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CONTENTS.

The price of silver this week fell to the lowest point on record, having been quoted at 26⅜ pence per sterling ounce in London, and at 57⅜ cents per fine ounce in New York. On March 3d, 1894, it sold at 27 pence in London, and 58¼ cents in New York, and for two weeks or more the London price was between 27 and 27⅛ pence. The price was steady during nearly all of 1896, but this year the decline has been almost continuous, having been interrupted only by a slight upward reaction in March.

The first point in the litigation between the Cowles Electric Smelting and Aluminum Company and the Carborundum Company has been secured by the latter, the United States Circuit Court for Western Pennsylvania having just given its decision. The suit was brought by the Cowles Company to enjoin the Carborundum Company from using the Acheson electric furnace, on the ground that it infringed the Cowles patents. The suit was begun about three years ago, but a new element was recently introduced by the Cowles ownership of the Bradley patents, to which reference was made in the *Engineering and Mining Journal* for February 20th and 27th and March 13th last. The Court now decides that the Acheson furnace is not an infringement. We have not yet the text of the decision, but hope to give an abstract of it shortly.

A correspondent in another column calls attention to the advertisements of Klondike "companies" which are now appearing in the daily newspapers of New York, Chicago and other large cities. The warning is timely, since there is no doubt that many of the swindlers who are always on the lookout for an opportunity are taking advantage of the new excitement to obtain money from credulous people. The prospect of success for a man who goes to the Yukon on his own resources and at his own risk is uncertain enough; to entrust money to strangers is to increase the risk.

It is altogether probable that many of the advertisers have not the slightest intention of going anywhere near the Yukon, nor of equipping parties to go there. We warn our readers that any investment of the kind proposed is pretty sure to end in loss. If they want to put money into the new gold-fields, there will be legitimate opportunities enough before long; but neither at present nor in the future should they risk anything except with known and responsible parties.

Prof. C. Thureau, late government geologist of Tasmania, described a very remarkable occurrence of gold and tin ore in a paper recently read before the Geological Society of Australia. Mt. Cameron, which is situated near the town of Gladstone in the northeastern part of Tasmania, is composed of granite, crossed by dikes of porphyry, which is capped on the southern and northeastern flanks by metamorphic slate and sandstone schists. Several gold-bearing quartz veins have been discovered in the schists, not far from the contact with the granite, a peculiarity of these veins being the resemblance of their filling to fine-grained grey to reddish quartzite. In the Royal Tasman vein the quartz became poorer in gold with depth, while cassiterite made its appearance, particles of gold and crystals of cassiterite being found in close juxtaposition. We believe that such an occurrence of gold and cassiterite has never been noted before, although a remarkable association of tin sulphide and gold and silver minerals is found in Bolivia, and the genesis of these Mt. Cameron veins will be an interesting problem for geologists. It should be mentioned that workable deposits of tinstone exist in the same vicinity.

The Calumet & Hecla report for 1896-97, which is given in another column, is of the usual unsatisfactory nature. Beyond the facts that the company's mines produced last year 92,475,595 pounds of refined copper, and the dividends amounted to $40 per share, the report tells us absolutely nothing. We have not even the gross earnings or the net earnings of the company, and it is impossible to draw any valuable deductions from comparisons of the statements of assets and liabilities with those of previous years. Of the average selling price of its copper and the cost of producing it we can learn nothing; all this information, which stockholders have a right to, is very carefully withheld. Unfortunately this is the company's usual policy, and its adoption by directors and officers, who have served honestly and secured great profits for the shareholders, has served as an excuse for other corporations where the management has not been honest and the results deplorable. It is, we believe, not only a wrong, but also a totally mistaken, policy to suppress information in this way. The Calumet & Hecla stockholders have permitted it with little protest, because they have received large returns; but there are signs that they will not always submit and that some of them are inclined to demand the information, which they have a right to receive.

The decline in the value of silver, which is due probably to the continued large production and the recently decreased demand from the East, has forced exchange in Mexico up to a point never before reached

the quotation of 225 being recorded one day this week. The rapid rise has, of course, paralyzed business in Mexico, since no merchant can afford to buy goods abroad with the possibility that a few points further advance will wipe out his profits on their sale. The present high rate of exchange materially decreases the dividends of foreigners who derive income from Mexico, unless payment is specifically guaranteed in gold, and in the latter case makes it harder for those in Mexico who have to pay the money. In this connection it is worth noting that there are now comparatively few Americans employed in Mexico under contracts requiring payment of salary in gold or United States currency. There was a time, not many years ago, when an American engineer, chemist, miner or mechanic engaged to go to Mexico could make such terms, but now it is only those who are specially wanted who can do it, which is equivalent to saying those who can command their own salaries anyway. As for the rest, there are now so many Americans in Mexico that it is unnecessary to send to the United States for a man to fill any ordinary position, and services bring naturally less reward. An assayer, surveyor or machinist now receives nominally about the same salary or wages as he would in the United States, but it is in Mexican dollars. Living, of course, costs less correspondingly, but when the exile returns to the United States the shrinkage in his savings is appalling.

There have been no changes of much importance during the week in the situation among the Western coal miners. The Pittsburg conference of operators held this week resulted in the preparation of a "uniformity" agreement—that is, an agreement providing for a scale under which miners in different districts and different classes of mines will receive fairly uniform wages, and the cost of production in different districts will be approximately equalized; but it is by no means certain that it will command the approval of all the mine operators.

As it has from the beginning, the question of the success of the strike turns upon the action of the West Virginia miners, and the leaders of the movement have concentrated all their efforts upon that State. What the actual situation is there it is difficult to say, since the news telegrams are contradictory in their tenor, and are evidently colored by local feeling. The facts seem to be that very few of the miners have yet given up work, and most of the mines are still shipping steadily. As long as this continues, there will be no important change.

No scarcity of coal is yet reported from any important point. The dispatches sent from Cleveland last week were incorrect, and the factories of that city have a sufficient supply. At Chicago and other trade centers there has been no want of coal, though prices have gone up a little.

In some quarters the strikers are evidently growing uneasy and there are fears of violence. No outbreaks of consequence have yet occurred, however, and the strike thus far has been a remarkably quiet one.

The Canadian Government and the Klondike Placers.

On July 27th the Dominion Cabinet decided to demand a royalty on the output of the new diggings of the Yukon. Under regulations previously issued, a fee of $15 per claim for registry and a tax of $100 per annum were imposed. Now, in addition to this, a royalty of 10% of the output is to be collected from all claims producing $500 per month and 20% on those producing more than that amount. Moreover, every alternate claim on all placer ground is to be reserved as the property of the government, to be sold or worked for its revenue. The establishment of such a system, which is, we believe, without precedent on this Continent since the end of Spanish rule in Mexico, is startling to those who have already acquired property on the Klondike by right of location and possession, if not by title from the government, and to prospectors who are proposing to go there.

The right of the Canadian government to make such regulations is unquestionable; the policy is doubtful. There is a suspicion that they would not have been so severe if it were not that most of the miners in the district were Americans, and the rush of prospectors thither promises to be chiefly American also. It was, of course, to be expected that the Canadian government would take measures to reimburse itself for the expenses of administration in the new district, and there is a plausible reason for a departure from the policy of liberality in granting public mineral land for the purpose of developing the unsettled parts of the country, since it is likely that the Yukon District has few natural resources besides its mines, and when the latter are exhausted the district will be abandoned; but this looks only to the easily worked placer deposits and fails to take into account the lodes whence they originated, which some day will require capital and industrial freedom for their exploitation. The measures adopted, however, seem to us unwise, owing to the retardation in the development of the mineral resources of the Canadian Yukon which they will cause, and the hard feeling they are sure to breed among the American prospectors, who are likely to clamor for retaliatory measures. These will be, moreover, difficult and expensive taxes to collect, since it will be nearly impossible to watch every miner, and the Klondike is so near the American frontier that clandestine exportation can hardly be prevented. It is a sound principle of government that revenue needed should be raised in the most inexpensive manner possible, and any other system is unjust to the people who have to pay the taxes.

Most of all to be regretted, however, is the possibility of friction arising between two nations whose interests are really identical; since recent history has demonstrated that rich gold mines are a prolific source of contention and hard feeling.

The Design of Metallurgical Works.

In a recent communication to the *Transactions* of the American Institute of Mining Engineers, criticizing Mr. L. S. Austin's paper on "A Modern Silver-Lead Smelting Plant" (read at the Colorado meeting, September, 1896), Mr. H. A. Vezin takes up the question of the location of metallurgical works, discussing the advantages of a level site over a hillside. A journey through the mining regions of the West will show that by far the greater part of our metallurgical works, especially the ore-dressing works, stamp mills, chlorination and cyanide works, and silver amalgamation and leaching mills are located on sloping ground. This is to a certain extent a peculiarly American practice. Although many instances of it are to be found in Europe, it is by no means so general there as it is here, and the new dressing works at Lautenthal, in the Upper Harz, which are erected on a steep hillside, are spoken of as following the American model. The common adoption of this plan in the United States is due undoubtedly to the theory that labor in handling material will be saved by providing for its regular descent through the works by gravity. This, then, resolves the question into one of cost, but Mr. Vezin, who is an engineer of wide experience, states that he does "not recollect ever meeting a metallurgist . . . who had . . . figured how much he gained or lost by one or the other method," and we fear that he is right in his assumption that an unprejudiced investigation of the question is commonly ignored.

Mr. Austin advocated originally a modification of the hillside location by "utilizing an extended surface with a moderate slope," admitting for works on a level site the advantages of good ventilation, accessibility and compactness, but in the final form of his paper omitted this expression of opinion. Mr. Vezin, whose criticisms are based on Mr. Austin's original paper, shows that with a coal consumption as high as 10 pounds per horse-power per hour the cost of elevating 30 feet is only 0·5 cent per ton, and considers that if it were four times as much the advantages admitted by Mr. Austin would be cheap at the price. He also mentions that the first cost of works on a level site is less than that of hillside or terrace works; that a more convenient arrangement can be made, and that every part of the works can be made alternately inferior or superior to every other part. This states concisely the case of the advocates of level sites, but it would have been interesting if Mr. Vezin had elaborated his criticism a little more. He admits, however, that advocates of the two systems will probably not come to an understanding of what they really disagree about until each has designed works according to his ideas of what is best and shown in dollars and cents what he gains; and for the same reason it is difficult, in the absence of specific data of the two methods of construction, to make precise comparisons.

There are, nevertheless, certain points which are evident. It is clear that in seeking a hillside location a more convenient level site is often forsaken, and in the construction of hillside works a greater amount of excavation and filling, and masonry for retaining walls, is required than for works built on level ground; in general, also, the framing of a regular building on level ground can be designed more simply and cheaply than a building on a hillside, which circumstances are apt to make more or less irregular. We are referring to hillside locations, rather than to gentle slopes and terraces, as representing the extreme of the case. The steeper the slope the works are built upon the more cramped they will be, and the greater the complications in making subsequent enlargements which were not originally planned. These are objections from which the works planted on level ground are free.

The advantage gained by the descent by gravity of the material treated in a hillside or terrace works would be more apparent if it were not that even in them there is likely to be a good deal of stuff to be sent back from a lower to an upper terrace, wherefore they too must be provided with elevators, the only difference after the original elevation of the ore being in the height of the elevators required. In the case of the stamp-mills where there is nothing to go back and only a moderate fall is necessary, or of smelting or other works in which there is no product to be returned from one department to a preceding one, a gentle slope or a series of terraces may be chosen possibly with advantage except as to the first cost of the works, providing the location is convenient. It is certainly advantageous to have a good fall in the ground for the final disposition of the waste products, slag or tailings.

Some of the best metallurgical works in the United States are built on level ground, and the advantages gained thereby are appreciated by their operators. Among these may be mentioned the dressing works of the St. Joseph Lead Company at Bonne Terre, Mo., where the cost of dressing is about as low as anywhere in the world, and the works of the Metallic Extraction Company, at Florence, Colo., where fine crushing and cyanide lixiviation are carried out probably as cheaply as at any point in the United States. Mr. Herbert Lang built the pyritic smelting works at Keswick, Cal., on level ground, and was warm in his recognition of the advantages gained thereby. We shall be glad to open our columns to a discussion of this subject.

NEW PUBLICATIONS.

THE BLUE BOOK OF AMERICAN SHIPPING. Cleveland, O.; *The Marine Review*, Pages, 448; illustrated. Price, $5.

This exceedingly useful manual gives complete information relating to the marine interests of the United States. It contains dimensions, etc., name and address of owner or manager of every American steam vessel over 100 tons, and every seagoing sail vessel. This is given in addition to a separate list of vessels on the Great Lakes. It is also a directory of the Society of Naval Architects and Marine Engineers, the American Association of Masters and Pilots, and contains names and addresses of 3,650 masters and pilots and over 5,000 marine engineers. One list of 500 names and addresses includes owners of 2,400 of the largest vessels in the United States, and a directory of passenger steamer lines owning 700 steamers gives the name and address of purchasing agents. A complete directory of steamship lines between the United States and foreign ports, particulars of coast dry docks and marine railways, and exports by ports for five years of principal commodities are also included, with many statistics of the iron ore and other business of the lakes. A classified and a port directory of the principal marine business concerns adds to its value. It is illustrated by nearly 100 engravings, including photographs of lake and ocean steamers.

ELECTRIC POWER TRANSMISSION. A PRACTICAL TREATISE FOR PRACTICAL MEN. By Louis Bell. New York; The W. J. Johnston Company. 1897. Pages 492; illustrated. Price $2.50.

In no new field of investment has more capital been expended during the last five years than in electric power transmission and distribution. Naturally the field has attracted and is attracting hundreds of investors to whom the subject is mysterious or little understood. To study it and to master it is a life's work, but to know more of it in all its practical bearings is a desire the fulfillment of which may readily serve to guide the capitalist away from dangerous investments, as well as assist him in choosing those which will prove profitable. Recognizing this condition of affairs Dr. Bell has written the book with the title given above, and his work, both in its inception and as he has carried it out, cannot fail to obtain a wide popularity. The purpose stated in his preface of "setting forth in the simplest possible manner the fundamental facts concerning present practice in electrical power transmission," and "stating only the results of investigation when the processes are undesirably complicated" has been closely adhered to and the non-technical reader will find but comparatively few of the meaningless formulæ with which many treatises on electrical subjects are made unintelligible except to the engineer and student. The apparatus described is intended to be typical of to-day's methods, and attention is called to the rapid changes constantly made in methods and designs. The author's intimate association with many of the prominent transmission plants just installed insures however, the up to-dateness of the book now issued.

In his opening chapters are considered the elementary principles underlying electrical transmission of energy and the sources of energy from which we may draw. Other methods of transmission are discussed as of interest to the investigator and investor, and a table is printed showing the relative efficiencies and costs of power transmission under the same conditions (said conditions not being chosen as particularly favorable to any one system) by rope, by compressed air, with and without reheating and by electricity.

The transmission of power by electricity is covered in detail, the discussion covering both direct current and alternating current in its various phases, and including as well the prime movers—boilers and engines of various types, water powers, etc.—and the details of line work, distributing stations, etc.

The final chapter is devoted to the commercial problem involved, which is reduced to the question: Can I profitably furnish power at a price which will enable me to undersell the current cost of power production, and is there a sufficient market for my power if I can? The tables of costs of steam power and of operation of transmission plants are taken from the results of exhaustive investigation of existing plants where obtainable, and the results are therefore of practical value.

The book is interesting and instructive to all students of electric progress in any direction and almost essential to the business man who wishes to keep posted on the subject, but has not the time nor opportunity to follow it by personal investigation.

The diagrams and illustrations are simple and instructive, and a carefully prepared index adds to the value of the book for ready reference.

T. W. S.

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.

Ministerio de Hacienda Estadistica Tributaria de España Año Economico de 1894-1895. Madrid, Spain; Ricardo Rojas, 1897, containing 27 maps with text.

Comisión Geologica Mexicana. Expedición Cientifica al Popocatepetl. By José G. Aguilera y Ezequiel Ordonez. City of Mexico; State Printer. 1895. Pages, 48; with maps.

Eleventh Annual Report of the Commissioner of Labor, 1895-'96.—*Work and Wages of Men, Women and Children.* Washington, D. C.; Government Printing Office. Pages, 671.

North Carolina Geological Survey. Bulletin No. 3. Gold Deposits of North Carolina. By Henry B. C. Nitze and George B. Hanna. Winston, N. C.; Public Printers, 1896. Pages, 260; with maps and illustrations.

Transactions of the American Institute of Mining Engineers. Volume XXVI. February, 1896, *to October*, 1896, *inclusive.* Dr. R. W. Raymond, Secretary. New York; published by the Institute. Pages, 1,141; illustrated.

Annual Report of the Board of Regents of the Smithsonian Institution, for the year ending July, 1895. S. P. Langley, Secretary. Washington, D. C.; Government Printing Office. 1896. Pages, 837; with illustrations and maps.

Kritische Betrachtungen über die Naviersche Bogentheorie und die Neuere Elasticitätstheorie Kontinuierlicher Fachwerkstragbögen. Von Heinrich Haase. Regensburg, Ger.; Herman Bauhof. 1897. Pages, 74; with diagrams.

Boletin de la Comisión Geologica de Mexico. Num. 1. Fauna Fosil de la Sierra de Catorce San Luis Potosi. Por Antonio del Castillo y José G. Aguilera. Mexico, D. F.; published for the Commission. 1895. Pages, 55; with 24 plates.

Das Grundgesetz des Horizontalschubs versteifter Tragbögen Kontinuierlichen Systems. Statischmathematisch und experimentell nachgewiessen von Heinrich Haase. Regensburg, Ger.; Hermann Bauhof. 1897. Pages, 102; with diagrams.

Twelfth Annual Report of the Illinois Society of Engineers and Surveyors. Being the Proceedings of the Society at its Twelfth Annual Meeting, held at Springfield, Ill., January 27, 28 and 29, 1897. Peoria, Ill.; printed for the society. Pages, 156.

Boletins del Instituto Geologico de Mexico. Num. 2. Las Rocas Eruptivas del S. O. Cuenca de Mexico. Pages, 46; illustrated. 1895. *Num. 3. La Geografia Fisca y la Geologia de la Peninsula de Yucatán.* Pages, 57; with map and diagrams. 1896. *Nums. 4, 5 y 6. Bosquejo Geologico de Mexico.* Pages, 274; with maps and illustrations. 1897 City of Mexico; State Printer.

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.

Precautions Against Fire in Metallurgical Works.

Sir: I read with interest the article in the *Engineering and Mining Journal* of July 17th, on "Precautions Against Fire in Metallurgical Works," and wish to call the attention of parties interested to the risks of fire in many of the mills and reduction works throughout the West, arising from the manner of installing their electric plants. It is no uncommon thing to see wires conducting direct current 120 to 500 volts strung about the mill on wooden cleats, and drawn through timbers and floor joists, with only a low grade of weather-proof insulation to protect the wires and prevent leaks and short circuits. Another practice that ought to be prohibited—and soon would be if the insurance companies would refuse to take risks on buildings where it is done—is running circuits with wire as small as No. 16 B. S. gauge. This is sometimes done simply to make a cheap job, though if there is any class of work that pays to have well done, it is electric work. Another error is in wiring small isolated plants with so heavy a loss in the conductors. While this class of work is somewhat cheaper in the beginning, it is extremely expensive in the long run, both as regards fuel and lamp renewals.

FLORENCE, Colo., July 26, 1897. S. T. J.

Klondike "Companies"

Sir: The *Engineering and Mining Journal*, as representative of the mineral industry, should vigorously raise its voice against the numerous swindles being worked with the aid of the Klondike excitement. You will note in the New York papers of Sunday numerous invitations to subscribe to the stock of companies and syndicates formed and forming for the alleged purpose of doing something or other in the Klondike. Thousands and millions are promised investors. The columns of yesterday's Chicago papers contain dozens of similar advertisements. All over the Central West and East the same thing is observable, and there is good reason to believe the general public is pouring in its money, in individual driblets, that aggregate a large whole. Probably not one in a hundred of these companies, so called, has any intention whatever of sending anybody to Alaska. The purpose of the promoters is simply to gather a few thousands by means of a cheap, vulgar swindle. Getting as much money as possible, they will vanish. The "stockholders" in the concern actuated by better faith will fare no better. The ground is placer ground and rich. If a newcomer should in the brief period of possible prospecting locate anything good, human nature will have to change, and history is a lie if stockholders ever get their share. Rich placer bars always were and always will be an individual mining proposition. No one has found the source of the Alaska gold. No one will hunt very hard for it until the bars are washed out.

As a general rule, people should bear the results of their own actions, and I am not actuated by sympathy for the fools who are parting with their money to these Alaska companies, but I am as to the damage it will do legitimate mining. The reaction which will shortly come will add impetus to the belief that mining is a fraud and all mining men swindlers; it will make more difficult than it now is the task of interesting capital in genuine mining enterprises.

CHICAGO, July 26, 1897. R. M.

Explosion of a Hartsfeld Furnace.

Sir: The water-jacket of the Hartsfeld smelting furnace at Oro Grande, San Bernardino County, California, blew up on June 8th last, killing two

men and severely injuring two others and completely wrecking the plant. I visited the scene lately and made myself acquainted with the circumstances, which may be of interest to your readers who are tolerably familiar with the name of Charles L. Hartsfeld, the designer of the apparatus.

The plant was an extremely crude and worthless one, consisting of a 48-in. circular water-jacket stack, with the water space closed up, and so arranged as to generate steam, which was conducted into a large sheet-iron box where it met the current of smoke from the furnace, and assisted, according to Hartsfeld, in precipitating the "voltic metals," which no other known form of furnace is supposed to catch, or any other furnace builder to know anything about. A steam plant of about 10 H. P., and a fan blower of diminutive size, completed the plant.

They ran, or attempted to run, for two months, making staggers at smelting the ores of the country trying to produce lead bullion, but never got a pound of it, the extent of their work being shown by the output of some eight or 10 tons of slag, not too well melted, which lies around the place. Hartsfeld himself conducted the work for five days, but left then, although his contract provided that he was to stay 30 days and put the thing on its feet. The control then fell to a superintendent fresh from the plow, and the result was as above mentioned. The explosion was caused by the formation of steam in the water-space and the consequent collapsing of the inner sheet. The rivets were sheared cleanly off, and the force of the explosion was chiefly felt at the feed door, whence the feeder was blown 180 ft. and killed instantly. The furnace-tender was less lucky, being simply cooked by the hot slag and living some hours. So much for trying to make a steam generator out of a water-jacket smelting furnace.

Their metallurgical plan was on a par with the apparatus. They bought a ton of pig lead, melted it and granulated it by throwing it into water. Thus prepared they added it to the charge in the stack in homeopathic quantities, expecting it to take down the gold and silver and subside at the bottom. But it refused to subside, and went into the slag; and the only bullion they got was that recovered from the hide of the unfortunate furnace-tender after the thing blew up. L.

LOS ANGELES, Cal., July 19, 1897.

METALS IN THE NEW TARIFF.

We give below the provisions of the new tariff act in relation to metals. After each clause we have added the duty under the late tariff in parenthesis, with P. preceding the rate:

172. Aluminum and alloys of any kind in which aluminum is the component material of chief value, in crude form, 8c. per pound (P., 10c.); in plates, sheets, bars and rods, 13c. per pound (P., 10c.).

173. Antimony, as regulus or metal, ¼c. per pound (P., free).

174. Argentine, albata or German silver, unmanufactured, 25c. *ad valorem* (P., 15%).

175. Bronze powder, 12c. per pound (P., 40%); bronze or Dutch metal or aluminum, in leaf, 6c. per package of 100 leaves (P., 40%).

176. Copper in rolled plates called brazier's copper, sheets, rods, pipes and copper bottoms, 2½c. per pound (P., 20%); sheathing or yellow metal of which copper is the component material of chief value, and not composed wholy or in part of iron ungalvanized, 2c. per pound (P., 20%).

177. Gold leaf, $1.75 per package of 500 leaves (P., 30%.)

178. Silver leaf, 75c. per package of 500 leaves (P., 30%.)

181. Lead-bearing ores of all kinds, 1½c. per lb. on the lead contained therein (P., ¾c.): *Provided*, That on all importations of lead-bearing ores the duties shall be estimated at the port of entry, and a bond given in double the amount of such estimated duties for the transportation of the ores by common carriers bonded for the transportation of appraised or unappraised merchandise to properly equipped sampling or smelting establishments, whether designated as bonded warehouses or otherwise. On the arrival of the ores at such establishments they shall be sampled according to commercial methods under the supervision of government officers, who shall be stationed at such establishments, and who shall submit the samples thus obtained to a government assayer, designated by the Secretary of the Treasury, who shall make a proper assay of the the sample and report the result to the proper customs officers, and the import entries shall be liquidated thereon, except in case of ores that shall be removed to a bonded warehouse to be refined for exportation, as provided by law. And the Secretary of the Treasury is authorized to make all necessary regulations to enforce the provisions of this paragraph.

182. Lead dross, lead bullion or base bullion, lead in pigs and bars, lead in any form not specially provided for in this act, old refuse lead run into blocks and bars and old scrap lead fit only to be remanufactured; all the foregoing 2½c. per pound (P., 1c.); lead in sheets, pipe, shot, glaziers' lead and lead wire, 2½c. per pound (P., 1½c.).

183. Metallic mineral substances in a crude state, and metals unwrought, not specially provided for in this act, 20% *ad valorem* (P., no clause of this kind); monazite sand and thorite, 6 cents per pound (P. not mentioned).

184. Mica, unmanufactured or rough trimmed only, 6c. per pound and 20% *ad valorem* (P. 20%); mica, cut or trimmed, 12c. per pound, and 20% *ad valorem* (P., 20%).

185. Nickel, nickel oxide, alloy of any kind in which nickel is a component material of chief value, in pigs, ingots, bars or sheets, 6c. per pound (P., 6c.).

189. Quicksilver, 7c. per lb. (P., 7c.): The flasks, bottles or other vessels in which quicksilver is imported shall be subject to the same rate of duty as they would be subjected to if imported empty.

190. Type metal, 1½c. per pound for the lead contained therein (P., ¾c.); new types, 25% *ad valorem* (P., 15%).

192. Zinc in blocks or pigs, 1½c. per pound (P., 1c.); in sheets, 2c. per pound (P., 1½c.), old and worn out, fit only to be remanufactured 1c. per pound (P., ¾.).

193. Articles or wares not specially provided for in this Act, composed wholly or in part of iron, steel, lead, copper, nickel, pewter, zinc, gold, silver, platinum, aluminum or other metal, and whether partly or wholly manufactured, 45% *ad valorem* (P., 35%).

The free list is as follows, so far as metals or minerals are concerned:

476. Antimony ore, crude sulphite of.

492. Bells, broken, and bell metal broken and fit only to be remanufactured.

505. Brass, old brass, clippings from brass or Dutch metal, all the foregoing, fit only for remanufacture.

511. Bullion, gold or silver.

520. Chromate of iron or chrome ore.

523. Coal, anthracite, not specially provided for in this Act, and coal stores of American vessels, but none shall be unloaded.

532. Copper in plates, bars, ingots or pigs, and other forms, not manufactured or specially provided for in this Act.

533. Old copper, fit only for manufacture, clippings from new copper, and all composition metal of which copper is a component material of chief value not specially provided for in this Act.

534. Copper, regulus of, and black or coarse copper and copper cement.

550. Emery ore.

583. Iridium.

588. Junk, old.

603. Loadstones.

605. Magnesite, crude or calcined, not purified.

606. Magnesium, not made up into articles.

629. Ores of gold, silver; ores of copper, or nickel, and nickel matte; sweeping of gold and silver.

637. Pewter and britannia metal, old and fit only to be remanufactured.

641. Platina, in ingots, sheets and wire.

642. Platinum, unmanufactured, and vases, retorts and other apparatus, vessels and parts thereof composed of platinum, for chemical uses.

643. Plumbago.

683. Tin ore, cassiterite or black oxide of tin and tin in bars, blocks, pigs or grain or granulated.

THE BAKU PETROLEUM PRODUCERS' LEAGUE.

A correspondent of the London *Standard*, writing from Baku, says: The great question of the day in Baku is the renewal of the League of Naphtha Oil Producers, whose first term of trial expires on October 1st. The manager, Mr. Antanoff, has just published articles in several leading Russian papers, pointing out the advantages and profits which the oil business acquired in Russia during the two and a half years it has been in existence. He urged the importance of its consolidation for a longer period on more organized and solid ground. The American Standard Oil Company formerly controlled the oil markets from west to east. The cost of transporting Russian oil was so great that it exceeded the sale price, and thus its export to foreign markets was stopped. With the formation of the league this state of things changed; the prices were firmly held, and if Russian oil could not find a free market in Europe it was sent to the Far East. The league concentrated in its hands all the oil products of the Baku District, and exported them through special contractors. The small dealers were thus able to enter the market on equal terms; while the principal firms agreed to give the league a trial, in order to ascertain in what degree such a union could be of advantage to them.

Now that the period of this experiment is drawing to a close, a great movement is in progress between two parties, one including the firms of Nobel, Rothschild and Mantasheff, and the other smaller dealers. The latter are trying to renew the league for a further 10 years, while the former are endeavoring to secure modifications in several articles of the union. The largest exporter of Russian oil to the Far East is the English firm of Samuel & Company, which has had with the Caspian Black Sea Company (Rothschild & Company) a contract for 10 years, beginning in the year 1892. The business of this firm is yearly extending. It now possesses 13 large ocean steamers, reservoirs in 15 different ports, from Bombay to Vladivostok, and great factories for making tin and wooden boxes. Last year this firm exported 11,000,000 poods of petroleum, of which 2,400,000 went to China, 2,000,000 to India, 1,000,000 to Japan and the remainder to other countries in the East. India is the principal consumer of Russian oil in liquid form and petroleum in boxes. Japan receives 20% of the oil exported and China 8%. The other great export firms are Nobel Brothers & Company, the Caspian Black Sea Company (Rothschild) and Mantasheff & Company. Nobel Brothers & Company many years ago established in Germany a company (Deutsche-Russische Naptha Import Geschichte) to export Russian petroleum to the center of Europe. But it proved a failure, owing to the Standard Oil Company, which has a strong footing in Germany. The same firm exports largely to the north of Europe, and has leased for that purpose the two steamers *Sviet* and *Loutch*, of the Russian Steamship Company. The Caspian Black Sea Company has a contract with Samuel & Company, and furnishes part of Turkey with oil, especially the Syrian ports. Its head agency, which is in Paris, controls all its export business. The third firm, Mantasheff & Company, has its own agents and steamers, and wholesale depots at Salonica, Smyrna, Egypt and formerly in Constantinople. Some years ago it exported about 2,000,000 boxes, but last year, on account of the political troubles in the East, its export amounted to only 1,000,000 cases of petroleum. M. Alexander Mantasheff is the chief of this firm, which has acquired in a short time a prosperous position.

Manganese in Chile.—The principal deposits of manganese in Chile exist in the province of Coquimbo and are owned by W. Creighton Tripler, of Coquimbo, and Joaquin Naranjo, of la Serena. The deposits owned by the latter are situated in the hacienda de Marquesa, 32 km. from la Serena, on the line of the Elqui Railway. The greater part of the ore disclosed there assays from 35 to 45% Mn, but there is a vast amount with a tenor of 50%.

