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AND

COAL

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The Pennsylvania Legislature has before it a resolution authorizing an investigation of the coal trade in that State. As first introduced, it provided only for an inquiry into the alleged bad condition and suffering of the miners in the Pittsburg District; but it has been amended to include a general inquiry, taking in the anthracite as well as the bituminous regions. The present indications are that it will pass, the only difference remaining to be settled relating to the composition of the committee—whether a special committee shall be appointed, or whether the investigation shall be conducted by the standing committee on mines and mining. In times past some good reports have been made by committees of this kind in Pennsylvania; but it seems doubtful whether the investigation now proposed will result in anything. Certainly no legislature can control the course of trade, and any attempt of the kind generally results, not only in failure, but also in actual injury to the intended beneficiaries.

Exports of pig iron continue, though they have had to encounter rising rates of ocean freight during the present month. At current prices of foundry iron abroad they ought to result in a profit to the makers here. Pig iron of a grade corresponding to the Alabama iron which has been exported was selling at about 38 shillings per ton in England when the export movement began, but now commands 44 to 46 shillings; and there has been a corresponding increase in Belgium and Germany.

We understand that inquiries have been made here for basic iron for Germany, though we do not hear of any shipments of such iron being made as yet. The German steel-makers have been recently somewhat embarrassed by delays in securing sufficient supplies of pig, and it is quite possible that a market for such iron may be found there. They generally require iron made strictly to specification, with agreed percentages of phosphorus and silicon. Some of the Alabama furnaces have shown their ability to make basic iron to specification, and could doubtless meet the German requirements without difficulty.

The Alabama coal operators have had a good deal of success in extending their trade, and some of them are now turning their attention to the improvement of their product and to the making of coke. The practice of washing the coal has already become quite common at the Alabama mines, and is extending, the number of washing plants increasing every year. There is quite a field for the introduction of by-product coke-ovens in Alabama, it seems to us. Great economies have been secured in the manufacture of iron there, but there is still room for saving. It has been well said that the Germans are succeeding in industrial competition because they have been able to pay dividends out of what their competitors throw away; and nowhere is this more true than in coke-making and the iron manufacture. The saving of by-products from coal may yet be the salvation of the Alabama operators, and careful attention to possibilities in this direction should be their first thought. The competent chemist is the man to whom they should pay most heed, and to whom they should give the largest liberty in experiment and research.

The British Columbia promoter is making a very determined effort to dispose of his stocks in Eastern Canada, where adroit appeals are being made to the national feeling. A correspondent writes us that "at present every city, town, village and hamlet is flooded with literature booming the mines of British Columbia and Northwestern Ontario, and scores of glib-tongued characters, who have made failures of almost everything else they have tried, are to be found in the hotels, railway trains, and even invading our homes with their pockets full of prospectuses and shares of stock, at prices from two cents a share up. You are told in the most confidential manner that a two-cent or a five-cent share will bring you a dollar in a very few weeks."

The people of Eastern Canada have not heretofore been much given to investment in mines, and the promoter, doubtless for this reason, considers the country a promising field. There are some good mining properties in British Columbia, but it is not the good ones that are being worked in this way. Our correspondent, who is himself an experienced miner, adds that "to my certain knowledge many of the representations in this printed matter are grossly misleading." No doubt; and we caution our Canadian friends to beware of the "wild cats" which seem to be so plentiful. It seems probable that the mines of the province are being greatly over-valued in any event, if the prices put upon them by venders are taken. The owners of genuine British Columbia mines should also look out for these people, who may do them great damage.

The great results promised from the gold mines of the British South Africa Company's territory—generally known as Rhodesia—have so far failed to materialize. A recent statement compiled at Salisbury, the chief town of the territory, and published by the *Rhodesian Times*, which has every reason to present the best possible showing, gives the total production from 1890, when the country was first opened, up to the end of

1896, at 7,047 crude ounces only, probably about 6,000 fine ounces. The returns of ore mined and crushed are not complete, but the average result seems to have been not far from 0.67 ounce per ton.

Of course there are reasons for the slow development of the region. The difficulties with the natives, which have occurred from time to time, notably the Matabele insurrection last year, interfered very much with the work. The chief cause has been the transportation difficulty, which has prevented the introduction of machinery and has made supplies very costly. A railroad from the coast has been under construction for several years, but its progress has been extremely slow and there is still a long interval between its terminus and any of the towns or trading posts in Mashonaland and Matabeleland, while there is a still greater distance to be traversed to reach the present terminus of the railroad running northward from the Cape of Good Hope. Until some road is finished there can be little systematic working or milling of ores.

The activity in prospecting and locating claims was very great for a year or two, but more recently very little has been done in those directions. A number of companies have been organized and a good deal of capital subscribed, but it looks as if returns must be postponed for some years yet.

Our contemporary, the *Pacific Coast Electrician*, criticises a recent article on the "Coal Supply of California" in our columns (*Engineering and Mining Journal* for January 16th, 1897, page 62), and says that we have not made allowance for a new source of supply in California itself. This supply is to come from the Corral Hollow mines in Alameda County, where some coal was taken out years ago, but the workings were afterward abandoned. Recently, however, according to the *Electrician*, the Wheelocks, owners of the property, have conducted extensive explorations with such satisfactory results that they have begun opening the mine on a large scale, and are putting in a plant for mining and handling the coal at the rate of 1,500 tons a day. They have also built a railroad to carry the coal to market at Stockton. This will mean an addition to the production of California coal of 450,000 or 500,000 tons a year, and will decrease the amount imported by over one-half.

We are very much pleased to know that so important an addition to the mineral production of California is to be expected. Cheap and abundant fuel is a pressing need of the State, and a supply from home sources will be welcomed. We may add, however, that our article was based upon the actual statistics for 1896; and also that the operations at Corral Hollow have been—probably for business reasons—very quietly conducted, and very few outside of those actually engaged have known of them. Even so good an authority as the last report of the State Mineralogist says of the property: "All information and admittance to the mine was refused."

We may add that it is now stated that the new mining machinery is of the most approved type, and that an extensive electric plant is included.

Processes and Assays.

We observe frequently in our Western exchanges references to new metallurgical processes, chiefly for gold ores of low grade or refractory character, from which great things are expected to come. Within the last two or three months we have read of a number of these, some of the names being new and others familiar. It is not necessary to go into the details of these so-called processes here; most of them are more or less absurd or impracticable. It is generally claimed for them that they will get more gold from an ore than it is shown to contain by the ordinary fire-assay. Of course this is very amusing and probably harmless, since nowadays, when professional advice is generally taken, no sensible person could be induced to put money into such a scheme. But there are many cases on record in the past where cautious business men of excellent judgment in most respects have been induced to invest money upon just such preposterous statements.

Apropos of these "processes" it is astonishing to find how prevalent is the idea among the ignorant in mining districts that the fire assay may not account for all the gold in an ore. Whence this notion is derived it is not easy to say. It may be a faint survival of the mysticism of the alchemists, or it may have originated in the "green gold" theory of 20 years ago. The latter, which was developed in California, involved the claim that a quartz vein of Marin County in that State contained paying quantities of gold, but in a "green" condition, that is, not yet fully ripened into the ultimate form of metallic gold, that with which we are generally familiar. It was affirmed, however, that maturity could be effected in short order by means of a certain secret process. This "green," or "youthful" gold escaped detection by the ordinary assayer because of igorance of the proper method of fluxing it in order to make it mature and therefore visible. Indeed, the improper methods commonly employed in assaying, it was said, drove away from the ores under treatment this "green" gold, which might be presumed to be tender and therefore requiring delicate methods. The nature of the latter was not made known, except that, it was said, the presence of even the minutest traces of common salt, sodium chloride, would cause the "green" gold to volatilize. A good deal of money was obtained on the strength of these assertions, and of course that was the only "green" gold that ever materialized. It was another and comparatively old example of the practical transmutation of something or nothing into gold.

The Boston & Montana Report.

The report presented by the Boston & Montana Company to its stockholders for the year 1896 (which is given in another column) is a most unsatisfactory document, as most of this company's reports have been. So far as the financial accounts go, the company seems to have had a prosperous year. The gross receipts reached a total of $6,414,307; the mining and other expenses amounted to $3,534,283, and charges on the debt, interest and sinking funds to $205,674, leaving a balance of $2 674,-350. From this, dividends amounting to $1,500,000, or 40 per cent. on the stock, were paid, leaving the considerable balance of $1,174,350 to be carried to surplus account. This was represented by increases in cash, unsold products and accounts receivable, and in supplies and materials on hand.

These are large figures; but in the report there is nothing to show how they were obtained. It is impossible to analyze the report, for there is no information given on which an intelligent analysis can be based. The gross receipts were from sales of product—gold, silver, copper and copper-sulphate, or bluestone; but we are given no statement of quantities or selling prices. How much was produced of each, or how much ore was extracted and worked to obtain the products, is not thought worth even a passing notice. (We believe the product of this mine in 1896 was about 60,250,000 lbs.—ED. E. & M. J.) It has been said that the copper of the Boston & Montana taken by itself costs more to make than it is sold for, and that whatever profit there may be is entirely in the gold, silver and other by-products. Whether this is true or not, there is no way of ascertaining from the company's statement.

The essence of a mining report is in its statements of costs, but these are entirely absent in the present document. What percentage of copper was obtained and what was the cost of mining the ore, extracting and refining the metals, are points of the greatest importance; but they are wholly ignored in the report.

In the very brief and unsatisfactory statement of operations at the mines, the only definite assertion is that development has about equaled the extraction for the year, the amount of the ore reserves at the close of 1896 being estimated at 950,000 tons, or about the same quantity as Captain Couch had given a year before. Accepting this statement, and taking the copper contents at 5 per cent., this is about equal to two years' production. As to what work has actually been done in the mines, we are quite in the dark, the only particulars vouchsafed being the erection of a new hoisting engine at the West Colusa shaft and an air-compressor at the Leonard. The important questions as to the existence of ore in the lower levels of the East Colusa, and what developments—if any—have been made in the Atlantic are not referred to.

There is another point in the report which requires explanation. The Butte & Boston smelter was leased early in the year, we are told, for the purpose of treating the low-grade ores, which will not bear the cost of transportation to Great Falls. But a few lines further on we are told that, owing to the operation of this smelter at Butte, "the works at Great Falls were not run to full capacity during the latter part of the year. This, of course, had a tendency to increase the cost per ton of treatment." There are several points here on which a stockholder should have full information. Did the ore extracted contain so large a proportion of low-grade stuff that it was not possible to keep the Great Falls works supplied? Or was it the policy of the management to keep the Butte smelter busy at the expense of the Great Falls works? And why was it necessary to so favor the Butte smelter, when the superintendent admits that such a policy had a tendency to increase the cost of treatment at the larger works?

These are all pertinent questions, and the stockholders might well insist upon knowing the terms on which the Butte & Boston smelter was leased; perhaps also a statement as to the parties benefited by that lease would be interesting and to the point. Certainly there should be some very sound reasons given for reducing the work at the Great Falls plant, which is supposed to be equipped with the latest and best appliances for work, and on which the company has spent a great amount of money. If better work can be done in an older plant belonging to another company, the stockholders should know it; if not, why should that plant be leased?

There are still other points which might be raised; but enough has been said, we think, to show that such a report is an insult to the stockholders. They have a right to know what is being done with their property, what it costs them to produce copper, what it is sold for, and many other particulars upon which they can base, if they wish, an estimate of the value of their property. While the company may be managed with skill and economy there is nothing in this report that need be changed to cover absolute dishonesty or utter recklessness. Every honest man

should conduct the business of which he is a trustee or director in such a manner as will clearly establish the proper discharge of his duties, and as will furnish a wholesome example by following which dishonesty in other concerns may be prevented. It is always quite safe to assume that where proper information is not given the stockholders by their directors or trustees it is because there is something to conceal, which the directors are either ashamed or afraid to have made known. It is then high time for the stockholders to investigate and for outside capital to avoid such concerns.

We should be pleased to receive correspondence on this important point from anyone who is interested, and we shall probably refer to it again editorially.

NEW PUBLICATIONS.

MANUAL OF IRRIGATION ENGINEERING. Second edition, 1897. By Herbert M. Wilson. New York; John Wiley & Sons. Pages, 538; illustrated. Price, $4.

The first edition of this book was very fully reviewed in the *Engineering and Mining Journal* for April 1st, 1893, page 291; and there is very little to be added to what was then said. The second edition has been generally revised and many additions made from recent practice. The chapter on the flow and measurement of water in open channels has been enlarged and several of the other chapters have been rewritten. A number of new descriptions of irrigating works.

The author is generally careful to cite his authorities, and a list of references is appended to each chapter for the convenience of the student. He makes especial acknowledgment to the late P. J. Flynn, and indeed it is hardly possible to for anyone now to write on irrigation without reference to Mr. Flynn's admirable work. Mr. Wilson's book is a very convenient manual, and the additions made are generally improvements over the first edition.

RECORDS OF THE GEOLOGICAL SURVEY OF NEW SOUTH WALES. VOLUME V., PART II. Sydney, N. S. W.; Government Printer. Pages, 112; with seven plates.

The present volume contains eight papers on different subjects connected with the Geological Survey, and by different authors. Three of them are on the geological relations of different fossil remains found in the strata explored by the survey. Some interesting notes are given on the occurences of rare minerals observed during the past year, and a very full list is given of all the papers and other publications on Australian geology issued during 1896.

Of the remaining papers one is on the "Occurrence of Meteorites in Australia," by G. W. Card; one on the "Geology of the Coast near Port Macquarie," by J. E. Carne; the third on "Some Auriferous Beach Sands," also by J. E. Carne. The last is especially interesting, describing a district where the beaches have been worked for gold at different times and with varying success: and where gold, platinum and tin have been ascertained to exist in those sands.

The publications of the New South Wales Geological Survey are usually to be commended, because they are brief and to the point, with very little superfluous matter, and have been apparently edited with much care. The present issue is no exception, and the 112 pages contain a great deal that is of interest to the geologist and the miner. The record of publications on Australian Geology is a very useful addition.

TABLES FOR THE DETERMINATION OF MINERALS BY PHYSICAL PROPERTIES; BASED ON THE SYSTEM OF PROF. ALBIN WEISBACH. Fourth Edition. By Persifor Frazer. Philadelphia, Pa.; J. B. Lippincott Company. Pages, 163. Price, $1.50.

This is a fourth edition of Dr. Frazer's translation of Weisbach's tables, of which the first appeared in 1874. We say translation when perhaps we should say modification, since there were deviations from Weisbach's scheme in the first edition, and more and more divergence in the subsequent ones. As to the purpose of the new edition we shall best quote from the preface, which says the "changes are more largely additions than alterations, and comprise about 135 species and sub-species interpolated among the 760 odd species, etc., contained in the third edition. . . . The names of the added species are introduced in smaller type where the full description would be if the book were to be reset; and when the student . . . has traced the mineral he is examining to a small group in which occur one or more of these names without description, he is referred to the supplement, ... where the minerals are arranged in alphabetical order. . . . The index has not only been enlarged to include the names of species which do not occur in the third edition, . . . but it has been entirely recast so as to include every name of a mineral or rock mentioned in any column. The advantage of this is that one can find by referring to the index the various rock matrixes and the minerals which are found in them."

The third edition of Dr. Frazer's tables appeared in 1891, at which time it was reviewed in the *Engineering and Mining Journal*. The Weisbach-Frazer tables aim at the determination of mineral specimens by their physical properties chiefly, using blowpipe tests of the simplest character to a certain extent, and chemical reactions in the main only as confirmatory of the results otherwise worked out. In this respect they differ essentially from nearly all the other systems of determinative mineralogy.

The Frazer method makes three divisions at the first cast, namely: I. Minerals of metallic luster. II. Minerals of sub-metallic luster. III. Minerals of non-metallic luster and white or light gray streak. No. I. is subdivided into five classes, according to color; No. II. into six classes, according to streak; and No. III. into five classes, according to hardness—1, very sectile; 2, sectile; 3, semi-hard; 4, hard; 5, very hard. The total list of minerals is consequently subdivided at once into 16 groups, in which further search must be made.

Dr. Frazer does not sufficiently define his meaning of "very sectile," "semi-hard," etc., which would have been desirable, since although the expert would probably interpret these terms correctly, the novice would be likely to mistake and go astray at the outset. Any uncertainty of this kind should be avoided, since the properties of the minerals themselves by which they are to be classified are often indefinite. Thus, there are certain minerals of which it is not easy to say the luster is either metallic or non-metallic, as, for instance, allanite. There are others which vary in color, like sphalerite, and in hardness, like magnesite. Obviously, such variations can only be provided against by putting the mineral into more than one class, so that whatever course is indicated by the physical tests the identity of the mineral will be finally proved. To illustrate the system, the three minerals above mentioned may be followed to identification, thus:

1. Magnesite.—III, non-metallic luster and white or gray streak; III, 3, semi-hard. This leads to a large group from among which the mineral in question is identified by specific tests.
2. Allanite.—III., non-metallic, and white or light gray streak; III., 5, very hard. There is no further sub-division.
3. Sphalerite.—II. 1; II., 2; II. 4, and III, 2.

The new edition of Frazer's tables is published in the same compact, well-bound form as the third edition, suitable for the pocket, and in this particular offers a model which might well be followed in other books of the kind.

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.

Hot Water Manual. By Walter Jones. Chicago, Ill.; The *American Artisan* Press. 1897. Pages, 220.

United States Commission of Fish and Fisheries: Report of the Commissioner for the Year Ending June 30, 1895. Washington, D. C.; Government Printing Office. 1896. Pages, 590.

Metals. Their Properties and Treatment. By A. K. Huntington and W. G. McMillan. London, Eng., New York, and Bombay, India: Longmans, Green & Co. 1897. Pages. 562, illustrated. Price, $2.50.

An Alternating Current Range and Position Finder. By Dr. Albert Cushing Crehore and Dr. George Owen Squier. Reprinted from the *Journal of the United States Artillery.* Fort Monroe, Va.; Artillery School Press. 1897. Pamphlet, pages, 20; with diagrams and illustrations.

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.

"Wet" and "Dry" Ores.

Sir: Will you or any of your readers be kind enough to inform me what is the exact meaning and derivation of the terms "dry" and "wet" ores, as applied to those containing silver? What special properties or constituents do each possess and how are they distinguished? In general they are supposed here to indicate the difference in the amount of lead which each carries, but the respective terms are used with much laxity and under conditions so widely differing that an authoritative explanation will be highly appreciated. HOWARD WEST.

NEW DENVER, B. C., March 13, 1897.

Cast Copper of High Electric Conductivity.

Sir: I am quite convinced that the prejudice against cast copper where high electric conductivity is desired has its foundation in the use of impure copper. It will be found that the copper of poor conductivity is recast metal in which oxide of copper is present in more or less quantities. The conductivity of a specimen cut from a wirebar will very nearly equal that of wire drawn from a similar bar. Several years ago Messrs. Cooper and Patch perfected a process for making "deoxidized" copper. This consisted in carefully protecting the melted copper from the action of air while it was being cast. I understand that the conductivity was high. Last summer I saw at Great Falls, Mont., a cast copper conductor line carrying a current of 9,000 amperes at about 150 volts. The line is between the power station and electrolytic plant of the Boston & Montana works. Its length is something over 2,000 ft. on a side, and I am informed that the conductivity is 95% of the best rolled electrolytic copper. The bars are each 2×12 in. and 20 ft. long, ends being lapped, soldered and bolted together. These bars were cast in iron molds at the refinery furnace from exactly the same copper that is used to make wirebars.

I am inclined to think that anyone can make as good copper as the "M. B." brand to which you refer in your last issue, if they will cast directly from the refinery furnace and take care to make as few cold sets as possible in their castings.

NEW YORK, March 22, 1897. J. PARKE CHANNING.

The Grand Central Mine, Mexico.

Sir: Allow me to correct some typographical errors which crept into your article on the Grand Central mine in the *Engineering and Mining Journal* of March 20.

The output of the mine since September last appears, from the data published by the *Financial News*, to have been £18,000, in October, £18,000 in November, £15,000 in December, £13,000 in January, and Captain Mein's estimates, made at the end of February, of £12,000 a month for eight months more. Assuming this did not include February, which we may count also at £12,000, we get a total gross value of ore in sight in September or exposed since September of £172,000, not £350,000 as you stated.

If the expenses average £7,000 a month for the 13 months, or a total of £91,000, it would leave the net value of the total output of the mine, if no new ore is discovered, as £81,000.

Mr. Farish's report gives the gross value of the ore in sight, August 1st, 1896, as $1,868,750, or say, £373,750, and this (page 17 of Mr. Farish's report) should yield according to the estimated percentages of recovery $1,309,522.50 in bullion, and $128,710 in concentrates, a total of $1,438,233.50," or £287,647. Against this Mr. Farish estimated the expenses of the mine and of the disposition of the product, $557,161, "leaving a net profit above operating expenses of $881,071.29," or, say, £176,214, as against an actual output, if Captain Mein's estimate should be realized, of £91,000, or 51% of Mr. Farish's estimate, and assuming that no new ore has since August, 1896, been discovered. It is only the desire that your *Engineering and Mining Journal* should be altogether correct that induces me to call your attention to the error in your last week's remarks. I do not now wish to discuss any other point, though with your permission I may do so on another occasion. I enclose my card and sign myself OPTIC.

[Our correspondent is correct; an unaccountable error had crept into our figures. Our attention was called to this error by so many correspondents that we feel comparatively safe in the assurance that no serious error can escape detection and, we gratefully say, exposure by our readers.—ED. E. & M. J.]

German and American Technical Schools.

Sir: I beg to call attention to the following facts in reply to Prof. H. O. Hofman's statements in your issue of March 6, relative to German and American technical schools.

1. The applicants at the Freiberg School of Mines who wish to obtain a degree are generally required to have done practical work in the smelting works or mines at Freiberg or elsewhere, under the supervision of a mine boss or smelter foreman before entering the academy. This preliminary course, lasting from six weeks to as many months, enables the prospective student to get much valuable practical information of great use to him later and to weigh the importance of his subsequent studies. He continually adds to this store of practical information during his four years course of study by very frequent trips through mines and by surveys, or by studies and actual work at the great smelting and refining works in the vicinity. Better results would doubtless be secured by American schools if this practice were followed here.

2. The Freiberg student is surrounded by a community whose prime industry is mining and smelting, and he lives in a town where he constantly comes in contact with mining and metallurgical engineers. A city like Boston, far away from the mining and metallurgical centers, does not offer such advantages.

3. The statement that instruction at Freiberg is given almost exclusively by lectures, with little or no practical illustration, is not alone controverted by the fact that practical work in mine or smelter is looked upon as necessary in order to obtain a degree at Freiberg, but by Professor Hofman's own list of exceptions: Drawing, surveying, determinative mineralogy, petrography, physics, chemical analysis, blowpiping and assaying.

4. That our American chemists (many of whom, by the way, are Freiberg graduates) do remarkably accurate and rapid work is not due to their school training nearly as much as to the strict requirements of our smelters, refineries and chemical works. For instance, a graduated metallurgist fresh from college and engaged at a Western lead smelter is first assigned to the subordinate position of assistant chemist, and must first learn how to accurately analyze and assay lead slag for gold, silver, lead, silica, iron, lime, manganese and zinc—all in less than two hours from the time he receives the unpulverized slag sample—before he is placed on the list for promotion. The fact that his analytical and assay results must be absolutely reliable makes him careful, notwithstanding rapidity, and he becomes self-reliant as soon as he finds out that upon his figures the metallurgist and manager depend.

The young graduate, be he of Freiberg or of the Massachusetts Institute of Technology, is alike put to this practical test, and then his future success largely depends upon his application. Yet boys who have never had more than a common school education are often taken into the assay offices, and soon become expert in the ordinary work required. However, whenever it becomes necessary to conduct special research work, the aid of the college-bred man is sought, and the chemist whose laboratory training has been most thorough naturally comes to the front. From this standpoint the Freiberg Academy still stands foremost among all the mining schools of the world, a position it has held undisputed for over a hundred years. Americans will continue to go to this school as long as they desire the very best training at the smallest cost under such great specialists as Ledebur, Winkler, Richter, Weisbach and many others. TITUS ULKE.

WASHINGTON, D. C., March 9, 1897.

The Forest Reserves in the Northwest.

Sir: Of the several forest reservations set aside by President Cleveland as one of the last acts of his term, on the recommendation of the commission appointed to investigate and report upon the matter, those which have been set aside within the boundaries of Montana, Idaho and Washington particularly concern the members of the Northwest Mining Association, and when the facts are fully known it is believed Congress will annul the act.

In Montana the Flathead, and the Lewis & Clarke reserves, embracing 5,952 square miles, lie along and on either side of the summit of the main range of the Rocky Mountains. The Bitter Root reserve lies on the eastern slope of the mountain range of the same name and embraces 1,080 square miles, making a total of 7,032 square miles of reserved territory in Montana. All of this reserved land lies in what are known as mineral areas. In Idaho the Priest River and Bitter Root reserves cover several important mineral sections. In fact, it is generally understood that the entire area is mineral land. A total area of 6,264 square miles is set aside in those two reserves in Idaho.

Washington fares worse than any other State in the reservation of those tracts embraced in the Washington, Ranier, Olympic and Priest River reserves. The Washington reserve of 5,475 square miles, includes nearly all the mineral belts of Okanogan, Whatcom, Skagit and Snohomish counties. The Ranier reserve of 3,492 square miles includes the St. Helen's and adjoining mining districts; while the Olympic reserve includes everything in the Olympic mountains and embraces 3,420 square miles. That portion of the Priest River reserve which is in Washington is all mineral land and embraces 144 square miles, making a total area in the State of Washington of 12,587 square miles, or nearly one-fifth of the entire State, which embraces 66,880 square miles. All of this land lies in the mineral districts and includes about one-half of the entire known mineral area of the State.

Adding to this nearly three-eighths of the total area of the State as Northern Pacific land grant, half of which also lies in the mineral sections (and if these reservations cover any of the granted land, other land must be granted in its stead) we have about 25,000 square miles of the mineral area of the State of Washington, placed absolutely beyond the reach of the miner except he buy from the railroad company at its price or special provisions are made, as recommended by the commission, which will permit them to prospect on those reserves.

With due regard for the National Academy of Sciences, on whose recommendation the commission was appointed, for the members of the commission who made the recommendation, and for Ex-President Cleveland, the people of the Northwest believe that they are but meagerly and most inaccurately informed of the conditions prevailing here; and that while the commission admitted that they realized that unless provision was made to enable the miners to prospect for and develop mines on the closed areas; unless the agriculturist could locate upon, cultivate and obtain title to the agricultural portions, and unless the citizens of the States in which the reserves are could use the timber for fuel and building purposes, the reserves could not be maintained, they could have arrived at a more just and efficient method on which to base their recommendations.

Realizing that our forests on public domain are being devastated to the injury of the country at large and of those sections in which they lie, in particular, it is recommended that the timber areas of the United States be immediately placed under the charge of the Forestry Division of the Agricultural Department, divided into districts, which shall be under the immediate charge of wardens; that it shall be the duty of the wardens to guard not only the timber, but the fish and game as well, and to make regular reports to some official in the State in which the district lies (the surveyor general or the local land office officials), returns to be made also annually to the Agricultural Department through the Forestry Division. The timber on public domain should hereafter be available for domestic purposes only and severe penalties should attach to violators of the law to be enacted, punishing such offenses as wasteful methods, foreign sale or shipment, setting of fires and all other methods of destruction.

A carefully drawn bill, covering all areas of timber on public domain, will protect all instead of a portion of our fast disappearing forests. The appointment of wardens and the imposing of heavy fines, with a portion of the fine going to the informer, would be proper safeguards, and, in the opinion of the writer, more wise and fair than the present reservation act, which deprives those States most in need of their resources from the full enjoyment of them. L. K. ARMSTRONG.

SPOKANE, Wash., March 15, 1897.

Building Slate for Ireland.—In a recent letter to the State Department, United States Consul Ashby, at Dublin, says that on account of the troubles which the Welsh slate quarries are encountering, the Dublin slate trade is beginning to cast about for new sources from which to draw the supplies required in the building trade, and the importers of slate are looking favorably toward the United States. Two inquiries have reached his office quite recently for a list of exporters of slate in the United States, and he is of the impression that slate exporters might profit by making an effort at the present juncture to secure the Irish trade. The office is always ready and anxious to furnish to intending purchasers all information in its power, but it must be said that exporters have not availed themselves of the privilege of furnishing it with information as to the line of goods handled by them.

Pig-Iron Production in Germany.—The complete statistics of pig-iron production as collected by the German Iron and Steel Union are as follows, in metric tons:

	1894.	1895.	1896.
Foundry iron	886 423	921,493	903,665
Forge iron	1,608,760	1,524,334	1,689,260
Bessemer pig	442,614	441,495	515,352
Thomas pig	2,611,525	2,898,476	3,252,765
Totals	5,559,322	5 788,798	6,360,982

The production of spiegeleisen is included in that of forge iron. The increase has been chiefly in iron intended for conversion into steel by the basic or Thomas Gilchrist process. This now amounts to more than half of the total production.

A California Electric Power Plant.—The success of the operation of long distance electrical transmission is perhaps best gauged by the opinion expressed by the company operating the plant. An extract from a recent letter was written by Mr. John J. Seymour, president of the San Joaquin Electric Company, operating the San Joaquin River-Fresno transmission, to the General Electric Company, which installed it: "It affords me great pleasure to write you regarding the successful operation of the long-distance transmission plant installed for our company. The entire plant as furnished has been in actual practical operation for a period of several months. The 35 miles transmission has given us no trouble whatever. Our load at present consists of 145 arc lights, 5,000 incandescent lights and 410 H. P. in motors, the latter including 180 H. P. for the Sperry Flour Mill and 75 H. P. for the city pumping plant. All of the machinery doing this work has worked with perfect success from the start. The incandescent lights have most of them been newly wired, thus enabling us to properly balance the load, and the regulation has given us no trouble whatever. During extensive tests, it was impossible to find more than two volts variation between any lamps on the system. Lights so furnished seem to me to be better than incandescent lights as usually furnished in San Francisco and other cities of the State."

THE DUQUESNE WORKS OF THE CARNEGIE STEEL COMPANY

By Franklin Hilton

In a recent article in the London *Iron and Coal Trades Review*, Mr. Hilton says that the Duquesne blast furnaces constitute an entirely new and perfectly unique plant. There are four furnaces, 560 ft. apart, 100 ft. high, 20 ft. diameter of bosh, 12 ft. wells and 10 tuyeres. Each furnace has four Cowper stoves, 90 ft. high and 20 ft. diameter, with a flame flue in the center, and a separate stack to each. For each furnace a separately covered casting shed is provided, with a tramway for carrying the charges, usually consisting of five tons of ore in a tub or box, filled from the depot shoots, from an ordinary filling level on the floor line to the top of the furnace, tipping automatically on to a bell or cone, and dispensing entirely with fillers and chargers. Each of these mechanical fillers has a separate steam-haulage engine. The ore boxes used for charging the furnaces are fitted with an inverted bell or cone. Each pair of furnaces has its separate battery of Babcock & Wilcox tubular boilers and blowing engines. Over each of the latter are 25-ton electric traveling cranes. The engines are of the usual vertical self-contained compound condensing type, with steam cylinders 28-in. and 42-in. diameter, by 5 ft. 6 in stroke. The beams, which weigh 30 tons each, are placed intermediately. The flywheels weigh 40 tons each. The engines, of which there are five, in pairs, with one pair always in reserve, were built by the E. P. Allis Company. Besides the blowing plant, there are four pairs of vertical compound condensing pumping engines—each fitted with a 10-ton motor crane—to the water-tower for the supply of the tuyeres. The water-tower is of wrought iron, and 120 ft. high.

A pig-iron breaker is provided for each furnace, and the pigs are cast in chills 26 ft. long. All the overhead cranes and the pig-iron breaking machines are driven by electric motors. Separate motors are provided for incandescent and arc lighting. Next to the stoves are the coke depots, traversed by crane roads. Then come the ore depots, which are double, and the stockyard for ore and coke. The ore and coke depots are 400 ft. long. One of the features that arrests attention is the fact that all the ironwork is painted with red oxide.

The ground upon which these furnaces are located was practically a sunken marsh. Piles were driven for the principal foundations, and some of them are about 30 ft. in depth. The foundations are of enormous extent and solidity, and cost probably as much as the whole of the superstructures. The construction was completed in a remarkably short space of time, electric light being used at night and a great force of men employed. To an engineer it seems a pity that the masonry will be almost entirely hidden under ground when the furnaces are completed. The stockyard is excavated to a distance sufficient for two additional furnaces, and there is ground enough reserved to extend the plant ultimately to embrace six furnaces.

