......	1.25	1.30	1 25	Swansea.	5	2.30	2.40	2.35
Eagle	10	.03	.04½	.03½	So. Swansea	1	1.90	2 00	1 95
Four Aces	1	.12	.13	.12	Tetro	1	.04	.06	05
Galena	10	1.10	1.15	1.15	Utah	10	1.05	1.10	1.10
Geyser-Marion	5	1 35	1.45	1.40	Utah Con.	1	50	.65	......
Herschel	5	.5	10	......					

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

PHILADELPHIA, PA.*

Name of Company.	L'cation.	Par Val'e	Mar. 11. H.	L.	Mar. 12. H.	L.	Mar. 13 H.	L.	Mar. 15 H.	L	Mar. 16. H.	L.	Mar. 17 H.	L.	Sales
Cambria Iron.	Pa.	......	...	...	41.88	...	41.88	...	41 63	...	...	...	...	...	18
Choc.&Glf.Ctfs	I.T.	50	...	...	8.13	8.00	8.25	...	8.13	...	8.13	...	...	...	188
Hunt & Br.Top	Pa.	50	...	...	...	...	...	...	...	...	...	...	...	...	...
" pref	"	50	...	...	50 00	49 00	...	...	50 00	...	50 00	...	50 00	...	35
Lehigh C. & N.	"	50	40 00	39.00	39.5	39.00	39.50	39 00	40 00	39.0	40 00	39 00	40.00	39.00	28
Lehigh Valley.	"	50	26 25	26 00	26.50	26.13	26.25	25 88	26.00	25 88	25.50	25.25	25.00	24 50	5,818
Li'leschuylkill	"	50	...	...	...	...	...	...	...	...	...	...	...	...	...
Penna. R. R.	"	50	52 88	...	53.0	52 88	53.00	52.88	53.[illegible]	53.00	53.13	53 00	53.13	53.00	2,934
Pa.SaltMfg.Co.	"	50	...	...	...	...	...	...	...	...	...	...	...	...	...
Penna. Steel	"	...	25.00	...	25.00	...	...	...	...	...	...	...	...	...	28
UnitedGas Im.	Can.	...	73.50	...	73.5	...	74.0	73 88	74 25	74.0	73.88	...	...	...	562
Welsb. of Can	Pa.	...	...	...	...	...	...	...	...	...	...	...	1 88	...	100
Welsb.Com'l	"	...	...	19.00	...	...	...	...	...	...	...	...	...	...	100
" Com pr.	"	...	62.50	...	...	...	62.50	...	62.00	...	62 00	...	...	...	125
" Light	"	...	...	...	44.0	...	...	...	41 00	...	...	...	...	...	66
West Coal.	"	...	...	...	51.0	...	...	...	...	...	...	...	...	...	15

* Official quotations Philadelphia Stock Exchange. Total sales, 10,007.

HELENA, MONT.* Week ending Feb. 20.

Name of Company.	Location.	Company's office.	Par value.	Bid.	Asked	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	Butte, Mont.	$1	$0.90	$1.00	4 000	.90-.95
Bald Butte	L. & Cl'ke Co.	Helena "	1	......	2 25	......	......
Bi-Metallic	Granite "	St. Louis, Mo.	5	......	1.75	......	......
Combination	" "	" "	10	......	.35	......	......
Granite Mt	" "		......	......	......	......	......
Helena & Victor	Missoula "	Helena, Mont.	5	......	......	......	......
High Ore	Jefferson "	Butte "	......	......	......	......	......
Iron Mountain.	Missoula "	Helena "	10	.37½	40	1,600	.40-.41
Judge	Meagher "	" "	......	......	.10	......	......
Merrill (Gold)	Jefferson "	Butte "	1	......	......	......	......
Ontario	DeerLodge "	Helena "	1	......	......	......	......
Yellowstone	Meagher "	" "	5	......	.12½	......	......

* Special Report of Samuel K. Davis. Total shares sold, 5,600.

PITTSBURG, PA.* Week ending March 17.