The Slate Industry of Maine.—The slate industry of Maine is confined to Piscataquis County, the most important quarries being situated at Blanchard, Monson and Brownville. The greater part of the output is turned out as roofing slate, but mantels, hearthstones, bath-tubs, tables, blackboards, etc., are also manufactured. The rock is generally quarried in blocks from 1 to 3 ft. thick, and 2 to 6 ft. square. The waste rock is sold to contractors for building foundations, etc.

UNDERGROUND PHOTOGRAPHY.

Written for the Engineering and Mining Journal by James Underhill.

The value of photographs in a mining report is evident to everyone and there are few engineers who have not wished at various times that they could illustrate their papers by means of the camera. I will endeavor to show how, with the simple appliances that can easily be carried into a rough country, photographs can be secured which will much more than repay the slight cost and trouble in taking.

The camera is the most important part of the outfit, and this should be the best obtainable, and in most cases where portability is an object carrying not larger than a 5 × 7-in. plate. It should be folding, self-containing and, where necessary, focussing by a scale in front, without the aid of the ground glass. The camera should have double swing-backs and sliding front. The tripod, as in surveying, should be adjustable to different heights and is much steadier by having its legs in only two sections. One should have two lenses, wide angle and rectilinear, for underground and surface work, and these should be able to cover a larger plate than the camera carries, so that the image is sharp when both sliding front and swing-backs are used. The best lenses are none too good, as great rapidity is almost always an advantage. The most useful shutter is probably the automatic Bausch & Lomb with iris diaphragm. I use a 4 × 5-in. folding Kodak, sliding front and double swing back, Bausch & Lomb lens and shutter. The Poco, Premo, Wizard and some other cameras, when fitted with wide angle lenses, are admirably adapted for underground work, and are very portable.

The plates used should be the quickest possible to obtain. Seeds 27 and Carbutts, also the quick plates of some other makers, work nicely, but little or nothing can be done with a slow plate. Films rarely give complete satisfaction, but where great portability is required cut-films seem to work fairly well. The lamp is very important. I have found the "Perfection" lamp (Fig. 2), while not perfection, perhaps the nearest to it of any lamp. The "Perfection" is a magazine lamp, and will serve for from 5 to 15 exposures without refilling. An admirable lamp is made by taking a clay pipe, wiring on to it a lamp wick. The magnesium powder is put in the bowl and the wick, previously soaked in alcohol, is lighted. The magnesium is blown up through the flame by means of a rubber tube or a bulb such as is used with the shutter of the camera. This outfit, costing about 1½c., will make as good a picture as the best lamp in the market, but has to be filled each time it is used. This, however, is perhaps an advantage as it enables the photographer to control the intensity of his flash by the amount of magnesium used, which has to be guessed at with a magazine lamp. Fig. 1 shows the contrivance ready for use.

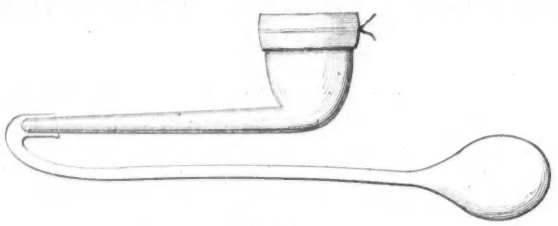
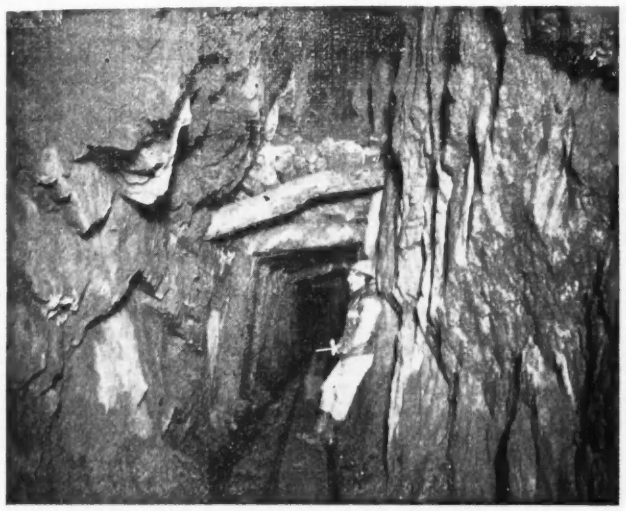


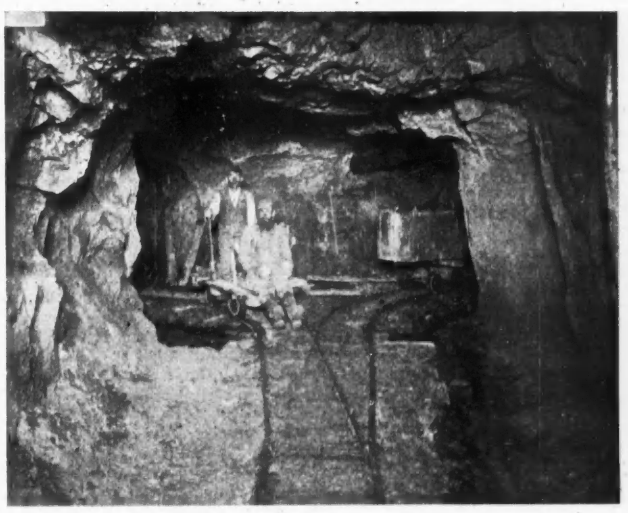
FIG. 1.

Blitz-pulver may be used without a lamp and simply ignited on a rock or shovel. It is easier to regulate the amount of light and much quicker, but it is harder to direct the light and makes more smoke. Magnesium powder with a lamp is, in my opinion, far nicer, less expensive, and in most cases better than blitz-pulver. A box to contain the instruments, plate-holders, etc., together with a flask of alcohol for the lamp, is useful. At all events, they should be carried in such a way as to be easily found in obscure light.

In taking the picture it is not necessary to focus very carefully, as the wide angle lens is very nearly universal focus. The best way is to focus with the ground glass on some object about 20 ft. away, make some kind of a mark and use this where the light is obscure underground. The camera must be leveled carefully as the wide angle distorts somewhat, even under the best conditions. This operation is quickened by having a level or a pair of levels on the swing-back. If the swing-back is level the picture will not be distorted, but the plates must be perpendicular, no matter where the lens is pointing. A ball and socket joint aids in leveling, but makes the camera less steady. By moving candles or lights in front of the camera one can tell exactly how much ground the lens covers and just what the photograph will include. There is rarely enough light to see the image distinctly on the ground glass. Everything being ready the slide is withdrawn from the plate-holder, the shutter opened, unless it was left opened in the beginning. The lamp is set going from behind, or to one side of the camera a few inches back of the lens. The flash must never get in front of the lens, though candles or lights may be left burning if they are not moved. The exposure lasts according to the size of the workings and the length of the flash can only be learned by experience. Perhaps three thimblefuls of pure magnesium, or about twice the quantity of blitz-pluver, would light an ordinary sized drift or stope. If the photographer stands behind the camera and causes the lamp to move in an arc from one side over the top to the other, blowing slowly all the while, so to throw the light in all directions, the best results can be obtained. A reflector is sometimes useful.



BEGINNING OF A STOPE.



JUNCTION OF TWO VEINS.

PHOTOGRAPHS TAKEN IN THE PRUSSIAN MINE, COLORADO.

Care should be taken not to let the smoke get in front of the camera, as this fogs the picture. This is very difficult in taking low drifts and upraises. In such places it is usually necessary to use blitz-pulver where the plate is exposed and the flash finished before the smoke really gets started. In all cases it is well to study the direction of air-currents both while making the flash and also when a good exposure is desired. I have found it almost impossible to take a second good picture within a reasonable time, even in well ventilated mines. After flashes as well as after blasting, even when the smoke is gone, there seems to remain a practically invisible gas which throws the objects in the picture all on one plane and makes the photograph look like a bas-relief. In taking pictures of shaft-houses and mills even in daylight it is often advisable to give one or more flashes to bring out more detail in obscure places. The contrasts otherwise are liable to be too great.

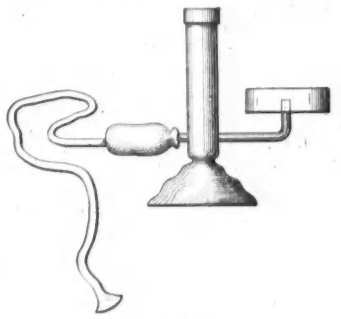


FIG. 2.

A few words should be added on the subject of developing and printing. Underground flashlights having so little contrasts need a good light in developing. They should be developed slowly and will often be improved by intensifying later on. The author prefers negatives bordering on dense and thinks that it is difficult if not imposible to over-develop a properly exposed or an under-exposed plate. In the boxes with the plates will be found formulas from the makers for developer, intensifying and reducing solutions and these are usually best suited to the particular brand of plates. Eastman's eikonogen powders and Dr. Anderson's eikonogen cartridges are very useful in traveling. They are cheap, take up little room and do very good work. In developing in tents and the like, starlight or indirect moonlight does little or no harm.

The engineer rarely does his own printing, but he will be rewarded as a rule when he does. Platinum paper gives the best results, as it tones down the sharpness of the ordinary flashlight negative. It is the easiest and quickest paper to handle, though somewhat more expensive than the

gelatine papers. Bromide paper, except for very thin negatives, is not as good as platinum, as it is likely to intensify the faults of the negatives. It is admirable, however, for enlargements, and most negatives taken by flashlight can be enlarged with good results.

The accompanying illustrations are reproductions of underground photographs taken in mines in the vicinity of Clear Creek and Idaho Springs in Colorado. They show what can be done with the camera in a mine.

THE YUKON GOLD EXCITEMENT.

Not for many years past has the country been as excited over reported gold discoveries as it is to-day. Three weeks ago the Pacific coast was in its normal state; now it is ablaze with an excitement that is extending all over the country. Everywhere men are preparing to start for the gold-fields in the belief that they can find fortune there. Is this belief warranted by the facts of the case? Thus far we can only answer by presenting those facts as briefly as possible.

Prospecting has gone on in a desultory way for the past dozen years and previous to July, 1896, no great strikes were made, but in that month coarse gold was found in the Klondike or Reindeer River, a tributary that flows into the Yukon from the right, about 1,800 miles above the river's mouth. Some 300 claims were promptly staked out, each 500 ft. long, and extending across the narrow valley, and the older mining camps of Circle City and Forty Mile Creek were quickly deserted for the richer discovery. Shortly afterward Bonanza, El Dorado, Hunker, Dry Fork and West Fork placers were staked out, all on affluents of the Klondike, and during the past winter they gave employment to some 3,000 men. From these claims gold dust valued at $1,000,000 has already reached civilization, and there is doubtless a larger amount awaiting transportation at St. Michael Island, on Norton Sound, near the mouth of the Yukon, but it is not probable that it is as large as rumor makes it. Knowing this we may be permitted to believe that the Klondike is a very rich placer gold deposit, and that in the unexplored mountain range in which it takes its source there must be some valuable quartz lodes awaiting discovery.

The country produces very little food; a few wandering moose, caribou and bear, and in summer numberless berries and a great quantity of migratory salmonidæ are all that can be reckoned on. Beyond them every pound of food, and supplies of all descriptions, must be carried in by way of one of three passes in the Mount St. Elias Alps, or else journey by an indirect route of more than 4,000 miles from Seattle or Vancouver to Circle City, by way of St. Michael Island. Provisions are necessarily high-priced by the time they reach the diggings, and owing to the sudden growth of the present excitement, and the unprepared condition in which it overtook the trading and transportation companies, no very large supplies can by any ingenuity be rushed through during the present season. It is not likely, however, that any large numbers of men will be able to reach the upper Yukon this summer, so that a heavy mortality in that region is hardly to be feared. They may get to St. Michael Island or to Dyea, at the head of the Lynn Canal, but beyond that they will find transport lacking.

The claims on the Klondike consist of some 15 ft. of gravel overlying the bedrock. The pay streak is usually half a dozen feet thick, and the gold is very coarse, nuggets the size of a pea being often found. On account of the cost of living, nothing but the very rich ground is sluiced at present.

All the gold so far brought out is believed to have come from the Canadian side of the line, though there are rumors of very rich strikes on a gulch below Forty-mile Creek in American territory. Order has been well preserved by a detachment of 20 of the Northwest mounted police, and 80 more are on their way to Dawson City. No difference has been made between American citizens and British subjects, and, notwithstanding reports to the contrary, it is hardly likely that any laws tending to exclude aliens will be passed at Ottawa, though a tax on all gold taken out is now to be levied. In one respect the intense frost of a winter, lasting eight full months, is a benefit. It renderes the following of the pay streak through the frozen subsoil comparatively easy, tunnels with little or no timbering sufficing, the dirt being piled to await the advent of spring. When the thaw comes, short sluices are set up and in a few weeks the result of the year's work is known. Wages are said to have risen to $15 a day last winter, and even at that price labor was scarce. Some 800 claims were worked.

The weather on the upper Yukon remains pleasant until about September 15th, but after that very cold snaps and gales accompanied by snow are frequent. Between the closing of navigation in September and the beginning of travel by dog sled and snow shoes in October there is a month during which the would-be traveler can do nothing but rage impotently. The coldest weather of the winter is generally early in December, though the average is lower in January. As low as 65° below zero is sometimes recorded. The spring is late, all the ice not leaving the lakes until June, and the summers are consequently very short, but they are hot, and so near the Arctic Circle there is, of course, practically, no night for several weeks. In winter the reverse of this obtains, and a short twilight is an apology for the day to which dwellers in lower latitudes are accustomed.

Of the two best-known routes to the new gold-fields, that by way of Behring Sea is naturally the less arduous, while its rival is considerably shorter. Heretofore steamers have sailed once each month from Seattle for St. Michael on Norton Sound, connecting, more or less closely, with the small flat-bottomed, stern-wheeled steamers in which the 1,800-mile journey to Circle City is made. On account of the extreme shallowness of the many mouths of the Yukon, none of these steamers may draw more than 4 ft. of water.

The fare by this route has heretofore been $150 first class, including board and stateroom, but since the excitement began it has cost somewhat more to secure a passage. By way of Dyea and the Chilcoot pass Dawson may be reached in 15 to 20 days from Seattle; usually, however, it takes a full month or six weeks. The all-sea route is only open for three months, June, July and August, no boats as a rule sailing from Puget Sound or San Francisco later than August 10th—even that is dangerously late, as the Yukon freezes by September 25th some seasons. By way of Dyea the prospector may go in as early as April, and may come out in tolerable safety until September 20th, but for six months in the year frequent storms render the passage of the Chilcoot Pass extremely hazardous. They come up without warning and sometimes last for many days. A man caught in one near the summit is lost.

After the divide has been gained, at a point 17 miles from salt water, the descent into the basin of the Lewis River begins. Lake Lindemann is reached 23 miles from Dyea, and from it there is a continuous waterway down which a staunch craft may float right to Klondike, 550 miles away. The White and Five Finger Rapids are, however, dangerous spots and wise men drop their boats through by hand and portage their loads, many adventurers having perished in these treacherous currents. Weekly steamers run from Seattle or Vancouver to Dyea. The fare in ordinary times is $40, including meals and berth, but just now premiums of hundreds of dollars are being paid to fortunate ticket holders by men who will go at any cost.

In conclusion, a few words extracted from Surveyor Ogilvie's latest report to the Canadian government seem to warrant repetition. He writes:

"Until better means of communication are established a man undertakes serious risks in going to the Yukon region unless he has sufficient resources to tide over the long winter. After September egress from the country is practically impossible until the following June, and a person who has not been successful in locating a paying claim has to depend for his subsistence upon finding employment. Wages are at times abnormally high, but the labor market is very narrow and easily overstocked. It is estimated that up to the middle of May 1,500 to 1,600 people had crossed the Dyea Pass this year. Several hundred more will go by steamer up the Yukon. Whether employment will be available for all and for the considerable population already in the district is somewhat doubtful."

Late advices state that the Dominion government has decided to impose a royalty on all placer diggings in the Yukon, in addition to $15 registration fee and $100 annual assessment. The royalty will be 10% each on claims with an output of $500 or less monthly, and 20% on every claim yielding above that amount yearly. Besides this royalty, it has been decided, in regard to all future claims staked out on other streams or rivers, that every alternate claim shall be the property of the government, and shall be reserved for public purposes, and sold or worked by the government for the benefit of the revenue of the Dominion.

PRACTICAL HINTS ON LIMESTONE ANALYSIS.

By K. J. Sundstrom.

In this paper, published in the *Journal* of the Society of Chemical Industry, Mr. Sundstrom says that in manufacturing bicarbonate of soda the writer had to use limestone, varying in composition with every cart load, and it was therefore an imperative necessity to analyze it quickly and correctly. After many trials he is satisfied that the following methods gives a correct result.

(A.) Weigh out two portions of 1 g. each of the finely powdered sample, transfer to small-sized basins, add to each about 100 cu. cm. distilled water. To one run in 25 cu. cm. normal HCl, cover with a watch glass, and allow to stand until all action ceases. Heat to boiling, cool and neutralize with normal NaHO, using a drop of methylorange as indicator. Cu. cm. HCl — cu. cm. NaHO = HCl required to saturate the carbonates of lime and magnesia.

(B.) To the other portion of 1 g. add cautiously 5 cu. cm. concentrated HCl, keeping the basin covered with a watch glass to prevent loss by spurting. After all effervescence has ceased, evaporate to complete dryness over a low flame. When dry, cool and take up with a little hot water and a few drops of concentrated HCl. Heat to boiling and filter through an ashless filter, being careful to wash all insoluble materials into the filter. Wash with boiling water until free from all trace of chlorides.

(C.) Dry the filter and contents and ignite in a platinum crucible to bright redness, cool under desiccator, and weigh for SiO_2.

(D.) Neutralize the filtrate and washings from (B) with NH_4HO in slight excess. Heat to boiling, filter and wash the precipitate, if any until free from chlorides. Dry at 110° C. and ignite; cool and weigh for Al_2O_3 and Fe_2O_3.

(E.) Heat the filtrate and washings from (D) to boiling and add a concentrated solution of ammonium-oxalate, "also heated to boiling." Allow to stand until settled clear, which is done, if rightly treated, in two or three minutes; decant the clear solution into a filter and dissolve the precipitate in HCl and reprecipitate with NH_4HO. Allow to settle, decant as before, and then wash the whole precipitate into the filter and wash with hot water until free from chlorides and oxalates. Dry at 110° C. and ignite in a platinum crucible, at first cautiously, and then over a blast-lamp, until completely converted to CaO. Cool under a desiccator, weigh, and calculate per cent. $CaCO_3$ from weight of CaO.

To check results tirate the CaO with the normal HCl.

Divide percentage of $CaCO_3$ by 5 (= cu. cm. normal HCl required for $CaCO_3$); subtract the quotient from cu. cm. normal HCl required for (A) and multiply remainder with 4·2 for per cent. of $MgCO_3$.

For practical purposes this method can be recommended and it has been successfully used for the last two years, and in many instances the writer has been able to finish a complete analysis in two hours.

Estimation of Sodium Bicarbonate.—Professor Lunge in *Zeitschrift f. Angewandte Chemie*, 1897, 169-171, describes a rapid and sufficiently accurate method, which is used at the soda works at Trenton, Mich. It is based on the following reaction: $NaHCo_3 + NaOH = Na_2CO_3 + H_2O$. When all of the bicarbonate has been converted into the normal carbonate the addition of a single drop of caustic soda solution causes the mixture to give a brown coloration with silver nitrate solution on a test-plate. The total alkali is determined by titration with N. acid, and the two determinations give all the data necessary for the calculation. The caustic soda solution is made up from commercially pure NaOH to 20° B, precipitating with $BaCl_2$, saturating with barium hydrate and diluting to N strength.

NEW CYANIDING PLANTS AT MERCUR, UTAH.

Written for the Engineering and Mining Journal by Our Special Correspondent.

Two important new cyaniding plants are soon to be put up in the Mercur District in Utah The first is to be at the Golden Gate mine, owned by Capt. J. R. De Lamar.

This will be the largest cyaniding plant in this country, if not in the world, the next largest, in point of capacity, being the De Lamar mill at De Lamar, Nev., where, ordinarily, 400 tons are treated daily, with a high average metallic extraction. The Golden Gate mill is to be an all-steel and iron structure, save the rock foundation, with no woodwork anywhere. The Gillette-Herzog Manufacturing Company, of Minneapolis, has the contract for the building, which is to be finished on November 15th, 1897. With the exception of the tankage the capacity will be 800 tons in 24 hours, though at the outstart it is proposed to treat but 500 tons. The mill is to be high on the hillside above the main working shaft to allow for ample dump, etc. All ores, whether free cyaniding or rebellious arsenides, will be calcined before going to the leaching vats, while the refractory arsenical mineral will be roasted, flues and chambers being provided to condense the poisonous vapors and fumes without reaching the open air. It might here be noted that no patented process is to be employed, but a system of treatment designed by Daniel C. Jackling, the metallurgical engineer who has experimented on these ores for months at the Golden Gate test mill.

L. C. Trent, of Salt Lake, under direction of Manager Hartwig A. Cohen, is getting up the detail plans for the mill. It is to be a thoroughly modern plant, with every labor-saving device. No expense is spared to arrive at the lowest possible cost in conducting all milling operations.

Power both for mill and mine will be furnished by the Telluride Power Transmission Company, of Colorado, from Provo Canyon, where there is one of the best streams in Utah. From the generating station to the Golden Gate the distance is 35 miles, and power must be supplied by December 1st, or 137 days from the signing of the contract. On July 15th nothing had been done in the way of construction, though on December 1st a minimum of 300 H. P. or maximum of 800 H. P. is called for in the contract at $60 per H. P. per annum. Not only will all the ordinary power be electrical, but it is proposed to to conduct mining by electrical power drills. Captain De Lamar some time ago took the needed precaution to solve the water supply question, by purchasing the controlling interest in the Gold Belt Water Company.

Rhodes & Thompson have the contract for the excavation and masonry, to be finished in 45 days from July 17th. Excavation will consist of 16,000 cu. yds. of solid rock; retaining walls over 8,000 perch of rock and a half million brick in flues, roasters, etc. T. B. Rhodes has the contract to build three-quarters of a mile of railroad grade to connect the mill with the Salt Lake & Mercur Railroad, a considerable portion being heavy rock work, to be completed under forfeit in 15 days from July 16th.

All told the expenditure for the new plant complete will be $300,000. A new departure in Utah mining is to be introduced in the Golden Gate, doing away with costly timbering, by adopting the caving system of working the large continuous ore bodies. Mr. Duncan McVichie, formerly of Iron Belt, Wis., is to have charge of affairs underground.

On a low foot-hill of the west slope of the Oquirrh Range, facing Rush Valley, are La Cigale mine and mill of the Boston & Mercur Gold Mining Company. The enveloping rock strata of the gold zone here dips to the west, which has given the name West Dip to a considerable stretch of country. This is the portion of Camp Floyd district most recently found to be gold-bearing and the cyaniding mill, to demonstrate that the ore can be profitably treated, is rapidly nearing completion. Before the end of August it will be handling 150 tons per diem and within six months the tonnage will be increased to 500. There are a number of novel features in the work. In working the ground the cave method of mining is also to be used here.

The ore is siliceous, absolutely free from arsenic or quicksilver and averages $6 gold per ton. It is worth recalling that the Mercur and other mills are handling $2.40 ore with a profit over mining and milling. The true foot-wall of this huge zone is a chert lime, the hanging a talc shale; the mineralized mass between measures 140 to 170 ft. thick, dip 45° to 60°. It is not demonstrated that all of this material carries paying values, though the ore seam proper is proven for a thickness of 15 to 35 ft. The Boston incline is down over 350 ft. and 500 ft. to the south the discovery incline is 265 ft. The company owns 1,000 ft. on the strike and 4,500 ft. horizontally in direction of the dip. This ore zone is opened in Omaha and Daisy ground to the south and in Edna May and Gray Rooster on the north, indicating ample supply for a large cyaniding plant. In fact, the West Dip lode is traceable for 12 miles and while paying products may not occur at all points sufficient is proven to warrant the forecast that several valuable properties can be profitably worked.

In order to obtain a water supply for the mill and other needs two farms were purchased by the company, to secure early priority rights from Ophir Creek. A gravity pipe line is being installed 5½ miles long, 660 ft. fall, pipe 4 in. in diameter. Below the mine La Cigale town is showing vigorous growth, with 20 odd buildings finished and others going up.

The Boston & Mercur Gold Mining Company is a Utah corporation, with 200,000 shares, of a par value of $10. Robert B. Blodgett is president, C. H. Scheu vice-president and manager, John Murray Marshall secretary-treasurer; these, with T. Ellis Brown and M. J. Cheesman, compose the directorate.

TIMBERING AT CURVE.

WORKING ON THE VEIN.

PHOTOGRAPHS TAKEN IN PRUSSIAN MINE, COLORADO.

Pillars in German Coal Mines.—In the Rhenish-Westphalian coalfield it is laid down by law that in every seam a pillar of coal at least 21 m. in thickness must be left between the various collieries. The quantity of coal thus left unworked in Westphalia has been estimated to be 28,600,000 tons.

A New Nickel-Iron Alloy.—Dr. Charles Guillaume, of Neufchatel, has reported the discovery of a new nickel-iron alloy. The expansion and contraction of this material under the influence of temperature are smaller than with all other alloys produced so far. Dr. Guillaume prepared at the works of the Commentry-Fourchambault Company, at Imphy, an alloy of 36 parts of nickel and 64 parts of iron, the ductility of which was but one tenth of that of platinum. For measuring apparatus and machines exposed to abrupt changes of temperature this invention is of high importance.

The Elba Iron Mines.—The right of working the Elba iron-ore mines has been accorded to Mr. Tonietti, son of the previous concessionaire, on the basis of a royalty of 7·25f. per ton of ore exported. The royalty is a heavy one in comparison with the 4.50f. obtaining in the previous contract. According to the new contract the annual output must not be less than 100,000 tons, nor more than 200,000 tons. The concessionaire must employ a certain number of workmen, and must keep the Follonica charcoal furnace in blast. After the exportation of 2,000,000 tons of ore, the royalty will be reduced one-third.

A Rapid Method for the Determination of Silicon in Silico-Spiegel and Ferro-Silicon.—C. B. Murray and G. P. Maury, in the *Journal* of the American Chemical Society, 1897, 19, 138-139, describe the following method: 0·5 gr. of the sample is placed in a porcelain or platinum dish; 50 c. c. of water, 10 c. c. of hydrochloric acid (sp. gr. 1·20), and 12 c. c. of sulphuric acid (one part of sulphuric acid [1·84 sp. gr.] to three parts of water) are poured on it, and the contents of the dish heated until copious fumes of sulphuric acid are given off. When cool, 10 c. c. of hydrochloric acid are added, and the whole is heated to soften the sulphate of iron: finally it is treated with 75 c. c. of water, and raised to boiling. The heating is discontinued, and note taken as to whether there is any effervescence when boiling ceases. Should this occur, the liquid must be evaporated until copious fumes of sulphuric acid are again given off, and then it is treated in the manner above described. The solution is filtered, washed with hydrochloric acid and hot water, ignited in a platinum crucible, and weighed. A few drops of sulphuric acid and enough hydrofluoric acid are added to dissolve the silica. The liquid is then evaporated to dryness, heated to decompose the sulphates, cooled and weighed. The difference in the two weights represents silica. The whole operation can be accomplished in 30 minutes.

UNITED STATES' PIG IRON PRODUCTION IN 1897.

The American Iron and Steel Association has received from the manufacturers complete statistics of the production of all kinds of pig iron in the United States in the first half of 1897; also complete statistics of the stocks of pig iron which were on hand and for sale at the close of the half-year. With a single exception direct returns have been received from every blast furnace company in this country whose furnace is now active or is likely to be some day active. For the single furnace company from which no report was received directly a careful estimate of its production during the first six months of this year and of the unsold iron on hand on June 30th has been furnished the Association by one of its leading selling agents.

The total production of pig iron in the United States in the first half of 1897 was 4,403,476 gross tons, against 4,976,236 tons in the first half of 1896 and 3,646 891 tons in the second half of 1896. As compared with the first half of 1896 there was a decrease in the first half of 1897 of 572,760 tons, but as compared with the second half of 1896 there was an increase of 756,585 tons. The production, arranged according to fuel used, was as follows:

Fuel used.	First half 1896.	Second half 1896.	First half 1897.
Anthracite	684,011	462,401	473,837
Charcoal	136,697	173,547	124,757
Bituminous	4,155,528	3,010,943	3,804,882
Total	4,976,236	3,646,891	4,403,476

The production of Bessemer pig iron in the first half of 1897 was 2,495,978 gross tons, against 2,793,672 tons in the first half of 1896 and 1,861,283 tons in the second half. Of the total increase of 756,585 tons of all kinds of pig iron in the first half of 1897 over the last half of 1896, 634,695 tons, or almost six-sevenths, was of Bessemer quality.

The production of spiegeleisen and ferro-manganese in the first half of 1897 was 80,622 gross tons, against 83,010 tons in the first half of 1896 and 48,930 tons in the second half.

The production of basic pig iron in the first and second half of 1896 and the first half of 1897 by States was as follows:

States—Gross tons.	First half 1896.	Second half 1896.	First half 1897.
New England, New York and New Jersey	6,171	16,521	27,916
Pennsylvania—Allegheny County	88,573	79,522	139,970
" Other counties	38,875	12,893	58,473
Maryland, Virginia and Alabama	47,546	26,058	42,741
Ohio, Illinois and Wisconsin	10,522	9,722	12,510
Total	191,687	144,716	281,610

The total production by States for the periods covered was as follows:

States.	First half 1896.	Second half 1896.	First half 1897.
Massachusetts	893	980	1,702
Connecticut	3,656	6,531	3,172
New York	99,870	106,205	108,929
New Jersey	34,435	24,728	37,863
Pennsylvania	2,246,753	1,777,413	2,149,252
Maryland	51,807	27,665	80,333
Virginia	231,685	154,592	153,472
North Carolina	2,151	.....	.....
Georgia	7,593	8,000	8,141
Alabama	464,205	457,965	436,505
Texas	1,131	90	2,604
West Virginia	68,421	40,118	53,735
Kentucky	44,450	26,210	17,185
Tennessee	143,354	113,984	140,431
Ohio	743,444	452,882	593,962
Illinois	638,186	287 053	519,671
Michigan	65,193	84,318	61,531
Wisconsin	102,586	55,898	29,773
Missouri	4,758	7,790	5,215
Colorado	30,665	14,439	.....
Total	4,976,236	3,646,891	4,403,476

The following States increased their production of pig iron in the first half of 1897 as compared with the second half of 1896: Massachusetts, New York, New Jersey, Pennsylvania, Maryland, Georgia, Texas, West Virginia, Tennessee, Ohio and Illinois. The following States show a decrease: Connecticut, Virginia, Alabama, Kentucky, Michigan, Wisconsin, Missouri and Colorado. The two charcoal furnaces on the Pacific Coast, one in Oregon and one in the State of Washington, have not made pig iron for several years; North Carolina has produced no pig iron since the first half of 1896; and for the first time for many years Colorado does not appear as a pig-iron producer in the midsummer statistics, the three Colorado furnaces having all been idle since September, 1896.

The whole number of furnaces on blast on June 30th, 1897, was 146, against 159 on December 31st, 1896. The number out of blast on June 30th, 1897, was 319. Two new furnaces were being built on June 30th, 1897, one in Pennsylvania and one in Ohio.