The new furnaces at Duquesne have more than realized the anticipations formed as to their output. It was expected that they would produce an average of 500 tons a day per furnace, but since they were put in blast they have done more than that, and one of them has produced over 600 tons daily. The plant of four furnaces may be regarded as equal to an output of about 800,000 tons of pig iron per annum. The cost is understood to have been from $700,000 to $750,000 per furnace, the largest amount ever expanded in a plant of this kind.

[We may add to Mr. Hilton's description that an additional furnace is now under construction at Duquesne of a still larger size, in which there are some marked advances. The hearth is to be 15 ft. diameter and 7 ft. deep, and there will be 21 tuyeres in two rows. This new furnace is expected to make 1,000 tons of pig iron a day, as against 5,000 a week, which was expected of the furnace described by Mr. Hilton.—EDITOR E. & M. J.]

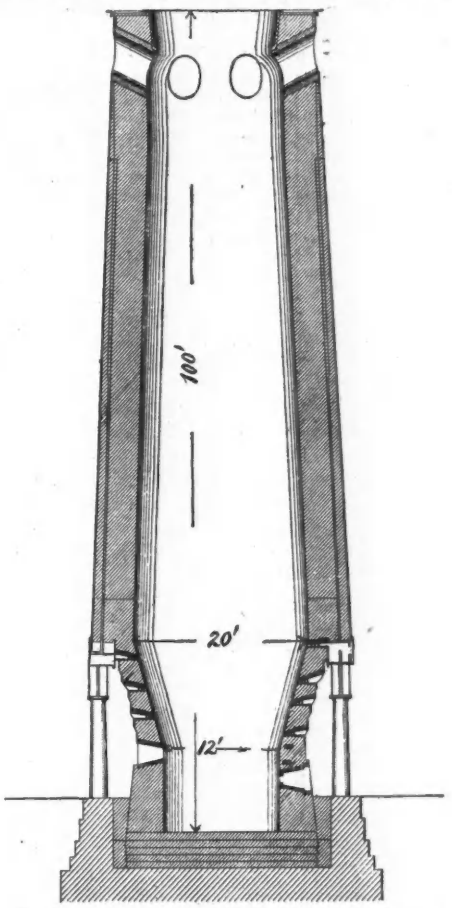
The steel works at Duquesne, the most recently built of the series owned by the Carnegie Steel Company, are located close to the new blast furnaces on the opposite side of the Monongahela River from McKeesport and about two miles below. The entire product is made into billets and bars, and for this purpose the mill is probably the finest in the world. With only two nominally 10-ton converters, but really 8½ tons, as much as 38,000 tons of ingots have been made in a month. The ingot molds are carried on cars, the ingots are heated in vertical furnaces, and are then rolled directly in a series of mills without reheating into various sizes of billets and bars. The ingots are 17½ × 19½ in. in cross-section. They are first bloomed in a reversing mill in 15 passes down to about 7 × 8 in., and the bloom thus made has its ends sheared off, and is cut into two pieces. These are instantly carried by conveyors into a roughing mill, where they receive five passes, both blooms passing through the rolls at the same time, in adjoining grooves. The two blooms can be sent into different finishing roles, and in regular practice one bloom is rolled into 4 × 4-in. billets, and the other into sheet bar for tin plate, about 6 × 1 in. in section. In the complete mill there are in all seven stands of rolls, each driven by a separate engine, in some of which only a single pass is made. To roll an ingot of 17½ × 19½ in. down to 1½ in. square billets requires 26 passes in the eight stands of rolls. Only the first three sets of rolls are tandem, and the others are placed in two parallel lines, so that the billet or bar in its movement through the mill from one stand to the other passes first forward, then back, then forward again. All the passages are made apparently automatically on power-driven rollers, the only labor required being the movement of the valves of engines and the levers controlling the lifting tables and feeding rollers.

After the billets or bars are sheared to length they find their way to the railroad cars in which they are shipped by automatic arrangements. The 4-in. billets drop one by one as they are sheared on to a continuous train of rollers joined at their axles by links, which travel up an inclined track formed of I-beams then horizontally on an overhead track parallel to the railroad. Switches are provided at several points on the roller track by which the billets are caused to leave the track and fall into a number of inclined bins or chutes, where they are cooled by a jet of water, and finally, by opening a gate at the bottom of the bin, they fall into the railroad car.

The sheet bars are treated differently. They are cut into lengths of about 30 ft. and carried on to a cooling table formed of a number of parallel railroad bars elevated about 3 ft. above the ground level. They are moved along this by a couple of endless chains, which travel at each end of the cooling table, and are finally carried in like manner directly into the railroad cars in which they are shipped. Only a small number of men is required to ship the great product of these works, amounting to from 1,200 to 1,400 tons per day.

The most prominent features of the Bessemer shop at Duquesne are the large radius of the casting-pit, the large number of casts—82 of 9 tons each—per shift, and the fact that all the metal used was cupola melted, the cupolas being tipped into a ladle upon a ladle carriage and thence weighed and tipped into a curved spout to the nose of the vessel. The ferro-manganese is heated and thrown into the ladle. The ingots are 17 in. square at the bottom, and are cast upon bogies running upon a depressed narrow-gauge railway for stripping away. The blast used is about 23 lbs., the duration of the blow being about 15 minutes. All the machinery is actuated by hydraulic pressure.

In the billet mill there are, as above stated, seven different mills or trains of rolls upon four different center lines. 1. The cogging mill, from 17 in. to 18 in. square ingots. 2. Two pairs of roughing rolls, blooms cut in three lengths. 3. Three pairs to 4-in. billets, and 2½x3 in. square. 4. One pair to 1¾ in. finished bars. No reheating is adopted. The blooms are cropped at the cogging mill and 4-in. billet mill. The latter are cut into 24-in. lengths, the 1¾-in. billets being run 20 to 30-ft.



BLAST FURNACE AT THE DUQUESNE WORKS.

lengths, while the 4-in. are traversed upon live rollers up an inclined plane to the shoots; then cooled down, and, by lifting the bottom shutter, are made to slide into trucks. There are separate engines to each train, except the 1¾-in. finishing mill. The output last year was 400,000 tons with one man in each mill.

A very complete electric plant is installed in a separate building to furnish light and power for the several machines in the plant, the latter being numerous. There will be over 40 Morgan electric cranes in the plant; all of these are driven by 220-volt direct-current motors. Each of the six casting houses is equipped with two 10-ton three-movement electric traveling cranes. A 10 H. P. multipolar motor, enclosed type, is used for the hoist—10 H. P. for bridge travel, and 3½ H. P. for carriage. The hoist and carriage motors are equipped with automatic electric brakes, the bridge motor with powerful foot brakes—an arrangement which permits of a very accurate movement in each direction. These cranes carry the pig iron to the metal breaker. Each blowing-engine house is provided with a 25-ton three-movement crane 61-ft. span, a 20 H. P. motor being used for hoist, 5 H. P. for carriage, and 30 H. P. railway-type motor for bridge travel. Automatic electric brakes and foot brakes are supplied, as on the cranes in the casting-house. A 50-ton electric crane of a special type, built by the Morgan Engineering Company, is erected over the metal mixer. It is a four-movement crane; two hoists, one carriage, and one bridge movement. The motors are 100 H. P. for main hoist, 20 H. P. for auxiliary, 10 H. P. for carriage, and 30 H. P. railway type for bridge. By means of this crane the molten metal is poured from the ladles into the metal mixer. In this way metal from several different furnaces is mixed together before being run into the converters. There is a 10-ton electric crane of 50-ft. span installed in the pump-house. The motors therein are 10 H. P. for hoist, 10 H. P. for bridge, and 3½ H. P. for carriage.

The metal breaker is direct connected to a 60-H. P. multipolar shunt-wound motor. The breaker, which is provided with a flywheel 4 ft. in diameter, is fed from a long table, driven, through suitable gears, by a 30-H. P. Westinghouse railway type motor. Cranes are used to lift the metal to the table. This apparatus can handle over 100 tons of pig iron per hour. Each casting-house is provided with a 5-ton conveyor; this is a carriage running the whole length of the casting house, and thence to the stock yards. Its function is to carry all the scrap iron to the foot of the furnace hoist, from whence it will be taken to the top of the furnace again. A Westinghouse railway-type motor moves this conveyor. The operator on the conveyor is protected from the heat by an iron cage.

Over the ore stock yard are three electric traveling bridges of 200 ft. span. These were constructed by the Brown Hoisting and Conveying Company, of Cleveland, O., and are the largest ever built for the purpose. The carriages are driven by steel ropes, all the machinery, such as drums, clutches, etc., being mounted on the bridge. Two 100 H. P. Elwell-Parker shunt motors are direct connected to the drums, and enable the operator to move the bridge, carriage and hoist at the same time. The purpose of these bridges is to unload all the ores needed for the furnaces. A 20-H. P. shunt motor drives the crushing machines in the ore-sampling department, and a 2-H. P. motor is used in the laboratory. In fact, electric motors are in use in almost every part of the plant for a large variety of purposes.

ABSTRACTS OF OFFICIAL REPORTS.

Boston & Montana Consolidated Copper and Silver Mining Company.

The report of this company for the year ending December 31st, 1896, gives no statement of quantities of its various products, nor does it state separately the cost of mining and reduction, so that it is impossible to give the returns per pound of copper, the cost of producing copper, or the cost of mining and reduction per ton of ore treated.

The income account for the year is as follows:

Gross receipts from sales of product		$6,414,307
Expenses at Butte and Great Falls	$2,887,968	
Expenses of handling copper	646,315	
		3,534,283
Profit from operations		$2,880,024
Charges on bonded debt		205,674
Balance		$2,674,350
Dividends Nos. 19, 20, 21 and 22		1,500, 00
Balance, surplus for the year		$1,174,350
Balance of assets December 31st, 1895		1,565,978
Balance of assets December 31st, 1896		$2,740,328

Sales of product include gold, silver, copper and copper sulphate (blue-stone). Expenses of handling copper include freight, copper charges, commission and expense account. Charges on debt include $79,503 interest paid, less $23,829 interest received, a balance of $55,674, and $150,000 paid into sinking funds.

The dividends paid were $2 per share February 20th; $2 April 10th; $3 August 20th; $3 November 20th; in all $10 per share, or 40% on the par value of the stock. Since the close of the year on February 20th, 1897, another dividend of $3 per share has been paid; this makes the total amount paid in dividends up to date $5,375,000.

The report of the director says: "The Great Falls Works continue well stocked with the various grades of ore necessary to the economical working of the plant, and it will be seen from the superintendent's report that the ore reserves in the mine have been fully maintained. Besides adding considerably to our cash surplus, we have paid over $300,000 for the improvements mentioned in the superintendent's report in the additions to the mining plant at Butte, and the construction at Great Falls."

The statement of assets and liabilities at the close of the year is as follows, compared with the similar statement at the close of 1895:

	1895.	1896.		
Assets:				
Cash and accounts receivable at Boston and product sold but not paid for	$1,743,635	$2,912,943	I.	$1,169,308
Cash and accounts receivable at mine	17,574	21,071	I.	3,497
Supplies at mine	20,428	59,058	I.	38,630
Cash and accounts receivable at Great Falls	17,130	8,070	D.	9,060
Supplies at Great Falls	97,237	127,829	I.	30,592
Total assets	$1,896,004	$3,128,971	I.	$1,232,967
Liabilities:				
Accounts payable at Boston	$71,068	$53,364	D.	$17,644
" " " mine	71,129	140,485	I.	69,356
" " " Great Falls	100,591	111,609	I.	11,018
Bonded debt interest	24,738	20,685	D.	4,113
Sinking fund due January 1st	50,000	50,000		.....
Proportion sinking fund due April 1st	12,500	12,500		.....
Total liabilities	$330,026	$388,643	I.	$58,617
Balance of assets	$1,565,978	$2,740,328	I.	$1,174,350

The amount of capital stock remains unchanged, $3,750,000 in 150,000 shares of $25 each. The bonded debt at the close of the year amounted to $1,089,000, there being $293,000 bonds of the first issue, $196,000 of the second and $600,000 of the third. During 1896 there were $77,000 bonds of the first issue and $81,000 of the second retired. The balance remaining in the sinking funds at the close of the year was $115,636.

The report says that new developments in the company's mines about equaled the extraction, so that the amount of ore reserves at the close of the year was about the same as at the close of 1895, being estimated at 950,000 tons. Additions to the plant during the year were a Norberg hoisting engine with engine and boiler houses at the West Colusa shaft; and a Risdon compound air compressor at the Leonard shaft. A new machine shop was built and work is in progress on an extensive system of bins for blast-furnace material.

The company leased early in the year the smelter of the Butte & Boston Company for the purpose of treating the low-grade ores, which had not before been worked, as it would hardly pay to transport them to Great Falls for treatment. Owing to the operation of this smelter the Great Falls works were not run to full capacity during the latter half of the year. This had a tendency to increase the cost of treatment per ton.

Superintendent Klepetko's report says: "During the year we have completed the major part of the construction outlined in my report for the year 1895. The new power house has been completed and the new generators for furnishing the larger amount of current to the electrolytic plant are now being put through their tests before acceptance. We expect an increased capacity of the electrolytic plant up to about 3,500,000 lbs. monthly due to the installation of these new generators.

"We have nearly completed arrangements by which we will do away with the present rope drive, running all our power in the smelter and concentrator, and at other parts of the works, by means of electric motors, driven from generators in the power-house. For the generation of the electric current for this purpose we have utilized our old electric generators by running them in series. The motors and the carrying wire are nearly all installed. This method of transmission, I am satisfied, will result in a large saving of power, which will be the more important for the reason that in future we have to pay for all our power.

"The only construction of any importance undertaken this year and in an unfinished state is the new blast furnace building and contents. The construction of this plant in connection with the construction of the new blast furnace bins should cause a considerable reduction in the cost of treatment in blast furnaces."

Osceola Consolidated Mining Company, Michigan.

The report of this company for the year ending December 31st, 1896, shows the total receipts from sales of 6,251,304 lbs. of refined copper, silver sales, sale of building lots at Hancock and interest were $687,018; the total costs were, $602,909; leaving total net income for year, $84,109. Adding the balance of assets December 31st, 1895, $273,063, makes a total of $357,172. From this dividend No. 41, paid July 25th, 1896, of $50,000, and dividend No. 42, paid February 1st, 1897, of $50,000, are to be deducted, leaving the balance of assets December 31st, 1896, at $257,172.

The directors in their report say: "Balance of assets is less than one year ago by about $16,000. This has been caused by the large construction account, made up as follows: Balance of repairs No. 3 shaft as result of fire in 1895 $11,000; sinking No. 6 shaft, $32,000; foundation and walls for the new engine, compressor and boilers at No. 6 shaft, $8,000; new boiler-house and boilers at stamp mill, $12,000, making a total of about $63 000, which we have charged directly to running expenses, as is our custom."

The assets at the close of the year were as follows: Cash in bank and accounts receivable at Boston and copper on hand, since sold, $268,709; cash and accounts receivable at mine, $16,653; supplies on hand at mine, $32,309; fuel on hand at mine and stamp mill, $29,446; 250 shares Hancock & Calumet Railroad stock, $25,000; total, $372,117. The liabilities were: Drafts and accounts payable, $64,927; dividends uncalled for, $18; dividend to be paid February 1st, $50,000; total, $114,945; leaving balance of assets December 31st, $257,172, as above.

The summary of work is as follows: Product of mineral, 7,365,739 lbs.; product of refined copper, 6,251,304 lbs.; yield of refined copper per cubic fathom of ground broken, 404 lbs.; percentage of refined copper in stamp rock, 1·26%; cost per ton of rock hoisted, $1.86; total cost per pound of refined copper for year, 9·64c. During the year 278,517 tons of rock were hoisted, 30,455 tons of which were discarded and 248,062 tons stamped. Cost of stamping was 24·79c. per ton.

The opening work for the year foots up as follows: shafts, 1,556 ft.; winzes, 25 ft.; levels, 7,284 ft.; total, 8,865 ft. Additional sinking and drifting for and around pillars during the year amounted to 4,392 ft.

Superintendent Parnall in his report says: "No sinking was done in No. 3 shaft. The disastrous effects of the fire, however, caused by the burning out of 28 levels in the previous year were repaired and the shaft went into commission hoisting rock in June. No. 4 shaft sunk 208·5 ft., and is now 65 ft. below the 34th level. No. 5 shaft sunk 289·5 ft., and to date is 50 ft. below the 35th level No. 6 shaft sunk during the year 1,058 ft. In addition to the sinking, 11 'plats' or level 'stations' have been cut at intervals where subsequent levels will be driven. The shaft is now down 1,802 ft., and within 60 ft. of the 22d level, which is extended far enough south of No. 5 shaft to make connections when No. 6 shaft reaches that point. In a similar way will each successive level south of No. 5 shaft be tapped as No. 6 goes down.

"By the end of 1897 it is expected No. 6 shaft will reach the 31st level. Much of the rock now handled at long distances south of No. 5, and at enforced hoisting, can be commanded with No. 6 shaft, together with all developments south, which, to date, has not been extended south of the shaft. To this end hoisting equipment and rockhouse facilities must be provided. The former has been contracted for, and the combined engine and boiler-houses, which will be of stone, were started last fall and nearly completed, but as winter set in before all mason work was finished, it was thought best to defer further work until spring, when there will be ample time for completion before the machinery can be installed. Rockhouse can be provided during the summer and in ample time to meet the needs of the shaft. The mill and mine plants are in good shape, and, with the exception of No. 6 shaft equipment, referred to above, no extraordinary outlay appears necessary for the coming year.

"At the stamp mill the new boiler-house referred to in the last annual report has been erected, and two new boilers added to steaming equipment. The boiler-house is a combination of stone and steel, 142 by 69 ft. in ground plan, and high enough to admit of a train of coal cars passing through it by which a large storage of coal can be deposited in front of boilers without cost of rehandling."

Economy of Gas Engines.—In a thesis recently published in the Stevens' (Institute) *Indicator* Messrs. Christy and Hasbrouck give results of an elaborate test of a 10-H. P. lighting plant driven by a gas engine. The conclusions arrived at are that the production of light in a plant of this kind is more economical than by the direct consumption of the gas in burners; using gas directly the cost of a 16 candle-power is 0·625c. per hour, with a gas engine running with illuminating gas it is 0·29c., and running with producer gas it is 0.17c. per hour.

TIMBERING IN THE LEVELS OF THE CALUMET & HECLA.

The accompanying illustration is from a photograph taken in one of the levels of the Calumet & Hecla copper mine, in Michigan, and shows the methods of timbering employed in the stopes of the great mine.

The general plan of opening the ground consists in drifting and stoping in opposite directions from each shaft, then running upraises to the next level, opened above in such a way as to leave sufficient pillars to support the ground. Starting from the shaft a drift is run along the footwall as far as it is intended to tram the ore to that shaft. This is followed by the cutting out, which is simply enlarging the stope to its full size, and is begun at the outer end of the drift and worked back toward the shaft. This is carried as high on the vein as it will stand without timbering. A raise is then run up the center of this block and the ground removed from both ends.

The timbering used for most of the distance between levels is composed of a battery of three sticks, each 12 × 12 in., known as drift-stalls. To these the sets are framed. About two-thirds of the distance up these sets are discontinued and heavy timbers used instead. All timbers used in the mine are coated with zinc chloride and white-washed, to diminish the danger from fire.

DEFINITIONS OF ASSAYS.

The assayer usually expects to be called on to answer an unlimited number of questions, but in one case at least we find that he has taken a step in advance by putting in type answers to some which are likely to be asked him. Messrs. Jones & Jones, assayers and chemists, of Denver, have issued a slip giving the following definitions of a specimen assay, a control assay and an umpire, which are convenient for readers:

A Specimen Assay is made to determine whether a piece of rock, mineral or other material contains gold, silver, etc. No sale of ore is made on the assay, and it is therefore unnecessary to make a number of check assays.

Control Assays are made on samples prepared from and representing a lot of ore which is for sale, and are usually either checks on the assay made by the assayers of sampling works, smelters or mills. Four checks are always run, and if the sample is not perfectly homogeneous, often many more; also, as not infrequently happens, if a repeat is required, because assays do not agree, no extra charge is made.

Umpires are assays made to settle differences between other assayers. These call for all the skill and ability of an assayer, as often thousands of dollars depend on the result. Often eight to ten checks must be made, as the trouble is frequently due to coarse gold or non-homogeneity of sample.

Paving Brick in Iowa.—The prospects for the coming season in the paving brick industry at Des Moines are excellent. Last year about 18,000,000 brick were sold, this cleaning out most of the yards, so that there are now practically no brick in stock. The local orders so far announced call for about 7,000,000 brick, and it is expected that the outside sales will greatly increase the number. A complete series of tests of the Des Moines brick made according to the specifications of the National Brickmakers' Association is now being made.

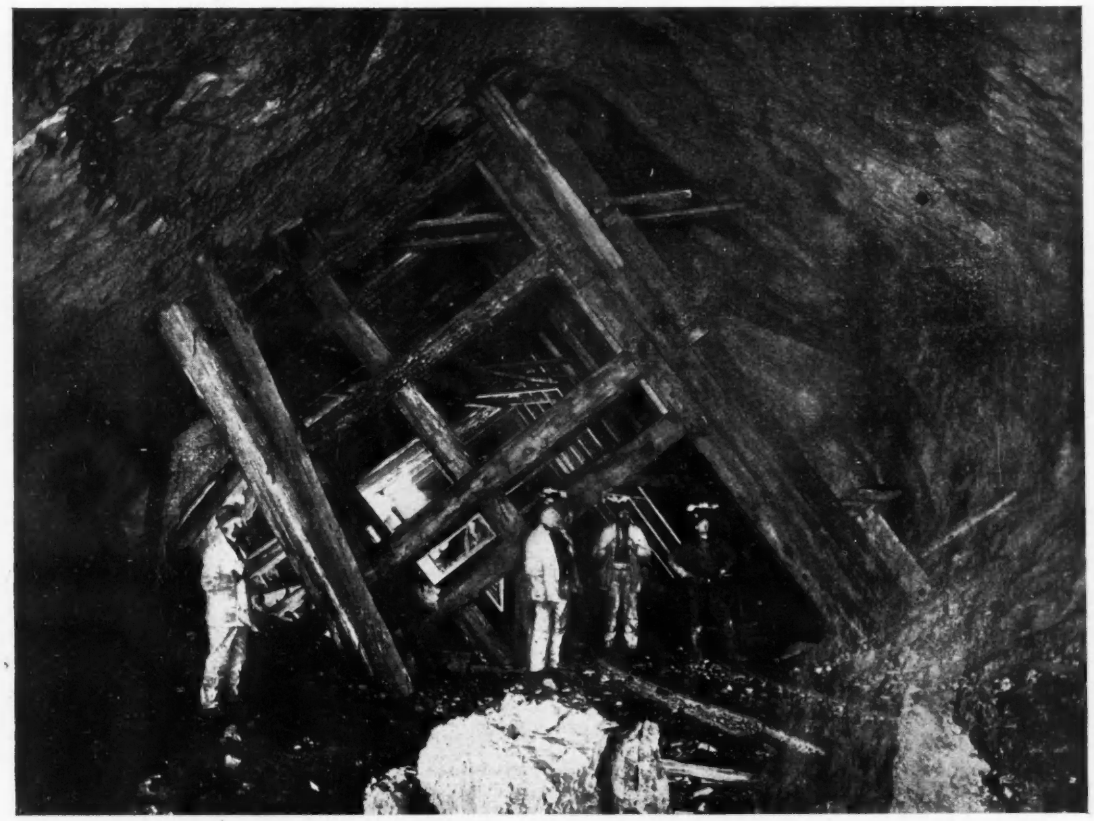
VEIN-WALLS.

By T. A. Rickard.

(*Concluded from page 284.*)

Fig. 12 represents the face of a drift in the Canton mine, near Waipori, Otago, New Zealand. *A A* is the reef, a vein of quartz which is supposed to lie immediately upon the foot-wall. Along *B B* the quartzose schist is soft, and the included quartz-folia are much twisted. *C C* is one of the so-called "false hanging walls." Along *A A* and *C C* faulting is evident; along *B B* distortion only. It was not possible to say where the lode ended, or where it began. The whole width from *A* to *C* was known to be gold-bearing, although *A A* served as a guide in following the gold-bearing channel. Nevertheless, those who were working the mine had little comprehension of the formation, particularly of its essential lack of definition, and, while admitting that there were several "false hanging-walls," insisted that there was only one foot-wall (underneath *A A*) which was stated to be of a different kind of rock, and exceptionally hard. On examination I found that the rock of the supposed foot-wall was similar to that of the rest of the gold-bearing country forming the lode, and on a sample of it being crushed and tested in a prospector's pan, it was discovered to be richer than that which was being actually mined. It was scarcely necessary after that to insist that a crosscut should be made into the foot-wall.

Fig. 13 represents the north breast of the lower level on the main lode in the Union & Companion mine, Union County, Ore. It illustrates the occurrence of walls within walls, for while the lode may be limited by the main boundaries along *E* and *D*, there are at least two partings (*G* and *H*) equally well defined, subdividing the enclosed width of ore. The country is a fine-grained granite, which, near the hanging, is decomposed and ore-bearing.



TIMBERING IN THE CALUMET & HECLA MINE, MICHIGAN.

Fig. 14 affords an example of "walls beyond walls." It represents a section obtained at the station on the 500-ft. level in the Mammoth mine, Pinal County, Ariz. The Mammoth lode traverses hornblende-granitite, porphyrite and a porphyry agglomerate. The lode-filling consists of altered country, and therefore changes as the lode in its strike penetrates first one kind of rock and then another.

Going to the Pacific coast, Fig. 15 represents a part of the west side of the so-called Mother Lode of California. The drawing is a portion of the face of a large open cut at the Gold Cliff mine, Angel's Camp, Calaveras County, Cal., near the now well-known Utica mine. The ore channel consists of a country-rock traversed by cross-veins of white gold-bearing quartz. The country-rock is a greenish-gray augite schist (probably at one time a diabase), carrying coarse pyrite near the gold quartz.

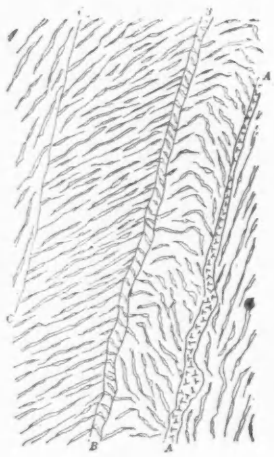
Another case in point is presented at the Cashier mine, in Summit County, Colo., as illustrated in Fig. 16, which shows a part of an open cut on the lode. The latter consists of altered quartz-felsite, rendered porphyritic by large crystals of feldspar. It is spoken of as a vein 45 ft. wide, having a hanging wall of porphyry and a foot-wall of lime. The ore is said to be penetrated by dikes of porphyry. The facts are really these: A certain width of quartz felsite within the neighborhood of its contact with the limestone has been acted upon by mineral solutions which probably came up along that contact. There are no walls, the porphyry of the hanging being simply the rock of the ore-channel in a less altered condition. The feldspar of the lode rock has been leached out.

Lodes subdivided by partings parallel to their outer walls often resemble twin veins such as are actually formed by the temporary parallelism of two distinct fissures traveling together after they have united. Such a case is shown in Fig. 17, which illustrates the union of the Old and New Castletown veins as seen in the north face of the 500-ft. level of the Drumlummon mine, Marysville, Mont. The country is clay slate. *A B* is the Old Castletown vein, 2½ ft. wide. *B C* is the New Castletown, 2 ft. wide. There is no selvage on any one of the three walls, but each is marked by soft, crushed and foliated slate.

The generous lodes of silver-bearing copper ore which at Butte, Mont., penetrate the granite are frequently marked by a brecciation of the encasing country and are accompanied by a mineralization of the granite far beyond the walls or limits of workable ore. In the 300-ft. level of the Gagnon mine, 374 ft. west of the main shaft, a crosscut shows that the lode channel extends 30 ft. north of the supposed foot-wall, the enclosed granite being broken and mineralized. Beyond this line the country ceases to be shattered and is no longer impregnated with ore, but is comparatively fresh, hard, normal granite, with a blocky fracture. This outer foot-wall of the lode channel is marked by the occurrence of some ore-streaks and an accompaniment of seams of clay, as is shown in Fig. 18. The foot-wall country has a noticeable number of slips or joint and another curved wall. To the extreme left is fractured quartzite, carrying iron-stained clay along the faces of fractures, and divided into two parts, *H H* and *B B*, by a narrow zone, *A A*, of soft yellow porphyry, whose curved lines of alteration are marked by streaks of gold-bearing ocher. The remainder of the section is all porphyritic material, of which *C C* is similar to *A A*; *D D* is a wedge of comparatively fresh rock, but slightly kaolinized and full of pyrite, and *E E* and *F F* are layers of brown and reddish soft talcose porphyry and clay, separated by numerous slips or smooth partings forming false walls. The main foot-wall was supposed for some time to be the line of contact of the band of quartzite *B B*, with the underlying porphyry; but assays have shown that the soft decomposed rock lying beyond it is fully as gold-bearing as the quartzite, and can be mined with as much profit for several feet beyond that line.

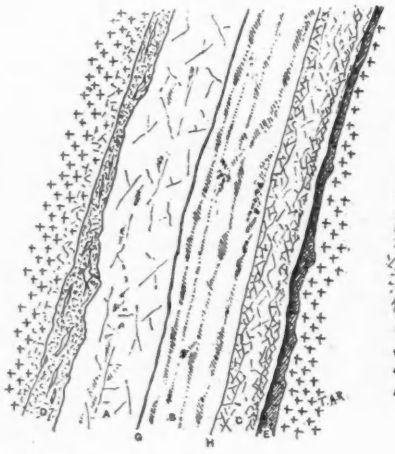
Not infrequently veins have irregular indistinct walls when ore-bearing, and smooth, clearly defined ones when barren. Fig 22 illustrates the face of the west drift of the 430-ft. level on the middle vein in the Nettie mine, near Butte, Mont. The south country is a fairly hard, reddish granite, which, in approaching the hanging, becomes soft and is traversed by slips or joints. On the hanging wall itself, *A A*, there is a seam of tough black clay, in which can be seen frequent films of minutely crystalline blende and galena, and small imbedded shots of ore and rock.

FIG. 12



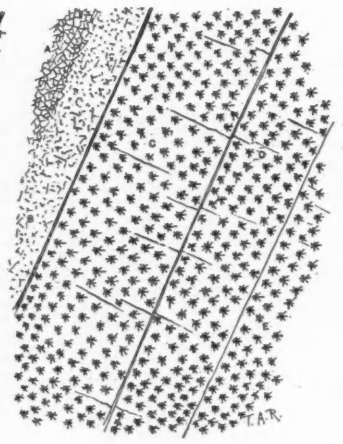
CANTON MINE

FIG. 13.



UNION AND COMPANION MINE, OREGON.

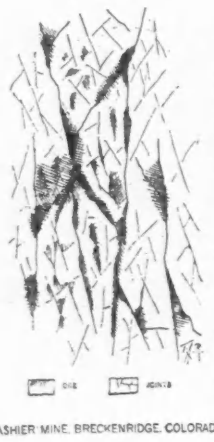
FIG. 14.



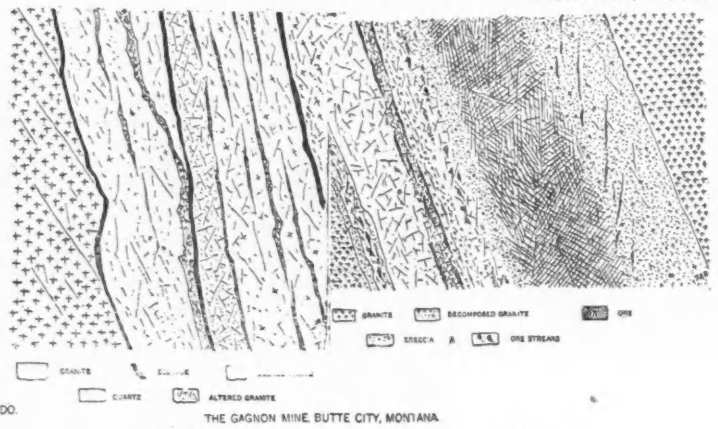
MAMMOTH MINE, ARIZONA.

FIG. 15.