Name of Company.	Location.	Par val	Bid.	Ask.	Selling price.	Name of Company.	Location.	Par val	Bid.	Ask.	Selling price.
Coal:						**Nat. Gas:**					
Mansfield	Pa.	50	......	......	......	Allegheny	Pa.	100	......	......	......
N.Y. & C. Gas C.	"	50	......	......	......	Chartiers Val	"	100	6	11¼	......
Mining:						Manufacturers	"	100	......	......	......
Ent'prise	Colo.	5	......	......	......	Peoples' Nat. Gas.	"	50	......	......	......
Lustre	Mex.	10	......	......	......	Peoples' Pipeage	"	25	13	14⅛	......
Silverton	Colo.	10	......	......	......	Pennsylvania	"	50	6⅛	8⅜	......
Miscellaneous:						Philadelphia	"	50	16⅞	19	......
Carborundum	Pa.	100	......	......	......	Wheeling	W.V.	50	......	......	......

* Official quotations Pittsburg Stock Exchange.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.				Dividends.			
				No.	Par Val	Total Levied.	Date and Amount of Last.			Total Paid.	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	*				90,000	Mar..	1897	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					191,031	Jan ..	1897	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				3,100,000	Jan ..	1897	.37½
5	Anaconda Copper	Mont.	30,000,000	1,200,000	25					2,250,000	Nov..	1896	1.25
6	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*				42,000	Feb..	1897	.01
7	Argentum Juniata, g.s.l	Colo..	2,600,000	1,300,000	2	*				39,000	July..	1895	.03
8	Aspen Mg. & S., s. l.	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
9	Atlantic, c.	Mich.	1,000,000	40,000	25					740,000	Feb..	1897	1.00
10	Aurora, i.	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
11	Bald Butte	Mont.	250,000	250,000	1	*				475,000	Feb..	1897	.02
12	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
13	Bates Hunter, g. s.	Colo..	1,000,000	1,000,000	1	*				67,500	Dec..	1891	.00¾
14	Belden, F. E., m.	N. H.	500,000	100,000	5	*				217,000	Jan ..	1896	.04
15	Big Six, g. s.	Colo..	500,000	500,000	1					2,500	May..	1896	.00½
16	Bi-Metallic, g. s.	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
17	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				5,375,000	Feb..	1897	3.00
18	Brotherton, i.	Mich.	2,000,000	80,000	25	*				120,000	Mar..	1893	.50
19	Bullion, Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,067,000	Feb..	1897	1.00
20	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					48,350,000	Feb..	1897	15.00
21	Cariboo	B.C..	800,000	800,000	1					140,965	Mar..	1897	.02
22	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	1,920,000	Feb..	1897	1.00
23	Central, c.	Mich.	500,000	20,000	25	100,000	Oct...	1861	.65	1,970,000	Feb..	1891	1.00
24	Charleston, p. r.	S. C..	1,000,000	10,000	100	*				150,000	Feb..	1897	1.00
25	Clay County, g. s. c.	Colo..	60,000	60,000	1	*				52,000	Nov..	1891	.02
26	C. O. D., g.	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
27	Cœur d'Alene, s. l.	Idaho	5,000,000	500,000	10					340,000	June.	1893	.06
28	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	4,960,130	Jan..	1897	.25	3,898,800	Feb..	1895	.25
29	Cons. New York, g. s.	Nev..	10,000,000	100,000	100	168,000	Jan..	1896	.05	10,000	Feb..	1893	.10
30	Coptis, g. s.	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
31	Cortez, Ltd., s. g.	Nev..	1,500,000	300,000	5					735,000	Feb..	1893	.15
32	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
33	Daly, s. l.	Utah.	3,000,000	150,000	20					2,925,000	Mar..	1897	.25
34	†Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*				1,240,000	Aug..	1896	.50
35	De Lamar, g. s.	Idaho	2,000,000	400,000	5	*				2,250,000	Oct...	1896	.25