The statistics of unsold stocks of pig iron on June 30th, 1897, show a considerable increase over the unsold stocks on December 31st, 1896. On June 30th the stocks which were unsold in the hands of manufacturers or their agents, and which were not intended for their own consumption, amounted to 827,163 gross tons, against 711,649 tons on December 31st, an increase of 115,514 tons. These figures do not include pig iron sold and not removed from the furnace bank, nor pig iron manufactured by rolling-mill proprietors for their own use.

Included in the stocks of unsold pig iron on hand on June 30th were 75,085 tons in the yards of the American Pig Iron Storage Warrant Company which were yet under the control of the makers, the part in these yards not under their control amounting to 146,515 tons, which, added to the 827,163 tons above mentioned, makes a total of 973,678 gross tons of pig iron which were on the market at that date, against a similar total of 847,686 tons on December 31st, 1896. The total stocks in the above-named warrant yards on June 30th, 1897, amounted to 221,600 tons, of which almost four-fifths were held in the South.

Lapis Lazuli in Chile.—This mineral exists in Chile at Yulahuen estate, on the western side of the Andes, belonging to Don Félix Marin Carmona. The deposit occurs near the line of perpetual snow in great masses, which are exploitable only in the summer season.

ABSTRACTS OF OFFICIAL REPORTS.

Calumet & Hecla Mining Company, Michigan.

The very brief report of this company covers the year ending April 30th, 1897. It gives no statements as to cost of producing copper or other details of operations. The statement of production says that during the fiscal year the mines produced mineral equivalent to 86,809,266 lbs. of refined copper; the product in refined copper was 92,475,595 lbs. against 85,552,776 lbs. for the fiscal year 1895-96. The price of copper has varied from 10½c. to 12c. per pound, and is now 11¼c.

The statement of assets and liabilities is as follows:

Cash at Mine office		$84,535
Cash at New York office		15,000
Cash at Boston office, exchange, copper at 8½c. per lb., and mineral at 4c per lb		6,599,428
Bills receivable at Boston and Mine		322,443
Total assets		$7,021,406
Drafts in transit	$84,354	
Employees' aid fund	4,535	
Bills payable at Boston and Mine	232,305	
Machinery contracts	562 000	
Aid fund, hospital, insurance fund	249,000	
		1,132,194
Balance of assets		$5,889,212

Compared with a year ago cash at the mine has increased $4,409. and with copper has increased $383,335 at Boston. Bills receivable are $404,868 less than a year ago. Drafts in transit are $16.524 larger: employees' aid fund $9,008 smaller; bills payable $20.088 larger; machinery contracts $137,193 smaller; the aid fund, hospital and insurance fund is a new item. Total assets are $17,123 smaller, total liabilities $139,409 larger than a year ago; balance of assets, $156,532 smaller.

During the year there were paid five dividends of $5 each per share and one of $15, making $40 in all, or 160% on the par value of the stock. The total amount thus paid was $4,000,000 for the year.

The report of President Agassiz says: "The number of men engaged in pushing openings is again at its maximum, so that our mine reserves are increasing at a satisfactory rate. We have continued our explorations on the Calumet and on the Osceola amygdaloids, but so far nothing of importance has been developed. We can hardly expect satisfactory results until we have carried on for some time regular mining operations from the three shafts we are starting on the outcrop of the Osceola amygdaloid. At the south end of the mine there has been a very material improvement in the character of the conglomerate lode.

"The hoisting engine *Superior* has been thoroughly overhauled, as well as the machinery connected with it. The rope wheel to connect the *Superior* with the compressor plant has been erected, and the greater part of that machinery, as well as the engine to run it, is now in place. The engines designed for No. 5 Calumet shaft are now in place; they will operate hoisting wheels of the Whiting system. At the Red Jacket shaft we have erected a large iron shaft-house, with a capacity nearly equal to that of four of our ordinary shaft-houses. This we are now equipping with breakers and other machinery. The few additions necessary to complete the hoisting plant at this shaft are now under way, and we are at work on fitting the shaft itself. We hope to have all our new machinery at the *Superior*, at No. 5 Calumet shaft and at the Red Jacket shaft in operation before the close of navigation. We now have small hoisting engines at each of our shafts, to enable us to handle to advantage our timber and other material intended for underground. We have also added a number of underground hauling engines for tramming.

"At the mills the boilers which were formerly used at the water-works boiler-house have been transferred to the mill boiler-house, so that our boilers are now under one roof. The greater part of our mill buildings at Torch Lake have been covered with iron, and we hope to have them all properly protected before the coming fall. There have been no changes of importance either at the Lake Linden or at the Buffalo Smelting Works.

"A fire broke out on Sunday January 17th, 1897, between South Hecla shafts 8 and 9, on the 24th level. This spot was most fortunately isolated from the rest of the mine, so that the mine officials were able to prevent the fire from spreading to the nearest shaft by damming the extremity of the level and flooding it. The end of the level was then walled off, and after five days our regular mining operations were resumed.

"The expenditures on account of the aid fund for the fiscal year amounted to $49,509. Since January the company has paid the men's contributions to the fund. The value of the aid fund at cost is $123,241."

Estimation of Zinc.—E. G. Ballard, in the *Journal* of the Society of Chemical Industry, May 31, 1897, recommends the use of a bright silver plate for determining the end point in the titration of zinc with sodium sulphide solution. If the titration is done with a cold solution, a large excess of ammonia is to be avoided.

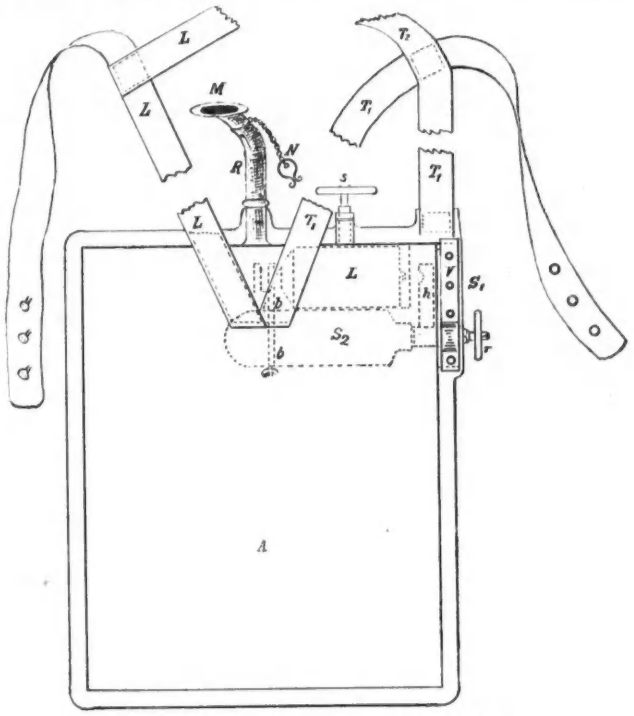
Estimation of Nickel in Nickel Steels.—J. Spüller, in the *Chemiker Zeitung*, 1897, 21, 243-244, states that the following method gives satisfactory results: 2 g. of the sample to be examined, and 2 g. of a normal nickel steel containing a known amount of nickel, are weighed out into two 250-c. c. flasks, and about 60 c. c. of nitric acid (sp. gr. 1·2) added to each. The contents of the flasks are boiled until solution is complete, and nitrous fumes are no longer given off. When cold, the iron is precipitated with zinc oxide, and the green colors of the resulting filtrates are compared, a white homogeneous paper being used for a background. Since nickel steels generally contain from 1% to 7% of nickel, a fairly reliable result can be quickly arrived at, if the standard has about the same percentage of nickel as the sample. The author employs three standard nickel steels containing 1, 3 and 5% of nickel. More accurate results may be obtained by comparing the colors in a calibrated vessel and adding a known volume of water to the test until the color is identical with the standard. Steels containing under 1% of nickel cannot be submitted to this method, on account of the faint color of the solution.

AN APPARATUS FOR BREATHING IN MINES.

Written for the Engineering and Mining Journal by Richard Cremer.

After an explosion of fire-damp or coal-dust, and during underground fires, the air in a mine is usually more or less impregnated with carbonic acid and carbonic oxide. If it were possible to remove quickly the workmen out of the poisonous after-damp into the fresh air, or to restore the air-gates, which are as a rule destroyed, there would be a possibility of saving many lives otherwise sacrificed in the after-damp. Statistics prove that most of those killed in explosions in mines are suffocated. Consequently it is of the utmost importance for a rescue party to descend at once after an explosion, and during or after an underground fire. The apparatus hitherto in use are suitable only for persons stationary in places full of gas, and presuppose a supply of condensed air. The dynamite-explosion which took place in the Hoheneggerschacht, Austria, the property of the Archduke Frederick of Austria, on March 16th, 1895, was the incentive that led to the invention of a serviceable breathing apparatus. Under the immediate impression of that catastrophe the idea on which the apparatus is based was conceived. During the following year continued experiments were made, which led to the present form of the "Pneumatophor." It was originally intended only for miners, but has proved useful also in factories, and at fires on board ship and on land.

The pneumatophor (invented and patented by Rudolph Chevalier de Walcher-Uysdal, Gustavus Gaertner M.D., and Gustavus Benda) is intended to make the user independent of condensed air, and to enable rescuers who are provided with it to enter immediately without danger those parts of the mine which are full of after-damp. The lightness and completeness of this apparatus are of particular importance. It enables a miner working in a fiery mine to save himself, and then to proceed to the rescue of his comrades, if he take the apparatus with him every day, or if a number are deposited at suitable spots in the mine. As the pneumatophor does not require a second person to set it going, it is of great value to those in the mine also when the descent of the rescue party is delayed by damage to the winding apparatus.



"PNEUMATOPHOR" BREATHING APPARATUS.

This apparatus consists of the breathing-bag A, the oxygen cylinder S, the caustic soda apparatus L, the nose-clip N, and the satchel. The breathing-bag is 450 mm. long, and made of gas-proof stuff. In it hangs a network of strips of dimity loosely knitted, intended to absorb the solution of caustic soda. In the middle of the top of the bag is the breathing-pipe R, a single pipe without a valve, with an ebonite mouthpiece M. By the side of it is the opening for the screw s, of the caustic soda apparatus. On the right side of the bag is the slit S, by means of which the caustic soda apparatus and the oxygen cylinder are inserted in the bag. This slit also enables one to turn the bag inside out after it has been used. The two metal plates V close the slit gas-tight, while at the same time they serve to hold fast the neck of the oxygen cylinder, the wheel r remaining outside. Attached to the middle of the bag at the right corner are the removable straps T, by which the bag is carried. They are passed over the shoulders, under the arms, and fastened at the end with hooks and eyes. The vessel S for holding the oxygen is a seamless steel cylinder tested for 250 atmospheres, with a content of 0·6 l. At a pressure of 100 atmospheres it holds 60 l. of oxygen. In the neck of the bottle is a valve, on the mouth of which is the outlet-pipe h. The side opening of this pipe is turned toward the middle of the bottom of the caustic soda apparatus to prevent the stream of oxygen when coming out from scattering the caustic soda which clings to the side of the bag. The valve is worked by means of the hand-wheel r from the outside of the bag. It is important to keep the valve well closed. To increase the absorbing surface the oxygen bottle and the caustic soda apparatus are covered with bags of a soft material. The bottle is so inserted in the bag through the slit S that its end rests in the sling supporting the caustic soda apparatus; the pipe h is turned upward, its opening toward the bottom of the caustic soda apparatus, its neck between the clips V.

The caustic soda apparatus is a cylinder of perforated sheet-metal containing a glass bottle with an india-rubber stopper, and contains 426 c. c. of 25% solution of caustic soda. It is 200 mm. long, and has a diameter of 80 mm. at the bottom. Between the bottle and its cover is an iron ring in which, perpendicular to the long axis of the vessel, is attached the thread in which the screw works. The caustic soda apparatus is placed in the bag in such a manner that this thread passes through an aperture at the top of it. Wire is wound round outside the india-rubber which surrounds this to render the neck of the bag gas-tight. The wheel which turns the screw s is, accordingly, outside the bag, and is fastened by means of a thread with a lead seal which shows if it has been turned or not. Turning this screw breaks the glass bottle inside the metal-cylinder. The screw, however, does not press directly on the bottle, but on an intermediate metal-plate, which causes complete breakage. An india rubber ring and piece of card prevent the glass bottle from coming in contact with the metal cylinder. In order to increase the absorbing surface and to catch the broken glass the entire caustic soda apparatus is covered with muslin which has the size washed out. Under the caustic soda apparatus is the oxygen cylinder, the end of which rests in a sling attached to the neck of the caustic soda apparatus. The nose-clip N is a simple nose-clip, the cheeks of which are covered with soft leather; it is fastened to the breathing tube by a string or chain. Each apparatus is furnished with two nose-clips.

When the apparatus is put into the satchel, its top with the mouthpiece and screw is uppermost. When packed, the whole apparatus is about 380 mm. long, 290 mm. broad and 100 mm. thick. A common sack will do for apparatus kept at fire stations, or at the pit's mouth, or underground.

Before being put into the satchel the sides of the apparatus are folded over, and then it is wrapped up in a square piece of linen to keep off dust and dirt. Then a strip of paper is put round it and fastened with a lead seal, so that the apparatus cannot be taken out without tearing the paper. The following four actions suffice to set the apparatus going: 1. Taking it out of the satchel and removing the covering. 2. Strapping the apparatus on and taking the mouthpiece between the lips or teeth. 3. Breaking the glass bottle of the caustic soda apparatus. 4. Opening the oxygen cylinder and putting on the nose-clip.

As already mentioned, the oxygen is inhaled through the breathing pipe. The breathing should be as even as possible. Only a small part of the oxygen inhaled at one breath is absorbed by the lungs; consequently the air breathed consists of about 4% carbonic acid and about 96% oxygen. The carbonic acid is absorbed by the caustic soda which wets the sides of the bag, whereas the oxygen is breathed again. It is that which makes so small a quantity of oxygen last so long. If the user be quiet, or make but slight movements, the apparatus can be relied on to enable him to breathe for nearly an hour and a half. If he move or work, the oxygen will last at least half an hour. After breathing for some time the bag should be raised to mix the air in it.

The weight of the apparatus is only 4·50 kg., which make it possible to take it into the pit every day, unless it be thought better to deposit it at life-saving stations in the mine. Naturally the apparatus is of the greatest value for the rescuers, as it enables them to go into places full of after-damp, and to carry out work necessary to restore the ventilating apparatus.*

When estimating the value of the pneumatophor the question of the possibility and advisability of breathing pure oxygen has to be considered. On this point Dr. Gustav Gaertner, professor of experimental pathology at the University of Vienna, writes as follows: "The breathing of undiluted oxygen, as experiments have proved, cannot hurt the human organism at all; on the contrary, its effect is refreshing and reviving. I have watched over several hundred oxygen-inhalations, carried out to cure the lungs, heart and liver, and have myself repeatedly breathed pure oxygen, four times with the apparatus here described (once uninterruptedly for 55 minutes), without once observing any symptom which could be regarded as a sign of injury to the organism. In the case in question, in which we have to do with men who probably have for some time breathed an atmosphere containing carbonic oxide, the administration of pure oxygen is the most suitable means of freeing the blood from the poisonous gas as rapidly as possible, and restoring it to its natural condition."

I may mention that by an order dated April 6th, 1897, of the Austrian Mining Government, the use of the pneumatophor has been made compulsory in the Ostrau-Karwin District and five apparatus must be supplied for every 100 workmen of a colliery.

Arsenic in Australia.—White arsenic, containing 98% arsenious oxide, and gray arsenic, containing 92% arsenious oxide, are now produced at the Spottiswoode Smelting Works, near Melbourne, Australia, and some of it has been exported recently to London.

Smelting Cyanide Bullion.—Arthur Caldecott, in the *Journal of the Society of Chemical Industry*, suggests the following method of handling the slags resulting from the smelting of cyanide slimes, which, it is well known, are apt to be rich in gold. To lessen the gold contents of the slag, a mold to receive the contents of the crucible may be used which has a small hole bored in the side a couple of inches from the bottom. While pouring, this hole is plugged up with clay, and a few minutes afterward, when the surface of the slag has solidified, an iron rod is thrust through, whereupon the still molten slag inside runs out. During the interval after pouring, any shots of metal contained in the slag settle to the bottom, or are caught on the partially chilled layer next the sides of the mold. Hence the outflowing slag is, as experiment shows, nearly gold-free. That portion of the slag which remains as a shell in the mold can be returned to the crucible when the next charge is melted.

* Electric safety lamps greatly assist the work of the rescuers who are provided with the pneumatophor. If there be smoke, spectacles must be worn to protect the eyes.

THE WITWATERSRAND GOLD-FIELD AND ITS WORKING—VI.*

THE TREATMENT OF TAILINGS.

WRITTEN FOR THE ENGINEERING AND MINING JOURNAL BY W. Y. CAMPBELL.

The gold in the conglomerates is won by the successive methods of:
1. Amalgamation on plates and smelting;
2. Concentration by vanners or strakes, chlorination and smelting;
3. Cyanide leaching, precipitation, smelting;
4. Slimes leaching, precipitation and smelting.

The output is contributed by methods 1 and 3; No. 4 will figure fairly in present and future years; No. 3 is of little moment and will probably become less, the ores here not favoring concentration in view of their grade and nature and of the success of the cyanide treatment of sands. The year 1896 saw 2,807,963 tons of sands cyanided, yielding 663,467 oz. bullion, value $9,882,485; the average yield per ton being $3.52, the average cost $1.08. The installation of the cyanide process on practical lines dates from 1892, and, though only approximate tonnage and cost records are available for that year, the output in bullion was 160,168 oz., worth $2,411,558. The year 1893 saw the process in course of adaptation all along the line, and step by step improvements have been made in arriving at economic solutions, cheap handling and increased extraction. The efforts are not ended yet, by any means.

The tailings record to the end of 1896 is as follows:

Year.	Tons treated.	Ounces.	Value.	Yield per ton.	Profit per ton.
1892	480,504	160,168	$2 411,556	$4.80	$2.28
1893	1,217,792	304,498	3,582,736	3.44	1.64
1894	2,691,700	587,309	8,507,866	3.14	1.62
1895	2,757,167	638,733	9,352,526	3.38	2.06
1896	2,807,963	663,467	9,882,485	3.52	2.45

The tonnage treated in the first five years of the cyanide industry varied from 54% to 106% of the tonnage milled; the erratic ratio is, of course, due to the treatment of sands milled prior to 1893, concurrently with the mill output from 1893 to 1896. The general gold output figures for the years 1893 to 1896 are affected in the same way. The normal ratio of the gold produced respectively from plates and vats, reduced to fine gold, is in every 100 oz. gross yield 77·57% from plates and 22·43% from vats. The monographs and articles on cyanide leaching of Rand tailings are so many that other than passing reference to the process itself is unnecessary, and a glance will only be given therefore at costs and results at date.

Costs of treatment vary on the mines from $0.84 to $1.56 per ton, calculated on the tons of sand treated. The basis as often calculated from and on the tons of ore milled is misleading. New plants on a large scale treating large quantities of non-acid tailings and constructed on the latest and best experience as to economical methods of handling, charging and discharging, can save from 25 to 50c. per ton treated on the costs of some of the older or smaller plants. Close analysis of the 1896 results from fairly typical cases will be the best illustration. These plants are several years old and work in sequence to 70 or 80 head mills and on 10-dwt. ores. The ton unit is calculated thus: Sands with 15% moisture, 24 cu. ft. = 1 ton. Sands with only 10 to 12% moisture, 27 cu. ft. = 1 ton.

The result of the treatment in one special case is as follows: Tons treated 1896, 49,577; yield in bullion, 10,692 oz.; yield in fine gold, 7,144 oz; fine gold per ton, 0·14 oz. The year's averages are given as follows:

Cost per ton	$1.31
Profit per ton	1.64
Fire assay of tailings before treatment	0·19 oz.
Fire assay, residues after treatment	0·03 "
Actual extraction	73·5%
Cyanide used per ton treated	0·652 lbs.
Cyanide bullion fineness	·707
Mill plate " "	·9 0

In practice we find the following details: Size of mill mesh, standard, was 600; white wages per ton were 22·3c.; Kaffir wages per ton, 7·6c.; cost of fuel (coal) used, 4·6c.; coke used for fuel, 1·9c.; cyanide (then 35½c. per pound; it is now 21c.) per ton, 23·0c.; zinc used per ton 1·42c.; borax used per ton, 1·10c.; carbonate of soda used per ton. 0·16c.; filling and discharging vats by contracts, 33·0c.; general and sundry expenses, 35·80c.; making the total working cost per ton about $1.31. The stores used in treating included 466·8 tons coal; 21·9 tons coke; 14·44 tons cyanide; 4·53 tons zinc; 1·275 tons borax; 0·800 ton soda; 1·500 tons sundries.

The cyanide used was all from Hamburg, trade standard, 99% pure cyanide—in reality 97% is a safe figure. Of the ore sent to mill and passed over the plates 68% is dealt with in the cyanide vats as sands and 28% is settled and kept in dams as slimes to be treated later. In some cases where water is plentiful and overflows allowed the percentages are less, but in this case under review and others like it where water is scarce, the figures given apply. Slimes are 40% poorer in gold contents than the sands from which they have been separated. A cup of lime is added to each truck of sands on its way to the vat.

The vats vary in capacity, but taking a typical case we have, in short, the following: Into a 196-ton vat of limed sands, 57 tons of 0·3% solution is run into and through the sands and drained off in 36 hours; then rest 24 hours, then three successive percolations of 0·16 solution of 26 tons each with interval periods of 6 to 12 hours; then two final cleansings or washings of the sands with weak or 0·08% solution, totaling 61 tons. Total sands, 196 tons; total solutions, 196 tons; period of treatment, five to six days.

Better extraction and lower costs are secured by having the sands dry; wet sands take longer percolation and more cyanide. Zinc boxes, if properly run, should not pass gold in solution in excess of 6 gr. per ton—about 1 oz. per month unrecoverable. The loss in smelting is 0·02% of the year's bullion.

The above represents the single treatment process. Some mills run the double treatment process, but extra catch of gold, 0·02c. per ton, does not appear to cover the increased costs of double handling.

In some works the solution occasionally rises to 1 or 2 dwts. of gold per ton. Electrical methods of precipitation now being tried only catch 40%, and so far the process is not a success; the remedy appears to be in the proper handling of the solutions and zinc boxes themselves primarily. A positive, if small, loss is that of cyanide from oxidation, and nothing has been discovered yet to prevent that; probably if it was prevented the loss in other ways might be greater. Cyanide has fallen from 72c. to 96c. per pound, when operations began, to 48c. in 1896, 42c. in 1895, 34c. in 1896, and 21c. now per pound. The bulk appears to come from Germany, where it is produced as a by-product at chemical works. These are local prices.

The comparative product of a typical mill chosen above in mill and cyanide gold (reduced to fine gold) for the year was:

Mill gold	31,906 oz.	77·57%
Cyanide gold	7,154 oz.	22·43%
Total	39,060 oz.	100·00%

VALUE OF WITWATERSRAND ORE MILLED FROM 1890 TO 1896.

Year.	Tons. (c) Milled.	Tons. (c) Sands Cyanided	Range of Value Per Ton Milled. Highest.	Range of Value Per Ton Milled. Lowest.	Range of Value Per Ton Cyanided. Highest.	Range of Value Per Ton Cyanided. Lowest.	Range of Total Value Per Ton Ore. (d) Highest.	Range of Total Value Per Ton Ore. (d) Lowest.	Cash Value Won.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	£ s. d
1890	711,877	.....	a 46 8	.....	.....	.....	a 46 8	.....	1,661,046 6 8
1891	1,154,145	.....	a 40 6	.....	.....	.....	a 40 6	.....	2,337,143 12 6
1892	1,979,354	.....	a 35 3	.....	.....	.....	a 44 2	.....	4,371,589 17 4
1893	2,200,704	b620,348	37 1	32 11	b16 6	b13 7	49 10	43 9	5,116,423 16 4
1894	2,826,330	2,674,673	35 3	31 9	14 3	12 11	51 3	47 5	6,974,181 5 1
1895	3,456,575	2,759,066	33 8	28 2	14 8	12 2	49 0	40 4	7,859,191 8 1
1896	4,011,695	2,807,963	28 7	25 10	15 8	13 11	41 0	38 0	7,842,446 18 4
Totals	16,340,676	8,862,050	.....	.....	.....	.....	.....	.....	36,192,022 17 4

(a) Average. (b) The first report of amount of sands cyanided is for the month of August, when 107,586 tons were so treated. (c) The ton of ore is supposed to be 2000 lbs., but in practice is probably not more than 1750 lbs.; the ton of sand varies from 24 to 30 cubic feet. (d) Includes value of gold won from concentrates.

YIELD PER TON OF ORE MILLED BY WITWATERSRAND MINING COMPANIES.

Company.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	Highest for Period.	Lowest for Period.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Aurora	31 9	31 2	24 9	30 9	21 6	35 7	Nil.	35 7	20 9
Banket	13 1	15 0	13 6	25 1	37 6	41 11	Nil.	41 11	13 1
Bonanza	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	100 11	100 11	100 11
Champ d'Or	Nil.	84 1	46 9	28 8	63 6	53 6	33 8	84 1	28 8
Champ d'Or Deep	Nil.	Nil.	Nil.	Nil.	24 6	28 2	Nil.	28 2	24 6
City & Suburban	69 1	27 6	45 8	65 7	47 1	39 7	37 7	69 1	27 6
Crown Reef	62 3	40 6	51 11	45 4	43 0	40 11	44 11	62 3	40 6
Durban-Roodepoort	45 8	40 5	37 5	52 9	53 0	46 2	41 7	53 0	37 5
Ferreira	67 0	69 2	69 2	81 0	93 7	84 4	74 3	93 7	59 2
Geldenhuis Deep	Nil.	Nil.	Nil.	Nil.	Nil.	18 0	26 10	26 10	18 0
Geldenhuis Estate	Nil.	73 6	44 2	41 7	35 2	32 6	27 0	73 6	27 0
Geldenhuis Main Reef	61 4	34 10	24 9	27 7	34 4	40 11	35 4	61 4	24 9
George Goch	45 8	29 8	27 2	25 7	30 6	34 7	28 6	45 8	25 7
Glencairn	24 4	20 4	36 4	29 6	48 10	39 7	26 10	48 10	20 4
Ginsberg	Nil.	Nil.	Nil.	Nil.	38 8	52 10	45 3	52 10	38 8
Henry Nourse	42 0	50 2	52 11	61 6	79 11	62 8	57 3	79 11	42 0
Johannesburg Pioneer	70 6	57 6	59 11	40 8	39 4	55 10	73 9	73 9	39 4
Jumpers	29 9	26 0	31 6	31 3	40 10	42 4	33 4	42 4	26 0
Jubilee	79 4	54 2	67 1	47 0	48 0	35 10	32 1	79 4	32 1
Langlaagte Estate	56 11	50 7	34 0	31 11	37 6	38 5	30 1	56 11	30 1
Langlaagte Block "B"	Nil.	16 3	19 0	28 6	31 11	26 2	23 0	31 11	16 3
Langlaagte Royal	69 11	34 10	30 7	29 8	40 0	23 0	21 1	69 11	21 1
Langlaagte Star	21 6	19 8	17 2	16 9	Nil.	Nil.	20 8	21 6	16 9
Langlaagte United	.....	13 5	27 8	22 3	22 8	27 11	Nil.	27 4	13 5
Lancaster	25 1	Nil.	Nil.	Nil.	Nil.	35 2	Nil.	35 2	25 1
May Consolidated	48 1	28 8	31 6	32 11	37 0	38 8	30 0	48 1	28 8
Minerva Block Reef	Nil.	Nil.	Nil.	16 6	19 10	32 7	21 6	32 7	16 6
Meyer & Charlton	50 11	80 3	68 3	70 9	53 3	41 5	33 1	80 3	33 1
Metropolitan	28 4	18 0	18 5	15 10	28 0	31 3	28 6	28 6	15 10
New Heriot	35 9	16 3	48 3	71 7	56 6	52 3	51 6	71 7	16 3
New Chimes	66 10	51 3	44 10	44 7	41 10	42 4	26 7	66 10	26 7
New Midas	Nil.	Nil.	14 0	Nil.	Nil.	122 4	39 0	122 4	14 0
New Primrose	42 2	35 3	39 4	40 6	39 10	34 7	28 7	42 2	28 7
New Rietfontein	118 8	Nil.	79 10	104 0	48 11	44 8	36 6	104 0	36 6
New Kleinfontein	19 6	15 6	Nil.	34 11	37 1	32 6	.....	37 1	15 6
New Modderfontein	84 2	Nil.	52 3	43 6	49 4	Nil.	23 9	84 2	23 9
Nigel	143 0	141 9	193 5	142 0	157 8	93 9	59 0	193 5	59 0
New Comet	Nil.	Nil.	Nil.	Nil.	46 9	34 7	29 2	46 9	29 2
New Croesus	62 3	35 9	31 2	31 7	Nil.	26 6	25 4	62 3	25 4
New Heidelberg Roodepoort	Nil.	Nil.	Nil.	30 0	Nil.	Nil.	16 6	30 0	16 6
Orion	Nil.	35 6	33 4	32 8	40 9	40 10	26 0	40 10	26 0
Princess	12 10	17 6	15 5	21 11	40 2	48 4	43 5	48 4	16 5
Paarl Central	Nil.	11 6	22 5	18 0	34 1	36 0	Nil.	36 0	11 6
Randfontein Porges	Nil.	Nil.	28 4	38 10	26 4	42 8	33 9	42 8	28 4
Robinson	113 0	108 11	96 2	104 0	96 10	80 6	76 2	113 0	76 2
Roodepoort (Kimberley)	Nil.	12 0	13 0	16 2	24 3	61 53	27 6	61 53	12 0
Roodepoort Deep	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	32 6	32 6	32 6
Salisbury	83 7	85 10	88 9	67 8	54 2	39 6	28 0	88 9	28 0
Simmer & Jack	38 4	31 7	28 8	27 8	38 0	46 8	42 8	46 8	27 8
Stanhope	60 0	43 4	50 6	43 8	52 7	39 9	32 1	60 0	32 0
Treasury	Nil.	48 1	47 4	65 10	38 5	Nil.	26 7	65 10	26 7
United Main Reef	30 7	20 0	25 2	27 10	50 7	48 2	37 10	50 7	20 0
Van Ryn	40 2	Nil.	28 3	24 7	35 7	46 1	30 7	46 1	24 7
Village Main Reef	Nil.	Nil.	56 10	49 5	53 10	111 8	Nil.	111 8	49 5
Wemmer	55 4	74 2	.....	66 3	54 3	64 2	51 3	74 2	51 3
Witwatersrand	18 5	15 9	.....	.....	.....	.....	31 2	31 2	15 9
Wolhuter	20 5	Nil.	31 6	34 10	51 5	39 10	33 7	51 5	20 5
Worcester	60 2	54 9	46 0	51 2	82 11	57 0	37 9	60 2	46 0
Vogelstruis	Nil.	Nil.	Nil.	Nil.	Nil.	Nil.	20 1	20 1	20 1

* No. I. of this series appeared in the *Engineering and Mining Journal* for June 19th, page 631; No. II., June 26th, page 659; No. III., July 10th, page 36; No. IV., July 17th, page 67; No. V., July 24th, page 96.

The average profit from tailings per ton was $2·44 for 1896, but it must be borne in mind that this is the profit based on taking the gold-bearing sands as they leave the mill, having previously been mined and crushed; no charge for mining and crushing is shown against the cyanided sands debit account.