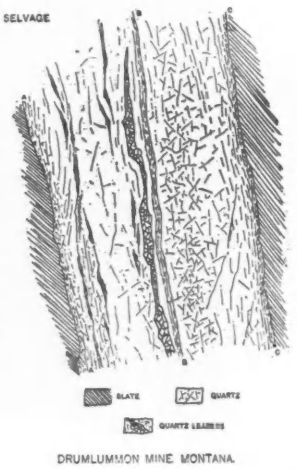
GOLD CLIFF MINE, CALIFORNIA.



CASHIER MINE, BRECKENRIDGE, COLORADO.



THE GAGNON MINE, BUTTE CITY, MONTANA.



DRUMLUMMON MINE, MONTANA.

FIG. 16. FIG. 18. FIG. 19. FIG. 17.

planes. It is separated from the lode-channel by a thick layer of tough black clay. Then comes a zone of kaolinized granitic filling traversed by irregular veins of zincblende and pyrite. Another clay seam divides this part of the section from a band of mixed white quartz and granitic filling, followed by altered mineralized granite, ribboned with veins of gray quartz, whose southern limit is a third seam of black clay. Then comes crushed, brecciated granite, diversified by quartz and occasional evidences of ore, which extends to the main pay-vein (on the hanging) which has been the workable part of the deposit. The section in the figure represents a width of 6 ft. Fig. 19 came from the east breast of the 1,300 ft. level, in the same mine. It is a representative section of the main ore-bearing vein.

In mines of this character, the geologist may determine the existence of the lode far beyond the limits of workable ore; but the miner will rightly distinguish between what is mineralized country too poor to exploit and the concentrated mineral which will yield a profit.

That straight walls are not the necessary adjuncts of a vein of ore is suggested in Fig. 20, which represents the breast of the hanging-wall drift on the upper level of the Double Extension mine, in Summit County, Colo. The lode formation consists of gently sloping quartzite, cut across and broken into by porphyry, which, as a dike, forms "the main vein," and in the shape of sheets, intercalated among the beds of quartzite, makes a succession of "floors" of gold-bearing ore of widely varying hardness.

Fig. 21, representing the western edge of cutting-out stope, near the supposed foot-wall of the lode, exhibits a somewhat similar complication This overlies a filling of white decomposed granitic material, full of partings and seams of black clay, such as *C C*. The foot-wall *B B* is also marked by a black selvage. Underneath it comes comparatively fresh "bluebird" granite. A few feet further east this level carried an ore body, *A B* in Fig. 22 being the zone so transformed. The brecciated quartz upon the foot-wall was the part of the vein which first became ore. The sides of the drift are now coated with a delicate efflorescence of goslarite (sulphate of zinc). In this connection, it may be of interest to state that in the Gagnon mine, at Butte, three miles away, the apparently clean country, at some distance from the lode, was found to carry 3% of zinc, indicating the extent to which the mineralizing action had penetrated.

Do we conceive of veins as formed by the filling of pre-existing cavities, whatever their shape may be, produced by the rupturing of the earth's crust, or do we believe that lodes can be formed without any previously prepared vacant space and simply by the chemical interchange vaguely covered by the term metasomasis? or, again, do both these explanations find corroboration in the daily observations of the mine?

Walking recently along the railroad grade between Anaconda and Cripple Creek, in El Paso County, Colo., I found in the sides of two open cuts the testimony transcribed in Figs. 23 and 24, one representing a typical dike and the other a typical ore-vein. In both cases the country is the coarse-grained, red granite of the Pike's Peak region. In both the jointing is well developed. The dark dike of basalt in Fig. 23 cuts clean through the red granite. Its boundaries are clear; there is no mistaking the line of separation. Moreover it is evident that the walls have dupli-

cate outlines and that rupturing has separated them without the destruction of their definition. The throw of the fault-fissure followed by the dike can be seen to be about 14 in. and its direction is indicated by the arrow.

Fig. 24, sketched in the immediate neighborhood, illustrates a gold-bearing vein in the same granite formation. Here there is no essential difference between the country and the vein-filling. The latter is altered granite, easily recognizable as such, in spite of its having become granular and soft through the kaolinization of the feldspar. The walls of the vein are ill defined, the streakiness of the filling being dimly repeated in the encasing rock. The vein-filling assays $3.60 gold per ton at this place, but is richer, without other material change of character a few rods distant.

The dike, Fig. 23, is composed of foreign matter filling an evident fissure; the vein, Fig. 25, is rock in place changed into ore by the removal of some of its constituents and the substitution of new ones. In the former case liquid material rose into the fissure, probably *pari passu* with its formation. On the other hand, the vein of gold ore traversing the granite gives no evidence of the occupation of a fissure by the incoming of new material. The ore is granite in place, softened, decomposed, discolored, and impregnated with gold, but still granite, clearly enough. Some liquid more subtle than molten lava was the vehicle which brought the Indiana mine, Gilpin County, Colo. The lode, which is the California vein, in its extension westward from the Hidden Treasure mine, is about 2 ft. wide. There is no parting or selvage separating it from the country. The latter is a quartz-feldspar rock, best described as granulite.

Another instance is suggestive. In the Mammoth mine, Pinal County, Ariz., already described, the granite in the east crosscut at the 300-ft. level, north, has an extraordinary number of fissures partially occupied by broken pieces of rock, so wedged in as to leave open spaces. The pieces are not of any foreign rock, but are identical with the enclosing granite. Fig. 26 is a reproduction from a sketch made on the spot in March, 1893. The elongated cavities, such as that illustrated, were found full of water when first reached by the crosscut; but they became drained as the workings tapped them, and thereby depressed the water-level of the mine.

The evidence of a multiplicity of fracturing, whether successive or contemporaneous, is the clue, I venture to believe, to many of the anomalies of vein structure. No district within my knowledge so well illustrates this aspect of the inquiry as Cripple Creek, where gold-veins occur as mineralized and enriched portions of dikes, phonolite and basalt, traversing masses of andesite tuff and breccia. The Moose vein, on Raven Hill, is a fair example. It is illustrated in Fig. 27, as seen in October, 1895, in the back of the sixth (or 350-ft.) level.

FIG. 20.

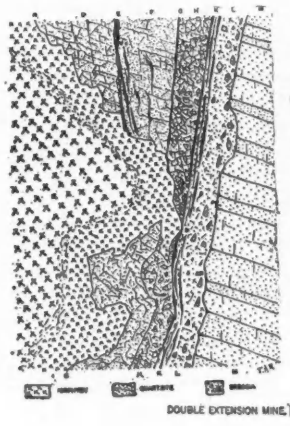


FIG. 21.

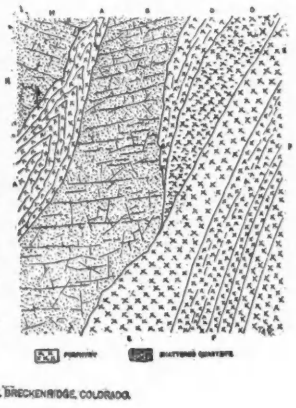


FIG. 23.

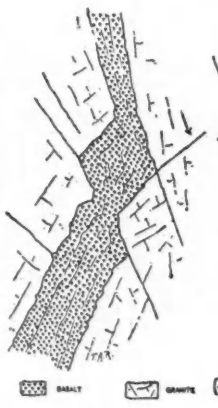


FIG. 24.

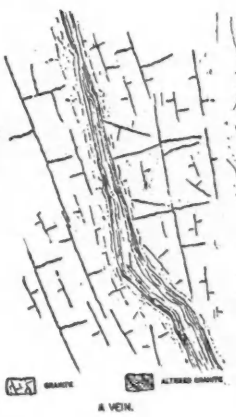
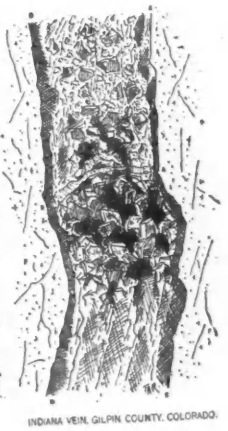
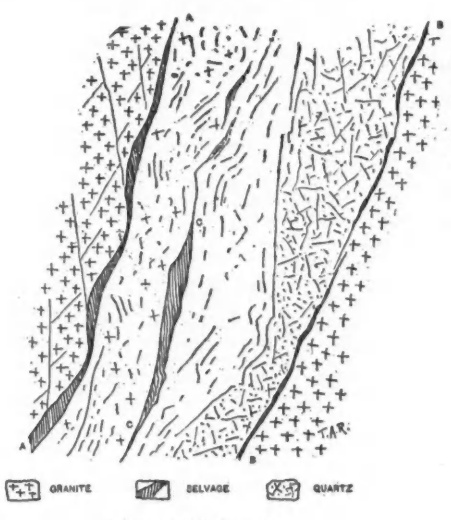


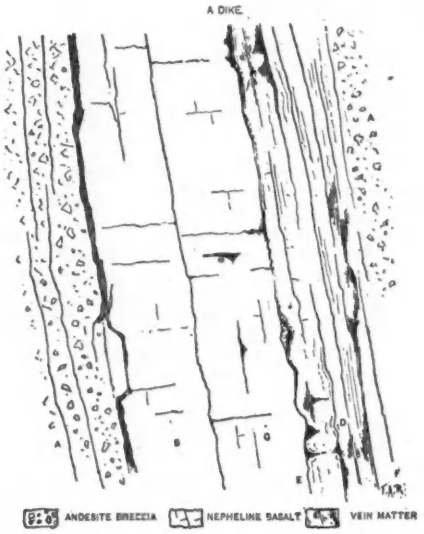
FIG. 25.





NETTIE MINE, MONTANA

FIG. 22.



THE MOOSE VEIN, CRIPPLE CREEK, COLORADO.

FIG. 27.

MAMMOTH MINE, ARIZONA.

FIG. 26.

in the minute particles of gold and removed the alkali of the feldspar. It was water, circulating for long periods, and patiently searching out its way, which quietly changed the granite into gold-bearing ore.

When Werner and his school attributed the filling of veins to the agency of descending waters, the existence of open fissures at the time of vein-formation was conceivable, because the theory necessarily restricted such operation to the vicinity of the surface. But the acceptance of ascending waters as the main agents of ore-deposition, and the recognition of the conditions possible to the formation of large masses of sulphides, at once transferred to the laboratory of ore formation to a deeper horizon; and the suggestion that veins were filled by the deposition of layers of mineral precipitated from waters passing upward along fissures which were kept wide open during such time as was required for crystalline growth to choke them with ore, was immediately ridiculed by the miner, because his daily experience taught him that the vein once deprived of its filling did not remain open, but was inevitably closed by the pressure of the surrounding rock. In many cases, in the absence of artificial means of support, his mine workings collapsed, so that where there was once a level wide enough for a man to walk through, there came to be only a seam of mud enclosed in shattered rock.

Despite the miner's objection, however, there is evidence that fissure do sometimes occur, which have been sufficiently open to permit the tumbling in of large pieces of rock. Two examples may be quoted. Th first is shown in Fig. 25, sketched in the stopes above the 800-ft. level is

I believe that the collection of observations in various mining districts tends to the modification of that idea of clean-cut definition which accompanied the early ideas of vein-structure. The evident contact between two dissimilar rocks, such as is seen along the walls of a dike, will be often found in veins to be replaced by an indistinct gradation from mineralized to unmineralized rock, originally the same but now rendered unlike by the selecting action of chemical solutions.

Thus underground work bears daily testimony to the close dependence of ore-occurrence upon the geological structure of the enclosing country. Wanting a proper understanding of the structure of the rock encasing his vein, the miner gropes but blindly in a maze of tangled phenomena until the geologist, by their proper elucidation, gives him a light which dissipates much of the darkness obscuring his progress underground.

Coal in Italy.—The output of coal, or rather lignite, in Italy, does not increase; it varies between 250,000 and 300,000 metric tons yearly. The center of the industry is the San Giovanni Valdarno basin, where seven mines produce brown coal. The mines ranking next in importance are those of Spoleto. The remainder of the supply is obtained from the Tuscan Maremma, from the Gonnesa basin in Sardinia, and from the Pulli mine at Valdegno. A large part of the output is made into briquettes, and about 500 men are employed in that industry.

PERSONAL.

MR. THOMAS W. GOAD, mining engineer, of Denver, Colo., has gone to London, England.

MR. P. A. SNELL has been appointed superintendent of the Cactus Mining Company's mines and mill in Copper Gulch, Utah.

MR. T. A. RICKARD, mining engineer and metallurgist, of Denver, has been reappointed State Geologist of Colorado for a second term by Governor Adams.

COL. H. G. HEFFRON has returned to Salt Lake City, Utah, after an absence of several months, during which time he visited Colorado, New York and California.

MR. BENEDICT CROWELL, of Dickman & Crowell, chemists and metallurgists, Cleveland, O., went to New Mexico last week to examine a group of gold mines for Eastern capitalists.

MR. E. M. MCILVAIN, assistant to the president, and also purchasing agent of the Bethlehem Iron Company, has been appointed acting general sales agent for the company, with headquarters at South Bethlehem, Pa.

MR. R. H. AHN, who conducts the reduction works at Rat Portage, Ont., and has done much for the development of the Lake of the Woods gold field, has gone for a short stay at Old Point Comfort, Va., for the benefit of his health.

MR. GEORGE A. SONNEMANN, mining engineer of Spokane, Wash., has gone to the Slocan District in British Columbia to make some examinations for Boston and New York investors. In returning he will stop at Rossland to make an examination in the Trail Creek District for a London company.

MR. JOHN VOLLMER, of Roxbury, Mass., and MR. D. A. BEATON, of Woburn, Mass., are associated in the firm of VOLLMER & BEATON, lead-burners and chemical plumbers. Both gentlemen have had much experience in the erection of sulphuric acid works, chlorination works and other chemical plants.

MR. RALPH NICHOLS, superintendent of the De Lamar mine and mill at De Lamar, Nev., has tendered his resignation and has gone to Leadville, Colo., where it is reported he will superintend the properties of Moffit & Smith, of Denver. MR. THOMAS OXMAN is reported to be his successor at De Lamar.

OBITUARY.

ABEL ELLWOOD JONES, at one time actively engaged in petroleum production in McKean County, died at his home in Philadelphia, Pa., on March 15th, aged 51 years.

JOHN THOMAS, a leading pig-iron manufacturer of the Lehigh Valley, died March 19th at his home in Hokendauqua, Pa., aged 67 years. His father, the late David Thomas, established the Thomas Iron Company, at Hokendauqua. In 1867 he become the general superintendent of the works, and remained in that position until 1894, when he retired in favor of his eldest son, David T. Thomas. Mr. Thomas was also interested in other enterprises. He was a director of the Catasauqua & Fogelsville Railroad Company, the Upper Lehigh Coal Company and the Pioneer Mining and Manufacturing Company, of Thomas, Ala. He was also interested in several coal companies.

PETER AUGUSTUS AHL died at his home in New ville, Pa., on March 22d, aged 83 years. He and his brother, the late D. V. Ahl, shortly before the Civil War broke out purchased and rebuilt the Carlisle Iron Works property and Big Pond Furnace property, both in the South Mountain: also other furnace properties viz., Caledonia Iron Works, in Franklin County; Mount Pleasant Iron Works, at Richmond, Pa.; Beaver Forges and Furnaces, at Fort Loudon; Governor Porter Furnace, at Harrisburg; Antietam Furnaces, in Maryland, and Mammoth Ore Banks, at Cleversburg. They also secured the completion of the Southern Pennsylvania Railroad, having its termini at Chambersburg and Pittsburg, and to Peter Ahl is due the credit for the construction of the Harrisburg & Potomac Railroad, which has since come under the control of the Philadelphia & Reading Company. He and his brother Daniel were the projectors of the York Springs Railroad and of the Western Maryland Railroad extension in the Cumberland Valley.

JOHN KING, lately president of the Erie Railroad and one of its receivers, died on March 17th, at Beaulieu, near Nice, France. Mr. King was considered one of the ablest railroad managers in the country. He had grown up in the business and was familiar with all its details. He was a native of Baltimore, and was born in 1832. He began the work of his life in Baltimore, in the employment of the Baltimore & Ohio Railroad. His first place was that of a ticket agent. He continued in the service of that road for 27 years and rose through the places of paymaster, auditor and general freight agent to that of vice-president and acting president. Having an opportunity to take the receivership of the Marietta & Cincinnati road he did so, and left the Baltimore & Ohio. He became president of the Pittsburg & Connellsville Railroad and receiver for the Ohio & Mississippi Railroad. In 1884 Mr. King was called into the service of the Erie road, and in November of that year he was made its president. He held this place until July, 1893, when he and Gen. J. G. McCullough were appointed receivers for the road.

SOCIETIES AND TECHNICAL SCHOOLS.

CANADIAN SOCIETY OF CIVIL ENGINEERS, MONTREAL.—At the meeting on March 25th, Professor Nicolson lectured on "The Transmission of Power by Gas."

ENGINEERS' CLUB OF ST. LOUIS, MO.—The 451st meeting was held March 17th. The paper of the evening, by Mr. Julius Baier, was entitled "Wind Pressure in the St. Louis Tornado with Special Reference to High Building Construction." This paper was the result of a thorough study of the St. Louis tornado of May 27th, 1896. From the known stability of a number of structures wrecked in the storm, the minimum force of the wind was estimated. The theory of tornadoes and a number of observations of tornado effects in other places were given. Instruments for measuring the speed and force of the wind were described, and their limitation defined. Experiments showing the relative pressure and suction action of the wind on various shapes were cited.

MONTANA SOCIETY OF ENGINEERS.—The regular monthly meeting was held in Helena, March 13th. Resolutions were passed requesting John W. Wade, county surveyor of Lewis & Clarke County, to call a convention of county surveyors to meet in Helena, for the purpose of discussing the new law which places the construction and maintenance of the roads and bridges of the respective counties under the supervision of the county surveyor, and to endeavor to make the work under the new law operate to the material advantage of the county, both as to the saving of money and the substantial improvement of roads and to determine upon a uniform method to be employed in carrying out the work. Following the suggestion of the society, County Surveyor Wade has sent out invitations to all county surveyors to attend a convention to be held in Helena on March 30th.

INDUSTRIAL NOTES.

The Richmond Standard Spike and Iron Works, of Iron Gate, Va., will begin work soon with a full force in every department.

Cambria No. 2 mill, at Johnstown, Pa., resumed operations this week after a year's shut down, giving employment to 100 men.

The Lalanee and Grosjean Manufacturing Company, Harrisburg, Pa., started the fourth mill last week, putting the entire plant in operation.

The Gates Iron Works in Chicago have recently made some improvements in the Gates rock and ore breaker. They are now building and sending out a number of these machines.

The Riverside Iron and Steel Works, at Benwood, W. Va., is about to bank its big blast furnace. An over-production is claimed to be the cause. This will throw 175 men out of employment.

The Goff Steel Company has started its works at Wilson, W. Va., on the Pittsburg, Virginia & Charleston Railroad, which have been in partial operation since December 1st last, up in full, and is turning out from 1,000 to 1,200 kegs of wire nails per week.

Mr. R. A. Hervey, agent for the Rand Drill & Rackarock Company in Sydney, New South Wales, has been obliged by the increase in his business to move to larger quarters than those formerly occupied, and is now established at 171 Clarence street, Sydney.

The Mauch Chunk, Pa., Iron Works are at present constructing two large reel drums for the Southwestern Coal and Coke Company, at Mount Pleasant, Pa. The machines weigh five tons each. On each will be wound nearly two miles of wire rope with which to pull 40 cars.

The McKenna Steel Working Company, of Joliet, Ill., has given an order to the Lewis Foundry and Machine Company, of Pittsburg, Pa., for the erection of a complete rolling mill, including buildings, rolls, furnaces, tools, etc. It is under contract to be completed June 1st.

The Robins Conveying Belt Company, New York, manufacturers of patent rubber belt conveyors, have, since their machine shop was destroyed by fire, been in need of larger accommodations, and have taken the entire second floor at 147-149 Cedar street, which will be fitted up both for office and shop use.

The Ingersoll-Sergeant Drill Company, of New York, recently received an order from the Atchison, Topeka & Santa Fe system for a large duplex air compressor to be used at the shops of the Gulf, Colorado & Santa Fe Railroad. The air cylinders of this compressor are cross compound and of the well-known piston inlet type.

Mr. Robert Ganz, the editor of *The National Provisioner*, will leave for Europe the latter part of March in the interests of the American export trade. He intends to visit every port of entry there, where American provisions and American machinery are bought and received. He will be pleased to take along catalogues, and possibly samples, to disseminate such information as may be of value and interest to the exporters in the United States. Anyone interested in this offer can communicate direct with Mr. Ganz at 284 Pearl street, New York, or have literature, catalogues and samples, if any, addressed to him at 72 Niedenau, Frankfort-on-Main, Germany, where he will make his headquarters; postage and duty on all packages must be prepaid.

The Jeffrey Manufacturing Company has put up at its plant in Columbus, O., a coal washer which will be of interest to all operators who are considering the question of washing their small coal and putting it into better condition for market. The washer is on the Robinson-Ramsay system, which the Jeffrey Company has been using for some time. The object of erecting this plant was to wash such coal as may be sent to the company from time to time with a view of ascertaining the result. The washer is now in full operation, and a number of consignments of coal have been received for testing purposes, showing that operators are very ready to take advantage of the opportunity. This is, we believe, the first fully equipped plant erected for testing purposes; it consists of a 200 ton washer fully equipped and in the same condition as would be supplied to any mine. Operators who desire to put in washers and would like to see the result before purchasing the machinery can arrange with the Jeffrey Company to wash one or more carloads of coal at any time.

The Dickson Manufacturing Company, of Scranton, Pa., has commenced the construction of a new boiler shop 130 ft. wide and 225 ft. long, which will have a steel framework throughout. The sides will be covered with corrugated iron and the roof with composition roofing on plank. The main boiler shop is about 52 ft. wide and 45 ft. high. Thirty feet above the ground is a runway made of substantial steel girders which carry a 30-ton traveling crane. At one end of the main shop is a riveting tower 25 ft. x 50 ft., having a runway carrying a 20-ton crane 50 ft. above the floor level. The crane in the riveting tower runs at right angles to the one in the main shop below. Adjoining the main shop is a punch room, which is about 50 ft. wide, extending the full length of the building. Attached to the roof trusses of this portion is a traveling crane of 5 tons capacity, which covers the whole floor surface. Adjoining the punch shop is a space for the flange fires and other furnaces 25 ft. wide and 225 ft. long. All the main posts of the building are arranged so that jib cranes can be attached to them, and the trusses are arranged so that shafting and other machinery may be attached at convenient points. This building, when completed, will be without doubt the handiest and best equipped shop of its kind in the country. The steel work was designed and will be furnished and erected by the Berlin Iron Bridge Company, of East Berlin, Conn.

TRADE CATALOGUES.

E. M. Freese & Company, Galion, O., manufacturers of clay-working machinery, have issued an illustrated catalogue of 135 pages explaining their brick and tile machinery, engines and boilers. Brick machines are made in a number of styles and sizes, and this company has particularly studied the requirements of manufacturers, as is shown by the perfected machinery they turn out. They also make such necessary accessory apparatus as clay crushers, clay disintegrators, dry pans, elevators and clay conveyors, cars, barrows, trucks, etc.

The Link-Belt Machinery Company, engineers, founders, machinists, Chicago, Ill., have issued a handsomely illustrated catalogue showing modern methods of applying their machinery to the coaling of locomotives, the handling of freight in warehouses and wharves and the storage of coal. Among the illustrations are some of the largest and best-known coal storage systems in the country, such as the recently completed plant of the Lehigh Valley Coal Company, at West Superior, Wis. The Link-Belt Companies very justly claim that they have erected more and larger coal-handling machinery than any other company in the world.

The Nordberg Manufacturing Company, of Milwaukee, Wis., has issued an illustrated catalogue (fifth edition) of the Nordberg patent automatic cut-off governor, which device is a combination of trip cut-off gear and a governor for controlling the same. It is designed to be attached to the steam inlet nozzle of slide valve, rocking valve and similar engines to regulate their speed. The steam is admitted at full boiler pressure, is cut off at a point corresponding to the demand for power, and expanded. About 700 of these governors are now in use in the United States, Canada and Great Britain, effecting an average saving of steam of over 30%.

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.

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 16TH, 1897.

578,720 and 578,721. PROCESS OF EXTRACTING GOLD FROM ORES. Henry R. Cassel, New York, N. Y. The process consists in gradually percolating a solution of a bromine compound of an alkaline base, capable of being decomposed by an acid, through a body of ore containing a suitable percentage of a substance having acid properties, the ore being maintained in a quiescent state during such percolation.

578,746. PROCESS OF AND APPARATUS FOR EXTRACTING GOLD FROM ORES. Bertrand C. Hinman, New York, N. Y. The process consists in treating the ore with bromine, filtering the solution, increasing its surface by subdivision, separating the free bromine from the subdivided solution by vaporization, and precipitating the gold.

578,751. EXCAVATOR. George W. King, Marion, O. The combination of an excavator of the scoop or shovel and boom type.

578,877. HYDRAULIC GOLD-SEPARATOR. John H. Barr and James F. Johnson, Kansas City, Kan. Assignors of one-third to William E. Harvey, Rosedale, Kans. The ore is forced by hydraulic pressure through a number of jars containing quicksilver.

578,816. APPARATUS FOR PLACER-MINING, ETC. Carroll D. Galvin, Chicago, Ill. The combination with a tower of divergent cableways extending from the tower, the outer ends of the cableways being connected together, and suitable anchors for retaining the cableways apart.

578,817. PROCESS OF REDUCING COPPER ORE AND MATTE. Arthur L. Grant, Toronto, Canada. Assignor to William James Urquhart, same place. The process consists in first roasting the ore or matte, next fusing it in the presence of silica, and thereby reducing the copper and nickel into silicates, then precipitating the copper and part of the nickel with an excess of iron, drawing off the precipitated copper and nickel and adding another portion of iron to the silicates remaining in the furnace, and finally drawing off the precipitated nickel and iron.

578,847. ACETYLENE-GAS GENERATOR. Clementina H. Wilcox, Minneapolis, Minn. The combination of a tank, charger, gas-holder and the necessary connections.

578,868. METHOD OF PRODUCING METALS AND ALLOYS. Hans Goldschmidt, Essen-on-the-Ruhr, Germany. The method of producing metals and alloys from metallic compounds containing oxygen, sulphur, or chlorine, consists in finely pulverizing the compound, mixing it with finely-pulverized metallic aluminum, heating a small portion of that mixture to initiate the reaction and letting the reaction then transfer itself to the remaining portion, causing a continuation of the process by the heat developed by the initial reaction.

578,908. CHLOROCYANIDE SALTS AND PROCESS OF MAKING SAME. George J. Atkins, London, England. Patented in England April 17th, 1894, No. 7,648; in France April 10th, 1895, No. 246,546; in Belgium April 10th, 1895, No. 114,994; in Germany April 11th, 1895, No. 85,063; in Victoria, January 9th, 1896, No. 12,801; in South Australia January 10th, 1896, No. 3,115, in New South Wales January 11th, 1896, No. 6,326; in Tasmania January 13th, 1896, No. 1,547; in New Zealand January 27th, 1896, No. 8,220, and in Western Australia September 24th, 1895, No. 747. The process consists in fusing together a chloride of an alkali and a compound of cyanogen with one or more bases.

578,912. PROCESS OF REDUCING ORES. Henry L. Bridgman, Chicago, Ill. The process of roasting and smelting sulphur-bearing ores consists in finely subdividing the ore, spraying it into the upper part of the heated chamber by means of and in contact with air, whereby the sulphur is oxidized, allowing the desulphurized particles to subside upon the hearth of the chamber and effecting their reduction on the hearth.

578,963 SMELTING FURNACE. Charles Bishop, Tacoma, Wash. The combination of a stack, a combustion chamber having its bottom formed into a basin to receive the molten metal, a slag discharge chamber, an inclined grate, the lower end of which projects into the slag discharge chamber, and a plurality of fireboxes connected with an oil supply and discharging into the combustion chamber.

578,972. ACETYLENE-GAS GENERATOR. James H. Couper, Atlanta, Ga. Assignor of one-half to John M. Sitton and Thomas V. Hubbard, same place. The combination of a gasometer, and a holder capable of sustaining a high tension, a pipe entering the gas space of both, a multiplicity of generators connected to the pipe and means for successively and automatically starting the generators upon the successive reductions of the gas-pressure in the gasometer below a given point.

579,011. BLAST-FURNACE HOISTING AND CHARGING APPARATUS. William Rotthoff and Marvin A. Neeland, Duquesne, Pa. The combination with a blast-furnace having an inclined track leading to its top, of a carriage movable upon the track, a pivoted hanger depending from the carriage and a bucket suspended therefrom, the bucket having a movable bottom.

579,111. PROCESS OF SEPARATING NICKEL FROM COPPER IN ORE OR MATTE. Noak V. Hybinette, Brooklyn, N. Y. Assignor of one-half to Albert R. Ledoux, New York, N. Y. The process consists in fusing the mixed sulphides, treating the fused mass with sulphide of manganese and thereby effecting solution of the copper sulphide in the manganese sulphide, allowing the nickel to subside and removing the supernatant sulphide of manganese and copper.

GENERAL MINING NEWS.

ARIZONA.

PINAL COUNTY.

BOOM.—From this mine south of Casa Grande a gold shipment worth $10,000 has just been made. A large body of ore has been developed in the lower workings which is said to average $16 per ton. Twenty stamps are running night and day.

YAVAPAI COUNTY.

CHICAGO GOLD MINING COMPANY.—Two quartz mills are to be placed on this company's property in Big Bug District.

(From an Occasional Correspondent.)

LYNX CREEK HYDRAULICS.—The almost continual stormy weather, which has lasted for about three months, has given the hydraulic works on Lynx Creek the best and longest vein they have ever had, and the amount of snow on the mountains promises to yield a supply of water for some weeks to come. They have been able to use a 4-in. nozzle almost continuously. I am unable to say what the yield per yard has been, but as it has been profitable in former years we must consider it very profitable now. Some two years ago a Bucyrus amalgamator was added to the plant, but was not for many reasons a success at first. Since then the amalgamator has been entirely changed and sundry other alterations have been made so that it can be pronounced a new machine. It handles about 60 cu. yds. an hour, without any trouble. It was using about 60 gals. of water per cubic yard of earth and as the waste water runs off to the retaining reservoir, it is used over and over again. The whole machine in running trim, together with trucks, weighs about 100 tons. An additional boiler was needed and put on a separate truck. A small engine is also on this truck and by means of a chain gearing on the axles it is used as a pusher for the whole machine. It takes only about five minutes to advance the apparatus 5 ft. after a clean cut has been made by the shovel. The shovel is of the standard type and discharges its burden into a hopper. A A strong stream of water washes the dirt from the hopper through the revolving screen. There is a double screen the inside one being very large mesh, to take out all the boulders and coarse gravel, which are discharged upon a conveyor. The conveyor takes its burden off to the side and discharges it at a distance of 30 ft. and about 20 ft. high. The second or outside screen passes all the fine sand and gold into a vat, the coarse sand also going to the conveyor. A centrifugul pump draws the fine sand and gold from the tank and discharges it at an elevation of 10 ft. on to the series of six amalgamating plates. These plates are rather fine riffles, the mercury being put in the riffles so that all flour gold is easily caught. Most all the gold is caught on the first and second plates, and nothing so far as the fifth plate. A second centrifugul pump discharges all sands from the tank under the plates. The plates, 2½ ft. by 6 ft., are all suspended and are easily cleaned by raising the one end and washing them down with a hose pipe. It is the intention of the company to have a new machine of 3,000 cu. yds. capacity. As the present washer and amalgamator was altered materially on the ground it is not as complete mechanically as a new machine would be; still it does its work very effectively.

ARKANSAS.

SEBASTIAN COUNTY.

PRAIRIE CREEK COAL COMPANY.—This company has been incorporated to open and work coal mines. The directors are J. C. Greer, G. T. Huggans, M. Theurer and S. W. Rogers; the company's office is at Huntington.

CALIFORNIA.

BRAMHALL COMPANY.—This company has been organized in San Francisco to operate in Pacific Coast mines and other properties on the London market, with the following directors: Col. Walter M. Bramhall, P. George Gow, Charles J. Okell, Col. H. A. Trevelyan, Arthur F. Chambers, C. F. Burnham, Arthur C. Donnell and J. J. Russell Peel. There will also be a board of directors in London.