36	Derbec Blue Gravel, g.	Cal ..	10,000,000	100,000	100	110,000	June.	1893	.10	280,000	Aug..	1891	.10
37	Dexter, g. s.	Nev..	1,000,000	100,000	10	8,000	June.	1892	.08	100,000	Aug..	1893	.33
38	Elkhorn, s.	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
39	Elkton Cons., g.	Colo..	250,000	1,250,000	1					211,960	Feb..	1897	.02
40	Enterprise, g. s.	Colo..	2,[illegible],000	500,000	5	*				825,000	May .	1893	.25
41	Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	567,500	Feb..	1897	.25	5,112,500	Jan..	1892	.25
42	Evening Star, s. l.	Colo..	500,000	50,000	10	*				1,437,500	Dec..	1889	.25
43	Florence, s.	Mont.	2,500,000	500,000	5	*				121,712	Feb..	1897	.01
44	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan..	1894	2.00
45	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan..	1897	.05
46	Garfield-Grouse, g.	Colo..	1,200,000	1,200,000	1	*				24,000	Dec..	1896	.01
47	Gold Coin, g. s.	Colo..	1,000,000	200,000	5	*				120,000	Feb..	1897	.10
48	Golden Eagle, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
49	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*				563,179	Dec..	1896	.01
50	Gold & Globe, g.	Colo..	750,000	750,000	1					36,000	Aug..	1896	.00 3/10
51	Gold Rock, g. s. c.	Colo..	500,000	500,000	1	*				28,750	Dec..	1891	.01
52	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
53	Granite, s. l.	Idaho	500,000	200,000	2.50	*				83,400	Nov..	1890	.10
54	Gt. West'n Quicksilv., q.	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
55	Harquahala, g.	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
56	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,175,000	Feb..	1897	.50
57	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
58	Holmes, s.	Nev..	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	April.	1892	.25
59	Homestake, g.	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	6,150,000	Feb..	1897	.25
60	Hope, s.	Mont.	1,000,000	100,000	10	*				672,252	Mar..	1897	.10
61	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,130,000	Jan..	1896	.12½
62	Iowa	Colo..	1,000,000	1,000,000	1					65,000	Feb..	1897	.00½
63	Iron Mountain, s. l.	Mont.	5,000,000	500,000	10	*				492,500	Nov..	1896	.06
64	Iron Silver, s. l.	Colo..	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
65	Isabella, g.	Colo..	2,250,000	2,250,000	1					202,500	Sept..	1896	.01
66	Jack Rabbit, g.	Cal ..	10,000,000	100,000	100	118,000	April.	1894	.02	260,000	April.	1891	.10
67	Jay Hawk, g.	Mont.	1,425,000	285,000	5					33,375	Dec..	1892	.12
68	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct...	1887	1.00	120,000	Dec..	1895	1.00
69	Kennedy, g.	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
70	Leadville Cons., s. l.	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
71	Little Chief, s. l. i-o.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
72	Maid of Erin, g. s. c. l.	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
73	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,150,000	Nov..	1896	.05
74	Mayflower Gravel, g.	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
75	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct...	1891	.03¾
76	Mercur, g.	Utah.	5,000,000	200,000	25	*				625,000	Feb..	1897	.12½
77	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
78	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	20,000	Jan..	1891	.02	4,080,000	Jan..	1895	.05
79	Monitor, g.	S. D..	2,500,000	250,000	10					45,000	Oct...	1890	.03
80	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,890,637	Oct...	1895	.06¼