The average profit during 1896 from all sources over 4,011,695 tons mined, milled, cyanided and in part vanned and chlorinated was only $1.82 per ton, and the natural question arises was no profit made in the mill? The answer to the superficial question appears to be that total costs and total figures alone show the eventual and final loss or profit.

Rand Bullion.—The bullion won by plate amalgamation is retorted and then smelted. It is practically free from all metals other than silver, which runs from 100 to 130 in 1,000 parts of bullion, the balance. 870 to 900, being fine gold. The bullion from the east section of the Rand shows slightly more silver than in the west section, with slight variations in all mines. In certain mines the bullion from the lower level is about .050 finer than that of the upper levels. Smelted gold from mill plates averages in fineness ·870 to ·880. Smelted chlorination gold averages ·990. Bullion from the cyanide process has a very wide variation, owing to crude methods of precipitating and refining, of from ·480 to ·810 fine. The average for the whole fields is ·720.

These bullion figures apply only to the gold won from the Rand auriferous conglomerates. The gold matrices in other parts of the Transvaal are various and their bullion likewise varies in fineness.

In the Lydenburg District copper shows up; in Dekaap it varies from almost fine to very refractory, and in Malmani District, the percentage of silver becomes excessive, as it does in many cases in Rhodesia. The Rand gold industry is singularly free from trouble in gold quality or variations.

The accompanying tables show the average returns obtained from different Rand mines for a series of years. These tables appeared in Volume V. of *The Mineral Industry*.

A NEW ATMOSPHERIC RANGE RECORDING THERMOMETER.

The instrument herein described has been developed to meet a demand for a recording thermometer for atmospheric ranges of temperature that can be applied to air, gases or liquids in a closed pipe or room. Fig. 1 shows the complete instrument, which consists of a Bristol recording pressure-gauge in which the helical tube is completely filled with an expansible liquid. This tube, which is sensitive to and is operated by changes of temperature, is inclosed in the cylinder projecting from the back of the case of the recorder as shown in Fig. 1. This cylinder protecting the sensitive tube is furnished with a screw-thread so that it may be conveniently located within a gas main, through the side of a tank, or through the partition of a room, as may be desired. Fig. 2 is an outline of one of the thermometers as applied to a large gas main; *A* representing the protected sensitive tube, *B* a cross-section of gas main, and *C* the recording portion of the instrument. It will be observed that the working part of the thermometer is entirely protected from any action of the gases or liquids of which the temperature is being recorded; hence the operation of the instrument is absolutely independent of the pressure or vacuum within the closed space.

Fig. 3 shows a specimen section of the chart of these instruments for a range from 0° to 130° Fahr. Other ranges may be made by using weaker or stronger pressure gauge tubes. By varying the quantity of expansible liquid enclosed in the pressure tube the lower end of the scale may be limited and a very open scale provided at the normal degree of temperature. These instruments have been in successful operation for several months and are very useful for many purposes. They are being manufactured and placed on the market by the Bristol Company, of Waterbury, Connecticut.

FIG. 1.

THE BRISTOL RECORDING THERMOMETER.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

COMPANY LIABLE FOR ACT OF SHIFT-BOSS.—The shift-boss of a mine acts as vice-principal in directing a miner to work at a certain place without notifying him of unexpected blasts at such place, the existence of which is known to the boss.—McMahon vs. Ida Mine Company (70 Northwestern Reporter, 748); Supreme Court of Wisconsin.

WHEN COMPANY IS NOT LIABLE FOR ACT OF FOREMAN.—The foreman of a gang of men engaged in shoveling coal into cars from a large pile, the surface of which had been frozen, acts as a fellow-servant of the men in so directing the work as to leave a projection of the frozen coal over the men at work.—Miller vs. Thomas (44 New York Supplementary Report, 277); New York Supreme Court.

ABANDONMENT A SURRENDER OF LEASE.—Under a written lease for 10 years, with right to mine coal, the lessee entered, but within a year ceased to operate the mine, removed all the apparatus which was necessary to its operation, took out the curbing and said he would do nothing further under the lease; but three months afterward he attempted to re-enter. It was held that the abandonment operated as a surrender of the lease.

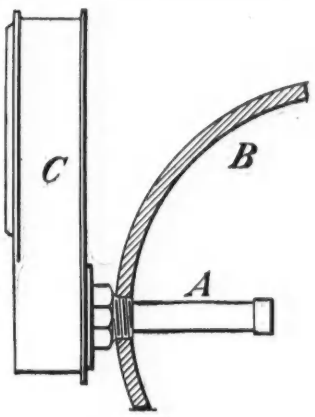


FIG. 2.

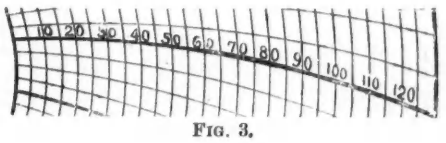


FIG. 3.

—Worrall vs. Wilson (70 Northwestern Reporter, 619); Supreme Court of Iowa.

MODE OF ASSESSING MINE FOR TAXATION.—The market value of a mine at a fair private sale, and not the income of such property, is the criterion for ascertaining its true value, for purpose of taxation, where the law requires that property shall be assessed at its "true value."—Hurd vs. Cook (36 Atlantic Reporter, 892); Supreme Court of New Jersey.

OPERATION OF COAL MINE DURING INSOLVENCY PROCEEDINGS.—The receiver of a coal company used part of the income in making permanent improvements during the two years succeeding his appointment, under the order appointing him; and then on his application the court authorized him so expend $1,000 per month in improvements during the next two years. It was held by the court that creditors were entitled to preference over the trustee out of the future current receipts, or the proceeds of the mortgaged property when ultimately sold, the parties having proceeded, and the court having administered the trust, in the same manner as in the case of a railway receivership.—Manhattan Trust Company vs. Seattle Coal and Iron Company (48 Pacific Reporter, 333); Supreme Court of Washington.

QUESTIONS OF NEGLIGENCE OF MINER FOR THE JURY.—Double car tracks in a mine extended from the track in the main slope into the side entries. As empty cars were coming down the main slope the switchman received a signal to allow them to pass his entry and run to the fourth entry. To comply, he set the switch so the cars would pass him and then went into the entry, to be out of danger, as was proper. He stopped on the track used for empty cars, some 25 ft. from the entrance. When such cars came to his switch, instead of passing on, they left the straight track and ran into his entry and he was injured. The other track in the entry was filled with loaded cars and he could not with safety have stood between the tracks when the cars were passing. It was held that the question of contributory negligence was for the jury to determine.—Southwestern Coal and Improvement Company vs. Robr (39 Southwestern Reporter, 1017); Court of Civil Appeals of Texas.

PERSONAL.

MR. H. S. MCKAY, of Boston, one the large owners of La Cigale mine, at Mercur, is summering in Utah.

PROFESSOR SMYTHE, of Harvard, was at Mercur, Utah, last week, examining the Vanderbilt and other properties.

MR. GEO. H. ROBINSON, after a tour of inspection on the Mother Lode, California, is enjoying a few days on the Atlantic Coast.

MR. CHARLES M. ROLKER arrived in Salt Lake from the North in time to join the throng attending the Utah Semi-Centennial Jubilee.

MR. A. D. HODGES, after a short trip to Denver, is again on the West Dip, Camp Floyd District. He is making a very thorough study of that area.

MR. CHARLES G. YALE, a well-known mining engineer of the Pacific Coast, has gone to the Klondyke District, on the Yukon. He will winter there.

CAPT. D. C. KINGMAN, who was one of the party that took possession of old Fort Yukon for the United States government, is now residing at Chattanooga, Tenn.

MR. GEORGE A. SONNEMAN, mining engineer, of Spokane, Wash., has started on a trip of six weeks or so to Baker City, Ore., Silver City and the Seven Devils District in Idaho.

MR. A. M. ROBERSON, a mining man from Kimberly, South Africa, is now in Butte City, Mont., examining the mines and smelters with a view to introducing parties in South Africa.

DR. R. P. HUDSON, of Nashville, Tenn., has returned to his home after a month's trip through California, Colorado, Wyoming and other Western mining States. He made a close inspection of the Colorado mining field.

MR. H. B. PATTON, professor of geology and mineralogy at the State School of Mines at Golden, Colo., has been in Cripple Creek during the week collecting specimens of phonolite and other rocks of the district for use at the school.

PROF. S. F. EMMONS returned to Salt Lake from Tintic July 19th. Before leaving Utah he made a flying trip to Sevier Canyon, over the Rio Grande Western. He expects to sail for Europe in a few days to attend the International Geological Congress at St. Petersburg.

MR. J. W. GATES, President of the Illinois Steel Company, of Chicago, together with Mrs. Gates, and MR. and MRS. J. A. DRAKE, have been making a tour of investigation through the mining regions of British Columbia. Mr. Gates proposes making some investments there.

MR. GEORGE E. QUINBY, of Webb City, the present mine inspector of Missouri, has been reappointed inspector of lead, zinc and iron mines for the two years' term, from July 17th, 1897, to July 17th, 1899. Mr. Quinby was appointed to fill the unexpired term of Francis A. LaGrave, and his appointment gave such satisfaction that his confirmation for the full term followed as a matter of course.

MAJ. IRVING A. STEARNS has been tendered a testimonial dinner on his retirement from the management of the coal companies of the Pennsylvania Railroad Company. The dinner is given on the evening of July 31st at Concordia Hall in Wilkes-Barre, Pa. Major Stearns' retirement from this position is much regretted both by the company and by his associates and subordinates, and there is a general desire to wish him success in his new field of action.

OBITUARY.

WILLIAM HENRY CONLEY, one of the best-known structural iron manufacturers in the country, died in Pittsburg, July 26th, aged 57 years. He was born in Pittsburg, educated in the public schools and learned the printer's trade in Plymouth, O., but returned to Pittsburg in a short time and went into the iron business. Some 30 years ago he established the firm of Riter & Conley, and its business has been gradually built up to its present dimensions. The firm has filled contracts for iron and steel buildings in all parts of the United States and in many foreign countries.

SOCIETIES AND TECHNICAL SCHOOLS.

ASSOCIATION OF AMERICAN STEEL MANUFACTURERS.—At the regular quarterly meeting, held at the Brighton Casino at Atlantic City on July 23d, Mr. G. M. McCauly, general manager Central Iron and Steel Company, was elected president; Mr. A. F. Huston, first vice-president of the Luken's Iron and Steel Company, vice-president; and Mr. Albert Ladd Colby, metallurgical engineer of the Bethlehem Iron Company, secretary and treasurer. A vote of thanks was extended to the retiring officers, including the president, Mr. W. L. King, general manager Jones & Laughlins Company; the vice-president, Mr. G. M. McCauly, and the secretary and treasurer, Mr. H. H. Campbell, superintendent of the Pennsylvania Steel Company.

LEHIGH UNIVERSITY.—Governor Hastings, of Pennsylvania, has approved the first and second specific appropriations, amounting to $150,000, and disapproved the third and fourth appropriations, amounting to $50,000, in the bill passed by the legislature appropriating $200,000 for the Lehigh University. The first two items are for maintenance and general expenses, and the other two were for general educational purposes and special maintenance of the plant. The trustees of the University have issued a statement announcing that the university will be open as usual in September, that the appropriation has entirely relieved them of any anxiety arising out of the temporary and partial failure of its income, and that the prospects for its continued usefulness and growth are in every way satisfactory and encouraging. The grant from the State will be made to cover two years, when, it is confidently expected, the income of the University will have been restored to its usual proportions.

INDUSTRIAL NOTES.

The Ætna-Standard Iron and Steel Works, Wheeling, West Va., have resumed operations.

The Central Connellsville Coke Company will construct a coke plant of 120 ovens in Unity Township shortly.

The McKenna Re-rolling Rail Company, of Joliet, Ill., has made a test run, and everything went well. This plant is said to be the only one of its kind in the world. The plant will start up in a few days and give employment to 200 men.

The Edward P. Allis Company, of Milwaukee, is building a complete concentrating plant for the Highlander mine, at Ainsworth, B. C.; also a complete gold stamp mill with Reynolds Corliss engine for the Andes Mining Company, in the Argentine Republic.

The Shipman Manufacturing Company, Rochester, N. Y., has been incorporated to manufacture machinery and metal work. The directors are Alfred G. Wright, John C. Woodbury, William J. Creelman, John A. Creelman and James Fitt, of Rochester.

The E. H. Eldridge Lumber Company, of Indianapolis, Ind., has been incorporated with E. H. Eldridge, George O. Eldridge and Henry C. Murphy as directors. The company will sell coal and fuel and manufacture lumber. It starts out with $35,000 capital.

The Rancocas Chemical Works, of Rancocas Creek, Burlington County, N. J., have been organized to manufacture phosphorous fertilizers. Capital, $50,000, Incorporators, Robert L. Thetter, of Oswego, N. Y.; George P. Deacon, Bowers, N. J., and Eli A. Wakefield, Philadelphia.

The United Gas Improvement Company, of Philadelphia, is erecting at Atlanta, Ga., a water tower and tank. The tank has a capacity of 10,000 gals. and is supported on a tower 60 ft. high. They have let the contract for furnishing and erecting the tank and tower to the Berlin Iron Bridge Company, of East Berlin, Conn.

The improvements at the Southern Phosphate Works, at Macon, Ga., are about completed, and the capacity has been doubled in preparation for next season's business, which commences in October. The output of the works will amount to about $700,000 next year. At present they are running night and day, and giving employment to about 150 hands.

The Scottdale Iron and Steel Company, of Scottdale, Pa., is making considerable improvement in its machine shops. An addition is being built in which new machinery for the manufacture of the Hays metallic lathing will be installed. The company recently placed an order with the Wais & Roos Punch and Shear Company, of Cincinnati, for six steam doublers.

A certificate of incorporation has been issued to the George B Sennett Company, of Youngstown, O., organized for the manufacture of engines, machinery, forgings, castings, etc., with $100,000 capital. The incorporators are George B. Sennett, Florence Sennett, Thomas E. Davey, Thomas W. Lloyd and C. D. Hine. The company has its plant completed and ready for operation.

Articles of incorporation of the Tony Ore Reduction Company, of Pueblo, Colo., have been filed with the Secretary of State. The capital is $100,000, and the organizers propose building ore concentrators under a new patent issued to a local man. The incorporators are Frank Pryor, Charles Henkel, A. N. Fink, John Martin and William R. Bushby, the latter the patentee of the concentrator.

A proposal has been made to the Johnstown, Pa., Board of Trade by capitalists desirous of building a tin mill. They will build and equip a mill with modern machinery throughout, and at their own expense, and entirely free from liens or encumbrances, to employ 125 hands at the outset, on the condition that Johnstown will furnish the working capital, this to be in the shape of preferred stock.

President E. G. Acheson, of the Carborundum Company, of Buffalo, N. Y., has returned from Germany, where he went to establish a branch carborundum works for the home company. The plant in Germany was started in order to preserve the patent rights of the company and the works were set in motion only a few days before the rights would have expired unless the manufacture had been begun.

A scheme has been proposed to prevent American weldless steel tubes from coming into competition in Europe with English tubes. A capital of $400,000 is said to have been subscribed in London to acquire the business of the Ellwood Weldless Tube Company, the Greenville Tube Company, and the American Weldless Steel Tube Company, of Ohio. Should this plan go through, American tubes will be sold only in this country.

The Columbia (S. C.) Phosphate Company, of which Mr. W. A. Clark is the President, will increase the capacity of their acid chambers about 50%. Pyrites burners will replace the brimstone burners now in use. When all the contemplated changes have been made the mill will turn out 15,000 tons of phosphate annually instead of 10,000 tons as at present. All the new work will be completed by the last of August.

The new steel plant at Birmingham, Ala., has been put in operation by the Birmingham Rolling Mill Company, and it has been determined to add another furnace to the plant. This will give a capacity of about 80 tons per day, and furnish all the steel the rolling mills can use, besides probably leaving a surplus, which will be sold to other Southern mills. The operations of this plant are being watched with a great deal of interest by the furnace men of the district, and rumors are very general that other plants will be erected in the near future.

The sale of the Baltimore Iron, Steel and Tin Plate Company's plant at Locust Point, Baltimore, to Messrs. W. H. Harris and David Tamplin on behalf of a new company called the Baltimore Tin Plate Company, has been ratified by the Circuit Court. The purchasers have bought the property outright, the consideration being $50,000. Mr. W. H. Harris has been elected president of the new company; Mr. Frank G. Turner, secretary and treasurer pro tem. Mr. Harris was formerly manager and secretary to the Villiers Tin Plate Company, at Britton Ferry, Wales.

On July 26th a charter was granted to the Compressed Coal Company, of Norfolk, Va. The company is empowered to hold real estate to the amount of 500 acres. The capital stock may be $25,000 to $500,000, in shares of $100 each. The principal office is to be in Norfolk. The officers and directors are all from New York City and are as follows: Charles W. Kohlsaat, president; John T. Davis, vice-president; Clarence A. Blanchard, treasurer and secretary. Directors, the above and George R. Blanchard, Alfred H. Brown and John M. Shuffrins. The annual meetings of the stockholders will be held on the first Monday of each August.

TRADE CATALOGUES.

Messrs. James L. Robertson & Sons, 204 Fulton street, New York City, have just published a very complete catalogue of the machinery they sell. They manufacture indicators, reducing wheels, plain-meters, damper regulators, feed-water heaters, exhaust pipe heads, shaking grate bars, coils and pipe bending, waste oil filters, steam separators, oil extractors, Eureka packing, tools and supplies.

We have been favored with a copy of the new catalogue of the Hendrie & Bolthoff Manufacturing Company of Denver, Colo. This firm is so thoroughly and favorably known throughout the mining regions of the West that it is almost superfluous to say that they carry a very full line of mining supplies and machinery, and the advertising department of the company is to be congratulated on the very artistic description of the contents of the firm's storehouse with which they have furnished us. Messrs. Hendrie & Bolthoff represent the following firms: W. S. Tyler Iron Works, John A. Roebling's Sons Company, Knowles Steam Pump Works, Dodge Manufacturing Company, Norwalk Iron Works Company, James Leffel & Company, Lingerwood Manufacturing Company, Nonpareil Cork Manufacturing Company, the Lunkenheimer Company, Ames Iron Works, New York Belting & Packing Company, New York Safety Steam Power Company, and many others.

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 JULY 20TH, 1897.

586,567. PROCESS OF MAKING POLYSULPHIDES. Bernhard von Schenk, Heidelberg, Germany. The process consists in combining and thoroughly mixing sublimed sulphur and hydrated lime in about the proportions of 60% of sulphur and 40% of lime, boiling the mixture in water for a suitable period, reducing the specific gravity of the lye thus obtained by the addition of boiling water to about 10° Baume, then decanting the lye, then further reducing its specific gravity to about 5° Baume by the addition of water, then adding an alkali carbonate, then decanting and evaporating the

mixture until it is dry, then cooling the dried mixture by exposure to the atmosphere, and finally grinding and sifting the dried mixture.

586,569. MACHINE FOR MAKING PIPE. Willis D. Sherman, Brooklyn, N. Y., assignor of three-fourths to Charles B. Johnson, John J. Wilson, Ellis H. Baillie and Frank B. Johnson, same place. Combination of rammers driven by cams thereon, a shaft and pinion.

586,635. AMALGAM-WASHING APPARATUS. Henrik C. F. Stormer, Christiania, Norway. Patented in Norway July 12th, 1895, No. 4,697, and in England December 27th, 1895, No. 24,837. The process consists in taking up the amalgam from a lower level, raising the same through a decomposing liquid to a higher level and simultaneously therewith subdividing the amalgam into streams and allowing said streams to flow through the solvent liquid, for the purpose set forth.

586,669. AIR COMPRESSOR. Alfred Shedlock, Jersey City, N. J. The combination of two cylinders, their pistons, a driving-cam, one-half of which has a gradually increasing rise, and the remaining half of which falls and then rises again, and connecting mechanism by which the cam reciprocates the pistons, the cylinder and pistons being diametrically opposed relative to the cam.

586,686 and 586,687. ELECTRIC FURNACE. Robert F. S. Heath, Camden, N. J., assignor, by direct and mesne assignments of 49% to Henry D. Hughes, Strafford, Pa. In an electric furnace, the combination of depending stationary carbons, carbon-carrier, screw rod for raising and lowering said carbons, a bearing for said screw rod, a rotary melting pot, a material feeder, means for removing the carbide of calcium from the melting pot, an antifriction vertical shaft for the rotary melting pot, a bottom guide for the antifriction shaft, bevel gear of antifriction shaft, bevel gear of horizontal shaft, horizontal shaft and means for actuating horizontal shaft, for the manufacture of the carbide of calcium.

586,707. OIL-WELL PUMP. Frank A. Garbutt, Los Angeles, Cal. In a deep-well oil-pump, a piston in the working barrel and hollow from end to end to form the oil-passage of the pump and internally screw-threaded at its lower end, with a collar screwed into such lower end and forming the oil-inlet into the lower end of the piston and also forming an annular inwardly projecting shoulder; and the standing-valve rod fastened to the standing valve of the pump and working through the collar and provided at its top with the cross-head having arms to be engaged by the shoulder when the piston is withdrawn, and to allow the oil to pass up through the piston.

586,729. METHOD OF AND APPARATUS FOR EFFECTING ELECTROLYSIS. Carl Kellner, Vienna, Austria-Hungary. Patented in France December 15th, 1894, No. 243,672; in Belgium December 15th, 1894, No. 113,221; in Italy December 31st, 1894, XXIX., 37,828, and LXXIV., 179; in Austria January 17th, 1895, No. 45/208; in Hungary February 28th, 1895, No. 2,255; in Switzerland July 4th, 1895, No. 10,558, and in Norway July 16th, 1895, No. 4,439. In a process for the electrolytic decomposition of salts of metals capable of combining with mercury, passing an electric current through a solution of such salt to a mercury cathode flowing uninterruptedly from a higher to a lower level and before reaching such lower level flowing alternately and repeatedly out of contact with the salt solution into contact with an agent capable of decomposing the compound or amalgam formed, for the purpose set forth.

586,783. TEST FOR MANUFACTURING LITHARGE. William H. Williams, Sharpsburg, Pa. The combination with the furnace of a pivoted frame located therein, the test consisting of a spirally coiled pipe for the circulation of liquid or fluid, fireproof tuyeres and means for raising and lowering the test.

586,822. ELECTRIC FURNACE. Francis J. Patten, New York, N. Y. A furnace wall, a pair of carbon electrodes inclosed within said wall, one of said electrodes being circular in cross-section, means for rotating the arc between and relatively to said electrodes and passages arranged to convey material through the annular arcing-space traversed by the rotating arc.

586,824. ELECTRIC FURNACE. Francis J. Patten, New York. The process of electrically heating a homogeneous mass of material of low and approximately uniform conductivity, consists in passing an electric current through such a mass and establishing around such a mass a magnetic field.

586,835. PULVERIZING MACHINE. John C. Clark, Atlanta, Ga. The combination of a grinding ring and a rotatory group of grinding rolls acting upon each other to grind the material, each roll adopted to swing outward by centrifugal force and the outer rolls of the group also acting upon the ring.

586,858. APPARATUS FOR PICKLING OR WASHING METAL. George Mesta, Pittsburg, Pa. The combination with an overhead wheeled carrier arranged to move horizontally in parallel lines, of conveying mechanism for supporting long sheets or strips at two or more points in their length, tanks located beneath the carrier in its path of travel, agitating apparatus mounted on the carrier, said apparatus being arranged to give the sheets or strips an agitatory motion in the tanks, and mechanism on the carrier for lowering the sheets into and raising them out of the tanks.

586,866. FEED-TABLE FOR ROLLING MILLS. John A. Potter, Cleveland, O. A feed-table having a plurality of parallel endless chains, and driving mechanism therefor constructed and arranged to operate them all in the same direction or a portion of them in a different direction from the remainder as desired.

586,910. SMELTING FURNACE. John D. McDonald, Sudbury, Canada, assignor of two-thirds to Richard Watson Demorest, same place, and Rinaldo McConnell, Mattawa, Canada. The combination of rails or ways having notched or cut-out portions, a feeding carriage moving on the rails and hangers arranged to support the carriage when it drops in the notches or cut-out portion.

586,938. HYDRAULIC MINING-GIANT. John P. Simmons, San Francisco, Cal. A hydraulic giant comprising a stationary pipe, a curved movable section and a ball-bearing joint connection between them.

MACHINERY AND SUPPLIES WANTED.

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

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

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

GENERAL MINING NEWS.

THE COAL MINERS' STRIKE.—The incidents of the strike during the week have been many, but the results small. The efforts of the managers have been concentrated on West Virginia, but up to the present time the greater part of the miners in that State continue at work and heavy shipments of coal are going to the West and Northwest. There have been partial strikes at the Fairmont and Monongah mines, but through the Kanawha and Pocahontas regions there is no cessation of work. The leaders realize that success is impossible while this continues, and every effort is being made to induce the men to stop; but they do not seem disposed to do so.

In the Pittsburg region the only mines at work are those of De Armitt and some of the New York & Cleveland Gas Coal Company. Here also great efforts are being made to induce the men to stop work, with the probabilities in favor of success.

In the West the Illinois miners are generally out, and hardly any mines are running. In Missouri, however, a number of mines are at work and are shipping coal to Chicago. In Iowa the strike is only partial, but the mines at work are chiefly the smaller ones which supply the local trade only.

The conference of operators at Pittsburg reached a "uniformity" agreement and a committee was appointed to secure the signatures of the necessary 95% of the operators of the Pittsburg District to make it binding. The agreement provides for cash payment of wages, 2,000 lbs. to the ton, check weighmen on the tipples, miners to be credited with the full quantity of coal contained in the mine car, abolition of company stores, semi-monthly pay days, uniform price for pick mining in the thin and thick-vein districts and screens not exceeding 1½ in. It also provides, in case of violation of the provision and terms of the agreement, for a penalty of 10c. per ton on the total output of coal mined by the violator, to be paid to a commission, subject to the right of further arbitration or appeal. The penalty when collected is to be distributed among the signers of the agreement pro rata. The commission is to be chosen annually, and known as the Uniformity Commission. It is to be composed of nine members, sworn faithfully to perform the duties of their office, empowered to enforce the judgments and awards, and to subpœna witnesses. The difficulty will be to secure the signatures of the requisite number of operators to this agreement, as two or three of the large companies are not disposed to sign.

ALABAMA.

(From Our Special Correspondent.)

During the present summer Dr. Smith, the State Geologist, will be engaged in the field work in Cleburn, Randolph and Coosa counties. He will visit personally the prospecting work being done, and will probably himself prospect to determine further facts relative to certain districts along the line of strike of some of the known ore-bodies where no discoveries of gold have yet been reported.

(From Our Special Correspondent.)

That portion of the Alabama coalfields which lie in the immediate vicinity of Birmingham, Pratt mines, as well as the mines at Hargrove, in Bibb County; Aldrich and Monta Vallo, in Shelby County, and the mines in Walker and Tuscaloosa counties have not been affected by the coal miners' strike. There has been no general strike in Alabama; some of the mines owned by the Tennessee Coal, Iron and Railroad Company and the Sloss Iron and Steel Company have been idle since July 1st, because the companies notified the miners that they would be expected to accept a reduction from the old scale of wages. Every effort was made by both parties to come to an agreement, so that neither would suffer materially; consequently a settlement has been arrived at whereby the miners accept 37½c. per ton, and it is expected the mines will all be running full-handed by August 1st. Of course the mineral production as well as the output of pig iron will be considerably affected during the month of July, and show a consequent decrease. Because the quantity of coal which the Tennessee Coal, Iron and Railroad Company has been able to mine has been insufficient to supply coke enough to keep all their furnaces in blast, therefore three at Bessemer and one at Oxmoor have had their fires banked. The quantity of iron ore mined during July will, of course, be considerably less than usual, and the production of dolomite and limestone used for flux will also show a decrease.

CHEROKEE COUNTY.

(From Our Special Correspondent.)

The bauxite mines, operated by the Republic Mining and Manufacturing Company, produced during the months of May and June 1,778 tons; this was omitted in the returns made by the State Geologist through a misunderstanding. The production of the mines operated by the Southern Bauxite Company is this year being hauled by wagon to Cave Spring, in Georgia, and shipped from that point on the East Tennessee, Virginia & Georgia Division of the Southern Railroad.

I was recently informed by the general agent of the Alabama Mineral Land Company, of Anniston, that he had received instructions to have the deposits of bauxite, which were discovered on the property of that company near Anniston last year, further developed, and to make arrangements for shipping the product.

CLAY COUNTY.

(From Our Special Correspondent.)

HOLLINGSWORTH - WATTS PROPERTY.—The test which was being made by Dr. Phillips at the old Hollingsworth-Watts property has been completed, but the result is not yet known.

IDAHO MINE.—The Huntington mill at this mine is being run regularly. A good deal of trouble was occasioned during the past two or three months because of an attempt made to use iron for the roller rings and ring dies instead of steel. The casting was done at a local foundry, and if the substitution had proven satisfactory a great saving would have been effected in replacing the wearing parts of the mill, but after a series of accidents directly attributable to the change the management decided to put in the parts as furnished by Fraser & Chalmers and avoid further cost from delay and breakdowns. This property will in future furnish a monthly shipment of bullion and rank among the regular producers. It has been demonstrated that it can be operated at a profit with only one Huntington mill. Prospecting work is being performed on the west end of this ore-body about 600 ft. distant from the present cuts; and will be also carried on at the east of the present workings, which are almost in the center of the property, comprising 232 acres. The management in future will have more prospecting work done, than has been its policy in the past, in order to determine how expensive a crushing capacity the ore-body will warrant.

RANDOLPH COUNTY.

(From Our Special Correspondent.)

A Montgomery syndicate which has been doing some prospecting in Clay County has, I understand, optioned a property near the Tallapoosa River in the extreme southwestern corner of Randolph County and proposes to prospect the same. The test this syndicate was making at the Horn's Peak property has been completed, and, I am informed, resulted unsatisfactorily. The five-stamp mill used for this test is to be moved to a body of quartz which is located northwesterly from the Idaho property, about two miles distant.

ALASKA.

On another page will be found matter treating at some length upon the present Alaska excitement. Gold has been found in the gravels of the Klondike, a tributary of the Upper Yukon, and some claims are said to be worth $200,000. All the bed of the stream, as well as those of its tributaries, have been staked. The total amount of gold so far received from this Territory as a result of the winter's work is about $1,000,000. Fresh discoveries are rumored to have been made on Stewart River, and also on the American side of the 141st meridian, but they lack confirmation.

The San Francisco *Examiner* has sent two expeditions to the Klondike District On Wednesday, July 28th, E. H. Hamilton, Charles G. Yale, Helen Dare and Joaquin Miller took passage on the *Excelsior* to St. Michaels, and from there they intend going up the Yukon River to Dawson City. Edward J. Livernash will lead the other party to Juneau and will go overland through the Chilkoot Pass to Dawson City. From all accounts the rush to this section is on the increase, and in a few months there may be 10,000 people in the district. The old miners who have returned discourage the idea of going in unless the parties are well equipped with money, provisions and clothing, and are ablebodied enough to withstand the rigors of the climate. Almost all who have returned express their intention of going back next March, and say the reports published fall short of the reality.

PRINCE WILLIAM SOUND.

Copper ore has been brought to Sitka from this district by Mr. F. C. Lawrence. The ledge on which most of the claims are located is a distinct one and can be traced for 300 ft., when it sinks beneath the sea. The width is 80 ft. Local mining men think highly of the discovery.