MINING LEGISLATION.—Two bills which were recommended by the California Miners' Association have passed the legislature. The first amended the old law of 1872 with regard to stealing from mines or mills, by making it fuller and more particular. As amended the law reads as follows, the additions being given in italics: "Every person who shall feloniously steal, take, conceal, remove or carry away from any *mine or* mining claim, tunnel, sluice, undercurrent, riffle box, sulphuret machine, *quartz mill, arrastra mill, chlorination or reduction works*, any gold dust, *or nuggets, or specimen rock*, amalgam, quicksilver, or concentrates, *or zinc sponge, or the ore or mineral from any mine, ledge, lode, vein or deposit, or other valuable mineral products* the property of another, shall be deemed guilty of grand larceny, and upon conviction thereof shall be punished by imprisonment in the State prison for any term not less than one year or more than 14 years."

The second bill adds the following section to the law of 1880 with regard to mining companies: "It shall not be lawful for the directors of any mining corporation to sell, lease, mortgage or otherwise dispose of the whole or any part of the mining ground owned or held by such corporation, nor to purchase or obtain in any way (except by location) any additional mining ground, unless such act be ratified by the holders of at least a majority stock of such corporation then outstanding. Such ratification may be made either in writing, signed and acknowledged by such stockholders, or by resolution, duly passed at any regularly called stockholders' meeting. The certificate of the secretary of any mining corporation reciting such ratification at a stockholders' meeting, or the names of stock holders with the amount of stock held by each and the total stock outstanding signed and acknowledged by him in the manner provided for acknowledgments to conveyances of real property, may be attached to, or indorsed upon any deed, mortgage, conveyance or other instrument made under this act and recorded with such deed, conveyance or other instrument, and the recitals contained in such certificate, or the duly recorded copy thereof, are made prima facie evidence of their truthfulness for all purposes whatsoever; provided, that no one except a stockholder in any such corporation shall be permitted to urge any objection to the acquisition of any additional ground or other property by such corporation."

INYO COUNTY.

SOUTH PARK DEVELOPMENT COMPANY.—This company, recently incorporated, has purchased 19 mining claims in Pleasant Canyon, Panamint Mining District, and known as follows: Ino, Jim Davis, Hill Top, Alta, Comstock, Gold Star, World Beater, Big Bill, Elephant, Florence, Gem, General Lee, Gold Note, Golden Terry, Little Till, Lookout, Mammoth and Summit. The capital is $10,000,000, divided into 100,000 shares of $100 each. The capital has been subscribed for by the following persons: George Montgomery, J. E. Langford, George R. Wells, Charles H. Fish and C. B. Fleming, who will act as directors, and John M. Cannon, Hugh J. Cannon and E. A. Montgomery are the remaining shareholders. The head office of the company is in San Francisco; George R. Wells is president and A. W. Havens, secretary.

KERN COUNTY.

(From Our Special Correspondent.)

LITTLE BUTTE.—This mine, together with the Helen S., Keno and Success, has been reported sold to Eastern capitalists. All have had considerable development work done on them. On the Little Butte the shaft is down 107 ft.; on the Helen S., 70 ft.; on the Keno, 50 ft.; on the Success the shaft is down 110 ft. and the tunnel is in 250 ft. The ore bodies on these properties are low-grade, but the veins are large.

MONO COUNTY.

BODIE MINERS' UNION.—This body has elected the following officers for 1897: President, Stephen O'Brien; vice-president, James Dolan; recording secretary, George Delury; financial secretary, John McKenzie; treasurer, John Donohue; delegate to Western Miners' Federation, James Glenn.

NEVADA COUNTY.

BRUNSWICK CONSOLIDATED GOLD MINING COMPANY.—The directors have ordered the levying of an assessment, No. 11, of 3c. a share. This will be payable April 20th, and delinquent stock will be sold May 15th.

RIVERSIDE COUNTY.

ORO GRAND MINING AND MILLING COMPANY.—This company was recently incorporated with a capital of $1,200,000 to work mines in the San Jacinto Mountains. The directors are nearly all connected with the Santa Fe Railway Company.

(From Our Special Correspondent.)

ALICE.—This mine, 4 miles south of Menifee, which has been idle for some time, has been bonded for one year by Los Angeles capitalists. A cyanide plant having a capacity of 25 tons is to be erected.

SAN BERNARDINO COUNTY.

HOLCOMB VALLEY MINING COMPANY.—A meeting of shareholders has been held in London for the purpose of considering a scheme for reconstruction. Mr. Thame, the manager of the company's property, had resigned his position and returned to England, and his report upon the property, where he had discontinued work, was not favorable to it, yet the shareholders disagreed with his finding. It was proposed to write down the capital to something like its real value—to £50,000, of which, probably, £10,000 would remain unissued. The scheme contemplated the raising of a small sum of money, which would be devoted to the purpose of investigating the present position of the company in California—of ascertaining what there was in the gravel on the granite, and what could be made of the water supply. If it were found on investigation that it was useless spending money any further, then no fresh capital would be called up, and the shareholders would have an opportunity of realizing their property. If, on the other hand, it were proved that something might be made of the sources of revenue then the shareholders would be able to call up the rest of the capital, if they saw fit, and if any profit was made it would go to the shareholders. A set of resolutions was submitted in which the plan of reconstruction was outlined in detail, which was adopted.

SHASTA COUNTY.

TRINITY MINING COMPANY.—This company has been organized to reopen and work a group of old mines in the Dog Creek district. The office is in San Francisco; Charles H. Fish is president; Jacob Stadtfeld, Jr., secretary.

(From Our Special Correspondent.)

LUCKY BALDWIN.—This mine, one of the Harrison Gulch group of mines, near the Trinity and Tehama County lines, 55 miles west of Cottonwood, has a large number of men employed, and considerable development work has been done. The three tunnels are in about 30 ft. each, and crosscuts will develop the vein at a depth of 500 ft. The lower tunnel has crosscut the ledge, showing ore which averages over $50 per ton. A 10-stamp mill is in operation.

WASHINGTON.—This mine, 4 miles northwest of French Gulch, is reported to have been sold to a Nevada syndicate. A large mill is to be erected and development work commenced on a large scale. Twenty-five men are employed.

COLORADO.

BOULDER COUNTY.

CONCORD.—The main shaft of this mine is being sunk, and some fine specimens of granulated gold are exhibited. This mine has produced some rich ore at the surface, and as a number of veins lie adjacent to the shaft, the lessees will begin to crosscut and drift from the bottom of the shaft as soon as a further depth of 50 ft. is reached.

MEADOW LARK.—The owners of this mine, in Bear Gulch, intend to begin shipping as soon as spring opens up. This property, it is said, has paid from the grass roots, and last year it shipped more pay ore than any other mine in the vicinity the last shipment, sorted with a shovel from a 2-ft. streak, netting about $40 per ton. A shaft will be sunk several hundred feet. The vein is wide and carries large bodies of mill dirt and a wide streak of smelting ore, running mostly in gold. H. E. Wood and John Wessel, of Copper Rock; George Teal, of Boulder, and George Rogers, of Denver, are the owners.

MIDMER MINING COMPANY.—This company is working two shifts on the Summerville, drifting up the hill from the 200-ft. level to reach the ore chute, which was found on the surface. Good ore is being encountered in the breast of the drift. The company is composed chiefly of Kansas City capitalists. It is their intention to thoroughly develop their group through the Summerville shaft.

CLEAR CREEK COUNTY.

(From Our Special Correspondent.)

CLEAR CREEK PLACER COMPANY.—At the recent annual meeting in Denver it was decided to float bonds to the extent of $15,000 for the purpose of enlarging the flumes on Clear Creek and furnishing greater power for washing the two miles of ground along the creek just below Idaho Springs.

CONSOLIDATED STANLEY MINING COMPANY.—The Denver *News* claims that a New York syndicate recently offered $2,000,000 for this group at Idaho Springs, which offer was refused. It is known to the writer that the Hamilton Smith syndicate, which recently bought the Tom Boy mine, was also figuring on this property, but the owners were not willing to sell without the cash in hand.

DUNDERBERG MINING COMPANY.—This company is made defendant in a suit for $300,000 brought by R. O. Olds in the Federal Court, at Denver, for the alleged charge of extracting ores from the ground owned by Olds of the Frostburg lode at Georgetown, it coming as a sequel to the case which was reported several weeks ago wherein Olds was established as the rightful owner to the lode by the same court in which this action is brought. This suit is brought regardless of the fact that the former case was appealed to the Federal Court of Appeals sitting in St. Louis, where it is now pending.

GOLCONDA.—The Buffalo parties operating this tunnel have let a contract for the work and it is now being driven toward the mine of the same name and the lodes of North Spring Gulch with air drills.

PENNSYLVANIA TUNNEL COMPANY.—The Philadelphians driving this tunnel, at Idaho Springs, for the gold belt of Gilpin have just applied for patents on 26 different full claims reached by the tunnel. These were mostly blind leads encountered while driving the first 3,000 ft. A shaft is being sunk on the Lotus lode, in Russel Gulch, to meet the tunnel, being the first air-shaft in a distance of about one mile. The route of the tunnel was somewhat changed because of a lode lying parallel with the tunnel. The work in the future will be on the lode, thus opening it up in addition to reaching the same lodes as originally intended.

WILCOX TUNNEL.—The Ohio company recently organized to continue this project at Idaho Springs has re-recorded its site under the name of the Little Chief tunnel. It will now be continued toward the Virginia canyon mines with air drills, as under the former ownership. Mr. Wilcox continues with the new company.

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From Our Special Correspondent.)

ELKTON MINING COMPANY.—Excavations are being made for a new combination mill to use both cyanide and chlorine. The water from the Elkton mill will be used. The daily capacity of the mill will be 50 tons.

ELKTON-RAVEN CONTROVERSY.—This matter, mentioned in our last issue, is settled for a while, at least. The Elkton vein is on Elkton ground, and with its present dip will remain in Elkton ground for an indefinite period. This was the most senseless and groundless rumor that has been circulated in the camp.

GALENA.—This mine, on Iron Mountain, about 3 miles northwest of Cripple Creek, worked under lease and bond, is making a road to haul machinery on or near the summit of Iron Mountain, the most inaccessible part of the Cripple Creek District. In the shipments from this mine, burros are necessary to pack the ore to the wagon road, the only property where burros have been thus used. The shaft has been sunk 120 ft. and the vein has increased from a 2-in. seam at surface to 2 ft. at the bottom of the shaft. The formation is red granite. The values consist of galena, silver and gold, some shipments yielding $200 per ton.

GOLD KING MINING COMPANY.—The El Paso, owned by this company, has resumed work at the rate of 4 ft. per day, by machine drills, below the 400-ft. level.

JEFFERSON MINING COMPANY.—This company, owner of the Mattie L., on Gold Hill, has sunk a shaft 700 ft., but for the last 200 ft. without much value. This is the second deepest shaft on this hill. The present directorate bought the control of the stock at prices ranging from 23c. to 27c. a share, and thus far have not received any returns. The south end of the claim is leased to Walter Head & Company, who have not yet reached the ore chute.

LEXINGTON MINING COMPANY.—The Clara D., owned by this company, has made its initial shipment from a 50-ft. shaft. The ore sampled $48 per ton. The pay streak is about 12 in. wide. The claim is worked under lease.

OPHIR MINING COMPANY.—This company owns two claims, the Dead Pine on the south slope of Battle Mountain, and the Carbonate Queen, on the north slope of Battle Mountain. The latter is worked under lease by a tunnel level, and although the vein has been opened up for 460 ft., it shows value from $2 to $40, with an occasional assay of $12. The vein is fairly well defined, and is largely composed of quartz. The Dead Pine has been worked under lease and bond by Dennis Sullivan for two years. Bond price, $100,000. The lessee has expended $20,000 on the property in sinking a shaft 500 ft., extending drifts, and erecting steam hoist, etc., and has sold during the past six months over $20,000 worth of ore. The lease has been twice extended.

GILPIN COUNTY.

BARKER.—This mine, leased by New York parties, has had a new shaft house and plant placed on it, to replace that burnt down some weeks ago.

FORFAR.—A small hoisting plant is being placed on this mine, near the Pewabic, and sinking will be recommenced immediately this is in place. The developments have opened up a large body of low-grade ore extending some 150 ft. east of the shaft, about 20 tons of which have been shipped daily for the last two months.

GALENA.—The damage to the shaft-house and machinery from the recent explosion has been repaired and sinking operations resumed.

REVIEW.—A good boiler and hoist of 50 H. P. capacity has been placed on this claim, and the shaft is being sunk steadily.

SAMPLING WORKS.—Messrs. W. J. Chamberlain & Company's sampling works, below Black Hawk, were burnt down on the morning of March 7th, the cause of the fire being unknown. Preparations are being rapidly pressed for rebuilding on the same site, that of the Old Hill smelter. At the State Ore Sampling Works new bins are being put in. Both sampling works have been doing a good business lately, and there is every prospect of its continuance.

LAKE COUNTY.

(From Our Special Correspondent.)

DOUBLE DECKER.—Denver capital is at the back of this enterprise, which is to begin work at once. The shaft is over 200 ft. deep, and it is learned that it will be sunk by the new lessees through the parting quartzite to the lower ore chutes. This property is well located on the gold belt, and in the early days over $100,000 was taken out of the old shaft.

IOWA GULCH SECTION.—The news that the Rex is to start up at an early day has lent a great deal of encouragement to other owners and lessees in this section. There are several good enterprises in the vicinity of the Rex, including the Kisawlee and the Selma. The Kisawlee is on the Silver Standard group and the shaft is down 100 ft., but owing to the closing down of the Rex these people also stopped work. The Selma is located on the Leadville side of the gulch, on the southwesterly trend of the ore chute opened up by the rich strike in the Nil Desperandum. The Selma shaft is located on the Minnehaha placer.

ORE MARKET.—A slight increase in shipments from the Leadville District is reported for last week, but from now on this increase will not be noticeable, as it is hardly probable that any additional shippers will be added to the list until the downtown mines start. I learn from very good authority that these mines will not start to pump until after Leadville's city election. The Miners' Union has clearly mixed up in politics, and it is their ticket against the citizens' ticket. The election promises to be a very hot one, as the miners are making a great fight. They will be clearly able to prove whether or not they want the affairs of the city in the hands of the Union or whether it is to go to the citizens. A leading mining man told me that if the Miners' Union is successful in the election there will be a grave doubt of the downtown mines starting up in April.

PAWNOLAS.—Mr. McGeorge has just returned from Philadelphia and I understand that preparations are now well under way for the starting up of this mine. The Pawnolas has attracted considerable attention in years past owing to the development work inaugurated by Maurice Starne in 1892. A shaft at that time was sunk to a depth of 220 ft. and rich ore found that assayed 2,000 oz. silver. This, however, proved to be but a streak and opened up into a good body of iron ore. There are six claims in this group.

OURAY COUNTY.

AMERICAN NETTIE.—It is authoritatively stated by those in a position to know that this mine, two miles south of Ouray, is at present producing greater quantities and richer ore than ever before in its history. The mine is owned by W. C. Wrisberg, of St. Louis, and is managed by Isaac Martin. Shipments lately have been five cars per month of exceedingly rich gold ore, which is found in caves in the upper quartzite in the form of stiff, yellow mud, which is necessarily handled several times in the process of drying previous to shipment.

BRIGHT DIAMOND.—Quite likely the starting of the Fowler smelter will insure a resumption of work at this mine, which has so far proved a losing investment. Congressman John F. Shafroth was in Ouray, March 15th, to look over the property and is favorably impressed with it. There are large bodies of ore in sight, but considerable development in the way of stoping will need to be done. A fine mill was erected by the owners some years ago, but has never paid a cent of interest on the investment, it having been ascertained that the ore was of a smelting and not a milling character.

GALENA QUEEN.—This property is near the San Juan Chief, at Mineral Point, and will resume operations as soon as the trail can be opened. Large bodies of galena ore have been disclosed, which, in view of the present favorable price for lead, can be shipped at a very fair margin.

GRAND VIEW.—Brookfield Bros. are working two shifts, having opened up a nice body of milling dirt running from $20 to $50 per ton.

OURAY SHIPMENTS.—During the month of February 122 carloads of ore were shipped from Ouray to valley smelters.

SAN JUAN CHIEF.—It is currently reported here that the owners of this well-known property will in the near future make one more effort to place the mine on a paying basis, and endeavor to realize some returns on the large amount of capital invested. The mine is located at Mineral Point, 9 miles southeast of Ouray, and is owned by a New York syndicate. Mr. J. W. Orth is superintendent, and Mr. O. M. Hill, chief chemist and superintendent of the chlorination process. The property has been developed by two shafts, one over 300 ft. in depth, besides numerous drifts and surface workings. The ore body, which is extensive, is found in irregular pockets and angles, at one point dipping from the surface to a depth of 50 ft. within a space of less than 75 ft., then suddenly rising to the surface a few feet beyond, only to drop again to a depth of 275 ft. in an almost perpendicular chute. The deep shaft was sunk 300 ft. alongside the ore body without the slightest indication of the closeness of its proximity to the shaft, and was discovered while running a short distance to ascertain the lay of the ground. The ore is of a low grade, but can be made to pay by careful management. The mine is supplied with one of the finest cyanide and chlorination mills in the West, the entire plant giving employment to about 250 men when in full working order.

SAN MIGUEL COUNTY.

(From Our Special Correspondent.)

CRESCENT CITY.—This property is in Deep Creek, between Telluride and Saw Pit, and formerly was a noted gold producer. It is now operated by Frank Sanders, of Ouray, and F. E. Dodge, of Delta, under lease and bond. A shaft that is being sunk to the lime contact formation is down over 100 ft.

MISSOURI, KANSAS & TEXAS TRUST COMPANY.—The Dynamo property of a group of four claims, Cornet Creek basin, is showing free milling gold ore in a shaft that is being sunk on the vein. The group is under bond to the above company of Kansas City, Mo., which will explore the different veins. J. M. Dikeman is resident agent of the company.

TELLURIDE POWER TRANSMISSION COMPANY.—The Canton claim of the Golden group, Bear Creek, owned by this company, was recently started by T. F. Van Wagenen, who secured control of it from L. L. Nunn, general manager of the company. Two tunnels are in the vein, and valuable gold ore was taken out while driving them. Large quantities of the same character of ore are exposed in the stopes. The mine is ¼ mile above the San Miguel Consolidated 120-stamp mill.

IDAHO.

BOISE COUNTY.

GOLD DOLLAR.—This mine is between Placerville and Garden Valley. A tunnel is being run to tap the mine at a depth of 350 ft. to 400 ft. A company has bonded it for $50,000.

ELMORE COUNTY.

GOLDEN STAR.—An important strike is reported in this mine, at Neal. In the exploration of the ground, a tunnel was driven to a distance of 200 ft., from which station a crosscut was made to a vein in which it is said 40 in. of ore have been uncovered. Assays are said to show high values in gold, and shipments to Salt Lake City will commence as soon as the trail between the mine and Boise City is opened.

IDAHO COUNTY.

(From Our Special Correspondent.)

BADGER & HOMESTAKE.—A wagon road will be commenced as soon as the snow goes, connecting these properties with Elk City, a distance of 18 miles. Development work is being continued, and a milling plant will be erected as soon as a road is built.

BANNER MINING COMPANY.—Twenty men are working on the Florence property and the showing made is excellent.

BLUE DRAGON.—This property has been closed until a hoisting and pumping plant can be brought in.

FLORENCE GOLD MINING AND MILLING COMPANY.—This company has been incorporated to work the Ella, Cleopatra and Belle claims. The capital stock is 1,000,000 shares, $1 each. Samuel I. Silverman is manager, and will commence active work about April 1st.

RELIEF MINING AND MILLING COMPANY, LIMITED.—This company has been incorporated to work the Cleveland group, comprising 10 claims, situated on Relief Creek, 8 miles south of Elk City. The company has a great deal of development work done. The president and manager of the company is Charles W. Goodale, of Butte, Mont.

KOOTENAI COUNTY.

CEDAR GLEN.—The shaft is down 16 ft. on the ledge, which at this point is reported 4 ft. wide. At 12 ft. tests gave $2 gold and 12% copper.

FLOWER.—A contract has been let to Koch Brothers to extend the 125-ft. tunnel 50 ft. The property is in the Newport District, four miles from the Great Northern Railway.

GOLDEN STAR.—The shaft is down 42 ft., having penetrated the iron capping and encountered a 4-ft. vein of steel galena. A pump has been ordered. The property, which is near Newport, is owned by Charles H. Griswold and others.

KATYDID.—Operations have been resumed at this mine, near Newport, after an idleness of more than a month. The main shaft, 200 ft. deep, will be continued to 300 ft. Fourteen men are employed. The ledge on the surface is said to be 5 ft. wide and well mineralized.

OWYHEE COUNTY.

MORNING STAR.—The shaft at this Silver City mine is down 390 ft., with two drifts running from the bottom. The one going east is 246 ft. long, the other 60 ft.

MARYLAND.

State Mine Inspector Otto Hobing, of Frostburg, has forwarded to Gov. Lowndes his report showing the operations of the coal mines in the Maryland coal fields for the year 1896. It shows that 19 mines are now operating in the Cumberland and Georges Creek District, employing 3,978 men. The production for 1896 aggregated 3,729,461 tons. He adds that the period covered by the report has been prosperous, that an advance of 12½% has been made in wages, and that the most cordial relations exist between the miners and the mine owners. Only six fatal accidents occurred during the year, and those were in no wise attributed to causes within the control of the owners.

MICHIGAN.

COPPER.

CENTENNIAL MINING COMPANY.—This company has levied an assessment of $1 per share, payable April 9th. The proceeds are to be used for developing the mine, chiefly for underground work.

QUINCY MINING COMPANY.—The fourth and last installment of 25% on rights to shares of the increased capital stock of the Quincy Mining Company is payable April 16th next. On and after that date the rights upon which all installments have been paid are convertable into full paid shares of stock at the office of the company, 45 Broadway, New York. The scrip transfer books will be closed at close of business March 25th. Any holder of scrip desiring to dispose of rights can, upon payment of installment, make them negotiable by use of an ordinary power of attorney for transferring stock.

MINNESOTA.

IRON—MESABI RANGE.

(From Our Special Correspondent.)

ADAMS MINING COMPANY.—The force at this mine has been laid off, pending some new arrangement. The shafts are kept pumped clear of water.

BIWABIK BESSEMER COMPANY.—This company, which has operated the Biwabik mine, has suspended operations, and will not work the mine for some years, unless a settlement of royalties on a lower basis can be arranged with the feeholders, J. M. Williams, of Chicago, and associates. The feeholders demand a royalty of 25c. and 30c. on various parts of the mine, and the Biwabik Bessemer Company is working under a sublease, taken from the Consolidated mines, which makes its total royalty 50c. and 55c. The original lease is for a minimum payment of $10,000 a year, and the second lease is for 300,000 tons a year. The first feeholders have already been paid for nearly the entire life of the lease, and the mine can be held by the Consolidated mines for many years without any additional payments. The sublease, however, is not yet mined up to date. The Consolidated offers to give the Biwabik Bessemer Company its choice of the Adams or McKinley mines from which to carry out its minimum of 300,000 tons a year, while bringing the feeholders of the Biwabik to terms, but does not offer, so far as known, to reduce its Biwabik sublease or to let the other two mines go for smaller royalty. It is probable that the McKinley will be chosen and if so, extensive work will be carried on there very soon.

GENOA IRON COMPANY.—This company is operating some 200 men and has 90,000 tons of ore in stock. Last fall there was no railroad track near the mine. It is the property of the Minnesota Iron Company and is very promising.

OHIO MINING COMPANY.—The suit of the Ainslie Mining Company, fee owner of this property, has been dismissed, leaving the mine in full and undisturbed possession of the Ohio.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—Although it rained part of the week the output of ore was large and the shipment was fair. The sale of zinc ore was about a carload less and lead ore three carloads less than the preceding week. Compared with the same time last year, sales show an increase of 29 carloads of zinc ore and one carload of lead ore. There is a small surplus of ore in the different camps. The highest price paid for zinc ore was $21 per ton for 14 cars of Joplin ore, 8 cars of Galena ore and the Oronogo and Alba outputs. At Webb City and Carterville the top price was $20 per ton. The top price for the corresponding week last year was $23 per ton. Lead ore sold at $18 per 1,000 pounds, delivered, until Saturday, when it advanced to $18 25 delivered. The same period last year it brought $17 per thousand on a weak market. The following are the sales of zinc and lead ores for the week ending March 20th: Joplin zinc, 1,213,450 lbs.; lead, 229,120 lbs.; value, $16,259. Carterville zinc, 953,570 lbs.; lead, 193,570 lbs.; value, $12,056. Webb City zinc, 495,110 lbs.; lead, 32,999 lbs.; value, $5,051. Alba zinc, 253,660 lbs.; value, $2,663. Galena zinc, 3,430,000 lbs.; lead, 674,420 lbs.; value, $43,010. Aurora zinc, 425,000 lbs.; lead, 35,000 lbs.; value, $3,097. Oronogo zinc, 125,230 lbs.; lead, 4,240 lbs.; value, $1,363. District totals for the week: Zinc, 6,896,020 lbs.; lead, 1,169,340 lbs.; value, $83,499. District totals for 11 weeks: Zinc, 67,560,590 lbs.; lead, 14,195,090 lbs.; value, $857,154.

ELECTRIC MINING COMPANY.—This company, on the Button Hole lease, has found a large body of zinc ore on the 120-ft. level.

HORSE SHOE COMPANY.—This company on the John H Taylor land, in cutting a drift at 145 ft., has opened up a fine face of zinc ore in open ground.

I KNOW COMPANY.—The company is mining its plant steadily and making over 50 tons of zinc ore and 30,000 lbs. of lead ore weekly.

MCKINNEY, JEFFRIES & COMPANY.—On North Heights they have opened a good body of pebble zinc ore in open ground at 50 ft. Last week they made 5 tons of zinc ore, which was their first turn in.

ROBINSON & PACKER.—These parties are operating the Uno mine, on the Granby land, west of Joplin, and have struck a big vein of lead. They are working a large face and the first week turned in 15,700 lbs. of lead.

SPOT CASH COMPANY.—At the company's mine on the McKinley lease, near Cartersville, a fine body of ore has been opened at 120 ft. They had a cave-in three months ago and had to sink a new shaft which struck the same vein of ore which produced 20 tons of zink ore weekly.

MONTANA,

SILVER BOW COUNTY.

(From Our Special Correspondent.)

BIG BONANZA.—At this mine, 1½ miles north of Butte, the lessees have uncovered at a depth of 70 ft. a streak of ore 1 ft. wide, which will assay 200 oz. silver.

BOSTON & MONTANA CONSOLIDATED COPPER AND SILVER MINING COMPANY.—On March 16th an order was issued by Judge Knowles in the United States Court at Helena granting this company liberty to survey the Rarus mine, owned by the Montana Ore Purchasing Company, in order to determine whether the Boston & Montana Company is entitled to an injunction on this property. At the Colusa, located one mile east of Butte, this company is putting up a small hoist on the old shaft, which was abandoned some years ago. This shaft is 800 ft. deep, with 300 ft. of water in it. It is possible that there is some low-grade ore left in the upper levels, which would not pay to work at that time. At the Mountain View, located one-half mile nearer to the city, about 400 tons of ore is hoisted daily, while developments are adding to the enormous reserves. The 1,000, 1,100 and 1,200-ft. levels are in from 1,400 to 1,800 ft. in ore all the way from 5 to 50 ft. wide, with no stoping done below the 900-ft. level. Some important discoveries have also been made in a crosscut going south from this mine.

BUTTE & BOSTON CONSOLIDATED MINING COMPANY.—This company has purchased from the Blue Bird Silver Mining Company one of the largest head frames in the district, which will be placed at Blue Jay shaft on East Granite street, Butte. It is also stated that the hoisting engine will be replaced by a larger one, as extensive developments are intended. At the West Gray Rock the water is down below the 500 ft. level and it is expected that the mine will be rapidly drained to the 700-ft., as the workings below the 500-ft. are not extensive.

EVELINE.—At this mine, one-half mile north of Butte, P. Mullins, the lessee, has the water pumped out to the bottom. At the 200-ft. level drifting is in progress and some high-grade silver-gold ore is being hoisted. The drift on the 300-ft. is also cleaned out and will be extended east.

W. A. CLARK'S PROPERTIES.—At the Colusa Parrot, located 500 ft. east of the Butte city limits, about 200 tons of ore are hoisted daily with 60 miners employed. Crosscutting is in progress on the 1,200-ft. level. At the Original the shaft is down to the 900-ft., where a station is being cut.

NEVADA.

STOREY COUNTY—COMSTOCK LODE.

HALE & NORCROSS MINING COMPANY.—The controversy between the two parties in this company is to be brought into the courts. In San Francisco, March 18th, the stockholders opposed to the present management held a meeting, which they claim to be the legal annual meeting of the company and elected the following directors by a vote of 56,241 shares of actual stock: Thomas Cole, A. Herman, William Bowers, A. W. Moore, G. W. Grayson, F. S. Butler and R. R. Grayson. Subsequently G. W. Grayson resigned and A. J. McDowell was elected in his place. The directors organized by electing Thomas Cole president, R. R. Grayson secretary, the Bank of California treasurer and Joseph R. Ryan superintendent. As soon as the minutes of the meeting have been written up a legal demand will be made upon the old officers of the company for the books, etc. Should the latter resist, as they are likely to do, application will be made to the courts.

NEW MEXICO.

SOCORRO COUNTY.

(From an Occasional Correspondent.)

COONEY MINING DISTRICT.—This district is in the Mogollon mountains and contains silver ore. The veins are true fissures and range from 2 or 3 ft. up to 25 ft. in width. With one or two exceptions, all of the veins that have been operated on are free milling ore and of good milling grade, giving good results by the ordinary pan and settler process. A few veins have been opened up that show a character of ore that has to be concentrated and shipped to the smelters, the same having given good returns in gold and silver and the base metals. On account of the topographical lay of the district, which is cut in almost every direction by ravines and canyons, quick development work and economical mining is possible, the operators in many instances being able to go down to the bed of the canyon, and tunnel in and get from 100 to 200 or 300 ft. of ground above them before having to sink a shaft. This district has passed through a slight period of depression, common to most camps where silver is one of the chief metals mined; but from reliable reports it is safe to affirm that before the end of the year the district will produce more metal and employ more men than ever before in its history.

HELEN MINING COMPANY.—The Confidence mine, operated by this company, is supplying the 30-stamp mill, with its capacity of about 80 tons per day, also adding considerable to the ore on reserve. The main tunnel, now in 1,600 ft., is still being extended. Two shafts 300 ft. apart have been sunk from the tunnel level to a depth of 150 ft., where a level is being driven to connect the shafts at that depth, which will open up a considerable block of ground. They are also getting ready to drift on the west side of the shaft in a block of virgin ground 800 ft. long and 150 ft. in height.

LAST CHANCE.—This mine, which has been idle for about four years, is expected soon to be in full blast again. The present owners are negotiating with an English syndicate, with a view of transferring the property.

MAUD S.—After a close-down of a few months operations have been resumed. Development work is being done on the 300 and 375 ft. levels. They expect to run the levels about 150 ft. before striking.

QUEEN.—The owners of this mine in the Cooney district are excavating a site for a mill to be erected on the property. For a considerable time a force of men has been engaged in development work.

NORTH CAROLINA.

CABARRUS COUNTY.

(From Our Special Correspondent.)

TROUTMAN.—This mine, near Gold Hill, has been leased to Dr. Wood and associates, of Pueblo, Colo. They have erected a 3 and a 5-stamp mill and are producing gold. The same gentleman has leased the McMackin and Icenhour gold mines, and is about to put them in operation.

DAVIDSON COUNTY.

(From Our Special Correspondent.)

REEVES.—This mine, near the Yadkin River, is to be operated by Dr. Souville, of Paris, France. He has bargained for the property and made one payment on account.

GRANVILLE COUNTY.

(From Our Special Correspondent.)

GRANVILLE GOLD ESTATES COMPANY.—The Cheatham gold mine is being operated by this company under the management of Col. E. B. C. Hambley, who informs me that they control 2½ square miles. On the principal vein they have sunk three shafts 60, 40 and 50 ft., covering a distance of 1,200 ft. in length on the vein which is of quartz between granite walls and carries free gold together with auriferous pyrites and galena. The vein averages 15 in. in width and has a milling value of $16 per ton, at the same time producing a concentrate of one ton from every 20. They employ 16 hands and are equipped with a 5-stamp mill and steam hoisting works. The concentrates are said to assay into the hundreds. This mine is in a new field 4 miles east of Oxford. The developments to date have been very encouraging.