81	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				520,000	Jan..	1897	1.00
82	Moon Anchor Gold		600,000	600,000	1	*				24,000	July..	1896	.01
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	145,000	Nov..	1896	.10	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					30,000	Oct...	1896	.00½
88	Napa, q.	Cal ..	700,000	100,000	7	*				820,000	Jan..	1897	.10
89	New Elkhorn	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
90	New Guston, g. s. c.	Colo..	550,000	110,000	5	*				1,198,120	Oct...	1892	.25
91	New Hoover Hill, g.	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1885	.20
92	N.Y.&Hon.Rosario, s.g.	C. A..	1,500,000	150,000	10	*				720,000	Mar..	1897	.10
93	North Banner, g. s.	Cal ..	1,000,000	100,000	10	21,794	Oct...	1896	.02	20,000	July..	1891	.05
94	North Com'wealth, s.	Nev..	10,000,000	100,000	100	85,000	April.	1890	.25	25,000	June.	1891	.25
95	North Star, g.	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
96	Nugget, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Jan..	1895	.00½
97	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,370,000	Jan..	1897	.10
98	Osceola, c.	Mich.	1,250,000	50,000	25	*				2,122,500	Feb..	1897	1.00
99	Pacific Coast Borax, b.	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
100	Parrot, c.	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
101	Petro, s.	Utah.	1,000,000	10,000	100					17,500	July..	1891	.75
102	Pharmacist, g.	Colo..	1,200,000	1,200,000	1					80,000	Jan..	1893	.01
103	Portland, g.	Colo..	3,000,000	3,000,000	1	*				923,000	Feb..	1897	.01
104	Quicksilver, pref., q.	Cal ..	4,300,000	43,000	100	*				1,823,911	June.	1891	1.25
105	" com., q.	Cal ..	5,700,000	57,000	100	*				643,867	July..	1882	.40
106	Quincy, c.	Mich.	1,250,000	50,000	25	*				9,070,000	Feb..	1897	8.00
107	Reed National, s.	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
108	Robinson Cons., s. l.	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
109	Running Lode, g. s. l.	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
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 King, s.	Ariz..	10,000,000	100,000	100	272,858	Mar..	1897	.25	1,950,000	July..	1887	.25
113	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan..	1897	.02	937,500	Feb..	1897	.25
114	Silver Mg. of L. V., s.	N. M.	500,000	500,000	1	*				300,137	Dec..	1891	.04
115	Small Hopes, s.	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
116	‖Smuggler Union, g. s.	Colo..	5,000,000	50,000	100					150,000	Oct...	1896	1.00
117	§Standard Cons., g. s.	Cal ..	20,000,000	200,000	100					3,717,868	June.	1895	.10
118	Swansea, g. s. l.	Colo..	600,000	60,000	10	*				39,000	Sept..	1892	.10
119	Tamarack, c.	Mich.	1,250,000	50,000	25					4,770,000	Dec..	1896	3.00
120	Teal & Poe, s. l.	N. M.	150,000	150,000	1	*				9,000	Nov..	1891	.01½
121	Tom Boy, g.	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
122	Trinity River, g.	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
123	United Verde, c.	Ariz..	3,000,000	300,000	10	*				562,500	Dec..	1893	.25
124	Union, g.	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
125	Union Leasing	Colo..	500,000	500,000	1					340,000	July..	1895	.04
126	Utah	Utah.	1,000,000	100,000	10	*				175,000	Feb..	1897	.02
127	Victor, g.	Colo..	1,000,000	200,000	5	*				745,000	Feb..	1897	.10
128	War Eagle	B.C..	500,000	500,000	1	32,500	Dec..	1894		187,000	Oct...	1896	.06
129	Woodside	Utah.	1,000,000	100,000	10					25,000	Oct...	1889	.25
130	Yankee Girl, s.	Colo..	1,300,000	260,000	5					520,000	July..	1891	.25