ARIZONA.

GILA COUNTY.

BLACK WARRIOR.—The superintendent of this property has taken on 45 extra men on account of recent discoveries of ore. Development work last month comprised over 400 ft. of drifting and sinking. The Montgomery tunnel has been driven 350 ft. on the vein and is in low-grade ore the entire length. The company is making preparations to haul ore to the Buffalo smelter, and deliveries will begin about August 1st and will amount to probably 30 or 40 tons a day, the limit being 50 tons. There is now 500 tons of ore on the dump, and there will be no difficulty to supply the maximum quantity. About 1,800 ft. of 18-in. gauge track has been laid from the Montgomery claim to the end of the wagon road to facilitate the handling of the ore.

CALIFORNIA.

AMADOR COUNTY.

(From Our Special Correspondent.)

DOYLE.—This mine, two miles south of Jackson,

on the mother lode, between the Amador and Amador Queen mines, has been opened up under the superintendency of F. A. Bagard.

MONTE CRISTO.—At this mine, which is six miles northwest of Volcano, development work is being pushed rapidly. The ledge shows 60 ft. of porphyry mixed with quartz stringers, the whole mass yielding from $2 to $3 per ton. The working tunnel, now in 750 ft. on the ledge, shows from 40 to 60 ft. of pay ore, and it now has 300 ft. of vertical backs, 425 ft. on the raise. A five-stamp mill has been working day and night for the past two years. A 6-ft. Huntington mill has just been completed. Thomas Dillon is superintendent.

CALAVERAS COUNTY.

(From Our Special Correspondent.)

BLUE MOUNTAIN.—Fred Greve, of Blue Mountain, bonded last week to Oakland and San Francisco parties the Eureka, Neutral and Oro Fino or Black Wonder quartz mining claims, all in Blue Mountain mining district, for a term of two years for $19,000. The condition of the bond is that the bondees enter within 30 days upon the properties and develop them in a workmanlike manner, binding themselves to perform during the year 1897 at least $300 worth of development work, that one-quarter of the gross proceeds derived from the reduction of ores shall be turned over to Greve immediately after each clean-up, which amount shall be applied on the purchased price above named.

CALIFORNIA EXPLORATION COMPANY.—At last the power plant of the Blue Lakes Water Company, situated on the Mokelumne River, near Mokelumne Hill, is in motion, and Mokelumne Hill, San Andreas and other towns in Calaveras County will be lighted by electricity. This plant, one of the largest on the Pacific Coast, will deliver power to the California Exploration Company, which has its poles and wires up for a distance of 17 miles from the power plant, and is extending them in all directions to light the towns along the mother lode in Calaveras County. This company will also furnish light and power to the mines in that section.

MARIPOSA COUNTY.

(From Our Special Correspondent.)

MOUNTAIN BELLE.—Mr. N. G. Wright has bonded this mine. It is near Princeton, just outside the limits of the Mariposa Grant. A force of men has been put to work.

NEVADA COUNTY.

(From Our Special Correspondent.)

BELLE-FONTAINE.—At this mine, located on Dear Creek, three miles east of Nevada City, the vein has widened out from 13 in. to 24 in. About three tons of high-grade ore per day is taken out in sinking the shaft. Hoisting works are being put in and crosscutting will be commenced at once. Six hundred feet of pipe has been purchased to supply the water wheel.

GASTON RIDGE.—At this mine, four miles south of Graniteville, and 32 miles from Nevada City, at an altitude of 3,000 ft., which is being worked by a series of tunnels, a strike has been made in the lower tunnel. The ore which runs as high as $35 per ton is packed on burros up to the mill, which has a capacity of 35 tons per day. The ledge has every indication of holding out.

REWARD.—A rich strike is reported in the Reward mine, about one mile from Nevada City. According to the mining record this mine was opened about five or six years ago and shaft sunk several hundred feet. All along the prospects were promising, but on the 200 and 300 levels they were better than at the surface. The sinking continued until the 400 level was reached a week or so ago. Ore assaying $1,200 per ton was taken out. The chute is between 12 and 16 in. in thickness, and it is widening as the men continue to sink.

SNEATH & CLAY MINE.—A deal has just been completed by which this mine passes into the hands of a number of Cincinnati men. It is near Nevada City, and the name of the new company is to be the Phœnix Mining and Improvement Company. Prominent in the deal are August Voss, H. K. Shockley, Dr. I. K. Mott, C. H. Karlsruher and other Cincinnati men, as well as some prominent mine prospectors in the West. The mine is an old one, having been worked about war times. Mr. Shockley will act as manager of the plant. Of the company Mr. Karlsruher is president and Mr. Voss secretary and treasurer.

WASHINGTON DISTRICT.—In this district, about one mile southwest of the Spanish mine, a strike has been made on Poorman's Creek. After the tunnel was in 120 ft. on the ledge, a crosscut was made, which showed the main ledge to be 23 ft. in width, the whole formation between the walls being from 35 to 40 ft. wide. Every sample taken from the ledge and stringers shows free gold to the naked eye, and the sulphurets are very rich.

PLACER COUNTY.

(From Our Special Correspondent.)

CEDAR CREEK AND MINERS' GULCH.—These hydraulic mines, near Dutch Flat, are reported as sold to an English syndicate, who will work them on a large scale under the superintendency of J. E. Doolittle.

HORSE SHOE BAR.—Bed rock at this placer mine, on the Middle Fork of the American River, has been reached at a depth of 36 ft. The gravel prospected averages well all the way down. About 40 men are employed.

TRURO.—This drift mine is on Ford's Bar on the American River, 114 ft. above the bed of the stream. It was opened about a year ago. A tunnel was run 315 ft. to the channel, and was continued 100 ft. further without striking the other rim. The gravel prospects $2.50 per carload.

SISKIYOU COUNTY.

(From Our Special Correspondent.)

DEMING-GARDNER PLACER MINE.—This mine, in the Oro Fino District, is now making the anuual clean-up. Their run this year was seven months, with a yield of $12,600 gold dust.

EASTLICK PLACER.—This placer, in the Oro Fino District, was again equal to its former record of nearly $15,000 for the season, which was a short one this year.

R. H. CAMPBELL PLACER.—This placer is leased by Mr. Hobart, who has worked a large gravel bank to bedrock, but has not cleaned up. The intention is to prepare the ground for next year's piping. Notwithstanding the lack of a regular clean-up, the sluice boxes yielded several thousand dollars.

WRIGHT & FLETCHER PLACER.—At this placer, in the Oro Fino District, they had but three months' run of water this year. Their clean-up averaged $2,000 per month.

STANISLAUS COUNTY.

(From Our Special Correspondent.)

BLACK OAK.—The shaft at Soulsbyville is now down 900 ft., and 40 men are employed. The vein is from 6 to 12 ft. in width and the 20 stamp mill is kept busy on ore that averages $10 per ton. The company is taking out considerable sulphureted ore, which goes high in gold. The ore is broken up, sacked and shipped below for treatment.

TUOLUMNE RIVER.—In a short time operations will be commenced on the river between the Davis ranch and La Grange by a company that intends dredging the river bed and securing the quantities of gold that are supposed to be lodged on the hard pan that forms the bed of the river. It has been bonded with the exception of three or four places. Work will probably commence as soon as the water gets low enough for them to commence dredging.

TRINITY COUNTY.

(From Our Special Correspondent.)

HALL CITY.—An important discovery has been reported. The rock is a black, white and gray granite and is traversed by veins of heavy spar. The formation runs northwest and southeast, from Tehama to Del Norte counties, and lies between a dike several hundred feet in width on the north and porphyritic 200 ft in width on the south. The out-croppings, which are about 600 ft. in width, have been followed for several miles. The pay streak assays about $15 to the ton. Prospectors are flocking to the new find and claims have been staked off for several miles on the supposed lode.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

BLACK OAK.—Late shipments of ore from this group of mines, near Soulsbyville, to the smelting company have been very rich, running over $80 to the ton in gold, besides silver which goes several dollars to the ton. In the 800-ft. level, now being run, the rich chute shows from 8 to 20 ft. in width, and about 400 ft. in length. A winze which has been sunk north of the shaft from the 700 ft. is now down 45 ft. on the hanging wall, and the ore in it shows equally well. The plant in operation consists of a 20-stamp mill, 10 Frue concentrators, and a 30-ton cyanide plant. The ore is principally galena and copper sulphurets, carrying gold in minute particles. The concentrates average $200, and the tailings $8 per ton. The ledge has every indication of permanency.

CONSUELLA.—One and a half miles southeast of Carters and east of the North Fork of the Tuolumne River, this mine has been developed on each side of the gulch, cutting the vein at a depth of from 150 to 200 ft. from the surface. The pay chute averages about five feet in width where exposed in the workings.

GOLDEN GATE.—The shaft is down 725 ft. and sinking has been discontinued. The 20-stamp mill is kept running on ore from the 300 and 400 ft. levels. No levels have been run from the station at the 400-ft. to the 700-ft. level. The mine is one mile southwest of Sonora.

SANTA YSABEL.—This group of mines, at Stent, is being developed on a large scale. The three hoists, 20-stamp mill, and other machinery are run by electric power, and the grounds and works are lighted by electricity. About 70 men are employed.

COLORADO.

CLEAR CREEK COUNTY.

ALICE MINING COMPANY.—This property, at Yankee Hill, is reported sold to Eastern parties for $250,000. The announcement is rather premature, for the deal is not to go through until satisfactory tests are made. The lode is 310 ft. wide between walls, but most of it carries low-grade mineral and no satisfactory system had been found by the old company for the treatment of the ore. However, it is believed that concentration can save the values, and if the tests now being made prove this, the mine will start up at once and the mineral will be quarried, so extensive is the showing. A mill is at the mine and this will be remodeled for the treatment of about 175 tons of the material per day.

FLOYD HILL.—The first discoveries of mineral near this station on the Gulf road have just been made by the finding of a lode with 4 ft. of quartz which will pay to treat by amalgamation. The location is the most easterly in the county and is about four miles directly east of Idaho Springs.

GOLD MEDAL.—This is one of the new discoveries on Seaton mountain which is attracting attention. In sinking the shaft to a depth of 210 ft. about 4 ft. of $17 mill dirt has opened up and near it is a streak of free gold which varies in width from 1 in. to 8 in., and is very rich.

NEWHOUSE TUNNEL.—Several important strikes have been made in this big bore, at Idaho Springs, within the month, for the heart of Seaton Mountain is now being pierced. It is no longer an experiment as an exploration scheme, for the lodes are found at a depth of 1,800 ft. as good, if not better, than at the surface. A number of blind leads have been cut, but these are quite generally covered at the surface by other locations of years ago. Samuel Newhouse, who is at the head of this undertaking, is very much pleased with the more recent discoveries, for it only bears out what he has long contended, that the veins in Clear Creek and Gilpin counties do not pinch out as depth is gained. If the present showing continues, and with a gradual increase in lodes over the discoveries at the surface, he will cut probably 1,500 different veins before Central City is reached. Of this number about 200 are producing mines.

P. T. MINE.—This property, consisting of three claims, has just been sold to the Rocky Mountain Mining Company for $18,000. This group is to be consolidated with the Calumet group and the different lodes will be worked through the latter set of workings. The property is located at Idaho Springs.

ROSCOE PLACER WORKS.—This company, operating on Clear Creek with hydraulic power, has never been able to secure sufficient pressure because of the poor system adopted in bringing the water to the pits. Some washing is going on, but until a flume with a pipe line from it is installed so that there can be some pressure and force in the washing of the ground, it will never prove a financial success.

SUN & MOON GOLD MINING COMPANY.—A new plant of machinery has just been placed at the Minott shaft and the workings will be joined and worked through one set. The mine is located at Idaho Springs, but is owned in Cleveland. Very extensive development of the group of five claims is contemplated, and the shaft will doubtless be sunk to a connection with the Newhouse tunnel.

(From Our Special Correspondent.)

CROWN POINT-VIRGINIA MINING COMPANY.—Through some arrangement this mine was sold at sheriff's sale to Joseph Stanley for $13,131 to satisfy a judgment on notes which had been given. It looks very much like the consummation of a freeze-out game which was commenced some time ago to place the mine in the hands of a few Eastern parties. The notes were given and in turn it was sold to about the same individuals. The mine is one of the best in the Idaho Springs District and is under development. Immense bodies of ore are blocked out, but none of it will be moved until the sheriff's deed can be made perfect, for under the laws of Colorado the property can be redeemed within nine months' time. In the bottom of the shaft at a depth of 700 ft. 3 ft. of pay ore is showing and is generally understood to be high-grade smelting ore, but the report cannot be confirmed.

DICTATOR.—Sam Markel, working this mine near Lawson, has opened into a very rich streak of ore that runs 2,700 oz. silver per ton; with it is some lower grade which runs 400 oz. silver per ton. A shipment has just been made through the Idaho Springs ore buyers.

GRIFFITH MINING COMPANY.—This property, at Georgetown, is being worked exclusively by leasers. The streak measures 15 in. wide and returns are as follows: On one carload 3¾ oz. gold, 58 oz. silver, 6½% copper, and 18% lead per ton; on the other carload 2½ oz. gold, 61 oz silver, 7% copper and 20% lead. This comes from the shaft. An adit level is also being driven in mineral.

MT. MCGREGOR.—This property, at Empire, has passed into the hands of Kalamazoo, Mich., people who are arranging plans for its extensive working.

SEATON GOLD MINING COMPANY.—A company has been formed for the working of the Seaton group of mines at Idaho Springs and the development work will be continued. F. S. Goldsmith remains as manager. The property is under systematic development and has some large bodies of both smelting ore and mill dirt blocked out. A tramway will be erected for bringing the ores from the mine into town if satisfactory arrangements cannot be made for the working of the lodes through the Newhouse tunnel. The manager says that the company will build a mill for the treating of the low-grade product by concentration.

CUSTER COUNTY.

GEYSER MINING AND MILLING COMPANY.—Mr. James W. Cartwright, treasurer of this company, writes: "Our work at the mine is progressing well, and the latest news is very satisfactory to the management. We are stoping out some ore of very good quality from between the 2,200 and 2,300-ft. levels. Are running in a drift on the 2,400-ft. level, and the material is all country rock; are also sinking the main shaft in the same material to the 2,500-ft. level. The future outcome of this enter-

prise for a successful issue never looked brighter than at this time."

EL PASO COUNTY.

GILLETT CHLORINATION WORKS.—These works will soon have their roasting capacity considerably increased by the erection of another 36-ft. Pearce turret furnace, the contract for which has been let to the Stearns-Roger Manufacturing Company, of Denver.

(From Our Special Correspondent.)

ANCHORIA-LELAND GOLD MINING COMPANY.—Between 700 and 800 tons of smelting ore a month are being shipped. The shaft is down 750 ft., and mining will probably be resumed about the first of the month and continued until the water becomes troublesome. Work in the shaft will then be stopped until the water can be pumped out through one of the tunnels that pierce Gold Hill. The company paid the usual monthly dividend of $6,000 on the 15th.

AREQUA TOWNSITE.—The Lindsay lease on this property recently struck a large flow of water, which drowned the pump then in use. The pump has been recovered, and with the assistance of a tank the water is kept down. A second pump is now ready to be put in use. The shaft is 165 ft. deep and the amount of water is estimated at about 60 or 70 gals. per minute. A new find of ore has been made, but on account of the water none has been taken out.

CRANK.—Sinking is being pushed in the shaft on Rasin Hill. About two months ago a new hoisting plant was completed. The hoister is a high-geared one made by Frazer & Chalmers, a bucket with a cross-head being used. The shaft is now 300 ft. deep and is dry as yet.

CRIPPLE CREEK & GOLD HILL TUNNEL.—Work was recently commenced on a contract for an additional 800 ft. of work on the tunnel. It calls for the extension of the tunnel from 2,300 ft. to 3,100 ft., where it should cut the Anchoria-Leland shaft at the depth of 700 ft. Power drills are being used, and the management states that the contract will be completed within 90 days. The tunnel is now nearly 2,400 ft. long.

KEYSTONE MINING COMPANY.—This company owns the Sitting Bull, the Cripple Creek and the Panther lodes, which are situated on Bull Hill, near the town of Independence. Some ore is being shipped from the Sitting Bull lode.

MARINETTE MINING COMPANY.—A new Deane pump, with a capacity of 500 gals. per minute, has just been put in Abe Lincoln mine of this company. It is installed at a depth of 300 ft. There is also a No. 9 B. Cameron sinker pump in the shaft. A drift is being run to connect with the workings of some former leasers on this property. When this is done the management estimates that the amount of water produced by the mine will be about 160 gals. per minute. Sinking in the shaft, which is now 320 ft. deep, will be resumed at once.

MOOSE.—No work is going on at present on this property, though considerable work has been done here in the past, and a large amount of ore shipped. The mine has paid $186,000 in dividends altogether, the last being in January, 1896.

REFORM.—A new shaft-house has been built on this property; also a steam hoisting plant put in. The mine is on Bull Hill, near the Blue Bird.

UNION GOLD MINING COMPANY.—Burrier & Company have just commenced work on their lease, on the dump of the Porcupine claim of this company. The dump of the Orpha May No. 2 claim of this company is also being worked by lessees.

GUNNISON COUNTY.

(From Our Special Correspondent.)

CHICAGO.—Great improvements are being made upon this property at Irwin, preparatory to active development. A large force of carpenters are erecting the necessary buildings, and a complete plant of hoisting and pumping machinery is being put in.

EL DORADO.—New machinery has been put in at this property near Waunita, and shipments will be commenced as soon as everything is in working order. A fine body of ore, rich in lead, was recently opened up.

GUNNISON.—A new boiler is being put in at the Gunnison mine near Spencer, and pending its completion work has been suspended in the mine. Shipments will be resumed within the next two weeks.

MAMMOTH CHIMNEY.—Eastern parties have secured a $10,000 option on this property.

MOMUS.—This property, located at Midway, was recently sold to George H. Whitelaw, who will operate it in conjunction with his other properties.

MOUNTAIN GEM.—The repairs to the machinery have been completed, and work in the lower levels is again under active headway.

LAKE COUNTY.

(From Our Special Correspondent.)

BIMETALLIC SMELTER.—This plant, which started up on the 9th with one furnace, is now running all three furnaces, and is treating over 300 tons of ore per day. Manager Ballou is receiving over 250 tons each 24 hours which is placed in the bins. It is expected that receipts will be fully 300 tons daily before long.

CATALPA-CRESCENT.—This combination, under the management of Mr. Jos. F. Horner, is doing an immense amount of work, and is one of the leading producers of the camp. Shipments have been running from 200 to 300 tons of ore per day, and this tonnage is to be largely increased. There are three different leases on the combination which are working and are producing the ore mentioned above. The Arthur leasee on the main shaft, at a depth of 350 ft., is mining a big body of manganese, and shipping about 125 to 150 tons per day. About 100 tons of this stuff goes to the smelter at Pueblo. In the McGreavy lease, at a depth of 160 ft., the big iron body is being developed, and from 60 to 75 tons a day of this character of ore is being shipped. The Morseman lease is also working in good iron and is shipping from 20 to 30 tons a day of iron ore. Little new work is being done, excepting in the Arthur lease, where prospecting is going on extensively. I also learn that the manganese shipments will be increased by August 1st to 200 tons per day.

DOWNTOWN PUMPING PROPOSITION.—The delay caused by the absence of the winches for the downtown pumps is virtually over, and all preparations are again under way for the drainage of this area. The first of the winches has arrived, and the others will be here before the end of next week. In the meantime work on the foundations and other preparations are under way, so that there will be little delay unless something unforeseen occurs. The second payment due the pumping association from the parties who signed the contract, $49,000, has all been paid in, and there will be no hitch on this score. The balers for the Weldon and Bohn will be finished and ready to turn over to the respective properties certainly not later than July 30th, and probably before. They are being built here. The two balers for the Weldon will hold 700 gals. of water, while that for the Bohn will hold 624 gals. These automatic dumpers need no man at the top of the shaft, and it is expected they can make a round trip every three minutes or so. They are to cost $600 and should assist materially in the drainage of the downtown area.

MAB.—It cannot be long before I have to report the opening of the big Mahala ore chute in this ground. As already described in the *Engineering and Mining Journal*, the Mab is a new shaft, started near the Mahala, and is being sunk for the purpose of opening up the same rich contacts. The new shaft has reached a depth of over 850 ft., and within another 50 ft. the sulphides should be reached. The shaft is now going through gray porphyry.

OUTPUT.—A careful estimate by conservative mining men puts the output of the camp at this time at about 1,300 to 1,400 tons of ore a day. Of this amount 500 to 600 tons are iron, and the balance is divided between silicious ore and sulphides. From what I can learn there will be an increase in shipments during August, even though the downtown mines cannot be looked for as shippers much before the first of the year. A number of the iron producers, however, have made contracts with the valley and local smelters to handle more of their iron, and in several cases shipments are to be doubled. The Catalpa-Crescent people alone will increase their shipments over 100 tons a day during August. The Yankee Doodle will also increase from 50 to 100 tons per day. In fact the tonnage will commence to increase next month and will keep it up until the first of the year, when it is believed it will have reached the high-water mark and will be fully 2,000 tons per day.

RANSOME LEASING COMPANY.—Under the management of W. F. Page, three shafts are being worked on the Matchless property, and are tapping big iron bodies at a depth of 200 ft. They have been raising about 50 tons a day, but from August 1 shipments will be doubled. The iron handled is of a low grade and is being consigned to the valley smelters.

WELDON MINING COMPANY.—Now that the Weldon property is out of the hands of the receiver, and is to be actively operated with the starting up of the downtown pumps, Mr. Griffith, the receiver, has stepped out and the new manager, Dr. E. H. Whitmore, took charge this week. He is a Gilpin County man who has mined in this State for 12 years.

WOLFTONE.—Ex-Mayor Nicholson is manager of the lease on the Wolftone property and at a depth of 700 ft. is developing a body of good sulphide ore, from which he is now shipping some 50 tons per day. Later on it is intended to get out the water and work on the rich ore body which was uncovered just as the Maid pumps were pulled and which was so quickly flooded.

YANKEE DOODLE.—Although this property was purchased by New York and other Eastern parties but a short time ago, it is being vigorously operated and the shipments, which have been 50 tons per day of iron ore, will be doubled by August 1st, and extensive development work is planned.

LA PLATA COUNTY.

COLUMBUS.—The owners are now sorting and sacking, and will ship 100 tons of high-grade tellurium ore in the near future. The entire dump is being washed and sorted for tellurium. The management announces that the shaft is to be sunk to a greater depth this summer, and contracts have already been let for packing and hauling the coal and other supplies for next winter's work.

DURANGO GIRL.—About 50 sacks of high-grade tellurium ore are ready for shipment from this property. Further stoping ground will be opened as soon as this shipment is made

FOREST QUEEN.—Robert Dwyer has been doing some crosscutting on this property, on the South Fork of Lighter Creek.

GOLDEN ROSE.—B. Kern, assisted by C. C. Eddy, is opening up the workings of this property, and will resume shipments in the near future.

SMALL HOPES.—The ore is increasing in extent in the north drift from the deep crosscut on this property and the conditions are favorable in the Valley King, recently purchased by Pret, Trachsler & Company.

OURAY COUNTY.

(From Our Special Correspondent.)

BACHELOR.—Messrs. Hurlburt, Armstrong and Sanders, owners of this property, are considering the advisability of putting in a stamp mill and concentrator of large capacity. It is thought that a plant of this kind would effect a great economy in treatment.

BACHELOR No. 2.—E. L. Thompson has been awarded another contract for driving the tunnel an additional 50 ft. or to the vein. The breast is now in over 200 ft., with something like 30 ft., according to surveys, yet to go before the vein is cut. The force was enlarged July 18th and the breast is being driven at the rate of 12 ft. per week.

BALD MCINTYRE.—A big strike is reported from this property, situated in the big blowout just north of town. It is being operated under bond and lease by Buskirk Bros. and others. A few days ago a vein of ore was broken into which measures 5 ft. across the breast, and is improving rapidly in quality and quantity. A test lot was sent to Denver for mill run, which returned $122 gold per ton. But 100 ft. remain to be driven before the tunnel reaches the east continuation of the American Nettie and O. & N. formation, where it is expected large pockets of ore will be encountered.

CLEOPATRA MINING AND MILLING COMPANY.—The smelting plant recently put in operation by this company has so far failed to meet with the success hoped for it by its projectors. The first mishap occurred immediately upon the furnace being blown in, when the stack, a wooden structure about 50 ft. high, burned to the ground. It was at first proposed to operate the smelter with but one shift, but this was found to be impossible because considerable time was lost every morning in re-heating the contents of the furnace which had cooled over night, and it has as yet been impossible to secure enough ore to keep the furnace going night and day, though this may be feasible in a few weeks.

DANIEL BONANZA.—This well-known Mt. Hayden property recently shipped another carload of ore which netted the lessees $750 for a month's work. A carload of $30 ore was also shipped at the same time to the Fowler smelter.

LITTLE HOMER.—This mine, in Saw Pit district, is undergoing exploration work by the owner, James S. Blake, who is prospecting for the ore contact. Some time since the ore chute, one of the largest and richest in the Saw Pit region, was thrown out of place by a fault which has necessitated considerable dead work in the efforts of the owner to re-locate it.

LIZZIE G.—This property, a half mile from Saw Pit, continues to produce a car load of gold ore per day, which is shipped to smelters and nets the owners and operators, W. H. Wheeler, of Saw Pit, and the Gurley Investment Company, of Denver, $150 to $250 per car. The ore lies in a contact vein on top of the limestone strata, and is from 3 to 5 ft. in thickness by 35 to 40 ft. in width. The ore is easily mined, and a force of only 15 men is employed. The ore contact has been thrown out of place and dropped by two or three faults, so that it is now necessary to hoist it up inclined shafts a distance of about 125 ft., making the cost of getting the product to the surface quite heavy. This, however, will be overcome in the course of the next few months, as the owners are making preparations for driving a crosscut tunnel, 4,000 ft. in length, which will tap the contact at the lowest depth it is known to have dropped, and 350 ft. ahead of the present workings. After this tunnel is completed the output will be largely increased.

RED MOUNTAIN DISTRICT.—The big mines of this section are shipping as much or more ore than ever. The Congress is shipping an average of two carloads per day, mined during the past winter. The St. Paul is working 10 men on good ore and is also sinking a new development shaft to facilitate handling the product. The Lake is employing 10 men and is running a level to crosscut the vein at the old shaft. The National Belle, owned by the Guston Company, is employing a small force, but outputting a large amount of ore.

SAN JUAN COUNTY.

LUCY.—This claim in Ice Lake Basin lies between the two groups owned by the Golden Horn Mining and Milling Company, and in character its ore is similar to that of the Grand View and Columbus, free milling quartz, carrying just enough iron pyrites to assist in saving the values on Frue vanners. On the Lucy there is now but 150 ft of development, but it is all in ore. The vein is 8 to 10 ft. wide, with ore from 4 to 7 ft. The owners will confine themselves strictly to development work for the next year.

SAN MIGUEL COUNTY.

(From Our Special Correspondent.)

BULLION MINING COMPANY.—This company's

Tremaine steam stamp mill, treating from 35 to 40 tons of ore daily, is now running full capacity on a 300-ton lot of ore from the Attica mine, under bond to the Bullion Company. If the test is to the satisfaction of those concerned it is understood that the company will at once take up the bond it holds on the property, erect a bucket tramway between the mine and mill, materially enlarge the capacity of the latter, and employ a large force of miners. The Attica vein carries a pay streak from 14 in. to 2 ft. in width which averages from $60 to $75 per ton in gold and silver. The mineral is heavily impregnated with iron sulphides, and therefore good concentrating ore. The mill has the latest concentrating machinery, and is effecting a close saving of values. The results obtained so far have been highly satisfactory.

BUTLER.—F. P. Magensen, the owner of this mine, located near Ophir station, has a small force of men employed on development work which, when completed, will permit the shipment of several carloads of ore per week. The high-grade mineral encountered while prosecuting exploitation work is shipped to smelters, and runs from $90 to $125 per ton in gold, silver and lead.

COLUMBIA-MENONA MINING AND MILLING COMPANY.—There are now 100 men employed in the company's mines, and the 30-stamp concentrating plant is treating from 100 to 110 tons of ore per day, which yields about 15 tons of concentrates that run 300 to 400 oz. silver, 6 to 8 oz. gold and 40 to 60% lead per ton. The mill is principally supplied with ore from the deep levels, where it is richer in gold than nearer the surface. The vein was intersected at a depth of 450 ft. below the lowest of the upper workings in January by a tunnel crosscut 1,450 ft. in length, and since that time drifts have been run on the lead each way from the intersection, blocking out considerable areas of ore ready for stoping. The property is this year managed by Austin H. Brown, formerly superintendent of the Tom Boy Mine. The present season promises to be the most profitable in the history of the company.

DU QUESNE GOLD AND SILVER MINING AND MILLING COMPANY.—This company is composed of Pittsburg, Pa., capitalists, with J. H. Schofield as superintendent. An upraise for ventilation was recently completed between the two main tunnels, and the upper one is now being driven into the mountain as rapidly as possible. This tunnel is in several hundred feet, its objective point being the intersection at a great depth of a large fissure vein crossing the entire group, and it is expected to reach it in the course of the next three or four months. If the vein at the intersection shows up as well as it does on the surface the company will immediately proceed to the erection of a mill on Howard's Fork of San Miguel River, in close proximity to the mines.

H. M. H. GROUP.—This promising group of gold lodes, located on Upper Bear Creek, is owned by H. M. Hogg, of Telluride. A fine stamp mill is to be erected near the property, at which to treat the product. One of the parallel leads traversing the claims was recently intersected at a depth of several hundred feet by a crosscut tunnel, and at the intersection it shows 4 ft. of quartz that assays from 1 to 4 and 5 oz. gold per ton. The tunnel is being continued to intersect the other lead, about 45 ft. distant and showing 6 ft. of mineral on the surface. The mill will be completed and ready for operation in a week or 10 days, and shortly after, if the ore yields as expected, the owner intends to add five more stamps.

LENISA GROUP.—Milton Evans, of Placerville, and Chas. Jordan, the owners of this group, in Prospect Creek basin, are vigorously prosecuting development work, and are having the ore so taken out packed down to Ballard's stamp mill, one mile below Telluride, for treatment. It is yielding an average of an ounce in gold per ton on the plates. The Louisa vein is from 6 to 10 ft. wide and the ore is free milling.

SAN JUAN GOLD AND SILVER MINING AND MILLING COMPANY.—This company, operating the Commercial mine, at Saw Pit, and the Little Annie, in Summit Creek, about a mile up San Miguel River from the town of Saw Pit, is making preparations to use cushion drills in the heavy development work in progress on these properties. The drills will be operated by electricity, taking power from the lines of the Telluride Power Transmission Company, which already supplies power for the operation of several mills in this district. Some very good gold and silver ore has been opened up in the Little Annie lately, and it is very probable that shipments will commence soon.

SHOEMAKER.—This property, near the town of Ophir, which has been worked under lease by Britton & Wiley for about a year past, is now being operated on a more extensive scale than ever before by George Shoemaker, of Telluride, the principal owner. The mine is opened up at a considerable depth by a cross-cut tunnel, several hundred feet in length, and drifts on the veins both ways from the intersection. The lead carries from 3 to 4 ft. of gold ore that runs from $10 to $100 per ton in the yellow metal, and while the mine was being worked by lessees several carloads of the ore were shipped to smelters and a large quantity treated at the local stamp mills, which yielded them a good profit. Mr. Shoemaker will soon make arrangements for the treatment of the ore as rapidly as it is taken out, and when that has been accomplished the force will be materially increased.