MONTGOMERY COUNTY.

(From Our Special Correspondent.)

BEAVER DAM.—This old gold mine, which in the past has produced large quantities of nugget gold, has of late been the seat of discovery of rich gold ore. Judge Jackson, of West Virginia, one of the owners, was down on March 8th, investigating the new discovery, on which new developments are being made.

BRIGHT.—This mine, situated near Ophir P. O., is being operated by a Mr. King and associates, of Dakota. They have a large bed of soft low-grade ore, containing fine gold, which is very difficult to save. They are erecting machinery and developing.

CINNABAR DISCOVERY.—Cinnabar is reported, upon good authority, as having been found in this county.

HOG-PEN BRANCH.—This gold placer is being sluiced by local tributers with some good results in nugget and dust gold.

SALLY COGGINS.—This gold mine is being operated by contract. The ore is mined and delivered at the mill for 20 cents per ton and is milled at the same price. Capt. William Munhall, of the Duquesne National Bank, Pittsburg, Pa., and J. M. Scott, of the same city, the owners, were at the mine on March 13th.

ROWAN COUNTY.

(From Our Special Correspondent.)

CUNNINGHAM.—This mine, near Gold Hill, is being opened by Col. E. B. C. Hambley. He has let a contract to sink a 40-ft. shaft on a quartz vein, which near the surface shows ore that runs $20 to the ton.

GOLD HILL.—The 10-stamp mill is in operation a few days each month on ore picked from the surface. On the Old Field mine they have struck rich ore, which is being milled on a Chilean mill by Mr. Bloomer, one of the English stockholders now on the property.

REIMER.—This mine is about to be put in operation by J. G. Schurz and Mr. Jenkins, of Boston, Mass. It is claimed that there are 20,000 tons of ore in sight in the mine above the 150-ft. level. They expect to unwater the mine at once. The post office address is Salisbury.

STANLY COUNTY.

(From Our Special Correspondent.)

LITTLE FRITZ.—This mine is located near Gladstone, and is operated by a Colorado company. Hon. Fred Betts, of Pueblo, Colo., is president and manager of the mine. They have an Elspass mill in operation treating the ore from the vein or deposit at the rate of 10 tons per day. It is a low-grade slate ore. A dividend is expected by the shareholders in April.

LOUDER.—This mine has been leased to I. J. Hedrick and associates, of St. Louis, Mo. They have sunk a shaft 60 ft. on a 4-ft. quartz vein carrying free gold and will at once equip the mine with the necessary machinery for mining and milling the ore. The mine is near Albemarle Post Office.

PARKER.—This mine, at New London, is producing well in placer gold, now that they have water from the heavy rains prevailing in this section at present. Some rich quartz has also been uncovered. The late Capt. J. G. Riley, of the South Hite mine, in California, reported on this mine that 100,000 tons of material worth $5 per ton was in sight and could be mined and milled at $1 per ton. This body of low grade is about to be worked.

NORTH DAKOTA.

(From an Occasional Correspondent.)

Coal mining in the State has not been characterized by very much activity during the season just drawing to a close. The railroad companies have not given the mine operators sufficiently low rates to enable them to extend their supply. Practically all the mines now worked in the State lie west of the Missouri River in Morton and Stark counties, and the greater part of the population of the State being in the eastern part of the State, there is some 250 miles to be traversed by the coal before it gets to the bulk of the consumers. The legislature, which recently adjourned, passed a railroad law which places the matter of regulating rates of all freight in the hands of the railroad commissioners, and this law may do something to place the miners of the State at less of a disadvantage. The fact that the North Dakota coal burns without giving forth any soot makes it a very desirable fuel, much more so than the bituminous coals that are used in the eastern part of the State, brought from Illinois and Iowa.

PENNSYLVANIA.

ANTHRACITE COAL.

LEHIGH & WILKES BARRE COAL COMPANY.—The Lance No. 11, at Plymouth, will shut down for an indefinite period on April 1st. The Lance is one of the largest collieries owned by this company and its shut down will throw about 750 men and boys out of work.

MINE INSPECTOR'S REPORT.—William Stein, inspector of the Sixth Anthracite District, reports 6,404,831 tons of coal mined in 1896, of which 5,914,556 tons were sent to market. Total number of employees was 20,920. The fatal accidents numbered 67 and the non-fatal 99. Number of tons of coal mined per life lost was 95,595; number of tons mined per employee, 306. In 1895 there were 7,164,895 tons of coal mined in the district and 6,636,166 tons sent to market. In the same year there were 59 fatal and 85 non-fatal accidents.

SOUTH CAROLINA.

The river phosphate miners are very anxious to have the Phosphate Commission take action on their request for a reduction of the royalty as soon as possible. The general assembly of the State has passed an act giving the board full authority to reduce the royalty to 25c. a ton if it is deemed advisable. A letter has been written to the board signed by the Coosaw Company, the Farmers' Mining Company and the Beaufort Phosphate Company. The companies in their letter urge immediate action, and invite the commission to visit their mines and see for themselves the situation, in order to prepare to discuss the question.

SOUTH DAKOTA.

CLARK COUNTY.

PENOBSCOT.—It is reported that a chute of rich ore has been found in this mine at Garden City, and that $50,000 worth of ore is now in sight much of which averages $25 per ton.

LAWRENCE COUNTY.

HOMESTAKE MINING COMPANY.—The Ellison hoist, now being completed by this company, will cost $250,000. The steel building is 200 × 90 ft. and 80 ft. high. The hoist will be run by a double 800-H. P. engine. A crusher building is going up within 100 ft. of the hoist, to which all rock will be sent before it goes to the mills. The deal for a large block of free milling mining ground near the Homestake has progressed so far that a tract has been selected for the company's mills.

IRON CREEK CAMP.—This is the name of a new district north of Iron Creek, and from Spearfish Canon to Bear Gulch road is found to carry rich float. Development work is being done. Several parallel fissure veins have been found running well in gold.

UNION HILL MINING COMPANY.—This company has let contracts for its 200-stamp mill at Galena to the Frazer & Chalmers Company at Chicago. The building will probably be put up by the mining company. The Richmond mill of the Union Hill is being increased from 20 to 80 stamps, and the company's smelter was blown in recently. Some 200 men are in the mine taking out ore.

TEXAS.

NAVARRO COUNTY.

TEXAS PETROLEUM OIL COMPANY.—This company, of Corsicana, has let the contract for the drilling of five wells.

PRESIDIO COUNTY.

CIBOLO CREEK MINING COMPANY.—Papers have been served in a suit begun in the United States Court in Chicago by E. D. Owens and others, who claim title to the land on which this company's mine is situated, under an alleged Mexican grant. The company claims on its side that the case has already been tried in Texas, and decided in its favor by the courts of that State.

UTAH.

JUAB COUNTY.

MOLLIE BAWN & LAST CHANCE.—A. C. Hose has succeeded in obtaining an option on these two claims, which lie between the Swansea and Iron Duke. The option calls for the payment of $600 cash, procuring a patent survey for the property and the payment of one-third of the stock in the new company. Work will be commenced at once. The capital stock of the new corporation will be placed at $150,000.

TOOELE COUNTY.

ANTLER MINING COMPANY.—The annual meeting of this company was held last week. The report of the work done on the properties during the year showed the mine to be in good condition with ore in sight running from $8 to $90 to the ton in gold and silver, besides some iron and a little lead. The property is composed of six claims on Lion Hill, in the Ophir District, adjoining the Northern Light. The directors elected are: Jacob Alt, A. W. Raybould, Thomas Dobson, George Q. Golding, John W. Hughes, James Hunter and W. B. Cowan. Jacob Alt was chosen president, John W. Hughes vice-president, A. W. Raybould secretary and treasurer.

WASHINGTON.

CO-OPERATIVE MINING SYNDICATE.—This syndicate informs us that it has 35 claims in the State, and is operating three camps, with expectations of starting two more as soon as the snow will permit. The properties in Pierce, Snohomish and Kittitas counties are either bonded or sold outright to them. In Snohomish County they have the entire Howard Creek District, consisting of 14 quartz claims and three placer claims. The lower properties consist of four copper claims from which assays up to 36% have been obtained, while the upper properties have given assays up to $120 in gold. The district is on the Skykomish River, 7½ miles from the railroad.

OKANOGAN COUNTY.

HUNTER GROUP.—This group of claims, in the Methow, consisting of Hunter, Seattle Boy and Buckhorn, has been bonded to F. S. Mack, of New York City, for $10,000, work to begin about April 1st. A fine strike of copper ore was made in the Hunter recently.

ROANOKE MINING AND MILLING COMPANY.—This company, a syndicate of Michigan City, Ind., capitalists, has had a force of miners at work all winter upon the two groups of claims situated upon the northwest slope of Mt. Ellemehan, a spur of Palmer Mountain, on the south bank of the Similkameen River. On the Roanoke group of 5 claims a tunnel has been run 220 ft. on the main ledge, which shows a 6-ft. vein of high-grade free milling ore. Upon the Hoosier group of 5 claims 75 ft. of work has been done upon a 6-ft. lead of good ore. It is the intention of the company to continue the development work until the tunnels in each group are run 500 ft. When the Roanoke tunnel has penetrated the mountain 500 ft., reduction works will be erected of sufficient capacity to handle all the output of both groups.

SIMILKAMEEN GOLD PLACER MINING COMPANY.—Active operations will commence at once, on the claims owned by this company on the Similkameen River with their dredger, which is equipped with machinery to raise the sand from the bottom of the river by powerful centrifugal pumps, and run it over tables coated with quicksilver, which retain the gold.

SNOHOMISH COUNTY.

PRIDE OF THE MOUNTAINS MINING COMPANY.—The lower tunnel in this company's mine is now over 1,000 ft. in, at which depth it is reported that very rich ore is taken. A large amount of concentrates are piled up at the smelter awaiting treatment.

STEVENS COUNTY.

COMSTOCK MINING AND MILLING COMPANY.—A controlling interest in this company has been sold for $10,000 cash. The company's stock is 2,000,000 shares, and William Hughes transferred 1,005,000 shares to F. M. Cook, of Hillsdale, Mich., and others. This company has three claims—the Comstock, the Butte and the Morning Star, which were better known at one time as the La Fleur ledge. The claims were staked at the time the north half of the Colville reservation was opened to mineral location. Hugh McCool, of Marcus, is president; Hugh Wallace is secretary, and the original owners included United States District Attorney Brinker, Mr. Robertson, his assistant; Collector Saunders, of Port Townsend; Receiver O'Toole, of the Land Office at Seattle; W. B. Heyburn and Clarence Ide.

FIRST NATIONAL, ANNA V. & RUBY.—O. S. Ford, with Dr. Pomeroy, I. J. Bellinger, D. H. Young and C. W. Baker, all of Cheney, have acquired these claims, situated seven miles southwest of Chewelah, and intend incorporating them at once, and then begin improvements. The claims are now developed by a 50-ft. tunnel and two shafts 28 and 38 ft. deep respectively. The ledge shows up 7 ft. wide in the tunnel, all more or less mineralized. The ore is copper pyrites, and gray copper carrying gold and silver.

JOLLY BOY.—James O'Neil, of Spokane, has a small force at work on this claim, on Blue Creek. It is developed by a 50-ft. tunnel and a 50-ft. shaft. The ore is copper pyrites and sulphates, assaying well in gold and silver.

LITTLE GIANT.—This mine, in the Pierre's Lake District, is said to have more than 100 sacks of ore ready for shipment, which will average $100 per sack.

MISSOURI.—In this claim gray copper predominates, with some gold and a good percentage of silver. It is being developed by a tunnel which is in 365 ft. now.

NIAGARA.—This mine and three adjoining claims at Meyers Falls have been bonded by W. D. McClure, who with other St. Louis capitalists owns the Granite Mountain mine in Montana. The St. Louis people take 55% of the Niagara group. The remaining 45% is held by W. B. Aris and W. H. Oakes.

SCOTIA.—In this property, in Toulo Mountain, the 208-ft. tunnel has cut a body of good ore.

SUNNYSIDE GROUP.—The owners of this group have incorporated their property, and will at once start work on a tunnel to tap four of their claims, making the entire length when completed about 3,000 ft. The first 200 ft. of tunnel will give a depth of over 1,000 ft. The ore is sulphide.

WASHINGTON.—This mine has a large ledge of gold-bearing quartz. It is developed by a 50-ft. tunnel and is now crosscutting at the end of the tunnel.

WEST VIRGINIA.

TYLER COUNTY.

ELK FORK OIL AND GAS COMPANY.—This company has been organized to open oil territory near Sistersville. The office is at Sistersville; the officers are: Robert McCormick, president; H. W. McCoy, secretary; C C. McCormick, treasurer.

WYOMING.

ALBANY COUNTY.

STETSON MINING COMPANY.—A rich strike was recently made by this company on the Buckhorn claim. A portion of the pay streak is said to be very rich, showing free gold. This claim is down only 22 ft., at which depth a crosscut of 25 ft., was made, and the rich 2-ft. vein struck.

CARBON COUNTY.

COPPER KING.—The vein in this mine, near Rawlins, is from 4 to 7 ft. wide. The walls are composed of black granite and porphyry. The ore is said to run from 40% to 70% copper and $6 per ton in gold.

OVERLAND PLACER COMPANY.—The machinery and piping for this company, now operating on Foote Creek, near Rockdale, has been received from Denver, and the washing of the ground will be begun by April 1st. Twelve hundred feet of sluicing has been placed in and 600 ft. of riffles built. This company, which is composed chiefly of Chicago capitalists, has acquired title to 940 acres of ground on Emigrant and Strawberry gulches, both tributary to Rock Creek.

YANKEE BOY.—On March 9th this copper mine, located at Rockdale, was sold to Chicago parties. The consideration is said to be $20,000. Recent assays taken from the 5-in. vein recently uncovered in the main shaft are reported as showing over 30% in copper, $7 in gold and $2.30 in silver. The mine is one of the oldest in Wyoming. It was first opened up in 1876.

LARAMIE COUNTY.

HARTVILLE IRON MINES.—A dispatch from Cheyenne states that a deal has been closed in that city whereby New York capitalists were given a three-year option on these mines, which have been shipping ore to the Denver, Omaha and Pueblo smelters for several months. A sum of $25,000 will be paid to the owners in monthly cash payments during the life of the option. This step, it is said, will result in the building of a line of railway from the Cheyenne & Northern to the mines.

SWEETWATER COUNTY.

JOHN HAY COMPANY.—Three soda wells have been drilled by this company at Green River. A fine flow of the fluid has resulted and a $40 000 plant has been purchased by which the flow will be treated for the making of caustic soda.

FOREIGN MINING NEWS.

BRAZIL.

ST. JOHN DEL REY GOLD MINING COMPANY.—This company reports for February a total return of 3,804 oz. of gold, an average yield of 0·55 oz. per ton worked.

BRITISH COLUMBIA.

KOOTENAY DISTRICT.

SILVER BELL.—On March 4th this mine, near Kaslo, made its first shipment of galena ore. The consignment was 29,000 lbs., and was sent to the smelter at Great Falls, Mont. The assays are said to show an average of 200 oz. silver and 65% lead.

SILVER CROWN.—This group of claims, composed of the Silver Crown, Colorado, Violet and Mountain, has been sold by Charles Benton, of Sanca, to Charles Dougherty, of Spokane. The claims are situated one-half mile east of the south end of Kootenay Lake. The price is $5,000. The purchaser agrees to incorporate a company to take over the claims, capitalized at $1,000,000, divided into as many shares, and to deliver as a part of the purchase money 75,000 shares to Mr. Benton. It is provided that 300,000 shares shall be treasury stock.

TLAIL CREEK DISTRICT.

(From Our Special Correspondent.)

HEATHER BELL GOLD MINING COMPANY.—The property of this company comprises the Heather Bell, Livingstone and Ramping Lion claims. They are all full sized, and comprise about 130 acres. They are original locations, situated on the south slope of Markie Mountain, on Sullivan Creek, about 11 miles north of Rossland. The ledge, which is large, is plainly traceable across the full length of the Heather Bell mineral claim, which runs east and west between solid granite walls with a width of from 40 ft. to 80 ft. A shaft has been sunk several feet on solid ore, and the assays from this run from $2.60 to $97 in gold per ton in addition to a fair percentage of copper and silver. The Heather Bell lead is claimed to be a true fissure. The capital stock is not given in the prospectus of the company, which is incorporated under the laws of Ontario. All the individual and promoters' stock of the company has been pooled for a term of nine months from October, 1896. The company is free from debt. John J. Withrow, of Toronto, is president, and William Croft, of the same city, is vice-president. The secretary-treasurer is I. E. Suckling. The company has offices in Toronto and Rossland.

I. X. L.—This property, on O. K. Mountain, has been added to the list of shippers. It has so far this year shipped 12 tons of smelting ore.

LE ROI ORE TESTS.—Recent experiments have been made with Le Roi ore under the direction of Captain Hall, superintendent, and Dr. Willis E. Everette. Ten tons and a half of crude ore was used. The value of the ore is given at $15, which according to Mr. Carlyle's report is classified as second-class ore. The result from these 10½ tons showed a little more than 5 oz. of gold, and 3,604 lbs. of concentrates net. The result is as follows: Gross value of the milling ore, $168; gold and silver saved on the plates, $67 85; gross value of the concentrates, $43.82; net result, $111.67. The concentration was 6 into 1. The experiment was made at the O. K. mine. The concentrates averaged 1·08 oz. in gold; 2·92 oz. in silver and 2⅛% in copper, and the total value of tailings was $5.

QUEEN VICTORIA GOLD MINING COMPANY.—This property comprises the Beaver and Denmark, full-sized claims on Sullivan Creek, about a mile and a half from the Columbia River and 14 miles from Rossland. A large quartz ledge well mineralized has so far been traced 3,000 ft.; its average width is about 30 ft. On the Beaver there are open to view two veins, one of which measures 6 ft. 6 in. and is composed of vitreous quartz filled with white iron, very much oxidized. The foot wall is of granite, about 20 ft. in thickness, and lies between the two veins. The second vein is about 41 ft. thick, and the mineral is similar to that in the other. The Queen Victoria has been capitalized for $1,000,000, and the par value of the shares has been fixed at $1. The directors are Robert Dixon, Fritz Bauer, Alex. Maccarter and J. S. Clute, Jr., all of Rossland; John F. Race and Edward Suckling, Toronto; trustee and treasurer, John S. Clute, Jr.; consulting engineer, E. W. Liljegran, Rossland.

RED EAGLE GOLD MINING COMPANY.—The claims of this company are in the south belt of Trail Creek. They comprise the Red Eagle and the Red Pole. The property is about half a mile south of Rossland on the east slope of Deer Park mountain, between the Curlew and Mayflower mines. Three ledges cross the property. The south vein, which has produced some of the richest ore in the district, is 6 ft. to 8 ft. wide, the pay streak being 24 in., and yielding assays from $18 to $285. The vein is traceable across the entire width of the claim, a distance of upward of 1,400 ft. The Red Pole is a full claim. It lies a mile south of the Red Eagle and east of the Silver Bell mine, the ledge of the latter crossing the Red Pole. The president of the company is W. H. Fife; William Bennison is vice-president; the manager is Jno. W. Cover and the secretary-treasurer is T. G. Elgre:

RED MOUNTAIN RAILWAY SHIPMENTS.—The management of the shipping mines of Trail Creek complain this company does not furnish them with sufficient car service, they having recently been compelled to withhold a large quantity of ore for lack of car accommodation. The railway management states that the difficulty has arisen from the lack of switch engines in the yards rather than from the want of cars.

WAR EAGLE.—Tunnels Nos. 1 and 2 are now completely connected. The bottom of the main shaft is now down 125 ft. below No. 2 tunnel. The miners are drifting east and west, following the vein. The shipments now amount to 250 tons per week, the total shipments from the mine to date being 2,600 tons, the greater portion having gone to the Trail Creek smelter.

ZILOR GOLD MINING COMPANY.—The officers of this company are: President, J. B. McArthur; vice-president, J. B. Ferguson; secretary-treasurer, T. Price Gower, and superintendent, H. Stevenson. The Zilor adjoins the Lily May, being about 1½ miles from Rossland. It was located under the old mining act which gives to the owners the absolute rights to the surface, and the right to follow the veins wherever found. The development work consists of a No. 1 shaft, 26 ft. in depth, which is on a considerable ore body. No. 2 shaft is sunk on a vein showing an ore body said to be 5 ft. in width. The ore is similer to that of the Lily May, which is a fine grained diorite, showing at the surface 3 or 4 ft. of sulphides yielding good assays. The capital stock of the company is divided into 1,000,000 shares of $1 each, fully paid and non-assessable.

FRANCE.

GARDON GOLD PLACERS.—Some interest has been excited in the finding of gold in the bed of the river Gardon. A society has been formed by M. Castelnau to conduct explorations, and a 30-ton Durand dredge has been procured and will be set at work dredging out the bed of the river. The gravel obtained will be passed through washers to secure the gold.

MEXICO.

COAHUILA.

(From an Occasional Correspondent.)

The Carmen mine is producing good ore, likewise the Sultana, owned and operated by a Mexican company. The Consolidated Kansas City Smelting and Refining Company is moving bridge and cable material to Boquillas del Carmen as fast as teams can haul it from Marathon, 103 miles distant. A loaded team requires five days to come, and returns empty in four days. The company has reduced the number of its superintendents and intends to make further changes in the mine engineers and captains. This entire country is broken up by granite upheavals and ore veins and coal seams are abundant. Most of the coal found so far has been on the Texas side, while iron, antimony and silver are found on the Mexican side. Valuable quicksilver mines are also found on the Texas side.

HIDALGO.

MARAVILLAS MINING COMPANY.—In December, 1895, a spring was tapped in the Camelia mine of the Real del Monte Company which flooded the lower levels of this mine and of the San Rafael and Maravillas also. Although the three companies interested failed to agree as to the proportionate parts of the expense of pumping each one should pay, the Maravillas Company in February, 1896, ordered a Cornish pump from England to be placed in the shaft of the Carmen mine. This has now been accomplished. The pumping engine has a 60-in. cylinder, diameter of plunger 15 in., and capacity 3 cu. m. of water per minute. The old Zotol pump has the same capacity. On March 5th the latter was started and the level of the water in the Zotol mine was lowered by 65 cm., on the 6th by 60 cm. and on the 7th by 50 cm. On March 7th the new Carmen pump was started and on the first day of operation the water declined by 90 cm. in both the Carmen and Zotol mines, and on the second day by 180 cm. in the Carmen and 60 cm. in the Zotol mine. The principal mines at Pachuca on March 7th, 1897, had a total pumping capacity of 19,356 l. per minute, an increase of nearly 53% in six years.

SONORA.

(From an Occasional Correspondent.)

The State Treasury returns for December, 1896, show taxes paid upon 3,205 kg. silver and 220 kg. gold produced during the month in Sonora, valued at $131,134 and $247,518 respectively. Of this total, 1,879 kg. silver and 206 kg. gold were produced at Minas Prietas and La Colorada, now the chief gold-mining district in the State. The Treasury returns are, of course, imperfect, but they still show a remarkable and continuous increase in gold and silver production for the past three years. For 1894 the total production of both metals was $3,790,163 silver, being valued at $1 Mexican per ounce and gold at $35, for taxing purposes. For 1895 it was $5,109,947. The statement for 1896 will not be completed until May, but it will show very nearly $7,000,000. The ores and bullion exported through Nogales alone in 1896 contained $1,613,989 gold and $2,638,918 silver (U. S. currency), equivalent to $5,961,277 Mexican valuation.

A very considerable exportation was made during the latter part of the year through the Custom-House at La Morita, of ores from the newly discovered district of Santa Ana, in the Sierra de Teras, near the rancho de los Pilares in the northern part of the Moctezuma District. This is the most recent important discovery, and is attracting much attention, because of the extraordinary grade of the ores and the size of the deposits. The mines were discovered by prospectors who were not citizens of Mexico, and it was claimed that the discovery was made within the zona libre or 60-mile limit, upon which only citizens of the republic may locate. Immediately other locations were made by citizens, and fresh complications arose through shipments of ore being made before the titles were granted, and therefore illegal. Exploration permits were granted also, with the result that 4 or 5, and in some cases 6, claimants appear for each mine in the court of the Secretario del Fomento in the City of Mexico. The original discoverers are in jail at Guaymas. The mines are mostly in limestone, clustering about two hills north and south of the Arroyo Noche Triste, on the western slope of the Teras Mountain, 10 miles east of the Yaqui River and 12 miles south of the great bend in the river. They are 30 miles north of Opotu, 20 miles northwest of Bavispe, and 40 miles southeast of Fronteras, in the municipality of Opotu, district of Moctezuma. It is questionable whether an astronomical determination of the latitude will show them to be within the zona libre. The shipment of many carload lots through La Morita and Bisbee show the ores to average from $500 to $1,000 per ton in gold and silver, the latter largely predominating. The ores are soft, ferruginous chloride ores. The outcrops are very numerous, all having a strike varying from northwest to northeast.

Renewed attention is being drawn to the Santa Elena gold mine in the Arizpe (upper Sonora River) District, and the Mulatos gold mines in the Eastern Salmaripa District (Sierra Madre) by reason of reported sales. The eastern part of Hermosillo District, around Tecorios, San Jose de Pimas, Suaqui Grande and San Marcial is also attracting attention through shipments and new discoveries of gold-bearing ores. This region is in the middle gold belt of Sonora, which extends nearly due south from Arizpe, through Matape to the Yaqui River near Cumaripa, which is also in the line of the principal coast or Altar belt. The Matape gold belt produces gold associated with copper, while in the coast belt lead is the principal associate of the gold. Several new mills are going up in the vicinity of Matape, and one has just been put in operation at Batuc. The Batuc mines are producing steadily, and are making quite a record for the short time they have been in operation.

I noticed during a recent visit to Minas Prietas that the mills there do not run on full time for lack of water, and yet additions to the mills are con-

stantly being made. I understand that a concession has been recently granted to parties who intend to supply the camp with an abundant water supply. If this is done it will enable the mines in the camp to be operated, and very largely increase its output.

The veins of Minas Prietas are in a porphyry uplift, capped on the east and west by basaltic flows dipping away from the ore-bearing zone. The heavy quartzite beds, resting upon granite, appear on the southeast, but the overlying linestones are completely gone, and appear only in the hills 8 or 10 miles distant to the east and west, and also north at Zubiate.

NEW GUINEA.

The Governor of Queensland has received a dispatch from Sir William McGregor, in reference to the New Guinea gold fields, says the *Australian Mining Standard*. It states that the Woodlark (Mumee) gold fields are over-manned. There is no reason to suppose that the present mining population can remain there long. The islands of Moserna (St. Aignan) and Sudest are practically abandoned by the surface miners. As regards Mount Scratchley and the vicinity, where the headwaters of the Mambara River take their rise, all that can be said is that there is a large area of country composed principally of slate and quartz, with colors of gold in many, if not in most creeks, with occasional traces of osmiridium and cinnabar. It is not yet known whether any new patch has been discovered that yields payable gold, McLaughlin Creek, where nearly all the gold found in that part of the country was obtained, must be about worked out by this time. The field is well worth the attention of good prospectors.

NEW SOUTH WALES.

BROKEN HILL PROPRIETARY COMPANY.—The statement for the four weeks ending March 4th shows 28,813 tons of ore treated. The output of the refining was 368 oz. gold, 539,039 oz. silver, 1 809 tons soft lead, 23 tons hard or antimonial lead and 638 tons copper matte. The contents of the matte are estimated at 34,118 oz. silver and 49 tons copper.

ONTARIO.

RAT PORTAGE DISTRICT.

(From Our Special Correspondent.)

DOMINION GOLD MINING AND REDUCTION COMPANY.—Work on the Gold Hill and Black Jack properties has been suspended, the men being required to open up some proposition in the Manitou district, which the company has secured.

GOLD COIN.—The contract of sinking 50 ft. of shaft on this property is completed. Mr. Markell, the leading spirit in its development, is here, having just closed the sale of an adjoining property to an English company represented by Colonel Engledue.

MASTER JACK.—The hoisting and developing plant is expected here, pending the arrival of which operations have ceased for a few days. The ore is low grade, but plenty of it is in sight.

MOSHER.—This property in Manitou district is said to have been sold for $25,000.

QUEENSLAND.

MOUNT MORGAN GOLD MINING COMPANY.—This company reports for February a total of 7,699 tons of ore treated. The yield was 13,005 oz. gold, showing an average of 1·7 oz. per ton.

SOUTH AFRICA.

TRANSVAAL.

WITWATERSRAND GOLD OUTPUT.—The production reported for the Witwatersrand mines in February is 213,467 crude ounces. This is the largest quantity ever reported for one month, exceeding by 1,038 oz. that of August, 1896. For the two months ending February 28th the total was 423,299 oz., as against 315,196 oz. in 1896, and 346.758 oz. in 1895. The production for the two months this year was equivalent to 345,412 fine oz., or $7,149,666.

VICTORIA.

BENDIGO.

LANSELL'S NO. 180 MINE.—The contractors have completed an extension of the main shaft 210 ft. to a total depth of 3,350-ft., making this the deepest mine in Australia and probably the deepest gold mine in the world. A 40 or 50 ft. well will be left, when crosscuts will be put in at the 3,310 and the 3,200 levels. At the bottom of the shaft the rock is the hardest in the district. The flow of water is very great and supplies the New Chum and Victoria crushing works, with more to spare.

WESTERN AUSTRALIA.

GOLD PRODUCTION.—The return issued by the West Australian Chamber of Mines shows that the returns announced for February, exclusive of the crushings of purely local companies, reached a total of 24,561 oz., from 11,967 tons of ore crushed, or an average of 2·05 oz. per ton, comparing with 28,099 oz. from 11,265 tons in January, or an average of 2·45 oz. There was, therefore, a decrease of 3,538 oz. in the yield. The highest return per ton during the month was 10·3 oz. from telluride ore from the Great Boulder Main Reef mine, 57 tons sent to Adelaide having produced 589 oz. of gold.

WANEROOKA COPPER MINE.—A deposit of £500 has been paid on this copper mine, conditionally upon the right of raising 100 tons of ore, with the option of purchase, says the *Australian Mining Standard*. This copper mine has been shut down for over 30 years. It was discovered nearly half a century ago by a man named Thomas Mason, who got a horse team and some cash for the show. The lode is a very strong one, and a large quantity of high-grade ore has been won from the mine, notably a big bunch of black ore that kept strings of teams going between Northampton and Geraldton for some years. The Wanerooka lode was the first ever discovered in West Australia, and was secured by a syndicate at Geraldton, the late Sir Luke Leake and Mr. Thomas Burges being among the number.

LATE NEWS.

DR. A. R. LEDOUX, who has been examining some copper-gold properties in New Mexico, has returned to New York.

SANTA RITA COPPER AND IRON COMPANY.—An option has been given upon the 40 copper mines of this company at Santa Rita, N. M., the reported price being $1,500,000.

MR. WALTER B. DEVEREUX has just returned to New York from Colorado and New Mexico, where he has been on professional business. Mr. Devereux has consented to deliver a course of lectures on practical metallurgy before the students of the Columbia School of Mines. These lectures will be given in April or May.

NORTHWESTERN MINING AND EXCHANGE COMPANY.—This company has completed a deal which involves the purchase of about 1,200 acres of coal lands south of Brockwayville, Pa. This company, which is affiliated with the Erie Railroad, will develop the property this season. The operations involve the construction of a mile or more of railroad and the opening of the mines.

CALUMET & HECLA MINING COMPANY.—This company has declared its 102d dividend, $5 per share ($500,000), payable April 23d to stockholders of record March 27th. This is the sixth dividend of the current fiscal year, and makes a total of $40 per share ($4,000,000) paid for that year, which ends April 30th next, and a grand total of $48,850,000 paid in dividends up to date.

GOLD PRODUCERS' CONVENTION.—The Denver, Colo., Chamber of Commerce, at a meeting held March 25th, indorsed a suggestion made by Louis R. Ehrich, of New York, regarding the advisability of holding a National Convention of gold producers the coming summer in some convenient city in the West. A committee was appointed to call the convention and make all necessary preparations.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, March 26.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending March 19th, 1897, compared with the corresponding period last year:

	1897. Week.	1897. Year.	1896. Year.
Pennsylvania Railroad.....	16,946	845,190	839,349

PRODUCTION OF BITUMINOUS COAL in tons of 2,000 lbs. for week ending March 19th, and for years from January 1st, 1897 and 1895:

Shipped East and North:	1897. Week.	1897. Year.	1896. Year.
Allegheny, Pa.....	47 034	475,949	500,803
Barclay, Pa.....	461	9,126	10.558
Beech Creek, Pa.....	72,287	804,774	786,764
Broad Top, Pa.....	8,319	87,812	100,717
Clearfield, Pa.....	76,626	1,034,842	1,030,449
Cumberland, Md.....	§78,962	634,545	627,026
Kanawha, W. Va	‡87,844	738,358	801,199
Phila. & Erie.....	717	140,769	11,342
Pocahontas Flat Top	†173,681	244,923	663,420
Totals.....	545,931	4,171,128	4,530,588

‡ For week ending February 28th.
† For two weeks ending March 13th.
§ For week ending March 13th.