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.			
				No.	Par Val	Total Levied.	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	257,500	Sept..	1896	.10
8	Alta, s.	Nev..	10,080,000	108,000	100	3,590,560	Jan..	1897	.05
9	American, c.	Idaho	5,000,000	500,000	10	*			
10	American Belle, g.s.c.	Colo..	2,000,000	400,000	5	*			
11	Anaconda, g.	Colo..	5,000,000	1,000,000	5				
12	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
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	Belcher, s. g.	Nev..	10,400,000	104,000	100	3,312,420	Sept..	1896	.25
19	Belle Isle	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
20	Ben Hur, g.	Colo..	900,000	900,000	1				
21	Blue Bell, g.	Colo..	500,000	500,000	1	*			
22	Blue Jay Cons., s. l.	Utah.	2,000,000	400,000	5	4,750	July..	1893	.004
23	Bob Lee, g.	Colo..	1,200,000	1,200,000	1	*			
24	Bullion, s. g.	Nev..	1,000,000	100,000	100	3,040,000	Feb..	1897	.10
25	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10				
26	Burlington, g. s.	Cal...	10,000,000	100,000	100	3,000	May..	1896	.03
27	Buskhorn, g.	Colo..	900,000	900,000	1				
28	Butte Queen, g.	Cal...	1,000,000	100,000	10	16,000	Feb..	1893	.10
29	Calumet, g.	Colo..	1,400,000	1,400,000	1	*			
30	Central Lead, l.	Mo...	400,000	4,000	100	*			
31	Central North Star, g.	Cal...	1,000,000	100,000	10	10,000	July..	1893	.10
32	Challenge, s, g.	Nev..	5,000,000	50,000	100	300,000	Nov..	1896	.10
33	Chollar, g. s	Nev..	11,200,000	112,000	100	2,021,600	July..	1896	.25
34	Chrysolite, s. l.	Colo..	10,000,000	200,000	50	*			
35	Cleveland Cliffs, l.	Mich.	5,000,000	50,000	100	*			
36	Columbine, g.	Colo..	1,000,000	1,000,000	1	*			
37	Confidence, g. s.	Nev..	2,496,000	24,960	100	1,636,974	Sept..	1896	.30
38	Cons. Imperial, g. s.	Nev..	5,000,000	50,000	100	2,082,500	Mar..	1897	.01
39	Copper Mountain, g.	Colo.	1,000,000	1,000,000	1	*			
40	Creede & C. C., g.	Colo..	800,000	800,000	1				
41	CrippleCreekCons., g.	Colo..	2,000,000	2,000,000	1				
42	Crip.Cr'k Gold Expl'n	Colo..	1,800,000	1,800,000	1				
43	Dante, g.	Colo..	1,250,000	1,250,000	1	*			
44	Denver City, s.	Colo..	5,000,000	500,000	10	*			
45	Denver Gold, g.	Colo..	300,000	60,000	5				
46	Dickens-Custer, g. s.	Colo..	2,100,000	420,000	5				
47	Enterprise, g.	Colo..	800,000	800,000	1				
48	Eureka Con. Drift, g.	Cal...	500,000	500,000	1	115,000	Feb..	1897	.05
49	Exchequer, g. s.	Nev..	10,000,000	100,000	100	725,000	Dec..	1896	.05
50	Favorite, g.	Colo..	1,200,000	1,200,000	1	*			
51	Fortunatus, g. s.	Colo..	100,000	100,000	1	*			
52	Found Treasure, g. s.	Nev..	10,000,000	100,000	100	55,770	Jan..	1892	.50
53	Franklin Gold, g.	Colo..	1,000,000	1,000,000	1	*			
54	Free Coinage. g.	Colo..	1,000,000	1,000,000	1	*			
55	Galena, l. s.	Idaho	500,000	500,000	1				
56	Garden City, g.	S. D..	2,500,000	250,000	10	2,898	Sept..	1891	.001½
57	Gem, g.	Cal...	10,000,000	100,000	100				
58	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00⅛
59	Golden Age, g.	Colo..	1,000,000	1,000,000	1	*			
60	Golden Dale, g.	Colo..	2,000,000	2,000,000	1	*			
61	Golden Fleece Grav. g	Cal...	130,000	130	1000	56,260	Mar..	1897	2.00
62	Gold Flat, g.	Cal...	1,000,000	100,000	10	13,000	Aug..	1893	.03
63	Gold King, g.	Colo..	1,000,000	1,000,000	1	*			
64	Gold Rock, g.	Colo..	1,000,000	1,000,000	1	*			
65	Gold Standard, g.	Colo..	1,000,000	1,000,000	1	*			
66	Gould & Curry	Nev..	10,800,000	108,000	100	4,850,400	Jan..	1897	.15
67	Hale & Norcross, g. s.	Nev..	11,200,000	112,000	100	5,786,800	Jan..	1897	.25
68	Hartshorn, g. s.	S. D..	1,250,000	250,000	5	8,750	Sept..	1891	.00½
69	Head Cent. & Tr., g.s.	Ariz..	2,000,000	200,000	10	22,824	Mar..	1892	.03
70	Hidden Treas., g. s.	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