SHOEMAKER GROUP.—A retort weighing 76 oz. was brought over to Telluride a day or two ago. It was caught on the plates from 50 tons of ore from this property treated at the Suffolk mill. The ore also yielded concentrates which run $50 per ton in the yellow metal. Robert Neely, late foreman of the Tom Boy mine, is superintending work on the property and the force is being steadily increased.

TELLURIDE SAMPLING WORKS.—These works, constructed this Spring by E. W. Richardson and E. W. Greenfield, were put in operation for the first time last week, treating mineral from the Good Luck, in Bear Creek, a mine owned by Herbert and Purdy. The mill is equipped with Huntington mills, copper plates, vanners, etc., and has a capacity of 20 tons of ore daily. Enough ore has been arranged for to keep the plant running several months.

WHEEL OF FORTUNE.—Mr. John Ross, of the firm of John G. Eversman & Company, Denver, and others of that city, own this mine and are developing it. A crosscut tunnel, now in about 700 ft., is being driven to cut the vein at a great depth, and is nearly completed. On the surface the lead carries a large pay streak of iron sulphide ore assaying from $50 to $200 a ton in gold. As soon as the vein is intersected drifts will be run and a large quantity of ore taken out for concentration and shipment. The property is located in the immediate vicinity of the Silver Pick, one of the largest gold producers in San Miguel County.

GEORGIA.

CHEROKEE COUNTY.

GEORGIA MINING, MANUFACTURING AND INVESTMENT COMPANY.—This company's affairs were wound up at Atlanta a few days since, by order of the Superior Court, after a lengthy litigation. The amount realized at the sale was $24,805, far less than had been anticipated, seeing that the actual properties represented by the subordinate corporations consist of 50,000 acres of very valuable mineral lands, two iron furnaces, 300 coke ovens, 40 miles of railway, 15 miles of underground railways, coal and iron mines well developed, more than 100 head of stock, about 500 buildings of various kinds and 7 locomotives, besides the tools and machinery for the operation of the mines. The property was sold subject to the bonds outstanding, the price representing the equity of the stockholders. The sale was a consummation of the plans of the bondholders, as it now gives the reorganization committee the entire property free from all incumbrance.

PUTNAM.—This mine was sold a few days ago to Messrs. E. E. and E. G. Pope, of West Virginia. The Putnam was worked from 1833 to 1865, and it is said a great deal of gold was taken out. Messrs. Pope also own 160 acres adjoining the Putnam. The price paid was $15,000, of which only a part was cash down.

IDAHO.

OWYHEE COUNTY.

DE LAMAR GOLD MINING COMPANY.—The 50-ton Pelatan-Clerici plant, which has been in operation at this company's mine for some time past, and which was erected by the General Gold Extracting Company, of Denver, has been finally accepted by the De Lamar Company and turned over to that company.

SHOSHONE COUNTY.

HELENA & FRISCO MINING COMPANY.—The mill has been closed since December, but development work has progressed steadily. A new hoist costing $35,000 has taken the place of the old one at the 666 ft. or working level. The old bed did not have the capacity required when the Exploration Company bought 51% of the company's stock last year. The new hoist is operated by a powerful engine and can lift 800 tons of ore every 16 hours from a depth of 2,500 ft. Since the reorganization of the company sinking has been progressing rapidly until now the 800-ft. level has just been reached. As the working station is 666 ft. below the apex of the lead, the mine has attained a depth of 1,466 ft. Stations have been cut at the 400 and 600 levels and one will be put in at the 800. The superintendent in his report writes that the east drift of the 600 level has been extended 31 ft. since July 1st, all in ore. The average size of the extension is 10 ft. wide by 12 ft. high. At the 600 station a crosscut has been commenced with a view of cutting another vein. It is supposed that this vein will be reached after driving 500 ft. C. A. Molson, consulting engineer of the company, has arrived from London and will proceed in a day or two to the mine, where he will examine the property.

MICHIGAN.

COPPER.

In relation to this the *Standard* says: "The facts in this case are that this selling of stocks upon the facts as represented in this circular is a fraud. Mining men who know say there is no more gold in the quartz veins of this property than in the lava of the surrounding country. The Alki mine was relocated by C. W. Meade on March 31st for Mrs. T. T. Tucker, and another party was hired to do the developing work on the mine and is now wondering where he is to get his pay. This hole in the ground, known as the Alki mine, belongs to a group of mines to which has been given locally the name of 'Spiritual Group,' as they were at one time under the direction of a Chicago medium, and one of the group, called Allright, was worked quite extensively, or rather quite a little money was spent upon it by the orders of this medium, whom parties had hired to direct them in the operations.

ISLE ROYALE CONSOLIDATED MINING COMPANY.—The $1,000,000 stock offered for subscription has been more than taken, and allotments will be made proportionally.

QUINCY MINING COMPANY.—It is reported that the management has under consideration the building of an electrolytic plant at Houghton.

TOLEDO GROUP.—Frank J. Lyons, of Butte, who has had a lease on the Toledo group of mines, near Sheridan, has purchased a 30-ton smelting plant, and had it shipped to Sheridan, and from there he will have the machinery moved to the mines, says the Anaconda *Standard*. Quite a large force of men are at work building the room for the mill, the foundation is laid, and Mr. Lyons thinks that within 60 days the smelter will be in operation.

MINNESOTA.

(From Our Special Correspondent.)

Ore shipments are exceedingly heavy, there being daily receipts at Duluth from the Mesabi Range of about 800 cars, or 20,000 tons, over the Duluth, Mesabi & Northern road, and at Two Harbors about the same. The Duluth & Iron Range docks last week loaded 48 vessels, the greatest number in its history. The average capacity of the craft was about 3,000 tons; one of these cargoes was 5,500 tons. Freight rates are still low, and capacity for August has been on the market at 50c. a ton, which state of affairs the mining companies in a position to do so are making the most of. Shipments from other and lower lake points are reported light, Ashland having shipped only about 700,000 tons so far this year.

The coal strike has hindered shipments of ore to some extent, many vessel owners not wishing to send their boats to Duluth without coal cargoes up and the docks are well filled with ore.

It is estimated that the recent very heavy rains damaged mines on the Mesabi and Vermilion ranges not less than $80,000 and some of them have not yet fully recovered from the effects. At the Hull mine seven pumps have been at work ever since the storm and the shafts are not cleared of water. Contingent losses to railways were considerably more than those suffered by the mines themselves.

The Minnesota Iron Company has changed its articles of incorporation, and those of its subsidiary mining and transportation companies, so that annual meetings will hereafter be held in Chicago, which has been the practical headquarters all along.

Surveys are being made by the Consolidated Iron Mines for a railroad track from its line at Hibbing to the Pillsbury property, but the line will not be built this year.

The largest cargo of ore ever carried on the lakes was taken from Duluth last week by the schooner *Polynesia;* it was 6,134 tons. The largest cargo carried on Lake Michigan was taken last week from Escanaba, and was 5,520 tons.

There is renewed talk of an independent railway line from Duluth to the ranges; this time the rumor mentions Franklin Rockefeller, of the Franklin group on the Mesabi, and the Zenith, on the Vermilion, as the projectors. There is probably nothing to it.

The county of St. Louis, finding it necessary to raise its assessed valuation about $18,000,000, in order to get the amount in taxes required and to meet the deficiency created by the reduction in assessments in other lines, proposes to put an increased valuation on mines, much to the mine owners' disgust. Earnest protests are being made and it seems as if the disgracefully large sums demanded by the county will be scaled down to within hailing distance of reason.

IRON—MESABI RANGE.

Explorations have been going on near the old town of Mesaba, at the eastern end of the range, where the first discoveries were made, but where no good ore had been found. It is known that there is ore there, but the iron runs low, though it is very free from phosphorus.

BIWABIK BESSEMER COMPANY.—At the Biwabik mine 200 cars of ore are shipped daily; with two shovels in the ore 10 hours a day. The stripping goes on rapidly.

CINCINNATI IRON COMPANY.—Considerable exploring with the diamond drill is to be carried on at this property.

GENOA IRON COMPANY.—In one day recently 75 men left work here to go to the harvest fields of the Dakotas, and there is a scarcity of men at all mining camps.

MAHONING ORE COMPANY.—The big shovel at this mine is loading with ease about 6,000 tons a day, and has so far cost the company a phenomenally small amount for repairs and refittings. Shipments from this mine are very heavy, and stripping is going on constantly.

IRON—VERMILION RANGE.

CHANDLER IRON COMPANY.—This company has laid off its night crews, there being so much ore coming out of shaft that the stock piles could not be reduced as fast as was desirable.

PIONEER MINING COMPANY.—This company has about 350 men at work, and is mining and shipping very rapidly.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The past week was gener-

ally an active one in mining circles considering the very hot weather, and the sales show an increase of two carloads of zinc ore and one car of lead ore over the preceding week, and compared with the corresponding week of 1896 there was an increase of 11 cars of zinc ore.

The price of zinc ore was weaker on all grades except top grades, which held steady at $23 per ton for four carloads of Joplin ore, and for the Alba product. Oronogo, Springfield and Stott City products brought $22.50 per ton. Lower grades were off from 50c. to $1 per ton. Lead ore started in at $22.25 per thousand pounds, and by Friday was advanced to $23.25, and the week closed firm at that figure. The price of lead ore for the last three weeks has advanced $1 a week. The same week of last year there was a general advance of $1 per ton to $21.50, but the Scotia ore sold at $23 and one other lot $22.50, several buyers bidding for these products. Lead ore dropped 50c. to $15.50 per thousand pounds, or $7.75 per thousand pound less than it brough the past week of this year. There is only a very small surplus of zinc ore in the district, and about 1,500,000 lbs. of lead ore that is held at $25 per 1,000 lbs. The sales of lead and zinc ore for the week ending July 24th, 1897, are as follows: Joplin zinc, 1,151,650 lbs.; lead, 226,090 lbs.; value, $17,580. Carterville zinc, 1,002,710 lbs.: lead, 179,020 lbs.; value, $16,089. Webb City zinc, 639,950 lbs.; lead, 60,670 lbs.; value, $7,808. Galena zinc, 2,590,000 lbs.; lead, 419,290 lbs.; value, $33,601. Aurora zinc, 585,000 lbs.; lead, 20,000 lbs.; value, $4,225. Oronogo zinc, 231,000 lbs., lead, 3,050 lbs.; value, $2,652. Sprinfield zinc, 132,000 lbs.; value, $1,452. Alba zinc, 114,000 lbs.; value, $1,311. Stott City zinc, 84,460 lbs.; value, $929. Belleville zinc, 16,020 lbs.; lead, 8,290 lbs.: value, $367. District totals for last week: Zinc, 6,547,380 lbs.; lead, 916,010 lbs.; value, $86,014. District totals for 29 weeks: Zinc, 188,154,200 lbs.; lead, 32,109,500 lbs.; value, $2,392,905.

GREAT WESTERN MINING COMPANY.—At this mine on Turkey, east of Joplin, they took out 5,000 lbs. of lead ore in two hours recently. This is the best record since the Hell Upon Earth Company in Leadville Hollow took out 14,000 lbs. of lead ore in four hours.

HOO HOO MINING COMPANY.—At their mine on the Becky Sharp lease this concern made another big strike of pebble jack, through the accidental cave-in in an old drift. Two hundred tubs of the caved dirt made five tons of zinc ore, and at the spot where it caved a large face of ore is exposed to view. This is luck pure and simple.

INTER-URBAN MINING COMPANY.—A lease on 40 acres of the Richards land, three miles west of Joplin, is now held by this company. There are quite a number of prospect shafts going down on the lease, and several have struck pay dirt. Bodine & Company, at 62 ft., have opened up a 12-ft. face of zinc ore. Fifteen feet of zinc ore-bearing dirt has been developed in seven drill holes, and shafts are being sunk on each of these drill holes.

MEESE & COMPANY.—This firm has leased 80 acres of Reed's land, about a mile northeast of Jackson Station. There are some 20 prospect shafts going down, and five are producing lead ore, one raising over 5,000 lbs. in 9 hours hoisting. The ore is found from 35 ft. to 90 ft. down.

PARKER & ANDERSON.—A good strike of rich zinc ore-bearing ground was made last week on the Orchard lease, three miles west of Joplin. The strike was made at 122 ft. in the bottom of the shaft, and they are still sinking in pay dirt, They only commenced to sink the shaft about eight weeks ago.

PORTER & STILLWELL.—They are getting out enough dirt at their pump shaft on the Rexland to keep the plant running steadily five days out of the week. Their turn-in last week was 15 tons of zinc ore for 2½ days' run.

SHORT CREEK MINING COMPANY.—The company is composed of P. H. Leddy, Will and Albert Smidt, of Galena, Kan., and Richards & Conover, hardware merchants of Kansas City, Mo. They have leased 70 acres of the Porter land, adjoining the Reed land. P. H. Leddy is the superintendent. The company is draining the land with an 8-in. lift pump. There are about 50 prospect shafts going down on the lease and about 20 of them are taking out pay dirt, and make turn-ins every week. The ore is found from 19 to 85 ft. down, in open ground, and water is scarce. The first turn-in was made May 1st, 1896, and every week since they have turned in from one to two carloads of lead ore, and are piling up the crushed ore for a plant.

SWEET HEART MINING COMPANY.—A lease has been signed on 40 acres of the Reed land, about a mile north of Jackson Station. There are about 30 prospect shafts going down on the lease, several of which are hoisting pay dirt, and are making weekly turn-ins. There have been several new strikes made every week for some time. The ore is found from 25 to 95 ft. below the surface, in open ground with very little water.

WONDER MINING COMPANY.—On the Beckwith & Company's lease this company is hoisting rich lead dirt and producing 20,000 lbs. of lead ore weekly.

MONTGOMERY COUNTY.

(From Our Special Correspondent.)

HAUGHTON & JONES BROTHERS.—They have opened up a large body of ore in open ground, and have a lease on several of the old town lots on the Wright land at Belleville. They sank a shaft on new ground to a depth of 65 ft., have put up a steam hoist and will take out pay dirt soon.

INEZ MINING COMPANY.—At the old Germania shaft on this company's lease east of Joplin, they are hoisting good lead ore and fine dirt, and as the ore is free they clean the dirt on hand jigs They produce about 10 tons of zinc ore and 3,000 lbs. of lead ore weekly. One pump drains the mine and furnishes water to wash the ore.

MCKINLEY COMPANY.—This company's pump recently broke down, and this accident has shut down all the mines on the lease. It will be some days before the pump will again be in operation, as it had to be sent to Holyoke, Mass., for repairs.

MONTANA.

BEAVERHEAD COUNTY.

GOLD DREDGING COMPANY.—The heaviest piece of machinery ever hauled here was the new dynamo for this company. It weighed 13,600 lbs.

CASCADE COUNTY.

SNOWSLIDE.—The entire output of the Snowslide, about 12 tons a day, will be handled by the smelter at Great Falls. Arrangements have also been made to care for the increased productions from the Neihart and Barker mines, all of which, together with what is now arriving from Fort Steele, should keep the smelter busy all the year.

DEER LODGE COUNTY.

GOLD RING.—Messrs. Mentor Wetzstein and Lee Eisenberg, of Livingston, have taken a six months' lease and bond on this claim. The bond is for $150,000, of which $2,000 was paid down. Some English capitalists are behind the bond. The property is a promising claim adjoining the Mayflower, for which W. A. Clark gave a quarter of a million dollars. The same parties are interested in the Sunrise claim, which adjoins the Gold Ring.

MAMMOTH.—The management is putting in a new boiler preparatory to further development, and the outlook is excellent. The Mammoth mill has been running on ore from neighboring mines, but will soon be run for the Mammoth mine as the ore already in sight is sufficient to supply the stamps for some time. All the way down from Coloma to Bearmouth there are miners at work. The mines in First Cnance Gulch, a tributary to Bear, are shipping ore. The indications are that this tributary of Missoula will become one of the richest sections of the State.

GRANITE COUNTY.

TACOMA PROSPECT.—Col. C. W. Griggs and W. Rust, manager of the Tacoma smelter, left here this week after an inspection of this mine, which is situated three miles from Royal and 12 miles from the Northern Pacific Railroad. Mr. Rust decided while away to join Colonel Griggs, A. G. Foster and W. H. Fife in purchasing and operating the property. It is a free-milling proposition running about $20 to the ton on an average. Four veins have been opened on the surface, running 16 to 30 in. in width at a depth of 20 ft., and growing wider with depth. Work has been in progress for eight months. A tunnel is now being run which will strike one of the veins at a distance of 125 ft. It is intended to put in a 10-stamp mill at once, and the owners believe that development will result in finding an ore body sufficient to run 100 stamps.

LEWIS & CLARKE COUNTY.

BELL BOY.—An important strike has been made in this mine, which is owned by Samuel Word & Sons. The mine has been idle several years, but was recently pumped out and some prospecting was done, with the result that a vein of free-milling ore running from $15 to $50 a ton has been uncovered. It is the intention of the management to run the ore through the 60-stamp Empire mill and to discontinue, for the time being at least, work on the surface rock. The latter carries good values, but is not nearly so high grade as the rock taken from the Bell Boy.

MADISON COUNTY.

ALKI.—According to the Anaconda *Standard* stock in this mine is being offered in the East, with a prospectus which speaks of the claim as being a recorded one, 1,500 ft. long by 600 ft. wide, title good and all work done necessary to secure a patent, with a 300-ft. tunnel crosscutting a vein 2½ ft. wide, but the main vein has not been opened and is 3 or 4 ft. wide. Then the circular goes on to tell of the necessary amount of work that must be done before it will be on a paying basis. In telling of its good qualities further on the circular states "that by sinking the shaft 200 ft. deeper without doubt the same vein of ore will be struck as is now being worked by the Kennett Mining Company in the Kennett mine. It also states that during the past year the property has been relocated and taken in a third vein that is from all appearances richer than the other veins, thus making the property at least one-third more valuable."

CLIPPER.—The cyanide plant at Pony is about completed and ready for work. The process will be under the supervision of Morris & Field, who will run the tailings at the Clipper mill, as well as treat certain kinds of ore from the Clipper group of mines. The owners, Elling & Morris, are now employing about 30 men on their properties.

LONGFELLOW.—Having secured a lease and bond on this mine located near Rochester, the Montana Smelting and Mining Company will immediately put it in shape for working. New machinery, adequate to extend the shaft to a depth of 600 ft., has been ordered and a tunnel is to be driven to tap the lead at a depth of 900 ft.

LUCKY DREAM.—A good strike is reported in this mine in the Mayflower District, which is under bond and lease to McMillan, Williamson and others, of Butte. The claim is owned by Lacaille and others. It is near the Mayflower—across the gulch. The new strike is a 9-ft. vein of ore somewhat similar to that found in the Mayflower, and the returns from the assay office run over $60 per ton.

ROUGH & READY GROUP.—The mill on this group of mines, on North Meadow Creek, has begun dropping its stamps. The owners have a large body of free-milling ore to work on. The property belongs to Fred B. Alley and others.

STEINER.—Armed men patrol the Steiner mine at Sheridan, the property which, by reason of the fact that a number of people desire to possess it, has already become famous. This property, which was discovered only recently, lies in the open flat just east of Sheridan. It is supposed to be very rich—sufficiently rich to justify the prospective long legal battle for its possession. It is located on patented ground, now in the possession of Mrs. Caroline McKay, of this city. The patent is about nine years old and the statutory time for mineral reversions expired some four years ago, but certain citizens of Butte, who have recently acquired Steiner's rights, contend that the title may be set aside.

SUNBEAM.—Peter Coyle and Peter Clifford have taken a lease on this property, near Sheridan.

WATSEKA.—The parties who have lately secured a lease and option of purchase on this mine in the Rochester mining district are at work getting the property ready for active operation. A new double compartment shaft will be sunk and the necessary machinery to do the work has been ordered.

NEVADA.

STOREY COUNTY—BRUNSWICK LODE.

CHOLLAR MINING COMPANY.—Shaft No. 1 has been sunk 12 ft. on the incline during the week; total depth, 992 ft. The bottom is in porphyry. On the 300-ft. level, are extracting ore from above this level, and understoping in the winze, below which continues to look the same. On the 400-ft. level—are cutting out a winze station in the end of the south drift from No. 1 east crosscut, preparatory to starting a winze in the ore below this level. The stopes continue to yield about the usual quantity and quality of ore. On the 500 ft. level—advanced No. 2 west crosscut 16 ft.; total length, 50 ft. The last 19 ft. has been through solid quartz of low grade. The face is still in quartz. Have discontinued the main south drift and started west crosscut No. 3 opposite east crosscut No. 5 and 52 ft. south of crosscut No 2. It is now in 16 ft. The face is in quartz and porphyry that gives low assays. Have sunk the winze during the week 12 ft.; total depth, 46 ft. The bottom shows a streak of ore, 4 to 6 in. wide, that gives fair assays. On the 600-ft. level—the main south drift has been advanced 34 ft.; making its total length 168 ft. from the north line. The face is in quartz and porphyry giving low assays. Have extracted and shipped to the Nevada mill during the week 102 tons and 750 lbs. of ore, assaying as follows: Top car sample, gold $17.77, ounces fine silver 18·07; wagon sample, gold $24.48, ounces fine silver 25.

STOREY COUNTY—COMSTOCK LODE.

OPHIR MINING COMPANY.—The latest weekly official letter says that on the 1,000 level, west crosscut No. 3, 125 ft. north of the shaft station, is in 171 ft. The face is in porphyry, seams of clay and lines of quartz, which assays 50c. per ton. In the old Central tunnel ground from the sill floor from the west crosscut from the Mexican shaft, at a point 132 ft. in from its mouth, the south drift has been extended 12 ft.; passing through porphyry and quartz, assaying $1 per ton; total length 140 ft.

OVERMAN MINING COMPANY.—The latest weekly official letter says that the output of ore from the mine for the week amounted to seven mining carloads, of the average assay value of $41.25 per ton. This ore was extracted from small streaks, which are being followed above the north drift on the 900 level. There is no change in the appearance of these streaks, which are likely to furnish a fair quantity of good ore for some time to come. The mine was in operation five days only, as no work was done on July 5th. When there is a sufficient accumulation of Overman ore it will be worked at the Brunswick mill.

POTOSI MINING COMPANY.—The latest weekly official letter says that the south drift from the top of the uprise, 100 level, has been driven 12 ft. for the week; total length, 48 ft.; face in porphyry. On the tunnel they carried the upraise above No. 2 crosscut up 6 ft.; total height, 63 ft.; top in heavy ground. A large part of the week has been occupied in repairing the shaft and in dead work at different points in the mine, including the hoisting of ore stowed on the tunnel level. They hoisted during the week 74 tons and 750 lbs. of ore, together with 112 tons and 400 lbs. of ore already in the bins. The Nevada mill has started to work. The average battery sample of two samples was: Gold, $8.34; silver, fine ounces, 9·32; top car samples, gold, $11.26; silver, fine ounces, 12·76.

SAVAGE MINING COMPANY.—At the annual meeting, July 15th, the old management was unani-

mously re-elected, with George R. Wells as president, E B. Holmes, secretary, and H. M. Gorham, superintendent. The latest weekly official letter says that the south drift from the top of the upraise above the 500-ft. level attained a total length of 14 ft., the face being in quartz giving low assays. The usual repairs are being made to the main shaft. In the company's ground on the Brunswick lode shaft No. 1 was sunk 10 ft. on the slope during the past week; total depth, 980 ft.; the bottom is in porphyry. On the 600-ft. level the north drift from the station was advanced 19 ft.; total length, 78 ft.; the face is in porphyry and seams of quartz. No work was done in the mine July 5th.

UNION CONSOLIDATED MINING COMPANY.—At the annual meeting in San Francisco last week, the old management was re-elected for 1897, with Charles H. Fish as president, Charles Hirschfield, vice-president; E. L. Parker, secretary, and D. B. Lyman, superintendent.

YELLOW JACKET MINING COMPANY.—The latest official report says that the repairs to the engine at the main shaft of the mine have been wholly completed, and men have been put to work making repairs wherever necessary on the 1,000 and 1,100-ft. levels. It is expected by the management that the latter work will be completed by August 1st, and that everything will be in shape at that time to resume prospecting on those levels at points where there are good indications for finding ore.

YELLOW JACKET MINING COMPANY.—At the annual meeting in Gold Hill, Nev., last week, all the old officers were re-elected for 1897. W. E. Sharon is superintendent of the mine.

NEW JERSEY.

MORRIS COUNTY.

NEW JERSEY IRON MINING COMPANY.—The compressor house at this company's Hurd mine, near Port Oram, was destroyed by fire July 21st. The blacksmith shop, carpenter shop and the hoisting engine-house, being at some distance from the burning buildings, were saved. The three large boilers were saved by running water through them during the fire. Besides the loss of buildings, two driving engines, three air compressors, the dynamo, crusher and the separating machinery were destroyed. The fire threw about 100 men out of employment, as the Hurd mine cannot be operated without the air drills, which were supplied by the three air compressors. The company has another engine-house at the mouth of the mine and the pumping engine is in this building, so that the mine can be kept free from water. The buildings will be rebuilt at once.

NEW MEXICO.

GRANT COUNTY.

TREASURE MINING COMPANY.—This compay is sinking the main shaft upon the Atlantic vein, and a depth of 417 ft. has been reached. Drifts will be started when the 425-ft level is reached. The new concentrating machinery at the mill is working well. The tailings are said to only carry $1 per ton as against $4 to $8 by the old method. The new addition to the plant cost about $6,000. Under the old system the ore was crushed by stamps and then run over amalgamating plates, which saved a considerable percentage of the free gold; the residue was then treated on Gilpin County bumping tables, the concentrates thus obtained being shipped to the smelter. The new process employed for the recovery of the precious metals in the ore entirely dispenses with amalgamation, the values saved being in the concentrates. The ore is passed through a set of rolls, thence through sizers to three improved Hartz Mountain jigs, where the coarser particles of ore free of gangue rock are extracted; the remaining material is then recrushed under stamps to be again concentrated on Gilpin County bumpers, the tailings from the bumpers passing over Wilfley tables, which recover nearly all of the remaining metal. The concentrates are shipped to the Silver City Reduction Works.

SOCORRO COUNTY.

(From An Occasional Correspondent.)

The Magdalena Mining District is situated about 20 miles west of the Rio Grande River, in the Magdalena Mountains, and is fast coming to the front as one of the gold-producing mining centers of New Mexico. The formation of the district is porphyritic, mainly andesite, rhyolite and trachyte. The mountains rise from the table land to a height of 10,000 ft. above sea level. Along the apex of this high range is found the great gold-bearing zone. This zone is marked by a series of dikes, traversing the range parallel to its strike, from north to south. These dikes are in formation composed of trachyte, alternating with felsite. Along the flanks of the dikes are found rich mineralized streaks of crystallized quartz, carrying as high as $6,000 in gold per ton, though the average value is but $12 per ton. The gold is free-milling. The mineralized zones are from 4 to 6 ft. wide. Development consists of shafts sunk on these mineralized streaks, from 50 ft. to 125 ft. deep. Work in this camp is being done by local companies, founded on the development plan. So far the principal claims worked in the camp are the Mogul, Gold Star, Philadelphia, Crestone and Oro Fino.

OREGON.

BAKER COUNTY.

BONANZA MINE.—Dispatches from Baker City say that the sale of this mine has been consummated, and the papers signed. The price paid was $750,000, and $50,000 was paid down. Half of the remainder is to be paid in 30 days, and the balance in 60 days. The purchasers are John M. Patterson, of Pittsburg; George Crawford, of New York; N. P. Hayes, of Philadelphia, and J. S. Wallace, of Denver. Albert, Louis, Emma, Edward and Franz Geiser had been the owners of the Bonanza for the last six years. Prior to that time it was operated by James Steele, cashier of the First National Bank of Portland.

COLUMBIAN.—The Columbian ledge is in a slate formation. This quartz lead can be traced on the surface for 2,200 ft. At the extreme northwest end of the ledge the footwall is as well defined as it is in the workings below the surface. Two lots of ore were milled from the very surface of this vein that ran $12.50 per ton. The incline shaft is 250 ft. long. Including drifts there is not far from 1,000 ft. of development work on this mine. From the surface to a depth of 150 ft. there is a fine vein of gold ore exposed. The average width of the ore is not less than 3 ft. At a depth of 75 ft. a drift was run over 200 ft. to the northwest in good ore all the way. This mine has over 20 ft. of water in the bottom of the shaft. Below the depth of 150 ft., where it was thought the shaft had left the vein, while putting in wall plates, more ore was found in what was supposed to have been the footwall. Mill tests on all the ore in this mine, excepting that in the 75-ft. level, which is the best, was $15.20 and $15.40 per ton in gold.

FLAGSTAFF.—A recent 14 hours' run on ore taken from the lower level resulted in a clean-up of $1,000. The mill runs on an average of from 12 to 14 hours per day. The main incline shaft follows the ledge at about a 55° dip for 700 ft. This would bring the bottom of the incline to a vertical depth of 574 ft. below the surface. There is ample ore to keep the mill in operation for years, and from the 200-ft. level to the surface the pay ore is from 12 to 18 in. thick. No effort will be spared to obtain more water. To that end sinking will be continued until sufficient water is obtained to run the mill continually. The collar of the Virtue shaft being only 3 ft. lower than that of the Flagstaff, there is good reason to believe that an ample supply of water will soon be had, as the Virtue had plenty of water at about the same depth; still the conditions that produce water in one mine, even in the same district, may not exist in another, often owing to peculiar features of the surrounding formation. The mine is equipped with a 10-stamp mill, with a capacity for 10 additional stamps; a 60-H. P. engine, and Snow pumps, which give ample power to sink at least to a depth of 1,000 ft. There are 30 men on the pay roll. About 20 of these are actually engaged in underground work. The company is composed of French capitalists, and in the purchase of claims, the erection of a plant and development they have expended over $320,000 in Baker County in a little over one year.

GRANT COUNTY.

DEADWOOD CLAIM.—James Beeson & Company are working two hydraulics on this claim, with very satisfactory results. George Snadderly has a claim on Deep Creek Gulch, which he is operating successfully.

ELK CREEK.—Sloan & Haskell are still piping on their Elk Creek placer. This mine has made several clean-ups this season.

LINCOLN NELSON CLAIM.—In the Susanville section, in the northern part of the county, unusual activity is noticeable in the mines. Especially have the placers taken on an air of prosperity. Though the water season has been short, the amount of gold taken out will by far outstrip that of any previous year. It is estimated that over $100,000 has already been secured. Among many of the promising properties is the claim of Lincoln Nelson, in Union Gulch. This claim has just been opened, and is paying well. The mine will soon be equipped with a hydraulic plant and all modern appliances for placer mining on a large scale.

RAMBO.—This placer company has suspended operations owing to scarcity of water. The clean-up went $10 to the man.

SOUTH DAKOTA.

LAWRENCE COUNTY.

ANNIE CREEK.—Rich uranium ore has been discovered in this district by Messrs. Von Davier and Herman Reinbold. Development work will be begun at once, as a contract is to be closed with an English syndicate that will take $25,000 worth of uranium each year. Some of the ore is said to run $150 in uranium to the ton.

BEAR LAKE.—This Black Hills property is showing up in a very encouraging manner. T. L. McKinnon, of Lead, S. Dak., who has recently returned from a thorough examination of the region, says the whole district is now staked out, that some trial shafts are down 20 ft., and that silicious ore running from $12 to $200 to the ton has been taken out.