Shipped West:	1897. Week.	1897. Year.	1896. Year.
Monongahela, Pa.....	21,938	280,340	200.569
Pittsburg, Pa.....	31,618	415,597	419,034
Westmoreland, Pa.....	34,920	400,656	414,065
Totals.....	88,466	1,096,593	1,033,668
Grand totals.....	634,397	5,267,721	5,564,256

Production of coke on line of Pennsylvania Railroad for the week ending March 19th, 1897, and year from January 1st, 1897, in tons of 2,000 lbs.: Week, 79,491 tons; year, 967,535; to corresponding date in 1896, 1,084,781 tons.

Anthracite.

If the condition of the anthracite market were to be judged entirely from the amount of business doing, our report would have to be very unfavorable. On the other hand, if it were to be judged by the firmness with which prices are being held, it would have to be reported exceptionally good. The combination of the two, however, makes the present situation one with which the big majority of sellers are well pleased. They believe that the present show of strength and unanimity need not be maintained long to convince buyers that efforts to obtain lower prices are fruitless. These efforts are trying the producers severely at this time, the buying of the dealers being in the smallest possible lots with which they can supply immediate wants. It is even said that they are exchanging sizes with each other in order to supply customers without purchasing new stocks. Under these conditions business cannot be otherwise than very slack, and cannot improve much because circumstances are likely to remain as they are for some time to come.

The Anthracite Coal Operators' Association is authority for the statement that during the first two months of the present year stocks of coal in general were reduced by 150 000 tons, but that the present month will increase them again and that they will on April 1st be fully as large as, and perhaps be larger than, they were on January 1st. Other opinions, however, are that the present month will show a continuation of the decrease during the two preceding months. This opinion is based on the present ready sale of pea and buckwheat coal, which at the opening of the year were the two sizes which were being largely stocked for want of purchasers. Chestnut coal is now, as it was then, difficult to sell at a fair price, and has continued to be stocked in greater or less amount. The circular of prices now in force is as follows: $3.75 for broken, $4 for egg and chestnut and $4.25 for stove.

Bituminous.

The Atlantic seaboard soft coal trade shows little that is new this week. The trade seems to be settling down, after the contract season is practically closed, to the routine work of delivering on contracts as the coal is required by the daily wants of consumers. The soft coal market is quiet, there being very little inquiry for coal, the producers depending at this time almost entirely on orders sent in upon contracts already taken for the season. Transient trade is practically dead on account of those consumers or dealers preferring to cover themselves at the present prices where there can be but little, if any, further reduction, than to risk the possibility of an advance from any cause.

A few of the smaller contracts have been closed during the week, but they do not attract the attention or produce the various rumors of low prices that the larger contracts do. The recent failure in the coal trade has given rise to rumors of one or two further failures which, however, when search is made for authentic source and facts to base them upon, do not seem to have any real foundation at this time.

Trade to the far East is showing up slightly better in the way of orders for present shipments. They are all on previous season contracts taken, but help producers' order-books accordingly, which have not been very full of late, consumers having still had their winter stocks to rely on. As these become depleted more orders will be forthcoming. Trade this side of Cape Cod shows little change in tonnage, though it seems to be just at the point where shipments are being made both from the lower and the New York harbor shipping ports at the same time, this from the ocean freight rate making the ultimate price the same, or about the same. New York harbor trade is quiet, though the regular orders that are coming in keep things moving. All-rail trade is quite brisk and tonnages are slightly increased. Transportation is very good and car supply is up to all demands.

In the coastwise vessel market vessels are not yet in good supply, though the condition is slightly improved from what it was. Freight rates seem to be unchanged. We quote current rates of freight from Philadelphia to Boston, Salem and Portland, 70c.; Providence, New Bedford and other Sound ports, 60c.; Portsmouth, 75c.; Wareham, 75@80c.; Lynn, 80c.@$1; Newburyport, 85c.; Bath, 75c. Five and 10c. above these rates is charged from the lower shipping ports.

NOTES OF THE WEEK.

Mr. E. L. Desvernine, manager of the American Export Coal Company, returned a few days ago from Mexico. While in Mexico City Mr. Desvernine sold 50,000 tons of coal to be used in different manufacturing works. He says that the demand for coal all through the republic is constantly increasing.

Buffalo. March 25.

(From Our Special Correspondent.)

The quiet which has prevailed in the anthracite coal trade still continues. There are no changes in quotations.

Bituminous coal in moderate demand at nominally unchanged rates. Supply fully adequate for all the requirements of the trade; assortment fair. There seems to be quite a competition existing among the agents of the various producing districts to obtain the contracts for supplying vessels with soft coal for the coming season.

Warm rains and variable winds have played havoc with the ice at this end of Lake Erie and large fields are floating down Niagara River. Our local weather forecaster says that he thinks nothing will burden navigation on April 1st, or the 5th at latest.

The Philadelphia & Reading Coal and Iron Company has purchased 10 tugs at auction at Duluth, formerly owned by the Inman Company, for $30.755.

The contract for supplying Buffalo with electric light was signed last week. The General Electric Company will furnish the city 2,283 arc lights at $109.50 each per year; extra lights above that number, to 2,500, free All lights over that number are to be paid for at the rate of $1 per light per night. This will cut the profits of the gas companies.

Pittsburg. March 25.

(From Our Special Correspondent.)

Coal.—There is a good boating stage of water at present; there is, however, very little coal loaded, and the run was a small one. At this writing it looks like a general settlement about mining rates and better rates for the miners; the operators in the Third Pool have effected a compromise with their men, and several mines have started at $2.25 per 100 bu., 25c. less than demanded. The Fourth Pool miners did not consent to the action of the Monongahela City convention, and are working at the 2c. rate. Contracts are now being taken for the spring run of coal, and it is thought that nearly all of the mines will be put in operation. James Jones & Sons have contracts that give promise of a year's run. The miners of the First and Second pools accepted the 2¼c. rate. It is expected that the close of the week will see all the pool miners at work. The battle between the railroad operators and miners over the mining rate to be paid during the coming Lake shipping season is still on with the same result as previously. In the meantime the operators interested in the Lake trade are getting their mines ready for a busy season, as the demand from the Northwest promises to be much larger than that of last year. The larger mines, and especially the machine mines, are all running. The demand is reported fair.

Connellsville Coke.—Production gained last week, but there was a great drop in shipments. The firing of ovens has ceased for the present, but it is not thought there will be a backward movement. The Dunbar Furnace Company added 15 ovens to the active list by firing that many at the Semet-Solvay plant at Dunbar, bringing the weekly production of by-product coke in the Connellsville region up from 500 to 900 tons. Thirty-seven of the 50 by-product ovens are now in blast, and the balance will be fired as soon as they can be got in readiness. The deal for the transfer of the Anchor plant to the Cambria Iron Company has been consummated and the 100 ovens at Anchor are being put in repair for active service. The works will be run in connection with Mahoning. The detailed report of the operations and output shows 18,069 ovens, 10,743 active and 7,266 idle. The production for the week was 107,666 tons, or 1,000 tons greater than the week previous. The Frick company, owning 11,437 ovens in the region, has 6,298 active. W. J. Rainey, with 1,775 ovens, has 1,204 active; Cochran and others with 745 ovens, have 635 active; Hecla Coke Company, with 772 ovens, has 324 active. The shipments were as follows: To Pittsburg, 2,540 cars; points west of Pittsburg, 2,996 cars; points east, 1,115 cars; total, 6,651 cars.

Shanghai, China. Feb. 12.

(Special Report of Wheelock & Company.)

Coal.—We have heard of no transactions of any importance in Japan coal, and the market is in every way quiet. Nothing is doing in Cardiff. Business in Sydney Wollongong is confined to resales among natives in small quantities, and there is no change in prices.

We quote prices as follows: Cardiff, 13 taels per ton; American anthracite, 9 taels per ton; Sydney Wollongong 6 75 taels per ton. Japan coal is 5·75 taels for Takasima lump, 5 taels for Namazuta lump and 4·75@5 taels per ton for other sorts.

Kerosene Oil.—Business has been confined to settling up for the old year, and fairly large deliveries have been made, but little has been done in sales, and 1·60 taels may be mentioned as the closing rates for Devoe's. In Batoum the market is quiet. Arrivals during the fortnight have been 40,000 cases Langkat, 133,000 cases Devoe's and 110 000 cases Batoum case oil. Including these arrivals, stocks are estimated at 348,000 cases American, 330,000 cases Batoum and 66,000 cases Langkat. Quotations are as follows, per case: American, Devoe's, 1·60 taels; Russian Batoum, 1·56 taels; Russian Batoum, bulk, 1·52½ taels; Langkat, 1·52½ taels.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, March 26, 1897.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Mar. 27, 1896. F'ces.	Tons.	Week ending Mar. 26, 1897. F'ces.	Tons.	From Jan., '96. Tons.	From Jan., '97. Tons.
Anthracite.	51	33,270	31	18,600	437,348	228,686
Coke...	137	162,670	108	147,500	2,116,029	1,717,914
Charcoal...	19	5,360	18	5,550	64,840	69,536
Totals ...	207	201.300	157	171,650	2,618,217	2,016,136

The iron market generally is in an uncertain condition. A little more business is developing, especially in bridge and structural material, and a larger movement in this line is expected. The great floods in the Mississippi Valley have destroyed many railroad and other bridges which will have to be replaced before long. In foundry irons the sales are only moderate, and those of Bessemer pig are disappointing.

The rail market is still quiet after its recent flurry. The great question here just now relates to the quantity of rails which were contracted for on speculative account. There are various estimates, but the exact truth will not be known for some time.

The weak point in the market is the development of a great pressure to sell, which promises to result in lower prices. The sharp competition is especially apparent in pig iron and merchant bar.

The chief topic of discussion this week has been the breaking up of the Lake Iron Ore pool. At the meeting in Cleveland this week the ore producers could not arrive at a satisfactory basis on which to continue the association and it was formally dissolved. Since the Rockefeller-Carnegie deal, large producing interests have proposed to reduce the price to $2.65 for the Norrie and $2.40 for the Fayal, these two being taken as the standard Bessemer ores for the older ranges and the Mesabi respectively. It is said that the Rockefeller-Carnegie people made a strong effort in behalf of the smaller mines to have the price established at $2.85 or $2.90 for the Norrie and $2.60 or $2.65 for the Fayal. They finally offered $2.75 for Norrie and $2.50 for Fayal as a compromise, but this was refused. The producers of the Gogebic, Marquette and Menominee ranges have since held a meeting to try and arrange an agreement of their own which will enable them to meet the competition of the Mesabi mines, but no result has yet been reached. There is some talk of cutting wages in the mines, but the larger companies say that this will not be done.

It is announced that the Cambria Iron Company has bought a half interest in the property of the Mahoning Ore Company on the Mesabi Range, thus providing for its own supply.

The low prices of Lake ore which are now assured will give Western Pennsylvania for the time an increased predominance in the iron trade.

There is talk of an attempt to revive the nail pool under some form, but the prospects of success are very slight.

NOTES OF THE WEEK.

We have been informed that the first shipment of iron ore ever made from the West Indies to Europe will be sent in a few days from the mines of the Spanish-American Iron Company near Santiago de Cuba. The British steamship *Cedar Branch* has been chartered to carry the pioneer cargo, and her destination is a German port. The negotiations which led to this shipment and the opening of a new trade were begun through the agency of the *Engineering and Mining Journal*.

New York. March 26.

The local market continues quiet and orders taken outside of a few contracts were for small quantities only. Structural material shows an improving demand. A number of contracts were closed by architectural shops this week for fairly large quantities of iron and steel; several were for building in this city. Bridge and railroad work is also promising. The State Railroad Commission at Albany, N. Y., has granted the application of the Metropolitan Traction Company to put in underground electric trolleys on its Sixth, Eighth, Ninth avenue and Belt lines—about 40 miles in all. Rails for 20 miles have already been contracted for and it is probable a further quantity will be asked for soon.

The contract for 5,000 to 6,000 tons of cast-iron pipe for New York, to which we referred last week, has been awarded to John Cornwall, Jr, of this city. An order for 750 tons for Hudson, Mass., is in the market. The Hawaiian government contract for 4,140 ft. of 12-in. cast-iron water pipe and special castings was taken by the Oregon Steel and Iron Company, of San Francisco. The imports of the Hawaiian Islands in 1896 included iron and steel to the amount of $38,941.

The cut and wire nail makers are at it again. This time it is the intention of the leading concerns to form a so-called "gentlemen's agreement"—not exactly a pool—by which the present ruinous competition will be stopped. An authority in the trade informs us that representatives of some of the principal nail-makers will hold another meeting in a month or so to decide upon a plan to regulate and likewise maintain prices. It is expected to fix prices monthly. We hear that the jobbing trade has been buying only sparingly lately, and now, as their stocks become depleted, there are signs of increasing business for the wire-nail mills.

With regard to the export trade we would say that there is an order in the market for 10,000 tons of 60-lb. section rails for Japan. Bids are said to have been made already by local mill representatives. A quantity of steel billets were shipped to Manchester this week. Inquiries for Southern pig iron continue to be received by local firms, and among them we hear of 10,000 tons for England and 2,500 tons for France. Quotations by furnacemen are said to have been verr low on these lots. Last week the Tennessee Coal and Iron Company made a sale of 7,000 tons of its pig iron. Of this amount 2,000 tons went to Antwerp, Belgium, and 3,000 tons to Genoa, Italy. The balance went to Belfast, Rotterdam and Manchester. Scarcity of freight room acts as a hindrance for larger shipments. Wrought-iron pipe, it is said, was ordered this week in assorted sizes for immediate shipment to Cape Town, South Africa. The total amount is eight carloads, and shows that American pipe makers are increasing their business with South Africa.

Mexico has been buying a quantity of mining machinery from us recently, and inquiries are being received from different South American States for similar goods.

Messrs. H. K. Porter & Company, of Pittsburg, Pa., locomotive builders, and the Verona Tool Works, manufacturers of track tools, have appointed Mr. F. S. Wonham their local export representative in New York.

Pig Iron.—The demand from Eastern foundries continues light, and it is said most of them have enough pig iron on hand to carry them through several months yet. However, we note sales of about 10,000 tons, of which 6,000 tons was No. 2 foundry iron, and was ordered by a concern in Westfield, Mass. The price, delivered, was below $12.14, which was bid by one furnaceman. The cost at furnace, based on this price, would be from $8.25 to $8.50; what the successful competitor received will not be given out. Of the other 4,000 tons, a quantity was ordered by a Newark concern. We understand that one of the Southern furnaces has been "bearing" the market, and that it recently made a sale of No. 2 soft at 85c. less than the regular quotation. In presence of growing competition prices are somewhat unsettled, but open market quotations show only a few changes.

Northern brands are now $12@$12.50 for No. 1. foundry; $11.50@$11.75 for No. 2 foundry; $10.50@$10.75 for No. 2 plain, and $10.25@$10.50 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, $10.75@$11. All prices are for tidewater delivery.

Cast-Iron Pipe.—Some orders were taken this week, and prices are firmer for special sizes of pipe. The New York City contract is referred to above.

Spiegeleisen and Ferro-Manganese.—Trade is very quiet, 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 and Rods.—Business locally is quiet, while prices are $15.50@$16 per ton at mill.

Merchant Iron and Steel.—Business is practically unchanged, and we quote: Common bars, 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; light cotton ties, 50c. per bdl, at mill. All prices are for delivery on dock New York.

Plates.—Business is improving, 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. Some makers are asking 0·05c. higher for plates. Rivets are 3@3·25c. for iron and 2·10@2·25c. for steel. Prices are for tidewater delivery.

Structural Iron and Steel.—Business continues to increase, 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 1·70c. 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 continues quiet. Discounts are as follows for plain pipe, out of store: 1¼ in. and over, 67, 10, 10, 10, 10 and 10%; 1¼ in. and under, 57, 10, 10, 10, 10 and 10%. Galvanized pipe, 1½ 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.—This market has a better tone now, and prices are a little more satisfactory to the mills. Quotations for cut nails in New York are $1.35@$1.45 per keg for large lots, and $1.45@$1.50 for smaller quantities. Wire nails are quoted at $1.70 per keg in New York.

Old Material.—The market is only slightly active, while the offers from buyers are under the prices now ruling. Dealers on the other hand show no inclination to sell. However, there were sales this week of 450 tons of railroad scrap at $12.50 per ton, delivered at buyer's works, and 100 tons of girder rails at $10.50 per ton, delivered on cars in Jersey City. It has just been made public that two weeks ago there was a sale of 1,300 tons of heavy section old iron rails. The price, delivered on the Hudson River, is said to have been equal to $12.50 per ton in New York. Quotations are for No. 1 wrought scrap, $10.50@$11.50 per ton; old iron rails, $12@$13; old steel rails, $10.50@$11.50. Prices are f. o. b. cars at New York.

Cast Scrap.—Business is light, 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 24.

(Special Report of Rogers, Brown & Co.)

The past week has been a slow one in pig iron sales, but with a somewhat increased inquiry for

forward delivery contracts. These latter, however, have not materialized into actual transactions. Melters of iron hereabouts are still consuming scarcely more than half their normal tonnage, and all lines are living chiefly on hope in the future. 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 24.

(From Our Special Correspondent.)

Iron Ore.—It may be stated definitely that ore prices will be lower this year than they were during 1896, as a result of the collapse of the Bessemer Iron Ore Association, which was dissolved in this city Tuesday. The death of the pool may also mean a reduction in the wages of the mine operatives. The bone of contention which finally resulted in the dissolution of the pool was the price of Norrie Gogebic and Mesabi-Fayal. The former sold last year for $4 and the latter for $3.35. Some of the operators demanded that Norrie-Gogebic should be sold for $2.65 and Mesabi-Fayal for $2 40. It was finally proposed as a compromise that Norrie should be fixed at $2.75 and Fayal at $2.50, but the opposition rejected it. While the old pool died yesterday, a new one was given birth today, when the operators in the "old ranges" held a meeting and appointed a comm'ttee to report prices at another meeting, which has been called for next Wednesday. It is generally understood in iron circles that the production of ore this year will exceed that of 1896, by reason of the fact that no apportionments have been made. The belief is common that, as a result of the collapse of the association and a heavier production in consequence, that the ore market will be given an impetus almost immediately. During the past week the market has been very quiet, much more so than during the corresponding period last year, when 7,000 more tons were shipped out of the city to the furnaces. All the sales were made at the old prices, which follow: Standard hard speculars, Bessemer quality, $4.50@$5; standard hematites, Bessemer quality, $4@$4.50; standard hematites, non-Bessemer quality, $3.50@$4; standard soft hematites, non-Bessemer quality, $2.50@$3.25.

Pig Iron.—Foundry iron has moved in quite a lively way during the week, several good sales having been made, for future delivery as well as for immediate use. The market for the other irons has been dull. The quotations remain unchanged. They are: Lake Superior charcoal, $13.50; Bessemer, $11@$11.25; No. 1 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 25.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business in most departments continues in a very unsatisfactory condition; although steadily increasing it is still much below its volume in former years, when prosperity generally began early in the year. In the pig iron trade there is little change to note. Consumers generally made liberal purchases during the past few weeks, but now are mostly inclined to wait in hopes that prices will be more favorable for them in the near future; at all events, most of them are inclined to take the chances of the market. Orders run light and competition keen, with the effect of preventing any material change for the better. Producers were encouraged by the heavy purchases of steel rails a few weeks ago to look for a stiffening of the market and such a result seemed assured by the stimulating influences of such heavy buying on closely allied branches of the trade. But the specifications on these rail orders are slow in coming forward in many instances, and there are evidences that some of the purchases were speculative in character which the market must absorb later.

Again there is the uncertainty of the Lake ore trade. Several meetings have been held, but the final decision has not been reached; this as well as other matters act as depressing factors upon the market, deterring buyers and making the pressure to realize more determined. In the local pig-iron market conditions are favorable to buyers, and all sorts of prices are heard for really good iron. More iron is undoubtedly being made than the market can absorb, and until there is some balancing of production and consumption little improvement may be expected. Prices in the Valley continue on the down grade; the weakness is more manifest in the medium qualities of material, the standard brands not being much affected. Pittsburg capitalists seem to have plenty of faith in the future of the steel trade, if we are to judge by the number of new plants under way and projected, several of them by parties who were previously engaged in the business and had made it a success. Some of the plants will operate on new inventions, which are expected to work a revolution in certain departments.

So far as values are concerned there is little to note, at the same time there is a good deal of Bessemer changing hands, whether for consumption or speculation we are unable to say; there are some good sized blocks under negotiation that will be closed later. The ore pool failed to agree, and their organization is now a thing of the past; it seems to be only a matter of time for the pools that are left to go the same road. Muck bar sold at $18 85, a decline. The Carnegie Company is making large shipments of steel rails by the Ohio River for the South; by the close of April fully 30,000 tons will have departed in this way.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
5,000	Bessemer, May, June, Valley	$10.12
3,500	Bessemer, June, July, Valley	10.15
3,000	Bessemer, April, May, Valley	10.00
2,000	Bessemer, April, Valley	9.85
1,500	Bessemer, May, Valley	9 85
1,500	Bessemer, April, May, Valley	9.85
1,500	Bessemer, April, May, Pitts	10.60
1,000	Mill Iron, Mar., April, Pitts	9.60
1,000	Mill Iron, Mar., Pitts	9.60
500	Mill Iron, Mar., Pitts	9.40
500	Mill Iron, Mar., Pitts	9.40
200	No. 2 Foundry, Pitts	10.60
100	No. 2 Foundry, Pitts	11.35
100	No. 2 Foundry, Pitts	11.40
50	No. 2 Silvery, Pitts	12.00
50	No. 2 Foundry, all ore, Pitts	11.00
25	No. 2 Foundry, Pitts	10.65

CHARCOAL.

50	Cold Blast, Pitts.	$22.25
50	No. 2 Foundry, Pitts	15.75
25	Cold Blast, Pitts.	22 50

BLOOMS, BILLETS, SLABS.

3,000	Billets, April, May, Pitts	$15.75
2,500	Billets, April, May, Pitts	15.90
1,500	Billets, April, May, Pitts	15.85
1,000	Billets, April, May, Pitts	15.65
500	Billets, April, May, Pitts	15.50
500	Billets, April, May, Pitts	15.75

BLOOMS, BILLETS, BAR ENDS.

Tons.		Cash.
575	Billet ends, delivered, Pitts.	$12.00

MUCK BAR.

1,000	Neutral, delivered, Pitts	$18.85

STEEL WIRE RODS.

3,000	5-gauge, Pitts	$21.40
500	Pitts	21.00

SHEET BARS.

1,500	Delivered, Pitts.	$18.50
500	Delivered, Pitts.	18.75

SKELP IRON.

600	Wide grooved, Pitts	$1.15 4 m.
500	Sheared, Pitts	1.30 4 m.
500	Narrow grooved, Pitts	1.15 4 m.
300	Narrow grooved, Pitts	1.10 4 m.

SKELP STEEL.

650	Shear'd, Pitts.	$1.15 4 m.
550	Wide groov'd, Pitts	1.09 4 m.
500	Narrow grooved, Pitts	1.00 4 m.
100	Narrow grooved, Pitts	.95 4 m.

FERRO-MANGANESE.

300	80%, delivered, Pitts	$16.00

OLD RAILS AND SCRAP.

800	Steel Rails, gross, Pitts	$10.00
400	Steel Rails, gross, Pitts.	10.50
100	No. 1 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 26.

(From Our Special Correspondent.)

Pig Iron.—The talk to-day is that now all complications are settled, good business will be done in pig iron within the next week or two. There are signs of improvements. Some furnace companies have made a large sale or two each. More buyers may step in soon. There is a better feeling all along the line, but at the same time it must be remembered the mills and foundries do not have business enough to warrant heavy buying. The people who asked for bottom prices this week, it is thought, contemplate buying before long No. 1 is $12.75@$13; No. 2, $10.50@$12; mill irons, $10@$10.50, two or three brands bringing more.

Steel Billets.—Buyers have been seen and no sales of importance have been made. Lower quotations are asked for and expected. The price that would make business is supposed to be $17.50.

Merchant Bars.—Carload lots of fair iron can be had at 1·10c. delivered. The smaller mills are not making much of a struggle for business when the larger are cutting prices so desperately. No important transactions have been reported and store sales are not particularly large.

Nails.—The nail market is quite good this week, country buyers having begun to send in their early requirements. Prices are firm, but it is hard to say how long the present heavy output will allow them to remain where they are.

Sheets.—There is a steady business in sheets of all kinds for near delivery. The market is neither strong nor weak as it is reported to-day.

Pipes and Tubes.—In a small way there is a better business, and in most cases fractionally better prices are paid for small lots. This would not apply to large orders.

Merchant Steel.—A fair amount of stuff is selling from day to day.

Plate and Tank.—There is a little improvement in quoted prices, at least for plate iron and steel, though it is not absolutely known that on large orders there would be any improvement. Market quotations remain the same: Tank, 1·25; universals, 1·30; shell, 1·35; flange, 1·50.

Structural Material.—Only trifling orders are coming in, but the assurance is repeated that as soon as certain contingencies are past a large amount of work will be placed, on some of which prices have been already made conditionally. Angles are quoted at 1·20; beams, 1·70.

Steel Rails.—No news has been given out; not much business can be heard of. In the matter of purchases for extensions, which directories were to pass on, nothing of a satisfactory character has been reached.

Old Rails.—There was quite a stir in both old iron and steel rails, three or four lots having been sold, but at exceptionally low prices. Parties would buy liberally for export if prices were right.

Scrap.—There is quite a stir in scrap, and several good sales have been made at something near quoted rates.

METAL MARKET.

NEW YORK, Friday Evening, March 26, 1897.

Gold and Silver.

Prices of Silver per Ounce Troy.

March.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	March.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
20	4 87¼	28⅛	62½	.481	24	4.87⅛	28¾	62⅝	.485
22	4 87⅛	28⅛	63	.487	25	4.87⅛	28⅛	62¾	.486
23	4 87⅛	28⅛	63	.487	26	4.87⅛	28¾	62⅝	.485

The sentiment of accomplished gold legislation in Japan awaiting executive action has affected the price of silver. The market demand seems to be easily satisfied, and prices show rather a receding tendency, though sustained by occasional continental orders.

The United States Assay Office in New York reports the total receipts of silver at 116,000 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.		1896.		1895.	
	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.
January	29·74	64 79	30 69	67·13	27·36	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	.....	....	29·79	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	$16,459	$282,468	I. $474,021
1897	708,641	1,001,321	86,861	491,523	I. 797,342
1896	12,750,226	21,927,029	12,003	279,020	I. 9,443,820
SILV.					
Feb	4,660,362	762,942	66,158	1,568,369	E. 2,395,209
1897	8,658,116	1,640,019	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 26th, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$6,800	$47,081	$714,000	$15,080	E. $658,639
1897	1,640,611	1,028,759	9,310,745	462,982	E. 8 859,615
1896	10,164,335	16,113,778	9 612,347	485,395	E. 3 178,199
1895	28,805,960	11,930,462	7,273,227	320,517	E. 23 828,188
1894	6,:91 732	2,933,386	10,694,264	403,896	E. 13,548,774

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

FINANCIAL NOTES OF THE WEEK.

General business does not improve under the influence of the tariff discussion in Washington, and the apparent prospect that there will be no action on the currency question at this session. Again business men are asking why Congress does not look to reduction in expenses rather than an increase in revenue to equalize matters; but this is too much to expect.

The decision of the United States Supreme Court in the case of the Trans-Missouri Freight Associa-

tion has caused a great deal of disturbance in railroad circles and the stock market. It is taken to mean that the railroad pools and associations under which through business is now transacted are illegal under the anti-trust laws. The breaking up of these associations may mean a general demoralization of railroad business.

The commission of 15 business men of the country appointed by President C. Stuart Patterson, of the Monetary Convention, which met at Indianapolis in January, assembled in Washington, March 25th to enter upon the discharge of the first of the duties with which they are charged. This commission was appointed by virtue of a resolution adopted by the convention, instructing them to visit the Capital and impress upon the members of the Fifty-fifth Congress the revision of the financial and currency systems of the country.

Late despatches say that the Japanese gold standard bill has passed both houses of the Legislature of Japan, and only awaits the signature of the Emperor to become a law. The demand for gold on Japanese account continues in the market in London.

The gold reserve of the Treasury continues to increase, and the banks are also enlarging their gold holdings slightly. Money continues in over-supply in New York, receipts of currency from the interior about balancing the shipments.

The statement of the United States Treasury on Thursday, March 25th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Mar. 18.	Mar. 25.	Changes.
Gold	$151,313,264	$151,745,980	I. $432,716
Silver	18,380,930	20,014,455	I. 1,633,525
Legal tenders	19,772,663	21,429,844	I. 1,657,181
Treasury notes, etc.	27,614,387	26,463 016	D. 1,181,371
Totals	$217,111,244	$219,653,295	I. $2,542,051

Treasury deposits with national banks amounted to $16,342,627, a decrease of $36,403 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $117,225,280. Against these are held in the Treasury $9,805,727 coined standard silver dollars and silver bullion purchased at a cost of $107,419,553, making a total of $117,225,280.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending March 20th, gives the following totals, comparisons being made with the corresponding weeks in 1896 and 1895:

	1895.	1896.	1897.
Loans and discounts	$481,652,400	$467,526,300	$506,370,000
Deposits	509,047,200	488,058,100	574,3 8,500
Circulation	12,366,300	14,198,000	15,952,900
Reserve:			
Specie	65,120,400	58,515,300	85 534,2 0
Legal tenders	76,287,900	82,541.900	106,216,900
Total reserve	$141,408,300	$141,057,200	$191,751,100
Legal requirement	127,511,800	122,014,525	143,382,125
Surplus reserve	$13,896,500	$19,042,675	$48,168,975

Changes for the week this year were increases of $457,500 in loans and discounts and $260,100 in specie; decreases of $4,365,300 in deposits, $258,400 in circulation, $4,365,300 in legal tenders, and $4,694,575 in surplus reserve.

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

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$85,534,200
1896	.....	.....	58,515 300
Bank of England	$200,228,675	.....	200,228 675
1896	243,519,785	.....	243,519,785
Bank of France	383,935,400	$245,427,300	629,362,700
1896	331,59 ,444	249,861,299	641,451,743
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	13,163,000	34,980,000	48,143,000
1896	13,119,000	34,737,000	47,856,000
Belgian National Bank	.....	.....	21,480.000
1896	.....	.....	19,755.000
Bank of Spain	42,642,000	54,316,000	96,958,000
1896	40,022,000	52,396,000	92,418,000
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
1896	491,150.000	.....	491,150.000

The return for the Associated Banks of New York is of date March 20th; all the others are of March 25th, except the Bank of Italy, February 10th, and the Bank of Russia, January 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.

Shipments of silver from London to the East for the year up to March 11th are reported by Messrs. Pixley & Abell's circular as below:

	1896.	1897.	Changes.
India	£1,038,298	£890,200	D. £148,098
China	166,550	44,512	D. 122,038
The Straits	76,482	35,493	D. 40,989
Totals	£1,281,330	£970 205	D. £311,125

Arrivals for the week this year were £230,000 in bar silver from New York and £47,000 from Chile, a total of £277,000. Shipments were £43,500 in bar silver to India.

Indian exchange has a lower tendency, but the India Council has refused to sell bills below 15d. per rupee, rejecting all lower offers. At that price about 28 lakhs were taken in London.

The foreign merchandise trade of Great Britain for the two months ending February 28th is given by the Board of Trade returns as below:

	1896.	1897.
Imports	£73 950,592	£77.220,832
Exports	51,274,563	47,030,041
Excess, imports	£22,676,029	£30,190,791

The increase in imports this year was 8 8% and the decrease in exports was 8 2%. The gold and silver movement for the two months is given by the returns as below:

	Imports.	Exports.	Excess.
GOLD:			
1896	£4,381,577	£4,679 592	Imp. £1.701 985
1897	3,713,178	2,784,420	Imp. 928,758
SILVER:			
1896	2.250.747	1.481.936	Imp. 768,811
1897	2,451,960	2,290,615	Imp. 161,345

The gold imported from the United States this year was only £25,203; the silver amounted to £1,638,309.