71	Himalaya, s. l.	Utah.	1,800,000	180,000	10	10,000	Oct..	1892	.01
72	Idaho Co., Ltd., g.	Idaho	100,000	1,000	100	*			
73	Idlewild, g.	Cal...	1,000,000	100,000	10	*			
74	Inez, s. l.	Idaho	1,000,000	1,000,000	1	*			
75	Jack Pot, g.	Colo..	1,250,000	1,250,000	1				
76	Jackson, l.	Mich.	300,000	12,000	25	*			
77	Justice, g. s. c.	Colo..	500,000	500,000	1	*			
78	Keystone, g.	Colo..	1,500,000	1,500,000	1	*			
79	Kingman Silver, g. s.	Ariz..	10,000,000	100,000	100	5,000	Sept..	1891	.05
80	Lacrosse, g.	Colo.,	1,000,000	100,000	10	*			
81	Lottie Gibson, g.	Colo.,	1,000,000	1,000,000	1				
82	Matoa, g.	Colo..	5,000,000	1,000,000	5				
83	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
84	Mexican, g. s.	Nev..	10,080,000	100,800	100	3,084,080	Nov..	1896	.20
85	Michigan Gold, g. s..	Mich.	2,500,000	100,000	25	40,000	Mar..	1892	.10
86	Milwaukee, s. l.	Idaho	500,000	500,000	1				
87	Modoc Chief, g. s. l.	Idaho	1,000,000	200,000	5	4,375	Jan..	1892	.00½
88	Monarch, g.	Colo..	1,000,000	1,000,000	1				
89	Mutual, g.	Colo..	500,000	500,000	1				
90	Neath, g.	Colo .	1,000,000	100,000	10				
91	New Gold Hill	N. C..	1,750,000	350,000	5				
92	New Viola, s. l.	Idaho	750,000	150,000	5	*			
93	North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
94	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	463,652	Mar..	1897	.10
95	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
96	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
97	Orphal Bell, g.	Colo..	1,000,000	1,000,000	1				
98	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,188,560	Dec..	1896	.10
99	Pappoose, g.	Colo..	2,000,000	2,000,000	1	*			
100	Peer, s.	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
101	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
102	Pine Hill, g.	Cal ..	1,000,000	100,000	10	25,000	Jan ..	1897	.05
103	Pioche Con., g. s. l.	Nev..	20,000,000	2,000,000	10	*			
104	Potosi, g. s.	Nev..	11,200,000	112,000	100	2,021,600	Nov..	1896	.05
105	Princess, g.	Colo..	1,000,000	1,000,000	1				
106	Puritan, g, s.	Colo..	1,500,000	150,000	10	*			
107	Quincy, c.	Colo..	3,000,000	300,000	10				
108	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
109	Ruby & Dun., g. s. l.	Nev..	25,300	506	25	*			
110	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
111	Savage, g. s.	Nev..	11,200,000	112,000	100	1,051,400	Jan..	1897	.20
112	Seg. Belcher & M., g.s.	Nev..	10,000,000	100,000	100	340,000	Nov..	1896	.10
113	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*			
114	Silver Hill, s.	Nev..	10,800,000	108,000	100	1,992,600	July..	1894	.05
115	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*			
116	Silver State, g.	Colo..	700,000	700,000	1	*			
117	Siskiyou Con., s.	Cal ..	2,000,000	200,000	10	44,000	June.	1896	.01
118	Specimen, g.	Colo..	1,200,000	1,200,000	1				
119	Temonj, g.	Colo..	1,000,000	1,000,000	1				
120	Tombstone, g. s. l.	Ariz..	12,500,000	500,000	25	*			
121	Tornado Con., g. s.	Nev..	100,000	100,000	1	*			
122	Union Con., g. s	Nev..	10,000,000	100,000	100	2,545,000	Sept.	1896	.20
123	Utah Cons., s.	Nev..	10,000,000	100,000	100	420,722	Feb.	1897	.05
124	Victory, g. s.	S. D..	1,250,000	250,000	5	2,625	Nov..	1896	.001½
125	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
126	Waterloo, g.	Cal...	2,000,000	200,000	10	30,000	Aug..	1893	.15
127	West Granite Mt., s.	Mont.	500,000	100,000	5				
128	Whale, g. s. l.	Colo..	500,000	500,000	1	*			
129	Work, g.	Colo..	1,250,000	1,250,000	1				
130	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 $31,320,000 in dividends and the Cons. Virginia $42,390,000. ‖ Dividends paid since consolidation.
§ Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897.
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.