LITTLE BLUE MINE.—This property, on Yellow Creek, is now shipping steadily to the Deadwood and Delaware smelter at Deadwood. The average value is $60 in gold per ton, and the consignments run to $12,000 a month. In the east drift a chute of ore 8 ft. by 6 ft. and of high grade has been struck.

TORNADO.—From a very small beginning the Tornado has grown and prospered, and in its development has been found to be one of the valuable mining properties of the Black Hills. Upon the ground which covers this mine the bustling town of Terry flourishes, and it receives its largest support from the Tornado. There is a wide vertical chute of ore, the depth of which is not known. It has been penetrated to a depth of 300 ft, and enough ore is in sight to keep the mine running for many years to come. The ore averages $30 per ton, and it is worked by chlorination process. A main shaft, 230 ft., in Fantail Gulch, near Terry, is used in working the mine. Out of this shaft about 200 tons of ore are taken daily and shipped to the reduction works at Deadwood, owned by the Golden Reward Company, which is also the owner of the Tornado. A free-milling ledge, which extends up through the quartzite formation in this mine, has been discovered. The vein of free-milling ore is very large and runs $12 gold per ton.

UTAH.

(From Our Special Correspondent.)

Last week there was but little work in Utah mines, save such as was absolutely necessary, for nearly everybody was in Salt Lake attending the Pioneer semi-centennial jubilee. At Tintic, where there is no trouble from water, the big mines closed down the last three days. It would seem that fully half the population of Park City and Bingham were in the metropolis of Zion, while Fish Springs and all other camps sent large delegations. Though this is not the place to dwell on the 50th anniversary of Utah's settlement, it can be said, in a word, there never was a more successful historic celebration in the West, nor one more generally participated in. For a week it was a continuous holiday, all business and cares being thrown to the winds, while foremost among the participants were mine-owners and miners.

IRON COUNTY.

(From Our Special Correspondent.)

OPHIR.—On the 105 level the vein shows seams of high-grade ore, from which picked samples return from 500 to 2,500 ozs. silver and $10 to $18 gold. A carload shipment will be made before the middle of August, that will be the most valuable rock ever sent away from State Line District. There are not as many men in the camp as the pioneers of last year expected this summer, but considerable business-like mining is on foot.

SULPHIDE.—J. A. Anderson has taken a $25,000 bond for 18 months, binding himself to do not less than 1,000 ft. of development before the expiration of the year and a half. He states that it is his intention to test the worth of the ground without loss of time.

JUAB COUNTY.

(From Our Special Correspondent.)

TINTIC SHIPMENTS.—For the week ending July 24th: Bullion-Beck, 20 cars; Centennial-Eureka, 3 cars; Uncle Sam, 6 cars; Mammoth, 5 cars; Ajax, 4 cars; North Star, 4 cars; Gemini, 18 cars; the foregoing lots were ore; Eureka Hill, 12 cars concentrates; Dragon Iron, 20 cars, hematite, for fluxing.

EARLY HARVEST CONSOLIDATED MINING AND MILLING COMPANY.—Early Harvest, Comstock and Victor lode claims, in Fish Springs District, compose the realty. Main shaft is down 150 ft., exposing a good vein carrying gold, the only one in the camp, some of the ore running $30 to over $100 gold. Generally the ore is carbonates and galena. Work is to be started again in a week. Capitalization, $300,000; shares par, $1. Officers and directors: T. R. Cutter, president; William Racker, vice-president; John Roberts, secretary-treasurer; J. J. Thomas, J. A. Thomas, L. W. Brown, Thomas Austin, all of Lehi, Utah.

HOMESTAKE.—About 16 days ago the contractors on the shaft gave up their contract, owing to an increased flow of water. Further exploration will not be long delayed, for, if the management cannot make a satisfactory new contract, the shaft will be extended by the company.

SIOUX MILL.—Last week the run on Star Consolidated low grade was finished, and it is said to have given the most thorough satisfaction to the owners. The mill is now treating Sioux and Utah ore and the outlook for having plenty of products to handle is flattering.

SMUGGLER.—Immediately north of the Godiva, B. N. C. Stott has uncovered a showing of ore in the Smuggler. He intends to carry on some systematic prospecting in this ground.

SALT LAKE COUNTY.

(From Our Special Correspondent.)

BINGHAM LEAD AND SILVER MINING COMPANY.—This is a recent incorporation, with capital stock of $150,000 divided into shares of $1 par value. Officers and directors: M. M. Freed, president; C. M. Freed, vice-president-treasurer; C. W. Freed, secretary; L. D. Freed, Carl S. Schmidt, R. H. Carr. The realty consists of No 10 and '92 lode claims, from which shipments have been made. Exploration is in progress and is to be continued throughout the season.

LEVANT.—A quarry was opened in May, on a face of limestone, to obtain suitable rock for the foundation of the Highland Boy mill, in which an ore seam is exposed carrying gold, copper and lead values. It is of sufficient promise for further prospecting. This claim is owned by Governor Wells and Heber Case.

NORTH LAST CHANCE.—Recently several important changes have taken place, resulting in a fair profit rather than a loss in mining and milling lead-silver low grades, of which there is a huge store. Superintendent J. P. Turner, wherever possible, is

doing everything by contract. The experiments with the Hodge jig have demonstrated that it does better work on this ore than the Frues; so the vanners are to be discarded, and sufficient jigs will be put in to increase the mill tonnage from 35 to 100 per diem. A new boiler, soon to take the place of the present one, will add greatly to the efficiency of the mill. As mined the ore runs 4% to 8% lead, 2 to 5 oz. silver. It is concentrated 10 into 1, making a $40 to $60 smelting product. The old workings in other portions of the property are being cleaned out, to reach bodies of low grade neglected in the bonanza days when the Last Chance was a large shipper of rich ore.

PETRO.—Last week a lot of 100 tons of heavy carbonates was sent forward, the first for a considerable period. This will help out the Bingham July shipments, which will probably prove to be the smallest of the year when the figures are made up.

SUMMIT COUNTY.

(From Our Special Correspondent.)

MCINTOSH SAMPLER SHIPMENTS.—For the week ending July 24th, total pounds, 1,537,670; made up of Ontario No. 1 ore, 224,000; Silver King, 474,480 ore, and 838,320 lbs. concentrates.

ONTARIO-DALY.—Everything appears full of promise for these two properties, operated under one management, which means fair prosperity for Park City. The majority of the employees voting on the question of accepting the proposed cut in wages, about 16%, decided the matter affirmatively, without calling in outside counsel. As given in last week's *Engineering and Mining Journal* the vote stood 205 "aye" to 159 "nay." The only concessions made by the management are the reduction of board at the company boarding-house from $7 to $6 a week, and surface carmen are to receive $2.50 a shift, in lieu of $2.25, as proposed. Under the new schedule, to take effect August 1st, the wages are the same as those paid in other Utah camps. The Ontario, Daly & Marsac mill gives employment to 800 or 900 men. From August 1st a full force will be at work, and in addition to the mining of a large ore tonnage extensive exploration will be carried on.

VALEO.—What may prove to be an important find was made a few days since in sinking the winze from the upper workings to the lower tunnel. At 90 ft. below the upper tunnel, or 160 ft. from the surface, copper ore running well in gold was met. Its extent is not known, but is being proven. Owners of adjoining ground are as elated as the Valeo folk, and it looks as though there will be considerable systematic prospecting done by them.

TOOELE COUNTY.

(From Our Special Correspondent.)

BRICKYARD.—Substantial ore reserves are being blocked out, giving assurance of a handsome, steady output when active mining is the order of the day. This ground is to be worked, probably, as part of the Golden Gate, and an electric tram will convey the mineral to the top of the big mill. All the De Lamar mines will contribute to the 800 tons per diem this plant is to cyanide.

GOLDEN GATE.—Excavation for the foundation of the mill was begun July 21st. It will be 390 ft. long by 300 ft. wide, extending from the east shaft to the top of the first ridge, and will completely change the aspect of that corner of the camp. Every available man is being set to work. Next week, when the masons start on the foundation, Contractor Rhodes states it will require 3 carloads of sand per diem to keep things moving on time.

LA CIGALE.—Operations underground were stopped last week while the gallows frame was erected above the main incline. To-day fire is under the boilers, the hoist is doing duty and development is resumed. Work on the 5½-mile pipe line from Ophir Canyon is being rapidly pushed. Some minor alterations are being made in the mill, which will probably be ready for the initial run in about a month.

MERCUR.—August will see the mill entirely complete, so far as 1897 plans contemplate. The last addition of 10 tanks, making 47 in all, received their first charge of ore a few days ago. The intent of the management is rather to obtain a more perfect extraction, by allowing longer leaching, than to increase the amount treated. From 275 to 300 tons a day will be put through, according to the character of mineral cyanide.

MERCUR WEST DIP GOLD MINING COMPANY.—This is a new company with 250,000 shares of a par value of 50c. each. The incorporators are: Arthur Murphy, A. B. Jones, B. T. Lloyd, of Salt Lake; E. P. Lynch, of San Francisco, and C. L. Prebble, of Mercur. The realty consists of nine claims in the West Dip portion of the Mercur area. There are 50,000 shares set aside for treasury stock.

NORTH DAISY.—Last week H. E. Cary and E. A. Benson purchased an undivided ⅝ interest from C. H. Schen, J. B. Thompson and Capt. W. C. McFarland, on basis of $100,000 for property, consisting of 2,250 ft. along apex and three claims, or 1,800 ft. deep. The other owners are A. H. and L. R. Mayne. This means another incorporated West Dip Company, and probably a cyaniding mill, the construction of which would be under way before winter. Some of the best auriferous mineral of the Mercur area, carrying $16 to $35 gold, was exposed in the 400-ft. incline recently. The North Daisy shows large bodies of easily leached cyaniding products.

WASHINGTON.

KING COUNTY.

Steps are being taken to impress upon Congress the requirements of Seattle in the way of an assay office. It is claimed that the city is losing much by not having the government tests for establishing the values of gold brought from Alaska made there.

PIERCE COUNTY.

GIG HARBOR.—The story of a placer strike near Gig Harbor, 10 miles from Tacoma, reached that city lately. The report is to the effect that a Mr. Peacock struck pay dirt that yielded the extraordinary return of $3 to the pan in gold dust. The exact location of the new diggings is a little way from the road between Gig Harbor and Purdy, and about four miles beyond Gig Harbor.

STEVENS COUNTY.

EUREKA CAMP.—People are flocking to this new camp by the score every day. The only trouble is to secure locations. Persons owning claims which are largely useful for town site purposes are afraid to allow building, as it is government land and reservation land as well, and they fear it may in some way jeopardize their rights. Mines can be developed cheaply, as tunneling costs about $3 a foot and for stoping where the vein is 6 to 10 ft. wide the cost would not be more than $1 a ton. Work has just been commenced on several claims, among which are the San Puel, the Admiral, the Lone Pine and the Tenderfoot. Arrangements are being made to work the Jim Blaine, the Quilp and others. Work on the Black Tail is progressing and the property is showing up well.

WYOMING.

CARBON COUNTY.

KEYSTONE MINE.—Colonel Cecil Morgan, who represents the English buyers of the Keystone, has, it is reported, been instructed to close the deal. The capacity of the mill will be enlarged from 25 stamps to 100 stamps. The same interests have secured a bond on the Holy Terror mine at Keystone for 60 days.

FOREIGN MINING NEWS.

AFRICA.

TRANSVAAL.

WITWATERSRAND GOLD PRODUCTION.—The output of the Witwatersrand mines for June was 251,529 crude oz. gold. This is the highest ever reported, exceeding the June production for May by 3,224 oz. It is greater by 57,889 oz. than that for June of last year. For the half-year ending with June the production in crude ounces has been as below for three years past:

	1895.	1896.	1897.
January	177,463	148,178	269,832
February	169,295	167,018	211,100
March	184,945	173,952	232,066
April	186,323	176,707	235,698
May	194,580	195,008	248,305
June	200,941	193,640	251,529
Total	1,113,547	1,054,503	1,388,430
Total, fine oz	908,654	860,434	1,132,959

This table shows the gradual recovery from the depression following the political troubles of 1895-96.

ASIA.

INDIA.

COLAR GOLD-FIELD OF MYSORE.—The returns of the four leading companies in this field show the following production of gold for the half-year ending June 30th:

	1896. Ounces.	1897. Ounces.
Champion Reef	38,904	60,492
Mysore	52,197	59,224
Nundydroog	21,177	26,199
Ooregum	35,887	28,073
Total	148,165	173,988

In addition, the Coromandel Company, which did not commence milling operations until April last year, has in the past six months obtained a yield of 6,358 oz., as compared with 1,652 oz. in April-June last year. The Tank Block property, worked by the Mysore West & Wynaad Company, is producing over 900 oz. of gold per month, and there have been irreguiar crushings by the Gold-fields of Mysore and the Mysore Reefs Company. For the six months the total output from the Colar District has been about 186,000 oz. against about 156,000 oz. in the first half of last year. We have recently dealt with the general progress of the Indian gold mines, and need only add here, that so far as the dividends are concerned, the improved returns of three of the companies are fully reflected in the interim dividends, the Champion Reef Company increasing its distribution from 2s. to 3s. per share, the Mysore from 2s. 3d. to 3s. 6d. per share on the present basis of 10s. per share nominal, and the Nundydroog from 2s. to 2s. 6d. per share; but in the case of the Ooregum Company, the interim dividends are reduced from 4s. on the preferred and 2s. on the ordinary, to 2s. 6d. and 6d. per share respectively. The Coromandel Company is expected shortly to announce its second dividend.

AUSTRALASIA.

NEW SOUTH WALES.

BROKEN HILL PROPRIETARY COMPANY.—This company's statement for the four weeks ending June 24th shows a total of 28,151 tons of ore treated. The output of the refinery shows a production for the four weeks of 406 oz. gold, 629,435 oz. of silver, 1,589 tons of soft lead, and 45 tons of hard or antimonial lead. In addition there was produced copper matte, the assayed contents of which amounted to 39 tons of copper and 43,486 oz. of silver. The total production of silver for the four weeks was therefore 672,921 fine oz. This company sets a good example in always reporting its production of precious metal in fine ounces and not in crude bullion.

TASMANIA.

MOUNT LYELL MINING COMPANY.—For the four weeks ending July 1st there were 5,274 tons of ore treated, two furnaces running through the month and the third furnace 7½ days only. The product was 372 tons matte, the contents of which were 212 tons copper, 16,694 oz. silver and 1,131 oz. gold. The average result showed 4·02% copper, 3·16 oz. silver and 0·21 oz. gold per ton of ore treated. The matte produced carried 57% copper.

CANADA.

Montreal despatches say that the Dominion Department of the Interior has received applications from a number of persons who desire to lease portions of the Saskatchewan River and dredge for gold in the sand at the bottom. It is understood that the ministry, after carefully looking into the matter, has decided to grant these leases under stringent conditions. One of these conditions is that a royalty on all gold brought up be paid to the government. After advertising the Stewart River, in the Yukon country, as open to tender for dredging for gold, and several offers had been received, the department has decided that it would not be right to hand over the gold in that river without a proviso for a royalty, and therefore no contract has been awarded.

BRITISH COLUMBIA—EAST KOOTENAY DISTRICT.

(From Our Special Correspondent.)

CANADIAN PACIFIC RAILWAY, CROW'S NEST PASS RAILWAY EXTENSION.—The details of this new route to open up Southern Kootenay have been nearly completed. The determination of the Canadian Pacific Railway Company to reach the Rossland mines is very strong, and to do so at the earliest opportunity arrangement will doubtless be made with the Columbia & Western. The extension of the route to Rossland as well as to Nelson has been fully decided upon. The further extension of the road to the Boundary country is a matter for future consideration. In all probability Nelson is to become Canadian Pacific Railway headquarters in Kootenay.

BRITISH COLUMBIA—SLOCAN DISTRICT.

AMERICAN BOY.—The recent strike of 18 in. in the face of the main crosscut tunnel in this mine has widened out to about 3 ft. Two feet of this is clean ore, the balance being concentrating.

ATHABASCA.—This mine has now 25 men at work getting out ore. Two carloads of 20 tons each are to be shipped to the smelter soon.

BRITISH COLUMBIA—WEST KOOTENAY DISTRICT.

(From Our Special Correspondent.)

DOMINION GOVERNMENT FISCAL RETURNS.—The Canadian government returns for the fiscal year ended June 30th, 1897, including the customs returns, which have been furnished by Mr. George Johnson, collector for the port of Nelson, give some interesting facts and figures connected with the mineral industry of West Kootenay. These figures being official may be accepted as reliable. The exports during the year from West Kootenay were: Gold, $2,306,880; silver, $1,767,643; copper, $518,515; lead, $248,421; total, $4,841,459. As the production of ore and matte in West Kootenay, for the past six months, approximates $4,200,000, it will be seen that there is a marked increase in the production for the first half of the present year.

LE ROI.—Captain Hall, the superintendent, reports the lowest working level of this mine to be at a depth of 500 ft. The principal levels are at 350, 400, 450 and 500 ft., respectively, and the 600-ft. level will shortly be opened up. The shaft itself is a three compartment one, 4 × 5 ft. The great development began to show itself at the 300 and 400 ft. levels, but is more strongly visible in the 450 and 500-ft. levels. Mr. N. T. Trelgear is in immediate charge of the lower levels. From one of these drifts, commenced only a few weeks ago, ore has been shipped at the rate of 100 tons per day.

Ventilation is now good. The compressor runs 3 pumps, 2 hoists and 18 drills, all in connection with the workings of the mine. Calcite is particularly noticeable on the face of the west tunnel at the 500-ft. level, which is being extended toward the Big Bear claim owned by the Le Roi Company, and where is located the big compressor, the "Senator." This west tunnel is all in ore.

First-class ore consists of nearly massive fine-grained pyrrhotite and copper pyrites, sometimes with a little magnetite or mispickel with more or less quartz and calcite. The value of this ore is given at $53.05 net per ton. The bulk of the ore, however, is second class, and it runs from $27.97 to $49

The company employs 180 men and it has a payroll of $15,000 per month. Since last September it has expended at least $100,000 in building improvements and machinery and at least a similar amount for labor. The Le Roi has already paid dividends amounting to $450,000 to date. Its capital is represented by 500,000 shares at the par value of $5 each, being a total of $2,500,000.

LE ROI DIVIDEND.—This company declared another dividend of $25.000 this month, making $50,000 for July, or $475,000 in all.

ST. PAUL.—Mr. George Pfunder, who recently took charge of this property, is pushing the work with much energy. He has found it necessary to make some changes in the plans. The local tradition of the camp is that the tunnel had been driven into the rock regardless of the direction of the ledge, though the ledge is plainly in sight but a short distance up the side of the mountain. The tunnel is now being extended in the direction of the ledge, where it is expected the ore body may be encountered. So far there have only been traces of the mineral in the hard diorite found in the tunnel. Little can be said in favor of the previous management or its plans of development.

ONTARIO.

GOLDEN STAR MINING AND EXPLORATION COMPANY.—A big deal in Seine River gold properties has been reported closed at Duluth, Minn. Fifty-one per cent. of the stock of this company has been sold to Louis A. Hall and W. H. T. Hughes, of New York. The price paid was $30,000, which represents the purchase price of the Randolph mine, owned by the company. The new owners intend to push work on the Randolph property at a rapid rate, and will develop new properties.

(From an Occasional Correspondent.)

MIKADO MINE.—The Mikado mine, which has attracted so much attention to the possibilities of the Lake of the Woods District as a gold producer, was opened up in July, 1896. Work has been pushed for the last 12 months with great perseverance, and a 20-stamp mill is now ready to commence work on the ore mined. The vein is situated in the contact of the schist and granite. A shaft has been sunk to a depth of 125 ft. and a crosscut of 35 ft. on the 100-ft. level has been made, which proves the vein to be holding its original promising indications. In the month of October, 1896, about 300 tons of the ore were shipped to the reduction works at Rat Portage, and an average return was obtained of 2½ oz. per ton. The mill has been erected under the superintendence of the manager, Mr. Theodore Brudenbach. He has had some 20 years' experience in various goldfields, and is a graduate of the Academy of Mines, Berlin. The mill is one of 20 stamps, of Fraser & Chalmers make, the stamps being 850 lbs. apiece. The crusher is also of Messrs. Fraser & Chalmers' Comet pattern. The tailings are to be run direct from the amalgamating plates to leaching cyanide tanks, the concentrates being very heavy.

YUM YUM.—The diamond drill work which has been pushed under the management of Mr. Burley Smith, has proved so successful that a shaft is to be sunk immediately on this property. The Yum Yum mine is situated near the Mikado, being about one-half mile to the south. Owing to the depression of the money and mining markets in London, considerable work that was contemplated has for the present been postponed.

QUEBEC.

CENTRAL QUEBEC GOLD-FIELDS COMPANY.—This is a newly-incorporated concern, whose aim is to work for gold in the Beauce region. Messrs. James King, W. Yuile, Montreal; J. L. Tache, St. Hyacinthe; J. P. Tache, Quebec, are its chief promotors.

MEXICO.

COMOBABI DISTRICT.

DEVINE.—These mines were recently purchased by Frank Morgan and Mrs. J. C. Irwin. Samples of green ore taken from No. 1 mine assayed, it is said, 372 oz. in silver, while the blue ore from No. 2 mine showed a value of 215 oz. silver, and second-class green ore 152 oz. Four different dumps contain considerable talc, which carries good values in silver.

SONORA.

LOS ANIMAS.—Messrs. J. B. Storman and Ricardo Johnson have sold this mine, about 30 miles from Santa Ana, to Mr. E. L. Giroux, recently from Jerome, Ariz. Mr. Giroux has let a contract to Mr. A. L. Pelligrin to run a tunnel 100 ft. on the property.

(From Our Special Correspondent.)

The Las Higueras & Las Norias niter deposits located about 15 miles from Pesqueris, are supposed to be very extensive. Experts estimate there is at least 200,000 tons in sight. George W. Beermaker, of San Diego, Cal., has obtained a concession for five years to work these mines.

MICHOACAN.

YNGUARO.—These mines have, it is said, been purchased by the Boleo Copper Mining Company, of Lower California. The mines are situated in the State of Michoacan, near Apatzingan.

SOUTH AMERICA.

BRAZIL.

ST. JOHN DEL REY GOLD MINING COMPANY.—The report of this company for the month of June shows a total production of 3,862 oz. gold, valued at £13,981. The average result was equal to 0.38 oz. gold per ton worked.

BRITISH GUIANA.

Exports of gold for the half-year ending with June were 51,476 crude oz., showing an increase of 2,382 oz., or 4·9% over the first half of 1896. At the values given the exports this year were equivalent to 43,791 fine oz., or $905,158.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, July 30.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending July 23d, 1897, compared with the corresponding period last year:

	1897. Week.	1897. Year.	1896. Year.
Pennsylvania Railroad.....	68,033	1,805,512	2,010,695

PRODUCTION OF BITUMINOUS COAL in tons of 2,000 lbs. for week ending July 23d, and for years from January 1st, 1897 and 1896:

Shipped East and North:	1897. Week.	1897. Year.	1896. Year.
Allegheny, Pa.....	57,347	1,321,151	1,318,048
Barclay, Pa.....	*416	25,438	24,638
Beech Creek, Pa.....	*90,792	2,040,790	1,705,174
Broad Top, Pa.....	12,092	244,209	245,158
Clearfield, Pa.....	109 611	2,536 414	2,804,517
Cumberland, Md.....	§172,963	2,093,281	2,012,319
Kanawha, W. Va	†86,908	1,704,691	1,913,618
Phila. & Erie.....	881	164,735	39,368
Pocahontas Flat Top.....	†53,950	1,344,157	2,138,422
Totals.....	584,960	11,474,865	12,201,162

Shipped West:	1897. Week.	1897. Year.	1896. Year.
Monongahela, Pa.....	3,561	734,232	582,481
Pittsburg, Pa.....	72,256	1,048,779	1,139 995
Westmoreland, Pa.....	82 692	1,155,709	1,118,153
Totals.....	158,509	2,938,720	2,840,629
Grand totals.....	743,469	14,413,586	15,041,791

Production of coke on line of Pennsylvania Railroad for the week ending July 23d, 1897, and year from January 1st, 1897, in tons of 2,000 lbs.: Week, 88,532 tons; year, 2,474,115; to corresponding date in 1896, 2,511,808 tons.

† For week ending July 10th. § For two weeks ending July 24th. * For week ending July 21st. ‡ For week ending July 14th.

Anthracite.

There has been little change in the demand during the past week. The market is decidedly quiet, and though much coal is being moved, it is mostly on old orders; there is absolutely no activity with regard to new sales. There are many indications of a strong combination to regulate trade, but as yet this has given rise to no feeling of alarm, nor is it considered dangerous.

Any prolongation of the strike in the bituminous region is likely to help the trade in anthracite, especially in the small sizes, which are already in increased demand in the West, though as yet the New York market has not followed the movement. The moral influence of the strike is, however, making itself felt; consumers are everywhere being led to enquire into the condition of their coal piles, and in the future possible wants are more likely to be taken into consideration than actual needs.

The market for buckwheat has been decidedly good and that for pea coal fair.

Those that predict a sharp advance in the price of small coal should remember that when an article is abundant it is rarely high in price and the autumn is the season when there is always a heavy stock of these grades on hand As yet, however, stocks are not as large as usual. In the West no small coal is usually sold and the present demand must be ascribed entirely to the labor difficulties in the bituminous regions.

Bituminous.

In the Eastern seaboard soft coal trade the chief interest is centered in the coastwise vessel market. The continued shortage of vessels has advanced freights where the consumer, in most instances, has felt compelled to limit his order to the producer, and it is thought that most of the orders that necessitated prompt shipment have been shipped at the advancing freights.

The prevailing south and southwest winds of the past fortnight have at last changed, and it is reported that a fair number of vessels are off the mouth of the Delaware and on the way to the Chesapeake, but no doubt the earlier arrivals will be chartered very promptly, and it is thought the market will be but slightly affected, and not until later arrivals will this happen.

It has been noticed by the trade that a number of vessels usually loading coal are now carrying lumber.

There is a fair accumulation of orders from ports east of Cape Cod in the hands of the producers, but most of them are prepared to wait for lower figures; The Sound trade, however, is calling for coal most strenuously, though to a limited extent. These buyers have a choice, at a slight advance, of taking coal from the New York harbor shipping ports in place of that from lower ports, something that they have done to a certain extent during the late dearth of vessels.

New York harbor trade is fairly good, consumers taking their usual supplies and possibly a little in excess. All-rail trade is quiet, most of the consumers in this line having slightly increased their stocks on account of the strike scare, and they are now ready and willing to take about the usual amount. Trade local to the shipping ports is quiet. The bunker business is of small extent.

In regard to the effect of the strike on the seaboard trade, most operators believe that all chance of it reaching the regions supplying the coal is now over. The difficulty has been confined pretty closely to the region supplying the South and West.

Transportation from mines to tide is fairly good and there are large stocks of coal at shipping points and on the way. This week there has perhaps been some slight reduction in the amount of coal standing in cars at the ports; even yet, however, stocks are much larger than is usual. The car supply is not large, though producers giving good despatch in unloading at tidewater have little difficulty in procuring all the empties at the mines they desire. There are no embargoes on any of the all-rail points.

In the coastwise vessel market, vessels are scarce and in good demand. Freights are strong at current rates, and advancing if anything. We quote current rates of freight from Philadelphia to Boston, 70c.; Salem, 70@75c.; Portland, Providence, New Bedford, and Sound ports, 60c.; Wareham, Portsmouth and Bangor, 75c.; Lynn, 80@90c.; Newburyport, 80c.; Dover, 90c. and towages; Saco, 85c. and towages; Bath, 60@65c.; Gardner, 60@65c. and towages. An advance of 5 to 10 cents may be added to these rates on charters to lower ports.

Prices remain steady and there are few changes to notice. We quote the following general prices: $1.70@$1.85 per ton, f. o. b. Newport News; $1.60@$1.90 per ton f. o. b. Philadelphia; $1.75@$1.85 per ton f. o. b. Norfolk; $1.75@$1.85 per ton f. o. b. Baltimore; $2@$2.60 alongside New York harbor.

Buffalo. July 29.

(From Our Special Correspondent.)

Anthracite coal is selling slowly at annexed quotations. Shipments by lake continue very light at unchanged freight rates. Bituminous coal changes hands only for immediate requirements pending the strike. Buyers hold off for lower rates and dealers are unsettled in their views as to the continuance of strike and visible supply. Coke fairly active, with steady market and stocks fully adequate for trade requirements. Report says that the New York Central Railroad Company has made a contract for the year's supply of soft coal at $1.20 per net ton delivered at Buffalo and Rochester.

News has been received from Niagara Falls to the effect that on Septemeber 1st the Power Company will have one of the new wheels in operation, and on that day it will send another liberal installment of electric power to Buffalo. Other wheels will be ready in October.

The quotations on anthracite coal since July 1st are as follows per 2,240 lbs. delivered free on board vessel at Buffalo: $5.05 for grate and $5.30 for egg, stove and chestnut: delivered on cars at Buffalo to Suspension Bridge, $4.75 for grate and $5 for egg, stove and chestnut. Retail within city limits, delivered per 2,000 lbs., nominally, $5 for grate, $5.25 for egg, stove and nut; $3.75 for pea. Blossburg sells at $4 per net ton delivered. Brier Hill region, per 2,000 lbs. in car lots on track Buffalo $3.25 for lump. No. 1 Cannel, per 2,000 lbs. in car lots on track Buffalo $4.50 per 2,000 lbs.

Bituminous coal is unsettled; entirely nominal; quotations omitted.

Coke per 2,000 lbs. in car lots on track Buffalo: Reynoldsville, $2.80@$3.00; Connellsville, $3.90@$4.

The shipments of coal westward by lake from Buffalo for the week ending July 24th aggregated 62,473 net tons, distributed as follows: 26,250 tons to Chicago, 10,950 tons to Milwaukee, 12,300 tons to Duluth, 4,839 tons to Superior, 1,930 tons to Toledo, 500 tons to Bay City, 600 tons to Kenosha, 710 tons to Saginaw, 120 tons to Alpena, 800 tons to Washburn, 1,000 tons to Green Bay, 1,175 tons to Port Huron and 1,200 tons to Marquette.

The rates of freight were 20c. to Chicago, Milwaukee, Duluth, Superior, Portage, Washburn, Marquette and Toledo; 25c. to Bay City, Kenosha, Port Huron, Green Bay and Alpena, and 40c. to Saginaw. Closing firm.

The following statistics of the coal trade of Buffalo were compiled by Mr. William Thurstone, secretary of the Merchants' Exchange: Receipts of coal by railroad for June not reported by request. Lake receipts for June none. Shipments by lake for the month of June 231,393 net tons as compared with 348.849 net tons in 1896 and 270,381 tons in 1895; for the season to July 1st, 430,243 net tons as compared with 644,183 tons in 1896 and 530,169 tons in 1895. The receipts by canal for the month of June, as compared with 3,924 net tons in 1896 and 340 tons in 1895; for the season to July 1st none, as compared with 7,510 tons in 1896 and 340 tons in 1895. The shipments by canal for month of June none as compared with 240 net tons in 1896 and 1,352 tons in 1895; for the season to July 1st none as compared with 240 tons in 1896 and 2,248 tons in 1895. Shipments by lake westward thus far this season show a decrease of 213,940 net tons as compared with 1896 and a decrease of 99,926 tons as compared with 1895.