Prices of Foreign Coins.

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

	Bid.	Asked
Mexican dollars	$ .48	$ .49½
Peruvian sole 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.

Copper.—The market has been rather dull and is now somewhat easier. The decline in g. m. b.'s in London evidently had a bad effect on buyers here as well as abroad, as orders are coming in for small lots only at rather lower prices. The large lake companies are still out of the market, holding nominally for 11⅞@12c., while second-hand lots of lake copper can be obtained on the basis of 11¾c., New York. For electrolytic copper decidedly lower prices have been accepted, and we have to quote for cakes, wire bars and ingots, 11@11⅛c, and for cathodes, 10⅜@10⅝c. For casting copper the quotations are almost nominal at 10⅜@11c., according to brand and quantity. Exports have fallen off somewhat of late, and the month of March is likely to show a considerably further falling off.

The European markets are still disturbed by political troubles in the East, and prices show a decline for the week of nearly 10s., the closing quotations being £49 5s.@£49 7s. 6d. for spot and £49 12s. 6d.@£49 15s. for three months prompt. Refined and manufactured we quote: English tough, £51 15s.@£52 5s.; best selected, £52 10s.@£53; strong sheets, £60 10s.@£61; India sheets, £56 10s.@£57; yellow metal 4⅛d. From the latest reports received from abroad it appears that manufacturers are still very well supplied with orders, but have not been booking much new business, in consequence of which they are holding off with new purchases.

Tin.—The market has been rather irregular, and the tendency has been toward slightly easier prices. Heavy arrivals have recently come in, but the stocks are in no way excessive. We quote for nearby delivery 13·35c., and for April to July 13·40c.

The London market on Monday last opened at £60 and kept steady for a couple of days, declining subsequently, however, to £59 7s. 6d.@£59 10s. for spot and £60@£60 2s. 6d. for three months prompt, which are the closing quotations. Reports concerning production in the East are of a somewhat conflicting nature, but it appears that the output just now is not quite as large as it was a year ago.

Lead.—The market has continued strong, but little business has been done. Western refiners appear to be well sold out and are holding back, while soft Missouri and chemical lead is somewhat more pressed for sale. We have to quote 3·42½c. New York. Little business is reported from St. Louis at about 3·20c.

The foreign market is dull and quiet, Spanish lead being 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 strong, but very quiet. Missouri brands are all firmly held at 3·20c., but are only salable in a retail way at this price. Corroding and argentiferous lead is worth 3·22½@3 25c. Trading is very light on account of an indisposition of buyers to meet sellers' views.

Spelter.—There has been a slightly better demand, and prices are fairly maintained at about 4·10@4·15c., New York.

The European market is somewhat easier; good ordinary brands being quoted £17 1s. 3d. and specials £17 3s. 9d.

Antimony.—There is a little better demand for this metal also, though prices are still rather depressed. We have to quote Cookson's 7½c.; U. S. Star, 7¼c.; and Hallett's, 7c.

Nickel.—Business is quiet and buyers are rather holding off. Prices are perhaps a shade lower. We quote for ton lots 33½@36c. per lb., and for smaller orders 35½@38c. London prices are 14@15d. for large orders and 15@16d. for smaller quantities.

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 is unchanged at $39.75 per flask. The London price is £7 5s. per flask, with £7 4s. named from second hands.

Imports of quicksilver into Great Britain for the two months ending February 28th were 1,275,298 lbs., a decrease of 385,835 lbs. from last year. Exports for the two months this year were 268,455 lbs., a decrease of 224,020 lbs. from last year.

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.

Imports and Exports of Metals.

New York.*	Week, Mar. 18. Expts.	Impts.	Year, 1897. Expts.	Impts.
Aluminum, boxes	.....	.....	609	.....
Antimony ore	.....	88	.....	183
" regulus, casks	.....	.....	.....	81
Brass, old	34	.....	147	95
Copper, fine	†641	39	13,696	991
" matte	†160	.....	2,858	111
" ore	.....	.....	.....	.....
" sulphate	586	.....	3,581	.....
Iron ore	.....	.....	.....	.....
" pigs, bars, rods	236	.....	2,192	1,419
Iron pyrites	.....	2,900	.....	5,570
" sulphate	.....	.....	.....	.....
Ferro-mangan'se	.....	.....	200	52
Ferro-silicon	.....	.....	.....	.....
Manganese ore	.....	713	.....	1,602
Spiegeleisen	.....	.....	.....	309
Lead bullion	†410	1 032	6,923	10,215
" pigs and bars	.....	.....	.....	.....
Magnolia metal	.....	.....	57	.....
Nickel	7	.....	125	5
Steel, billets, rods	2,451	5	6,056	4,692
Tin	†34	560	542	2,987
Tin dross	.....	.....	28	.....
Tin and black plates, boxes	.....	22,648	.....	129,862
Zinc dross, long tons	.....	.....	99	.....
Zinc (spelter), long tons	†160	.....	1.305	784

*Metal Exchange Reports. † Week ending March 25th.

Baltimore.**	Week, Mar. 25. Exp.	Imp.	Year, 1897. Exp.	Imp.
Bismuth metal, cases	.....	.....	.....	.....
Chrome ore, long tons	.....	.....	.....	.....
Copper, fine	2,429	.....	9,425	.....
" matte	.....	.....	.....	.....
" sulphate	181	.....	1,293	.....
Iron ore	.....	9,251	.....	63,954
" pigs, bars, ingots, blooms	.....	.....	80	858
Iron oxide, bags	.....	.....	.....	.....
" pyrites, long tons	.....	.....	.....	.....
Ferro-manganese	189	.....	1,275	.....
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	61	.....	245	191
Tin and black plates, boxes	.....	.....	.....	7,962
Zinc (spelter) long tons	.....	.....	2	.....

**From our special correspondent.

Philadelphia.††	Imports. Week. Mar. 19.	Year, 1897.
Antimony, casks		2,700
Copper ore, long tons		624
Ferro-manganese, long tons		33
Ferro-silicon		
Iron ore, long tons		47,322
" pig " "		
" pyrites, long tons		
" and steel scrap, long tons		
Manganese ore, long tons	3,450	9,400
Spiegeleisen " "		
Tin " "		125
Tin and black plates, boxes		3,961

†† From New York Metal Exchange Reports.

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	11·80	11·03	13·43	13·30	3·41	3·14	4·12	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

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, March 26.

Heavy Chemicals.—Conditions remain much the same as reported last week. Chlorate of potash, which was higher last week, has gone up still further, and sales of large lots have been made at 10c. Bleaching powder is very scarce on spot, and for large lots higher prices would have to be paid than are given in the quotations below. The figures for hyposulphite of soda 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, 10c.

Acids.—Business is reported as having been somewhat better during the past week, particularly with the East, where the reopening of textile mills has been stimulating trade. 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.—Conditions continue quiet. There is little brimstone in hand for spot sales, for which quotations are $20½ per ton, best unmixed seconds. To arrive the same grade is offerd at $19.50@$19.75. Thirds are $19 per ton.

Fertilizing Chemicals.—There is little to report in this line. Manufacturers have been busy moving goods, but the market is very quiet. The greater part of the trade is in the potash salts, on which the advance goes into effect April 1st.

Sulphate of ammonia, gas liquor, $2.25 for shipment, and $2.30 for spot; bone, $2.15@$2.20 per 100 lbs. Dried blood, high grade Western, $1.70 per unit New York; f. o. b. Chicago, $1.45 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, $13.75@$14 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.—The market is decidedly firmer, and a higher price is being obtained than a week ago. For spot sales, 1·95c. is asked; to arrive, near by, 1·85c., and for shipment, 1·80c.

NOTES OF THE WEEK.

Shipments of phosphates from Florida during February, 1897, are reported by the *American Fertilizer* as follows: From Brunswick, Ga., 3,570 tons; Fernandina, Fla., 11,814; Punta Gorda, Fla., 3,152; Port Tampa, Fla., 9,589; Savannah, Ga., 5,284; total, 33,409 tons. Hard rock phosphates were shipped exclusively from Brunswick, Fernandina and Savannah, while pebble phosphates went forward from Punta Gorda and Port Tampa. Of the foreign shipments made, 10,988 tons were for Germany, 4,473 tons for Holland, 4,112 tons for the United Kingdom, 2,777 tons for Sweden, 2,092 tons for France, and 1,095 tons for Italy. The domestic shipments were chiefly to Pennsylvania.

Liverpool. March 16.

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

For chemicals generally the tone is firmer and more doing.

Soda ash is in better demand, higher prices being anticipated. For export, prices vary according to export market, and nearest range for tierces 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 firmer and tending upward. The nearest spot quotation for barrels is £2 7s. 6d. per ton, less 5% and 7s. less for bags.

Caustic soda is selling more freely and outside makes are very scarce. We quote spot range, as to market, about as follows: 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 without special feature and steady at £6 15s.@£7 per ton, net cash, for hardwood packages, as to destination.

Chlorate of potash is in active request from the States, owing to the proposed change in tariff, and a large business is reported at 3¾d. @ 3⅞d., while makers have to day decided to withdraw from the American market for the present.

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

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

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

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

Valparaiso, Chile. Feb. 13.

(Special Report of Jackson Brothers.)

Nitrate of Soda.—Business on the coast has been very limited, and sales during the fortnight amount to only 162,000 quintals. The European market continues dull, with a downward tendency; prices asked by producers check all fresh business. We quote 95%, February and March delivery, at 5s. 8½d.; April and May, 5s. 8d., both sellers. The price of 5s. 8½d. with 17s. all round freight stands at 7s. 2½d. per cwt. net cost and freight without purchasing commission.

MINING STOCKS.

Complete quotations will be found on pages 322 and 323 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 26.

The market in general has been rather quiet. The Comstocks were dull. Of Consolidated California & Virginia 200 shares sold at $1.25, an advance of 5c. from last week's quotation. Chollar returned to the exchange on March 20th, after an absence of three months; it advanced 30c. to $1.20, with sales of 50 shares. Savage was dealt in to the extent of 200 shares at 35c.—the first call since March 4th. Ophir sold 400 shares at 90@95c. The California stocks were very quiet and prices sagged. Standard Consolidated sold 850 shares at $1.65@$1.70. Brunswick has been hammered until now it is selling for 6c. a share. Of this stock 24,900 shares were traded in this week at 6@8c. These prices show a recession of 10 to 12c. on the opening quotation in January last. The 20c. assessment will be delinquent April 20.

The Colorado group of stocks received the most attention by speculators this week, and the Cripple Creek stocks were in some demand. Prices, however, began to sag at the close, but only in a few instances were the declines notable. Of the higher-priced Cripple Creek stocks, we note sales of several hundred shares of Anaconda gold at 50@52½c. Isabella was also dealt in at 41@45½c. The lower priced shares were fairly active. Annetta sold a number of shares at 11½@12c. The Annetta Mining Company recently sold a block of 400,000 shares to a syndicate of three gentlemen, and President Wilcox states that the stock has since made an advance of 25% in the local market. The officers of the company are: President, Edward J. Wilcox; vice-president and treasurer, W. D. Hoover; secretary, James McGee; superintendent, Frank Reno. The company is capitalized at $1,000,000, divided into shares of $1 each. It owns properties on Quartz Hill near Central City, in Gilpin County, Colo., and at Georgetown, Clear Creek County, in the same State. The Griffith group at the latter place is one of the properties that has been developed to some extent by the company. President Wilcox says that they are negotiating the sale of the Sylvania & Penn claims in this group to Chicago people. The company has about 21 claims, and it is said that these have been leased to miners who are developing them and for the privilege pay the company 50% on the ore raised. Some small shipments of ore have already been made to the Denver smelters. There were also sales of other Colorado stocks, and among them we note Gold Coin at $4.50, Golden San Juan, at 22@23c., and Red Mountain, at 26½c.

Two Arizona stocks were traded in this week. Old Dominion sold at $13.50 and Phœnix at 6c. The Utah stock, Horn Silver, recorded transactions in 300 shares at $1.70@$1.75. Kingston & Pembroke, of Ontario, was dealt in to the amount of 100 shares at 28c. The North Carolina gold stock, Russell, shows dealings in a considerable number of shares at prices varying from 31½@33c.

The Consolidated Stock and Petroleum Exchange has done hardly anything in mining stocks this week, while the Mining Exchange on the other hand reports business fairly active.

Boston. March 25.

(From Our Special Correspondent.)

The market for mining stocks averages lower, in sympathy with the tone of ingot copper and the unsettled condition of the general market. The volume of business transacted is more restricted, except in two or three of the stocks which are largely speculative. Arnold declined from $3⅜ to $3⅛ and closed $3 bid, with limited transactions. Atlantic fell from $21¾ to $21. Calumet & Hecla declined from $380 to $375, but since the latter sale a dividend of $5 per share has been announced, payable April 23d, which makes a division of $20 per share thus far in 1897; later sales were at $377½. Centennial went off from $7¼ to $6¼ on the announcement of an assessment of $1 per share, payable April 9th by holders of stock March 23d, and later the stock sold at $8, assessment paid. Franklin was unchanged at $11. Humboldt rules at 55@60c. There is talk that this property, together with the Arnold and Copper Falls, may be consolidated and worked as one mine. Kearsarge farther declined from $18¼ to $16½, the expectation of an early dividend not being realized. Osceola is off $1 per share to $31¼ and closes $31½. Quincy declined from $109½ to $106 and scrip $100¼ to $97. It looks a little singular that there should be a difference of $9 in the price of these two while $6¼ to be paid on the scrip will make it precisely as good as the old stock. Tamarack is firmer, advancing from $118 to $120¼ and has been much more active of late than usual for this stock. Tamarack, Junior, is off $1¼ to $17. Tecumseh, ¼ lower at $2¾ and Wolverine declined from $9¾ to $9¼ per share.

Boston & Montana has been quite active through the week, declining at first from $126¼ to $125, then rising sharply to $129 (highest), and slid off to $125½, closing $126. Butte & Boston has had a steady decline from $19¼ to $17½, the appearance being that parties are realizing temporarily. Old Dominion still continues weak, declining from $14¼ to $13¾ on limited transactions.

Gold stocks are not yet in favor, possibly except ing Gold Coin, which took a start upward last week, and has continued to advance, gaining from $3¾ to $4⅛; the transactions have been unusually large. Merced farther declined from $10 to $9 and is inactive. Pioneer broke from $6¼ to $5, with large sales at the lower figure, notwithstanding continued newspaper reports, that verything is looking well. Santa Ysabel is off $3¾, to $12¾ and little doing.

In the afternoon market there were no special features, but the same dullness continued, with rather a free selling of stock, wherever buyers stood ready to take it.

Cleveland. March 24.

(From Our Special Correspondent.)

As was expected, the stock market was somewhat weakened during the past week by reason of the fact that many investors feared that the Bessemer Iron Ore Association would be dissolved, or that some radical action would be taken at the meeting held Tuesday. None of the stocks offered in this market were affected seriously, as the fluctuations did not take a wide range. Jackson advanced a few points, while Lake Superior and

Pittsburg & Lake Angeline declined slightly. Minnesota, which was withdrawn from the market several weeks ago, was placed on sale during the past week.

Salt Lake City. March 20.

(Special Report of James A. Pollock.)

The mining stock market has been active but irregular and uncertain, and the general situation is not of a nature to produce confidence. The gold stocks are strong, even though there is but limited demand, and the silver-lead stocks are weak. Ajax sold slightly lower, although not for any change at the properties. Lack of supporting orders caused the decline. Anchor is shipping lightly, and the stock remains inactive. Bogan is doing nothing, while Buckeye held its strength in good shape and did considerable business. With the closing of the March dividend books, Bullion-Beck went off more than the amount of the dividend. On the 15th the Centennial-Eureka paid its usual monthly dividend. Some light offerings of odd blocks of the stock occurred during the week, the quotation being slightly shaded. Both of the Dalys were quiet, with quotations about unchanged. The damage done at the Daly by the snowslide has all been repaired, and the full works are again in operation. Dalton was a shade stronger on reports that the leasers were sacking pay ore. Dalton & Lark did but little, but that little at shaded prices. Dexter was materially stronger on the strength of the official reports to the effect that some important mine developments had just occurred. Neither East Golden Gate nor Eagle showed any signs of returning life. Four Aces was likewise quiet. Weak holders let go of Galena at shaded figures. Geyser-Marion was strong and did heavy business. Horn Silver did comparatively little on this market. Little Pittsburg was very active, but about stationary. Mercur was much stronger and closed with very little stock being offered. A slight reaction again occurred in Mammoth through lack of support. Northern Light was slightly stronger and in increased demand.

Ontario was again offering at somewhat lower figures, but there were few buyers in. Richmond-Anaconda was active at stationary quotations. Rover was offered but lightly and the business done was at advancing figures. Sunbeam fluctuated widely again and closed lower. Silver King was strong on limited dealings. Sacramento did little, but was offered at low figures. Swansea and South Swansea each declared a March dividend of 5c. Both stocks sold materially higher during the week but closed at practically the figures of the previous week. Tetro was somewhat lower.

San Francisco. March 20.

(From Our Special Correspondent.)

The market was very dull at the opening, and prices were generally weak. There was a little improvement toward the middle of the week and quotations were better, but even then matters were dull.

The activity soon subsided, and the week closed very dull. On Friday and Saturday there were hardly any transactions worthy of note. About all the interest there is in the market centers around the Hale & Norcross fight. On Thursday the Grayson party held a meeting and elected directors, but the present officers will certainly refuse to recognize this board, and a long litigation will probably follow.

Some quotations noted are: Consolidated California & Virginia, $1.25; Challar, $1.02@$1.05; Ophir, 89c.; Hale & Norcross, 84c.; Confidence, 79c.; Best & Belcher, 67@68c.; Potosi, 33c. A little was done in Standard Consolidated at $1.60@$1.65.

The California Debris Commission has received new applications to mine by the hydraulic process from Wise & Partridge, in the Alameda mine, and from George Nissen, in the Annie Laurie mine, both near Colfax, Placer County, to deposit tailings in Bunce Canyon.

Spokane, Wash. March 19.

(From Our Special Correspondent.)

The Stock Exchange opened with the bullish element quite active, especially in handling Deer Park of Trail Creek, B. C. Heavy buying resulted and many different rumors were in circulation regarding it. Quotations for Deer Park on the local exchange on Saturday were 18 to 22c., but these prices were later in the week hammered down to 15c, bid. Sales for the week aggregated 30,650 shares.

Butte showed large orders from Rossland, Montreal and Toronto, and the total sales amounted to 4,000 shares at 3¾. The Butte mine is located in the Trail Creek District, in British Columbia. Rambler-Cariboo, located in the Slocan District, was fairly active this week, with sales of 11,000 shares at 50@54c.

Noble Five Consolidated of Slocan held its own at 60@60½c; sales amounted to 3,000 shares. Monte Cristo of Trail Creek was firm with dealings of 4,750 shares at 11¾@12½c.

On March 16th two new stocks were called on the exchange, Jeff Davis and Boston. The former is located at Ainsworth, B. C., and the latter in Grante County, Oregon. The largest individual owner of Boston stock is T. S. Griffith. Of Jeff Davis there were sales of 4,500 shares at 15@19½c. and of Boston, 2,000 shares at 6c. On the same day Dardanells changed hands at 20c., with sales of 5,000 shares.

Some heavy transactions took place in the lower-priced stocks. Among these were Poorman of Trail Creek, with dealings in 4,100 shares at 4½@5¼c., Vulcan with 7,500 shares at 1@1¼c., and St. Keverne with 6,000 shares at 4c.

The total sales this week amounted to over 100,000 shares, nearly treble those reported last week. There are now 87 listed and 66 unlisted stocks called on our exchange here.

President Newbery made the announcement after Friday's call that no member on the exchange shall bid for a stock at a higher figure than a board lot has previously been offered, without first having bought up the board lot offered; otherwise the caller will rule out such a bid.

Messrs. Van B. De Lashmutt, John M. Burke and C. D. Rand were proposed and endorsed for membership this week.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, March 18.

The first effort to establish a regular organized stock exchange in Rossland has been made. At a meeting attended by upwards of 50 brokers a committee was appointed to draft a constitution and a set of by-laws to govern the exchange. The project is now in a fair way to be carried out. The plan provides for a membership fee of $50, and a board of nine directors to manage the exchange.

London. March 13.

(From Our Special Correspondent.)

The California Milling and Mining Company, Limited, operating the California and Hidden Treasure mines in the Nevada District, Gilpin County, Colo., and the Hidden Treasure mill, in the same district, has been obliged, from want of capital, to sell its mines, and in the future its operations will be confined entirely to the working of the Hidden Treasure mill. For quite a number of years the company has been unable to work the mines at a profit, owing to the want of capital. The company was hampered with mortgages to the extent of $40,000, the interest on which it could not pay. As these debentures had to be redeemed in 1898, the directors naturally felt that something must be done pretty soon to get them out of their difficulties. Three months ago they made an attempt to issue new debentures to the extent of £25,000 so as to pay off the old debenture bonds and to provide capital for re-opening the mines.

This attempt proved a failure, so that the directors had no alternative but to sell the mines. Negotiations have been completed with regard to the sale, but the terms are not yet disclosed. The contract for the sale of the mines includes the stipulation that a royalty of 5% for 10 years is to be paid on the whole output of the mines, and that the ore produced from the mines shall be sent for treatment to the company's mill for a period of five years. The mill in question is one of the best in the district. It has 75 stamps and ample water-power.

Paris. March 14.

(From Our Special Correspondent.)

A little more attention has been given to mining stocks, though there is still an uneasy feeling and the fluctuations of international securities command the most attention.

The copper stocks have weakened somewhat, and nearly all the prices are lower, with the exception of Boleo, which still continues to advance. I do not think the general reaction will go very far, and it will very probably be succeeded by another upward movement.

Le Nickel has fallen a little again. The statements to be made at the yearly meeting this week are looked for with some curiosity. Huanchaca has also fallen; it appears that the water is interfering seriously with operations in the mine, and it seems impossible to control it.

The lead and zinc stocks are generally strong, especially the former. The lower prices of zinc do not seem to affect the shares of the companies much.

Very little has been done in the metallurgical shares, and they have not perceptibly lost. The stocks of the Russian group continue to maintain very high prices. The Acieries de France have received a large order for the extension of the Siberian Railroad through Manchuria.

The Transvaal gold shares continue absolutely dead. Very few transactions have been made, but those few have been at lower prices than have been recorded since the excitement first began. The situation in South Africa seems to grow worse instead of better.

The political situation grows worse instead of better, but people are getting used to alarms and apprehension is less keen. AZOTE.

MISCELLANEOUS DIVIDENDS.

Boston & Colorado Smelting Company, quarterly dividend of 2½%, payable April 1st.

MEETINGS.

Goldstone Mining Company, at 10½ East Pike's Peak avenue, Colorado Springs, Colo., on April 5th, at 4 p. m.

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

Nisi Prius Mining and Leasing Company, annual meeting at 605 People's Bank Building, in Denver Colo., on April 13th, at 4 p. m.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dlnq.	Sale.	Am.
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
Belcher Silver	Nev.	54	" 6	" 27	.25
*Brunswick Con	Cal.	11	" 20	May 15	.03
California	"	11	Mar. 30	Apr. 17	.01
*Centennial	Mich.		Apr. 9		1.00
Channel Bend	Cal.	6	Mar. 12	Apr. 3	.02
Con. Cal & Va.	Nev.	8	Apr. 13	May 3	.25
Con. Imperial	"	38	Mar. 23	Apr. 13	.01
*Eldorado Gold	Utah.		Apr. 12	May 3	.01
Emerald	"		" 15	" 4	.00½
Fish Springs	"		Mar. 27	Apr. 24	.04
Golden Fleece	Cal.	19	" 30	" 24	2.00
Gold Valley	"	5	" 24	" 8	.10
*Henrietta	"	1	Apr. 26	May 17	.06
Horseshoe Bar, Con.	"			Apr. 17	.10
*Jamison	"	9	Mar. 26	May 21	.05
Kentuck Con.	Nev.	13	" 23	Apr. 14	.05
Little Pittsburg	Utah	12	" 26	" 15	.01½
Live Oak & Minuett	Cal.	12	" 17	" 5	.01½
Lone Hill	"		" 20	" 15	.01½
Marguerite	"	5	Feb. 25	" 8	.10
Mexican	Nev.	56	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	May 3	.10
Potosi	Nev.	47	" 14	" 5	.20
Sevier	Utah.		" 3	" 19	.04
Silver King	Ariz.	16	Mar. 1	Mar. 29	.25
Snowflake	Utah		" 29	Apr. 29	.01
Uradine	"		" 20	" 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	Mar. 15	6,000	18,000	48,000
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	Apr. 23	500,000	2,000,000	48,850,000
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			4,500	9,500
Daly	Mar. 1	37,500	37,500	2,925,000
Della S			10,000	60,000
*Elkton Con	Mar. 20	20,000	65,000	231,960
*Florence	" 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			20,000	3,244,918
*Homestake	Mar. 25	31,250	93,750	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. 20	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
*Pennsylvania	Mar. 1	2,575	5,150	7,725
*Portland	"	30,000	90,000	953,000
*Princess			5,000	45,000
*Quincy			100,000	9,070,000
Rambler-Cariboo	Mar. 15	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	"	7,500	22,500	29,950
Standard Con.	" 23	20,000	20,000	3,737,868
Swansea	" 20	5,000	10,000	31,500
Two Friends	" 31	20,000	20,000	20,000
*Utah			2,000	175,000
*Victor	Mar. 15	20,000	60,000	765,000
Totals		$1,015,181	$4,693,888	$114,160,176

* 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. 20. H.	Mar. 20. L.	Mar. 22. H.	Mar. 22. L.	Mar. 23. H.	Mar. 23. L.	Mar. 24. H.	Mar. 24. L.	Mar. 25. H.	Mar. 25. L.	Mar. 26. H.	Mar. 26. L.	Sales
Alamo	Colo	1													
Anaconda	"	1					.51	.50	.52	.51½	.52	.51½	.55		2,600
Anchoria-Lel'd	"	1													
Annetta	"	1							.12	.11½	.12½		.13		800
Argentum-Jun.	"	5					.30		27½		.27		.28		1,000
Belcher	Nev.	100													
Best & Belcher	"	100													
Bodie	Cal.	100													
Breece	Colo.	25			.18										500
Brunswick	"	1	.07		.18	.06	.08	.07			.08	.06			24,900
Chollar	Nev.	100	1..0												50
Comst.T. Bonds	"	100													
Con. Cal. & Va.	"	100	1.25												200
Con. Imperial	"	100													
Creede & C. C.	Colo.	1							.06						500
Cripple Cr. Con.	"	1			.11				.10¾						2,900
Crescent	Utah.	25													
Crœsus	Colo.	1													
Crown Point	Nev.	100													
Dalton & Lark	Utah.	1													
Deadwood	S. Dak	25													
Eagle	Colo.	5													
Elkton	"	1									1.30		1.27		700
Fanny B	"	1							10						100
Favorite	"	1													
Garfiel Grouse	"	1													
Geyser	Utah	5													
Gold Cliff	Colo.	1													
Gold Coin	"	5					4.50						4.80		380
Gold Explor	"	1													
Gold & Globe	"	1							.10						1,000
Golden Fleece	"	1							.29	.27					2,000
Gold San Juan	"	1					.23	.22½	22½	.22	.23	.22½			13,600
Hale & Norcross	Nev.	100													
Homestake	S. Dak	100													
Horn Silver	Utah.	25			1 70		1.75								3 0
Iron Silver	Colo.	2													
Isabella	"	1					.43		.45½		.41		.44		900
Jack Pot	"	1													
Japan	"	10									2.75		3 00	2.85	500
Jefferson	"	1													
King & Pemb.	Ont.	10							.28						100
Lacrosse	Colo.	10													
Leadville Con.	"	10													
Little Chief	"	50													
Mercur	Utah.	25													
Mexican	Nev.	100													
Mollie Gibson	Colo	5					.22								300
Mono	Cal	100													
Moulton	Mont	5													
Mt. Rosa	Colo.	1													
New Haven	"	1											1½		3,000
Old Dominion	Ariz.	25							13.50				13.5		3 0
Ontario	Utah.	100			9.00										100
Ophir	Nev	100	.95						.90						400
People's	Colo	1							0						2,000
Pharmacist	"	1	.15		.15		.15		.16		.15				13,400
Phœnix Con	Ariz.	100			.06						.06				1,100
Portland	Colo.	1													
Potosi	Nev.	100													
Quicksilver	Cal	100													
" pref.	"	100													
Red Bird	Colo.	1													
Red Mountain	"	5					26¼								1,500
Russell	N. C.	1					.33	.31½	.33	.32	.33	.32½	.33½	.32½	39,200
Savage	Nev.	100							.35						200
Sen. M & M. Co.	Colo.	10											1.10		100
Senator pref.	"	10											8 00		10
Sierra Nevada	Nev	100											.35		200
Standard Con	Cal.	100			1.70	1.65					1.65		1.65		1,150
Syndicate	"	100													
Union	Colo.	1													
Union Con	Nev.	100							.19		.19				2,300
Utah Con	"	100													
Victor	Colo.	5													
Work	"	1							.07						200
Yellow Jacket	Nev.	100													

*Official quotations. Sales, Consolidated Exchange, 22,500 shares; New York Stock Exchange, 44,500 shares; New York Mining Exchange, 74,490 shares. Total, 141,490.

INDUSTRIAL, COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Mar. 20. H.	Mar. 20. L.	Mar. 22. H.	Mar. 22. L.	Mar. 23. H.	Mar. 23. L.	Mar. 24. H.	Mar. 24. L.	Mar. 25. H.	Mar. 25. L.	Mar. 26. H.	Mar. 26. L.	Sales
Balt. & Ohio	100							15¾				15	14¾	400
Ches. & Ohio	100	18		17⅛	17⅝	17¾	17¼	17½	16¾	17	16½	16⅝	16	6,990
Col.C.& I.Dev	100													
Col. Fuel & I.	100	20½		20½		20⅜	20	21						630
Col.,H.V.&Tol	100	3¾		4		4¼		4				4		1,182
do. pref.	100													
Col. & H.Coal	100													
Del. & Hud. C	100	108⅜	108	108¾	108⅛	108	107⅜	107⅝	106¾	107⅝	107¼	107⅛	107	4,959
Del., L. & W.	50					154¼		154½	154⅛					1,300
General Elec.	100	34⅛	34⅛	34⅜	34⅛	34⅝	34	34	33	33⅜	33	33	31¾	12,.30
Lake Erie&W	100							16½		16		14		200
do. pref.	100					67		66¾	66⅜	65¼		60		319
Morris&Essex	100									164¼				10
Nat'l Lead	100	23¾				23¾	23⅛	23¼	22¾	22⅝		22¾	22½	1,720
do. pref.	100	91⅛	90			92	91			90¾				3,3
N. J. Central	100	91⅛	90	91¼	88	85¾	84¾	87¼	84¾	87¼	85½	87⅝	86	66,159
N. Y.,L.E.&W	100													
do. pref.	100													
N.Y.,Ont.&W.	100	14¾	14⅛	14⅛		14⅛	14⅛	14⅛	13⅞	14	13⅞	13¾	13¾	3,147
N.Y.,Susq.&W	100					8⅜		8½		8⅛		8¼		548
do. pref.	100			25	21½	24⅜	24¾	24	23¾					1 360
Norfolk & W.	50													
do. pref.	50					27¼				26⅜				9
Phila. & Read.	50	23½	23	23⅜	23¼	23⅛	22½	22⅜	21⅛	22¼	21¼	22⅛	2 ⅜	35,718
Tenn. C. & I.	100	27½		27½	27⅛	27⅛	25⅞	27	25¼	26½	26⅛	26	25⅞	12,455
do. pref.	100													
Wheel. & L. E	100	1¼		1½	1⅛	1⅛				1		1¼		620
do. pref.	100	4				5		4⅛						440

* Official quotations N. Y. Stock Exchange. Total shares sold, 150,674.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Mar. 19.	Mar. 20.	Mar. 22.	Mar. 23.	Mar. 24	Mar. 25.
Alta	Nev.	100	.01	.04	.04	04	04	04
Belcher		100	.18	.19	.18	.17	.15	.15
Belle Isle	"	100						
Best & Belcher	"	100	.68	67	.65	.67	.65	.67
Chollar	"	100	1.10	1.15	1.10	1.20	1.15	1.20
Con. California & Virginia	"	100	1.25	1 20	1.10	1.20	1.15	1.20
Crown Point	"	100	.19	.20		18	.13	.14
Gould & Curry	"	100	.31	31	.29	.38	.28	.29
Hale & Norcross	"	100	.84	.85	.80	.82	.84	85
Mexican	"	100	.26	.27	.25	.25	.25	26
Nevada Queen	"	100			.07	.07	.06	
Ophir	"	100	.91	.89	.88	.92	.88	.91
Potosi	"	100	.35	.36	.34	.39	.37	.38
Savage	"	100	.30	.31	.29	.30	.29	.29
Sierra Nevada	"	100	.27	.27	.25	.50	.24	.26
Standard	Cal.	100	1.65	1 65		1.65	1.55	1.55
Union Con.	Nev.	100	.27	.29	26	.28	.28	.28
Utah	"	100	.06	.05	.05	06	07	.06
Yellow Jacket	"	100	.27	.27	.28	.25	24	24

*Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Mar. 25.

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	36	39	Ore Knob	"	10		
G. Cr'k Coal	"	10	106	107	Silver Valley	N. C.	5		

*Official quotations Baltimore Stock Exchange.

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Mar 19. H.	Mar 19. L.	Mar. 20. H.	Mar. 20. L.	Mar. 22. H.	Mar. 22. L.	Mar. 23. H.	Mar. 23. L.	Mar. 24 H.	Mar. 24 L.	Mar. 25. H.	Mar. 25. L.	Sales.
Allouez	Mich.	25									.85				100
Anaconda	Colo.	1													
Arnold	Mich.	25	3.25		3.38	3.25			3.25		3 25		3.25	3.00	1,125
Atlantic	"	25			21.75		21.75						21.00		320
Bonanza	Nev.	100			.50		.60	.50	.65	.62½	.67½	.60	.70		3,470
Bost. & C. C	Colo.	1													
Bost. & Mont.	Mont.	25	126⅝	124½	126½	125¼	128⅛	127	129	127	127¾	126½	127½	125¼	12,719
Butte & Bost.	"	25	19 13	18.50	18 75	18.50	19.00	18 50	18.63	18 13	18 35	17.75	18.00	17.50	12,504
Cal. & Hecla	Mich.	25	380						377½				377½	375	22
Centennial	"	25	7 38	6.25	8 00	7.38	8.13	7.50	7 50	7.25	8.00	6.88	8.00		10,400
Dominion Coal	N. S.	100	7 25	7.13	7 00	6.88	7 25	7.00	8.00	7 00	7.75		7 50		107
do. pref.															
Franklin	Mich.	25	11.00												38
Gold Coin	Colo.	1	4.62	3 93	4.25	4.13	4 75	4.25	4 75	4 63	4 75	4.50	4 88	4 63	21,205
Humboldt	"	1			57				60						600
Illinois Steel	Ill.	100	34.50				34.00	33 00	33 00	32.25	33 00	32.75			485
Kearsarge	Mich.	25	17.75		18.00	17 75	17.75	17.25	17.25	17.00	16.50		16.63	16.50	1,425
Lake Sup. Iron	"	25													
Merced	Cal.	15	9.75	9.50	9 50	9.25	9 88	9.25	9 25				9.10		659
Napa	Cal.	7													
National	Mich.	25													
Old Dominion	Ariz	2	14.25	14.00	14.00		14 00		13.75		13.75				1,550
Osceola	Mich.	25					32.75		32 00	31.00	32.00	31.50	31 50	31.25	285
Pioneer	Cal.	10	6 25	6.00	6.00	5 50	5 75	5 50			5.50	5.38	5 00		4,455
Quincy	Mich.	25	108		107		107	106½	106	105	105		106		280
do. scrip	"		108		100		100				97 00	93.00	97.00		272
Ridge Mining									1.25						100
San. Ysabel (G.)	Cal.	5					13 13		13. 0				12 75		200
Tamarack	Mich.	25	119½	119	120		120		120	119	120	118½	120½	118½	1,042
Tamarack, Jr.	"	25	17.50		17 50		17.00		16 75						455
Tecumseh	"	25	2.88	2.75	2.75										50
Westingh.E.&M	Pa.	50									24.00				110
do. pref.	"	50			52 00				51†		51†				79
Wolverine	Mich.	25	9.75				9 75	9 50	9 75		9 50	9 25			255

*Official quotations Boston Stock Exchange. †Ex-dividend. Total sales, 74,362.

COLORADO SPRINGS, COLO.

Name of Company.	Par val	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.	Mar. 20. H.	Mar. 20. L.	Sales.
Ajax	$1													
Alamo	1	.05	.04⅞	.05¼	.04⅞	.04⅞		.04⅞				.05⅛		7,300
Am'ric'n C	1													
Anaconda	5					54	.53¼	.53¾	.53⅛	.53⅝	.53⅛	.53¾		8,500
Aola	1													
Arg'ntumJ	2	.29				.27⅛		.27	.23¾	.29⅝	.26	.29⅛		7,650
Bangkok	1													
Bankers	1													
Banner	1	.02⅛	.02⅜	.02⅛		.02⅜				.02⅜		.01⅝	.01½	100,500
Ben Hur	1													
Blue Bell	1													
Bob Lee	1													
Bost. & C.C.	1													
Bucknorn	1													
Colo.C.&M.	1													
Columbine	1													
Copper M	1													
Cr. & C. C.	1													
C. C. Con.	1	.10⅜		.10⅜						.10⅜	.10¼	.10		9,000
Cr.Cr.Exp.	1													
Crœsus	1													
Des Moines	1			.07⅜										200
Elkton	1	1.29¾	1.28⅝	1.29¾	1.28	1.26½	1.26	1.26¼	1.25	1.25⅛	1.25⅛	1.25⅛		26,900
Enterprise	1													
Fanny R.	1	.07⅝		.07¾		.07¼		.08						3,500
Favorite	1													
Franklin	1							.004⅛						1,000
Garfield-G.	1													
Gold. Age	1													
Gold. E'g'e	1													
Gold Fl'ce.	1	.35												100
Gold & Gl.	1													
Gold King	1													
Gold Stand	1													
Gould	1													
Grotte	1													
Henrietta	1													
Humboldt	1													
Ida May	1													
Ingham,C.	⅛													
Iron Clad	1													
Isabella	1	.48¼	.47¾	.45¾	.44	.44⅛	.43⅛	.43	.42½	.43½	.42½	.43	.42	62,550
do. stamp.	1	.47	.46⅛			.43	.42⅜	.42½						8,900
Jack Pot	1	.07⅞		.08		.08	.07	.07⅜	.07¾	.07¾		.07⅞	.07¾	18,100
Jefferson	1													
Keystone	1													
Ladessa	1													
L'nc'ln B'y	1													
LottieGib.	1													
Marion	1	.004												6,000
Matoa	1													
Mollie G.	5	.29	.28							.25⅛	.24⅝	.25		10,700
Monarch	1													
Mt. Rosa	1									.08⅛				100
Mutual	1													
Nugget	1													
Ophir	1													
Oriole	1			.01⅞										5,000
Orphan B.	1													
Pappoose	1													
Pharmacist	1	.13¼	.13	.13¼		.14	.13¾	.13⅞	.13¾	.14	.13⅞	.13⅞		27,000
Pilgrim C	1			.01⅛	.01	.01		.01				.01		57,000
Portland	1	.85	.82	.80	.79	.83	.82	.83		.82		.83½	.83	4,000
Reno	1													
Sacramento	1													
Silver St.	1													
Specimen	1									.15⅛				500
Sq'w Mt.T.	1													
Temonj	1													
Trachyte	1			.01¾				.01¾		.01⅞		.01⅞		7,000
Union	1			.20		.20¾	.20⅛	.21⅛	.21⅛	.22	.21¾	.21¾		11,210
Virginia M.	1													
Work	1	.07⅛		.07	.06¾	.07		.06⅞				.06¾		11,500

Official quotations. Total shares sold listed, 394,200; unlisted, 613,450

CLEVELAND.

Name of Company.	Par value.	Mar. 24. Bid.	Mar. 24. Ask.	Name of Company.	Par value.	Mar. 24. Bid.	Mar. 24. Ask.
Aurora	$25		$4	Lake Superior	$ 5		$30
Chandler	25	$35	40	Minnesota	100	$45	55
Cleveland-Cliffs Iron	100		3⅞	Pittsburg & L'ke Angeline	25		70
Jackson	25		75	Republic	25	10	12

BRITISH COLUMBIA. Week ending March 20.

Name.	Selling price.	Name	Selling price.	Name.	Selling price.
Boundary Creek:		**Trail C'k** (con.):		**Trail C'k** (con.):	
Old Iron Sides	$0.06	Blue Bird	$0 19	Josie	$0 45
C'p McKenney:		Butte Gold-Copper	.15	Jumbo	.50
Cariboo M.& S.Co.	.47	Br. Col. G. King	.08	Josie Mac	08
Ainsworth & Nelson Dis.:		Caledonia	.03	Le Roi	7.50
		California	15	Lily May	.20
Dellie M. & M. Co	.13	Camp Bird	.05	Little Darling	.04
Colville Res.		Colonna	05	Mabel	04
Burton	.03	Commander	.15	Mayflower	.13
Fidelity G.& C.Co	.08	Crown Point	50	Monita	20
Joe T. Gold M. Co.	08	Deer Park	.18	Monte Cristo	.13
Mountain View.	.05	Dewdney	.03	Morning Star	.07
Idaho District:		Enterprise	.20	Nest Egg	.08
Daisy Group	08	Evening Star	.14	Northern Bell	.15
Dardanelles		Georgia	.13	O. K	.25
Oro Pinar Placer	.10	Gertrude	.08	Palo Alto	.08
Slocan Dis.:		Good Hope	.04	Phœnix	.10
Idler	.10	Great Western	.15	Red Eagle Lee	.12
Noble Five Con.	.55	Hattie Brown	.08	Red Mt View	.12
Rambler Con	45	Helen	.05	Rossland Red Mt.	.18
Reco	1.25	High Ore	.05	St. Elmo	.09
Slocan Star	2.50	Homestake	.08	Silver Bell	.10
Wonderful Group	.10	Imperial	.08	So. Cross & Wolver. C.	.08
Trail Creek:		Iron Mask	.42	St Paul.	.10
Alberta	.10	Iron Coat	.10	West Le Roi	.15
Big Chief	.10	Iron Horse		White Bear	.18
Big Three	.15	Ivanhoe	.08		

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

LONDON. Mar. 12

Name of Company.	Country	Product.	Authorized capital.	Par value. £ s. d.	Last dividend. Amt. s. d.	Last dividend. Date.	Quotations. Buyers £ s. d.	Quotations. Sellers £ s. d.
N'th Americans:								
Alaska-Mexican....	Alaska....	Gold...	£200,000	1 0 0	0 4.8	Jan., 1897	1 0 0	1 5 0
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 3	June, 1896	3 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..	"	200,000	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	16 3	18 9
Copper:								
Anaconda.	Montana.	Cop. & Sil. .	6,000,000	5 0 0	5 1¼	Nov., 1896	5 18 9	6 1 3
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	" "	1 17 6	2 2 6
Mason & Barry.....	Portugal..	Cop.& sulph	1,050,000	4 0 0	£1 cp	Dec. "	2 10 0	2 15 0
Rio Tinto...........	Spain......	Copper.. ...	3,250,000	10 0 0	18 0	Nov., "	26 17 6	27 0 0
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 11 3	2 13 9
‡Mt. Morgan Gold .	Qu'ns'and	Gold.... ...	1,000,000	1 0 0	0 6	Mar., "	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 6 3	2 8 9
City & Suburban...	Transvaal	Gold.........	1,360,000	4 0 0	2 0	" "	3 5 0	3 10 0
Crown Reef..	"	"	120,000	1 0 0	12 0	Oct., 1896	9 10 0	10 0 0
De Beers	CapeCol'y	Diamonds...	3,950,000	5 0 0	£1	Jan., 1897	27 11 3	27 13 9
Ferreira.......	Transvaal	Gold.........	90,000	1 0 0	30 0	" "	16 10 0	17 0 0
Geldenhuis Est.....	"	"	200,000	1 0 0	2 6	Oct., 1896	2 8 9	2 11 3
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 10 0	6 15 0
Jagersfontein......	OrangeF.S	Diamonds...	1,000,000	5 0 0	6 0	Sept.,1896	8 12 6	8 17 6
Langlaagte Estate.	Transvaal	Gold.........	500,000	1 0 0	3 0	Jan. 1897	3 15 0	3 17 6
Primrose (New)....	"	"	300,000	1 0 0	xrts.	Sept.,1896	3 5 0	3 10 0
Robinson...... ..	"	"	2,750,000	5 0 0	5 0	Jan., 1897	7 5 0	7 10 0
Sheba.	"	"	850,000	1 0 0	x-rts	Feb , "	1 16 3	1 18 9
Sim. & Jack (New).	"	"	5,000,000	5 0 0	......	......	3 7 6	3 12 6
Wemmer.........	Witw'sr'd	"	80,000	1 0 0	15 0	Jan., 1897	6 0 0	6 5 0

‡ Ex-dividend.

PARIS. Week ending March 12.

Name of Company.	Country.	Product.	Capital Stock. Francs.	Par value. Fr.	Divs. last year. Fr.	Prices. Op'ning. Fr.	Prices. Closing Fr.
Acieries de Creusot.. ...	France.. ..	Steel mfrs..	27,000,000	2,000	80.00	1,990.00	1,949.00
" " Firminy....	"	" " ..	3,000,000	500	85.00	1,765.00	1,770.00
" " Fives-Lille..	"	" " ..	12,000,000	500	35.00	810.00	800.00
" " la Marine...	"	" " ..	20,000,000	500	37.50	1,060.00	1,060.00
" " Longwy....	"	" " ..	....	500	35.00	875.00	865.00
Aguas Tenidas...........	Spain..	Iron pyrites	10,000,000	500	25.00	115.00	116.00
Anzin.......	France......	Coal.........	....	....	170.00	4,945.00	4,885.00
Boleo........	Lower Cal..	Copper.......	....	500	65.00	1,660.00	1,750.00
Briansk..................	Russia ...	Coal & Iron	....	....	....	1,310.00	1,305.00
Bruay......................	France....	Coal..	3,000,000	400	700.00	26,475.00	25,990.00
Callao........	Venezuela.	Gold....	32,200,000	125	....	4.25	4.50
Cape Copper......	S. Africa....	Copper......	....	50	1.50	61.50	62.50
Champ d'Or	"	Gold....... ..	....	25	....	27.00	27 00
Courrieres............	France.	Coal..........	600,000	300	160.00	1,630.00	1,600.00
De Beers Consolidated..	S. Africa....	Diamonds ..	98,750,000	125	15.63	685.00	706.50
Dombrowa	Russia	Coal...	....	500	....	599.00	600.00
Dynamite Centrale......	France......	Explosives..	....	500	12.50	505.00	485.00
Fraser River....	Brit. Col'mb	Gold.........	....	....	....	44.00	44.00
Huanchaca..............	Bolivia	Silver.	....	125	5.00	66.00	61.00
Huta-Bankowa.	Russia......	Iron & steel	....	....	....	3,345.00	3,315.00
Langlaagte Estate......	S. Africa....	Gold	11,750,000	25	11.25	98.00	97.50
Laurium...	Greece......	Zinc & lead.	16,300,000	500	40.00	655.00	645.00
Lautaro	Chile........	Nitrates.....	....	125	.. ..	150.00	150.00
Malfidano.............	Italy	Zinc	12,500,000	500	40.00	1,020.00	1,015.00
Metaux, Cie. Fran. de...	France......	Metal d'lers.	25,000,000	500	12.00	672.00	645.00
Mokta-el-Hadid..........	Algeria.... .	Iron...... .	18,312,500	500	40.00	765.00	750.00
Nickel	N.Caled'nia	Nickel	12,720,000	500	30.00	220.00	212.00
Paccha-Jazpampa.......	Chile........	Nitrates...	....	....	....	22.00	25.00
Penarroya......	Spain..	Coal, etc....	....	500	65.00	1,640.00	1,625.00
Rebecca.........	Colo'do,U.S.	Gold.........	....	....	....	9.00	9.00
Rio Tinto	Spain.......	Copper......	81,250,000	250	27.65	690.00	684.00
Robinson	S. Africa....	Gold..	....	125	12.50	202.00	192.00
Saint Elie.	Fr. Guiana..	"	4,000,000	25	....	35.00	35.50
Salines de l'Est........	France.....	Salt.........	....	500	20.00	320.00	305.00
Sels Gem.de la Rus. Mer	Russia......	" etc.......	....	....	....	599.00	590.00
Tharsis	Spain..	Copper.. ...	....	50	8.75	174 00	172.50
Vielle Montagne...... ..	Belgium....	Zinc.........	9,000,000	80	20.00	531.00	527.50

MEXICO. Week ending Mar. 11.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo.........	9,600	$0.7	....	$30	$28
Angustias...	Guanajuato....	2,400	10.00	....	540	580
Arevalo y Anexas....	Hidalgo.	....	10.00	....	300	360
Asturiana y Anexas..	Zacatecas.......	2,500	10.00	....	220	210
Bartolome deMedina	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	....	....	200	160
Pabellon.........	"	1,000	27.89	....	200	180
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	....	....	80	50
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	....	900	930
do. free stock.	"	1,200	14.00	....	450	400
Sta. Maria de la Paz..	S. Luis Potosi..	2,400	....	....	500	570
Soledad........	Hidalgo.........	960	7.50	....	440	400
Sorpresa.............	"	960	5.00	....	300	250
Trinidad.............	Guanajuato....	2,000	....	....	60	50
Tlauzingo...........	Puebla.........	2,400	....	....	40	30
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	20	15

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.* Feb. 13.

Name of Company.	Capital.	Share value Nominal	Share value Paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,300,000	$100	$100	1 per cent.	$31½	$31	$31
Caracoles	315,000	100	100	5 "	....	.... ..	....
Descub. de Huantajaya...	1,000,000	100	100	3 "	....	....	.. ..
Huanchaca de Bolivia....	8,000,000	25	25	4 "	38	38½	38
Oruro....	800,000	200	200	....	330	335	335
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	....	....	....
Todos Santos......	2,000,000	100	100	1 "	15	16	16
Nitrate Cos:							
Agua Santa............	3,000,000	50	50	7 "	152	154	150
Antofagasta............	2,000,000	200	200	5 "	148	150	148
Union	3,000,000	200	500	.. ..	43	45	45

* 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.	Value. Paid up.	Last dividend. Date.	Last dividend. 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	13s. 10d.	Dec., 1893..	0.21	" 8.08
Sheridan Con.Mg. Co.	Colorado,U.S	20,000	Taels 100	Taels 100	....	....	" 8.00

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

DENVER, COLO.*

Name of Company.	Par val	Mar. 15 B.	Mar. 15 A	Mar. 16. B.	Mar. 16. A	Mar. 17. B	Mar. 17. A.	Mar. 18 B.	Mar. 18 A	Mar 19. B.	Mar 19. A.	Mar. 20. B.	Mar. 20. A.	Sales.
L'd Mines														
Anaconda...	$5	.53⅜	.53⅞	.53¼	.54⅛	.53⅞	.54⅛	.52¼	.54	.53¾	.54	.53⅞	.54⅛	4,800
Arg. J......	1	.28¼	.28⅝	.27	.30	.26	.30	.25	.29	.29	.30	.28⅛	.32	2,300
Bankers....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Garf. Gr....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Gold Stand.	1	.05⅝	.06	.05⅝	.05⅞	....	.05⅝	.05¼	.05⅛	....	....	.05	.05⅛	39,000
Insley.. .	1	.004¼	.005	.004¼	.004½	.004¼	.005	.004	.004⅛	.004¼	.004½	.004¼	.004½	2,000
Iron Clad...	1	..	....	.05⅛	.05⅞	.05⅜	.05⅝	.04⅛	.04⅞	.05	.05¼	.07	.07¾	29,000
Isabella.....	1	.44	.46	.44	.44⅜	.43¾	.44⅛	.42¼	.42⅝	.42	.43	.42¼	.43½	8,500
Jefferson. .	1	.11	.12¼	.09	....	...		.10	.13	..	....	.19	.10⅛	1,000
Mollie Gib..	5	.28⅛	.29⅜	.26	.28	......	.29	.25	....	.24	.24⅛	.21	.26	8.0
Mt. Rosa....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Peoples.....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Pharmacist	1	.18	.18¼	.12⅞	.13⅛	.13⅛	.14	....	....	....	....	....	....	1,000
List. Pr.														
Agate.	1	....	....	.001	.002	.001	.001⅜	.001	.001½	.001	.001¼	.001	.001⅛	1,000
Aola.	1	.01⅜	.01⅝	.01⅜	.01⅛	.01⅜	.01⅝	.01⅜	.01⅜	.01⅜	.01⅝	.01¼	.01½	5,000
C. C. Imp...	1	..	....	....	....	....	....	....	....	.001	.001¼	.001	.001⅛	49,000
CannonBall	1	.006¾	.007	.006	.006¾	.006¼	.006¾	.005¼	.005⅛	.005¼	.005½	.005	.006	109,000
Defender...	1	.004⅛	.005	....	....	....	....	.004¾	.005	....	..	.004	..	3,000
Dictator....	1	.001¼	.001⅛	.001¼	.001⅛	.001¼	.001⅛	.001¼	.001⅛	.001¼	.001⅛	.001¼	.001⅛	58,000
Dixie........	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Eclipse.....	1	.001⅛	.002	....	....	....	....	....	....	....	....	....	....	1,000
Finance....	1	.004¼	.004⅛	.004¼	.004⅜	.004¼	.004⅛	....	..	.004	.004⅛	....	....	125,000
Findley	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Gene Field.	...	....	....	....	....	....	....	....	....	....	....	....	....	......
Gold Field..	1	.001⅛	.001⅜	.002	.002¼	.002	.002⅜	.002	.002¼	.002	.002¼	.002	.002¼	4,000
Gold. Hope	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Gold Queen	1	.001	.001¼	.001	.001¼	.001	.001¼	.00⅜	.001¼	.00⅜	.001	.00⅜	.001	9,000
Gregory....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Hecla.......	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Illinois	1	.008	.008⅛	.008		.008	.008⅛	.008	....	.007½	.008	.007⅜	.008	8,000
Jack Pot ..	1	.07¾	.08	.07¾	.07⅞	.07⅝	.08⅛	.07⅝	.08	.07⅝	.07⅞	.07⅜	.07⅜	2,000
Justine.. ..	1	.002	.003	.002⅛	.003	.002⅛	.003	.002	......	.002¼	.003⅛	.002¼	....	5,000
Kimberly..	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Linc. Boy...	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Millionaire	...	....	....	....	....	....	....	....	....	....	....	....	....	......
Puritan .	1	.002⅜	....	.002¾	.003¼	.002⅜	.003⅛	.002½	.003	.002¼	.003	.002½	....	1,000
Q'n Victoria	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Reno ...	1	.03¼	.03⅜	.03⅛	.03⅜	.03	.03⅝	.03⅛	.03⅜	.03⅛	....	.03	.03⅛	1,000
Royal Age	1	.003⅜	.003⅛	.002½	.002¾	....	....	.002¼	.002⅞	.003½	.003½	.003¾	.004½	861,000
Sentinel....	1	.001¼		.001¼	.003¼	.001	.001⅛	.001¼	.001⅛	.001	.001⅛	.001⅝	.002	34,000
Seven Hills.	1	.006½	.009½	.006⅜	.007⅛	....	....	....	....	.006¼	.008	....	....	1,000
Three H's...	1	.003	.003¼	.003	.003¼	.002¾	.003¼	.002¼	.003	.002½	.002⅜	.002½	.002⅜	99,000
W. Cr. Con.	1	....	....	....	....	.001¼	....	....	....	....	....	....	....	1,000
Unl. Act.														
Ætna.......	1	....	....	.005⅜	.006	....	....	.005⅛	.006	.005	.006	....	....	3,000
Arcadia...	1	....	....	....	....	....	....	....	....	....	....	....	....	......
" Con.	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Ben Hur....	1	....	....	....	....	....	....	....	....	....	....	....	....	......
Bob Lee....	1	.008½	.009¼	.008¼	.009¼	....	....	.008¼	.008½	.008½	.009	.008	.009⅛	12,000
Bost. & C.C.	1	..	....	.006	.006¼	..	.006⅛	.005⅛	.007	....	....	....	....	3,000
Chimb'razo	1	....	....	....	....	....	....	....	....	....	....	....	....	......
C. C. Con...	1	....	....	....	....	....	....	....	....	....	....	....	....	......
C K. & N.	1	.009⅛	.01	.009⅛	.010	.009⅜	.010¼	.009	.010¼	....	....	....	....	15,000
Enterprise	1	.07⅛	.07⅜	.07¼	.07⅝	.07	.07⅛	.07	.07⅛	....	....	....	....	1,000
Eureka ..	1	.005	....	....	....	....	.005	....	.003	....	.005	....	.005	13,000
Lit. Dorritt.	1	....	....	.001⅜	.001	.001⅛	.001	.001	....	.001	.001¼	.001	....	10,000
Magna Cha.	...	....	....	.02⅝	.02⅜	....	....	....	....	....	....	.01¼	.01⅛	2,000
Mt. Beauty	1	.02⅛	.02⅝	.02¼	.02⅝	.02¼	.02⅛	.02¼	.02⅛	.02⅛	.02⅝	.02⅜	.02⅝	3,000
Old Gold.,...	1	.006⅜	.007	.006⅜	.007	.006⅜	.007	.006⅛	.006⅜	.005¼	.005½	.005⅝	.006	53,000
Santa Fe ..	1	.001⅜	.002	.001½	.002	....	....	....	....	.001¼	.001⅜	.001¼	.002	15,000
Squaw Mt.	1	.02⅛	....	.02⅛	.02⅜	....	....	.02¼	.02⅜	....	....	.02¼	.02⅛	9,000
Tamarack.	1	.02⅛	.02⅜	....	....	....	.02⅝	.02¼	....	.02⅛	.02⅝	.02½	.02⅝	68,000
Trachyte...	1		....	.01⅜	.01⅞	....		.01⅛	.02	....		.01⅜	.02¼	4,000
Va. M.	1	.06¾	....	.06⅝	.06¾	.06⅛	.06⅝	.06⅛	.06⅜	.06¼	.06⅜	.06¼	.06⅜	81,500
Wire Gold.	1	....	....	....	....	....	....	....	....	....	....	....	....	......

* Official quotations Colorado Mining Stock Exchange
Shares sold, listed, 1,475,400; unlisted, 292,500. Total, 1,767,900.

SALT LAKE CITY, UTAH.* Week ending Mar. 20.

Stocks.†	Par value.	Bid.	Asked.	Actual selling price.	Stocks.†	Par value	Bid.	Asked.	Actual selling price.
Ajax............	$10	$0.64	$0.66	$0.66	Horn Silver.....	$25	$1.75	$2.00	$2.00
Alliance.........	1	.15	.35	....	Little Pittsburg	5	.02⅞	.03⅛	.03
Am. Nat. Gas....	......	.01	.02½	.02	Lucky Bill	10	.14	.18	.17½
Anchor...........	20	1.00	1.20	1.15	Malvern..	2½	.21	.25	.... ..
Annie....	1	....	.10	....	Mammoth ..	25	1.75	1.85	1.85
Bogan...........	1	.05	.07½	....	Mercur....	25	7.10	7.20	7.15
Brick Con........	.....	.40	.60	....	Morgan.........	125	.18	.22	.22
Bullion Beck & C.	10	9.00	9.25	9.25	Northern Light	5	.83	.85	.85
Buckeye	.....	.14	.14½	.14	Ontario.........	100	9.00	10.00	10 00
Centen'l Eureka.	50	50.00	60 00	......	Overland......	5	.20	.40	.....
Dalton..........	5	.03	.03½	.03¼	Rover	10	.45	.47½	.47½
Dalton & Lark...	1	.18	.22	.20	Silver King.....	20	17.00	18.00	18.00
Daly............	20	4.50	5.00	5 00	Sioux Con......	10	.80	1.00	....
Daly West.......	20	7.75	8.00	7.90	Sunshine..	10	.65	.75	.65
Dexter...	......	1.50	1.60	1 60	Swansea. .. .	5	2.20	2.30	2 30
Eagle......	10	.03	.04½	.04	So. Swansea....	1	1.70	1 75	1 75
Four Aces.......	1	.12½	.13½	.12½	Tetro......	1	.04	.05	.04½
Galena.	10	1.00	1.10	1.00	Utah... ,.......	10	1.00	1.10	1.05
Geyser-Marion ..	5	1.35	1.42½	1.40	Utah Con.......	1	.50	.65	....
Herschel.........	5	.15	.10	....					

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

PHILADELPHIA, PA.*

Name of Company.	L'ca-tion.	Par Val'e	Mar. 18. H.	Mar. 18. L.	Mar. 19. H.	Mar. 19. L.	Mar. 20. H.	Mar. 20. L.	Mar. 22. H.	Mar. 22. L	Mar. 23. H.	Mar. 23. L.	Mar. 24. H.	Mar. 24. L.	Sales
Cambria Iron.	Pa.	......	40.00	....	....	....	....	....	....	....	39 00	....	39.00	...	260
Choc.&Glf.Ctfs	I.T.	50	8.00	....	8.00	7.75	....	....	....	....	7.75	....	....	....	3 3
Hunt & Br.Top.	Pa.	50	19.00	....	17.75	....	....	....	....	....	....	....	....	....	15
" pref	"	50	50.00	....	....	....	50.00	....	....	....	....	....	....	....	20
Lehigh C. & N.	"	50	40 00	39.25	40 00	39.00	39.25	39 13	39 25	39.00	39.13	39 00	39.00	38 00	149
Lehigh Valley.	"	50	24.75	24.25	23.38	23.00	23 25	23.00	23.50	23 13	23.88	23 75	23.75	23 50	5,791
Li'leSchuylkill	"	50	....	....	....	....	....	....	....	....	....	....	....	....	......
Penna. R. R....	"	50	53.13	52.88	53.00	52 88	53.00	52.88	53.13	53.00	53.13	53.00	53.00	52.75	2,335
Pa.SaltMfg.Co.	"	50	....	....	....	....	....	....	....	....	....	....	....	....	......
Penna. Steel...	"		....	....	....	....	....	....	....	....	....	....	....	....	......
UnitedGas Im.	Can.	......	74 13	....	73.50	....	73.75	...	....	...	73 50	73 25	73.50	73.25	216
Welsb.of Can	Pa.	.. ..	....	....	..	....	....	....	1 88	....	1 88	....	....	....	37
Welsb.Com'l..	"	.. ..	....	....	....	....	....	....	....	....	16†	....	....	....	154
" Com pr..	"	......		....	62.50	....	61.50	....	....	....	....	....	....	....	7
" Light ...	"	......	42.00	..	41.00	40.13	40.13	..	40 75	40.50	41 0	....	....	....	231
West Coal.	"		....	....	....	....	....	....	....	....	....	....	49 50	....	5

* Official quotations Philadelphia Stock Exchange. † Ex-dividend. Total sales, 9,533.

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 24.

Name of Company.	Loca-tion.	Par val	Bid.	Ask.	Selling price.	Name of Company.	Loca-tion.	Par val	Bid.	Ask.	Selling price.
Coal:						**Nat. Gas:**					
Mansfield........	Pa.	50	.....	.....	....	Allegheny.........	Pa.	100	......	......	....
N.Y. & C. Gas C.	"	50	....	.....	....	Chartiers Val......	"	100	8	11	....
Mining:						Manufacturers. .	"	100	.....	......	....
Ent'prise	Colo.	5	.....	.....	....	Peoples' Nat. Gas	"	50	.....	......	....
Lustre...........	Mex.	10	....	.....	....	Peoples' Pipeage.	"	25	14	14½	....
Silverton	Colo.	10	....	.....	....	Pennsylvania......	"	50	3	7	....
Miscellaneous:						Philadelphia.	"	50	18	19	.....
Carborundum...	Pa.	100	.....	.....	....	Wheeling . ..	W.V.	50	..	.....	.....

* Official quotations Pittsburg Stock Exchange.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par Val	Assessments. Total Levied.	Date and Amount of Last.			Dividends. 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..	1,250,000	1,250,000	1	......				211,960	Feb..	1897	.02
40	Enterprise, g. s.	Colo..	2,500,000	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. No.	Par Val	Assessments. 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'kGoldExpl'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	.00½
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	100,809	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.