Lake freights from June 1st to 30th this year were 20c. to Chicago, Milwaukee, Duluth and Lake Superior ports; 25c. to Green Bay, Sheboygan, Racine and Bay City; 20c. to Toledo, and 35c. to Saginaw. A year since the rates for June were: 60@40c. to Chicago; 55@35c. to Milwaukee; 30@25c. to Duluth and Lake Superior ports; 45c. to Green Bay; 60@40c. to Racine; 30@25c. to Bay City and 25c. to Toledo. The distribution of coal thus far this year was to the following places: 190,431 tons to Chicago, 92,150 tons to Milwaukee, 61,050 tons to Duluth, 8,725 tons to Racine, 2,000 tons to Green Bay, 57,400 tons to Superior, 4,480 tons to Saginaw, 6,710 tons to Toledo, 900 tons to Lake Linden, 2,400 tons to Marquette, 1,238 tons to Fort William; 1,400 tons to

Sault Ste. Marie, 1,100 tons to Manitowoc, 5,675 tons to Kenosha, 500 tons to Bay City, 3,100 tons to Hancock, 75 tons to Alpena and about 10,000 tons to miscellaneous ports by vessels first clearing for Tonawanda.

Pittsburg. July 29.

(From Our Special Correspondent.)

Coal.—Since our last there was a large rise, and a small coal shipment followed, aggregating 1,500,000 bu., shippers generally are disposed to hold on to their coal waiting to see how the strike will terminate. Many of the mines at various points are running full, the miners refusing to join the strikers. The West Virginia miners refuse to quit work; they are well paid and well treated, and seem to know a good thing. Virginia has been a sad disappointment to the strike managers. Great efforts have been mads to bring out the Fairmont District mines, but it was a complete failure. The mines of the New York & Cleveland Gas Coal Company are still running; the men decline to come out. The coal market is steady, the supply fully up with the demand. Many iron plants have returned to the use of gas, and will continue until the strike is settled. Present prices of coal are for slack 85c. a ton; run of mine, railroad coal, $1.25@$1.50 a ton; river coal, 5@5½c. a bushel.

At Uniontown, Pa., two weeks ago the customers were eagerly scrambling for coal and bidding prices up, while operators picked their customers. Now demand for coal has shrunk to such a degree that the operators are begging for customers.

Connellsville Coke.—A big increase in production and shipments is shown. The report of the coke trade for last week shows 11,275 ovens in blast and a production of 113,740 tons, being the largest output since the early weeks of 1896, and almost unprecedented for the season of the year. There are indications that the trade will continue to increase. The shut-down of some of the iron mills has not had any noticeable effect on the iron and coke trades so far, and it will likely be over before any material harm can be done. The coal strike may cut more of a figure in the coke trade than the wage disagreements, and may probably result in the stoppage of some industrial establishments. However, the trend of the trade in the region is toward an increase, and it is probable that the active list of ovens will be further increased. There are now but 7,100 idle ovens in the region, and last week's output shows an increase of over 8,000 tons. The railroad companies have been busy handling the cars on account of the increased run in the coal business from West Virginia fields and the lower end of the Connellsville region. In the running order 2,601 ovens made six days, 7,912 ovens five days, 712 ovens four days, and 50 ovens, Semet-Solvay plant seven days. Shipments were: To Pittsburg, 2,865 cars; shipped West, 2,475 cars; sent East, 1,395 cars; total, 6,735 cars.

Cleveland. July 28.

(From Our Special Correspondent.)

That all danger of embarrassment by reason of the strike of coal miners is past for the manufacturers of Cleveland is the belief of the coal operators and shippers of this city. A member of the firm of M. A. Hanna & Company said to-day that there was plenty of coal in the city at the present time, and the probabilities were that the West Virginia operators would forward a large quantity of fuel into the city before the operators came to an agreement in Pittsburg. It was reported yesterday that slack, which is used by a number of manufacturies of this city, had advanced in price, but the report was discredited by some of the larger dealers, who claimed that the story originated with bulls. From all that can be learned from reliable sources it seems that the coal situation in Cleveland is much easier than it was last week. It was reported early in the week that the Cleveland Rolling Mill Company was compelled to close down its wire department on account of a scarcity of coal, but upon investigation it was found that a scarcity of coal was only incidental in connection with the shut-down, as the company has coal standing on a sidetrack.

Shanghai, China. July 2.

(Special Report of Wheelock & Co.)

Coal.—Owing to continued drought in Japan, the usual means of transporting that coal from mine to ports of shipment are rendered useless, and only small boats can now navigate the various rivers where hitherto large carrying lighters were used. Consequently Japan coal arrives in very limited quantities and thus commands enhanced prices, $5.50 f. o. b. being the quotation for ordinary kinds; this has neutralized the anticipated fall in prices, owing to rates of freight having declined, and coal has gone up in value as freights have come down. Ohnoura has been dealt in from first hands at 6 taels, ex-godown, and altogether a good business has been done during the past fortnight. There were no transactions in Cardiff coal, and Australian Wollongong remains quiet.

We quote prices as follows: Cardiff, 13 taels per ton; American anthracite, 9 taels per ton; Sydney Wollongong, 8 taels per ton. Japan coal is 5·75 taels for Takasima lump, 5 taels for Namazuta lump, 5·75 taels for Miiké lump, and 6 taels per ton, with an upper tendency, for other sorts.

Arrivals for the fortnight under review had an aggregate of 19,405 tons.

Kerosene Oil.—In American oil all business of a speculative nature has been put to an end by the arrival of some 260,000 cases of Devoe's, which have thoroughly replenished stocks, and teashop transactions have been principally confined to taking delivery of previous purchases; sales were small. From first hands of ships to arrive sales have been put through to a considerable extent, and about 150,000 cases have been placed for September, October and November clearance. All stocks of Comet oil have been cleared off. Stock in godowns amounts to 228,562 cases. Arrivals aggregate 256,789 cases of Devoe's. In Batum oil small sales of Anchor brand are reported at 1·50 taels. Stocks of all Russian kinds amount to about 280,000 cases. There was an arrival recently with 135,000 cases of Anchor brand oil. Stocks of Langkat amount to 63,000 cases. Quotations are as follow per case: American Devoe's, 1·56 taels; Comet, 1·53 taels; Russian Batum, Anchor chop, 1·50 taels, and horse chop, 1·45 taels; Russian Batum, bulk, 1·40 taels per two tins; Langkat, 1·40 taels.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, July 30, 1897

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending July 31, 1896.		Week ending July 30, 1897.		From Jan., '96.	From Jan., '97
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons
Anthracite.	39	24,100	23	12,750	791,740	500,886
Coke...	130	155,950	107	150,359	4,846,162	4,439,714
Charcoal...	23	6,600	15	3,251	165,926	142,536
Totals	192	186,650	145	166,350	5,802,828	5,083,136

The advent of prosperity in the iron trade, for which everybody has been anxiously waiting, seems to be still further postponed. The volume of business for the week has been moderate, and there does not seem to be any immediate prospect of an increase. It is true that there has been some inquiry for raw materials, but it has not been of a pressing nature at all; rather of a tentative kind, from manufacturers who do not want immediate deliveries, but are trying to see how far they can secure themselves for the future at low prices. The foundries generally are not over-busy, and complain of low prices and difficulty in collections. Forge iron is a drug in the market, buyers being almost entirely absent. What little activity is shown is among the steel men, and they are quite ready to take orders for any delivery, near or future. The increase of 100,000 tons in stocks of raw iron since January is rather depressing; and the fact that the stocks have piled up while the heaviest exports in our history have been going on, shows that the increase in production for the first half of the current year, as compared with that for the second half of 1896, has not been accompanied by a corresponding increase in consumption.

Under these circumstances it is to be expected that prices will remain low. In this respect it is still a buyers' market and sales-agents know that any attempt to raise quotations is useless. Good orders are not plenty enough to be refused, and are just now only to be secured by bidding a little below the current rates. Bessemer pig is selling below $9 per ton at Mahoning and Shenango Valley furnaces, and steel billets at $14 in Pittsburg are at a corresponding price. In foundry irons there are no fixed prices and almost every order has its own quotations. There has seldom been a time when it was so hard to give the real rates, since a majority of the sales are made on private terms—which means that the seller does not want anybody to know how much he has cut under the nominal quotations.

In finished material the conditions are very similar. Demand continues moderate and prices very low. There is more movement in structural material than in anything else, but there is nothing on hand which the mills cannot handle easily and still have room for more orders. The extraordinary July rains, which have done a great deal of damage in New England, New Jersey, Eastern New York and Pennsylvania, may cause a temporary demand for bridge material, but that will soon be satisfied.

Some dealers are calling attention to the suddenness of the boom which marked the months July-October of 1895, and are rather inclined to anticipate a similar movement this year, but there are no signs of it yet. It is true that the promised good crops and the high prices of grain will increase the purchasing power of the farmers; but that class of people have a good many debts to pay off before they can go to buying very liberally. In any event it will take some time to permit the full effects of this prosperity to be felt. The railroads, however, are looking forward to a heavy business, and will, very probably, be pretty heavy buyers in the fall. On the other hand the stoppage of a number of the big Eastern textile mills is not encouraging.

Export trade continues large, and is having some effect on the market. It is likely to be affected by the probable increase in ocean freight rates resulting from the certainty of heavy grain shipments. Meantime our increased exports are attracting much attention abroad. We have heretofore referred to inquiries made in the British Parliament as to the placing here of orders for rails for India; the answer that the American bid was nearly $5 per ton lower than any of the British offers seems quite a sufficient explanation. As long as our makers can give such terms, the export trade will grow.

Our views of the market may seem somewhat gloomy, but we believe that they are based upon the actual condition of affairs. Such a view is not a popular nor an agreeable one at any time. It is a much pleasanter task to write of a rising market than of a falling one; and should the future disprove our present forecast, no one will be better pleased or more ready to chronicle the new prosperity of the trade.

New York. July 30.

Sales-agents report that business has fallen off considerably this week as compared with June. They state that although prices have softened somewhat, buyers are still holding off. Conservative members of the iron trade tell us that the present quotations cannot continue very much longer, as they are on rock bottom and a reaction must come. The Tariff Bill is settled, and it is expected confidence in business will soon be restored and the demand for iron and steel increase. A little difficulty is now being experienced in filling orders for prompt delivery. Many of the mills are cleaning up and in consequence there is hardly any material being stocked up to meet the demand. It is believed, however, that some of the mills will soon resume operations.

Of the contracts taken we note one for 7,000 tons of steel rails for Mexico and another for 500 tons for the Manhattan Elevated Road. In structural material there was a contract awarded a Pittsburg mill for 2,300 tons for a new structure, for offices and for the printing establishment for the New York Life Insurance Company. There was also a contract for 350 tons of material which went to a local concern. The Lukens Iron and Steel Company recently shipped several carloads of plates to Mexico.

We learn that the Illinois Steel Company, which received a contract from the New York Central for structural material some time ago, recently had it increased.

We understand that a Western Pennsylvania firm has contracted to deliver this season's supply of hoops for a large cooperage plant, aggregating 6,000 tons. A sale of 1,000 tons of wool bale hoops was also made this week.

Recently a few contracts were taken for bridge work, and among these we note those awarded to the Wrought Iron Bridge Company, of Canton, O., for steel girder bridges over Onondaga Creek at Seymour and Temple streets; the former, $4,832, and the latter, $4,054. There will no doubt be more work in this line, as the recent rain has probably demolished several bridges up the State.

In the export trade we understand that there has been a good movement in electrical material from this port, many of the foreign countries taking large quantities. Nails and hardware continue to go forward in small lots, while mining and other machinery shows an increase over last week. Among those to receive mining implements are Cape Town, Delagoa Bay and Surinam. To Cape Town there were also shipped 300 bundles of bar steel, valued at $2,075, and 1,806 pieces of iron pipe, valued at $2,231. Four cases of iron-working machinery, valued at $128, were sent to London. Melbourne, in Australia, will receive 12 boxes of steel rails, besides 365 pieces of iron pipe, while 371 cases of hoop iron went to Alexandria, in Africa. A quantity of steel billets, valued at $5,614, was sent to Antwerp, Belgium. Honolulu, in the Hawaiian Islands, recently ordered iron pipe valued at $1,598, which went forward this week. Japan continues to take its share of our manufactures, and among the recent shipments we note 1,571 pieces of iron pipe, $23,887 worth of steel rails, beside several quantities of railroad material and three locomotives; also 24 tons of pig iron, all of which went to Yokohama.

Exports of ferro-manganese continue to be made, and the latest noted are 48 casks to Fiume, Austria, and 33 casks to Trieste, in the same country. It may be said that the Carnegie Steel Company is making these shipments principally.

The Ordnance Company of Bridgeport, Conn., has received a contract for three 40-knot torpedo-boats from a South American government. The exact destination of these torpedo-boats has not yet been given out, but it is supposed to be the Argentine Republic. The Backus & Johnston Company, of Lima, Peru, is said to have been purchasing considerable mining machinery and equipment in the United States. The first heavy shipment is to be made to-day on the steamer *Finance*. It is reported that the Mexican Southeastern Railroad has just signed a contract for 40,000 tons of rails for the first division of the road. For pig iron there continue many inquiries from abroad, but actual business from this source is meager.

Pig Iron.—A moderate business has been done in some brands of pig iron, but taken as a whole the market has been quiet this week. Some further shading of prices is noted, and Northern irons are now quoted somewhat less than last week. Southern iron, however, remains unchanged in price.

Quotations are: Northern No. 1 X Foundry, $11.50 @$12 per ton; No. 2 X Foundry, $10@$11; No. 2 plain, $10.25@$10.50; gray forge, $9.50@$10.; Southern No. 1 Foundry, $10.50@$10.75 per ton; No. 2, $10@$10.25; No. 1 soft, $10.75@$11; No. 2 soft, $10.25 @$10.50; gray forge, $9.50@$9 75; Basic, $10.50@$10.75. All prices are for tidewater delivery.

Cast-Iron Pipe.—Business has been at a minimum this week, and prices continue low.

Spiegeleisen and Ferro-Manganese.—Local trade continues quiet. Quotations are: Spiegeleisen, 20%, $19@$19.50; ferro-manganese, 80% foreign, $46, delivered at buyer's mill.

Steel Billets and Rods.—The local market continues quiet. Quotations are $16@$16.25 for billets at tidewater and $20, nominal, for rods at mill.

Merchant Iron and Steel.—Business continues rather inactive, and prices continue easy. Quotations are: Common bar, 1@1·05c.; refined, 1·10@1·15c.; soft steel bars, 1·00@1·10c.; steel hoops, 1·25@1 35c.; steel axles, 1·50@1·60c.; tire steel, 1·05@1·10c.; spring steel, 1·40c., base; links and pins, 1·50@1·60c.; cotton ties, 60c. per bdl. at mill.

Plates.—Business consists mainly of carload lots. We quote for universal mill plates 1·10@1·15c. For steel plates prices are: Tank, 1·10@1·15c.; boiler shell, 1·20@1·30c.; flange, 1 35@1·40c.; firebox, 1·60@1·75c., and 2·25@2 50c. for locomotive firebox, according to quality. Charcoal iron plates are 2·25c. for shell, 2·75 for best flange and 3·25 for firebox. Rivets are 2·25@2·50c. for iron and 1·75@1·85c. for steel Prices are for tidewater delivery in large quantities.

Structural Iron and Steel.—A few small orders were taken this week; otherwise the market is quiet. We quote for angles, 1·10@1·15c.; tees, 1·25@1·35c.; channels, 1·15@1·25c. The price of beams, New York delivery, is 1·15c. for ordinary sizes, 1·20c. for 20-in., and 1·25c. for 24-in., carload lots.

Steel Rails and Rail Fastenings.—Orders are small, and business on the whole quiet. Quotations are $18.50@$19 per ton for standard sections and $23 for girder rails. Lighter rails are figured on by a reliable concern as follows: 12-lb. rails, $26 per ton at mill; 16-lb., $24, 20 lb., 25-lb. and 30-lb., $22 per ton.

For rail fastenings tidewater quotations are: Angle bars, 1·05@1·10c.; spikes, 1·45@1·50c.; bolts, 1·75@1·85c.; square nuts, 1·80@1 85c.; hexagon nuts, 1·90@1·95c.

Wrought-Iron Pipe.—Trade is rather strong at advanced prices. Discounts are as follows: For plain pipe, out of store: 1½ in. and over, 67, 10, 10, 10, 10 and 10%; 1¼ in. and under, 57, 10, 10, 10, 10 and 10%. Galvanized pipe, 1¼ 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% for less than carload lots. For carload lots this additional discount is 7½% to 10%.

Nails.—The wire nail market shows only a moderate business doing, and prices remain at $1.40 per keg for carload lots, and $1.50@$1.60 for smaller quantities. Cut nails are being inquired for in a small way and quotations remain at $1.30 per keg for carload lots on dock and $1.40 for less.

Old Material.—With inquiries more numerous, the market is looking better than last week, but dealings are not very active. Sales of steel street rails aggregating 500 tons are reported at $9.50@$10.50 per ton delivered at mill.

Iron rails show a good demand for export, but no sales have been made this week. Quotations are: Iron T rails, $10.50@$12.25 per ton; steel rails, $9@$10.50; No. 1 wrought scrap iron, $10@$11; hammered car axles, $15@$16 all f. o. b. cars; car wheels, $9@$10 per ton, delivered at buyer's works; machinery scrap, $9@$10; wrought pipe and tubes, $7.50@$8, delivered, New York; wrought turnings, $8@$8.50; cast borings, $6.50@$7; burnt iron, $5.50@$6.50 per ton, delivered at mill.

Cleveland. July 28.

(From Our Special Correspondent.)

Iron Ore.—The change in the market during the past week has been slight, if any at all, so far as sales of ore are concerned. Small lots have been disposed of, some of Bessemer and some of non-Bessemer, but the aggregate of the transactions foots up only a small amount. The following prices prevail: Specular and magnetic ores, Bessemer quality, $3@$3.75; specular and magnetic ores, non-Bessemer quality, $2.50@$2.75; hematite ores, Bessemer quality, $2.50@$3; hematite ores, non-Bessemer quality, $2@$2.50.

Pig Iron.—There has been no marked improvement in the trade during the past week. Not much iron has been sold, and the few sales have been about equally divided between Bessemer and foundry irons. The quotations follow: Lake Superior charcoal, $13.25; Bessemer, $9.75@$10; No. 1 foundry, $10.25@$10.50; No. 2, $9.75@$10; No. 1 Ohio Scotch, $10.40; No. 2, $9.90; gray forge, $8.50@$8.75.

Pittsburg. July 29.

(From Our Special Correspondent.)

Raw Iron and Steel.—The improvement which was inaugurated at the close of last week continues with a liberal volume of transactions and a further advance in prices; the trade for the next five months will be an active one; the tariff bill is now the law of the land and business men can make their calculations with certainty, knowing what the situation is. Trade in all departments has been of a very unsatisfactory description; extremely low prices have been the rule, not the exception; the time has arrived for a change, which will be acceptable generally. Several of the mills which have been undergoing repairs and improvements are about ready to start up, and with the improved outlook will lose no time in resuming operations. It may be said the time we have been waiting for so anxiously is now in sight. All that is now wanting is the adjustment of the labor troubles and the settlement of the coal question. Notes of improvement in mills and furnaces are very general. At New Castle great changes have been made; at the Shenango Valley Steel Mill nearly all the machinery and rolls are being replaced with better. The Raney & Berger furnace has undergone extensive repairs and is now in successful operation. The improvements on the Rosena furnace are fast nearing completion. When finished it will have a capacity of 400 tons and will be the largest furnace in the Shenago or Mahoning valley. There are some very encouraging features, and they are important because of their significance, rather than because of any immediate benefits which can be realized. Sample lots of skelp, sheet-bars, wrought-iron pipe and other articles which were sent abroad some time ago are now bringing in new orders. There can be no doubt whatever that American iron and steel and the products thereof will find much wider markets in the future.

For sheet bars the demand is improving, with liberal sales at $16.75@$17. For wire nails the market is dull; sales show a slight decline, $1.25@$1.27; an improvement is looked for in the near future. For finished material the demand for small amounts is on the increase; prices are without change, but very low. For iron and steel pipe the demand is improving and prices are looking up; the mills in this vicinity are running full.

The Latest.—The firmness previously noted continues; there has been an increased inquiry for various products. It may be truly said that very extensive operations are being made for the fall and winter trade. The Bessemer sales were the largest for some time. Some of the sales are for monthly delivery the balance of the year. The Shenango and Venango mill men declare that unless the Amalgamated Association gives them the same terms obtained by the Jones & Laughlins scale of prices they will start non-union inside a week

At Cleveland, O., sales of 70,000 tons billets are reported, deliverable the balance of the year, $13.90, an improvement of 15c. a ton over sales made last week. In sheet bars we note liberal transactions.

COKE, SMELTED, LAKE AND NATIVE ORE.

Tons.	Cash.
12,600 Bess., 2,000 tons a month July to Dec., inclusive, Pitts	$9.80
10,000 B., S., O., N., P.	9.60
10,000 B., A., O., Val	9.10
2,500 Bess., O., Pitts.	9.70
2,000 B., A., S., Val.	9.05
2,000 Bess., S., Val.	9.10
2,000 B., A., S., O., P.	9.60
2,000 B., A., S., Pitts.	9 55
1,500 Mill Iron, A., P.	8.70
1,500 Mill Iron, Jy., V.	7 80
1,000 Bess., A., S., Val.	9.10
500 B., S., N., Pitts.	9.60
500 M. I., prompt, P.	8 25
200 No. 1 Silvery, P.	13.25
100 No. 2 Foundry, all ore, Pitts.	10.00
50 No. 2 Fdy., Pitts.	9.90
50 No. 1 Foundry, all ore, Pitts.	10.65

CHARCOAL.

110 No. 3 Fdy., Pitts.	15.00
75 Cold Blast, Pitts.	21.00
50 No. 2 Fdy., Pitts.	15.00
25 Cold Blast, Pitts.	21.50

BLOOMS, BILLETS, SLABS.

Tons.	Cash.
5,000 Bill., A., S., Mill.	$14.40
3,000 Bill., A., S., O., M.	14.45
2,000 Bill., A., S., O., M.,	14.50
1,200 Bill., J., A., Mill.	14.25
1,000 Bill., J., Mill.	14.20
1,000 Bill., J., A., Mill	14.25

BLOOMS, BILLETS, SLABS.

Tons.	Cash.
500 Bill., A., Mill	$14.25
500 Bill., A., Mill.	14.60

SHEET BARS.

2,200 Delivered, Pitts.	$16 75
1,500 Delivered, Pitts.	16.50
1,000 Delivered, Pitts.	16.75
800 Delivered, Pitts.	16.85

SKELP IRON.

500 Sheared, Pitts	$1.25 4 m.
400 W. G., Pitts.	1.10 4 m.
380 N. G., Pitts.	1.10 4 m.

SKELP STEEL.

900 N. G., Pitts.	$0.92½ 4 m
875 W. G., Pitts.	0.92½ 4 m
800 Sheared, Pitts	1.10 4 m.

STEEL WIRE RODS.

1,500 Delivered, Pitts.	$20.00

MUCK BAR.

500 Neutral, Pitts	$18.50

BLOOMS, BILLETS, BAR ENDS.

1,000 Bloom & billet ends delivered	$9.25

FERRO-MANGANESE.

150 80% del., Pitts.	$46.00

OLD RAILS AND SCRAP.

350 C. W., gr., Pitts.	$ 8.50
300 No. 1, W., net	11.00
200 I. R., gr., Pitts.	11.50
130 No. 1 Cast, gr., P.	8.50
100 S. R., gr., Pitts.	9.00

Philadelphia. July 30.

(From Our Special Correspondent.)

Pig Iron.—A fresh attack is being made on Pennsylvania furnace interests by Southern makers and the result up to this afternoon is that quite an amount of Southern iron has been contracted for, for forward delivery, mostly at prices said to average 25 to 50c. under latest quotation for home products. Our people were taken by surprise and are making no effort to meet these prices, particularly not in the better and special brands. The buyers say home iron will have to come down, but if it has been shaded, as it is strongly hinted it has been, the quotations given out do not show it. The quotations are $11 for Bessemer; $14.50 for low phosphorus; $11.75@$12.25 for No. 1 X foundry; $10.75@$11.25 for No. 2 X foundry. Standard mill irons are worth $10.

Billets.—At last users of billets have deemed it advisable to place orders. They have done so only for small lots, standing stubbornly out for $16. Large consumers are rather anxiously awaiting advice from their friends at Pittsburg as to what to do.

Merchant Bars.—Our mill man have got a hint that some car building orders are likely soon to be given out. They need such a lift badly, but personal inquiries fail to establish the rumor as a strong possibility, although most railroad companies are in need of cars. The movement in bars is moderate, and prices 1.05@1.10c. for refined steel bars are 1·10@1·15c.

Sheets.—The week's business proves that the larger buyers are placing contracts for later delivery. Small buyers are also purchasing more freely. There is more firmness in prices, though no advance.

Pipes.—Pipe work is coming along.

Merchant Steel.—The handlers of merchant steel say there is an improving movement.

Plate.—Within two days a large number of orders have been placed for boiler and bridge plates, some of them of considerable size. The big buyers are submitting specifications, but it will likely be found that they do not intend to contract for all the iron enumerated in specifications. The tone of the market is decidedly stronger, but prices have not been advanced and probably will not be until mills are fuller than they are at present. Tank plates are 1·10@1·15c.; universals, 1·15@1·20c.; flange, 1·30c.

Structural Material.—Bridge work has been coming in nicely for two days, and before Saturday noon some heavy orders will be placed. The sharp competition has resulted in what amounts to a break in prices. Small buyers have shown up suddenly and want iron before they will all be able to get it. Some big contracts are hanging fire.

Steel Rails.—Quotations are $18@$19. There are no specific statements to be had.

Old Rails.—This week's reports show sales of old iron rails at $11.50. Steel are quoted at $10.25 without known sales.

Scrap.—There are sales of cast borings at $6@$6.50, and of axle turnings at $8.50. Old iron axles are quoted at $14; choice railroad scrap can be had at $11.50; heavy steel scrap, $10.50.

METAL MARKET.

NEW YORK, Friday Evening, July 30, 1897.

Gold and Silver.

Prices of Silver per Ounce Troy.

July.	St. Ex.	London Pence.	N. Y. Cts.	Value of $1.	July.	St. Ex.	London Pence.	N. Y. Cts.	Value of $1.
24	4 87¼	27¼	59¼	.459	28	4 87¼	26⅜	57⅜	.44
26	4 87¼	27⅜	59	.457	29	4 87¼	26⅛	57⅛	.445
27	4 87¼	26⅜	58½	.453	30	4 87¼	26⅜	57⅜	.448

The silver market made a new record this week, touching low-water mark on July 28th at 26⅜d. London and 58⅜c. New York. This is the lowest since March 3d, 1894, when silver was quoted 27d. in London and 58¾ in New York. The cause has been the poor condition of trade in the East, and consequent withdrawal of Indian orders, and as there were no Continental or mint orders to sustain the market, it broke under rather free offerings for prompt and future deliveries. The market rallied to-day on some Japanese buying and speculative covering; but these orders being filled it closes weak at 26⅝d. in London and 57⅞c. in New York.

The United States Assay Office in New York reports the total receipts of silver at 60,000 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	28·96	63·06	31·34	68·40	28·33	61·98
April	28·36	61·85	31·10	67·92	30·39	66·61
May	27·86	60·42	31·08	67·88	30·61	66·75
June	27·58	60·10	31·46	68·69	30·47	66·61
July	.....	.....	31·45	68·75	30·48	66 75
August	.....	.....	30·93	67·34	30·40	66·61
September	.....	.....	30·19	65 68	30·54	66·90
October	.....	.....	29 68	65·05	30·89	67·64
November	.....	.....	29·46	64 98	30·79	67·42
December	.....	.....	29·70	65·24	30·40	66 47
Year	.....	.....	30·67	67·06	29·53	65·28

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

Gold and Silver Exports and Imports

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

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD.					
June.	$7,623,878	$650,343	$130	$440,640	E. $6,533,025
1897	25,000,717	3,715,240	93,188	2,220,314	E. 19,158,351
1896	42,935,551	25,189,431	100,811	717,635	E. 17,129,296
SILV.					
June.	5,086,863	954,882	.....	2,044,013	E. 2,087,96
1897	27,894,9·0	4,419,889	259.150	10,600,48:	E. 13,133,68
1896	29,927,230	5,943,743	685,284	8,527,814	E. 16,140,95

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 July 30th, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$2,204,250	$67,995	$969,524	$55,578	E. $3,050,201
1897..	27,287,216	2,147,712	28,830,187	1,191,078	E. 53,773,582
1896..	40,327,798	17,494,397	22,114,713	1,388,102	E. 43,560,012
1895..	35,062,582	24,205,606	23,960,100	1,022,825	E. 33,794,251
1894..	80,316,001	10,989,711	21,243,111	992,632	E. 89,567,769

Of the gold exported for the week $1,700,000 went to France, $500,000 to Germany, and the balance to South America, Mexico and Turks Island; the silver went principally to London. The gold and silver imported came chiefly from Central and South America and the West Indies.

FINANCIAL NOTES OF THE WEEK.

The passage of the tariff bill by the Senate and the closely following adjournment of Congress last Saturday came somewhat suddenly after all. Both were expected, but almost up to the last moment it seemed quite probable that the session might be extended a few days longer. The adjournment cut off all other questions before Congress, and they have gone over until the regular session in December. Outside of the passage of the tariff bill and a few appropriation bills, practically nothing has been done at this session. It is a relief to most business men, however, to have the tariff settled for a time and to have Congress out of the way, though it is for a few months only.

The long-expected message of the President on the currency question was sent to Congress just before the adjournment. It was brief, and said little beyond recommending the appointment of a commission to consider the condition of our currency, and report such measures or such plans of readjustment as might seem advisable. Coming at so late a date the message met with very little consideration. The House of Representatives, it is true, passed promptly and without debate a bill authorizing the appointment of a commission as proposed by the President; but the Senate paid no attention to the matter beyond referring the message and the House bill to committee. The general expectation that nothing would be done about the currency at this session has been realized.

In pursuance of the action of the Indianapolis Convention, Mr. H. H. Hanna, chairman of that convention, will appoint a committee to prepare a plan of currency reform, to be submitted to Congress next winter. It is announced that the Secretary of the Treasury is also preparing a plan to be submitted to Congress.

General business continues quiet, and the outbreak of activity, which was to follow the passage of the tariff bill, has not yet made its appearance. The new conditions have been generally anticipated and discounted, so far as speculation is concerned, and they are not just now of a nature to give much encouragement to legitimate business growth.

The New York *Evening Post* of July 30th says: "The engagement of $3,200,000 gold for export by to-morrow's steamers, and $750,000 more for shipment next week, was not wholly unexpected; for sterling exchange has been very firm this week, with actual rates a shade above the limit at which last month's $7,000,000 exports of gold were made. Moreover, shipments of gold at this period of the year are not at all unusual. Passing over the last five years of abnormal conditons in the sterling market, a study of the record shows that in 1891 the last heavy gold shipments of the season went out July 25th, in 1890 on August 5th, in 1889 on July 20th, and in 1888 on July 17th. It will be noticed that this reckoning includes 1891, when the domestic grain production was larger than it can possibly be this year and when the foreign crop shortage was quite as serious. In that year $1,500,000 gold was taken for export within five days of the present date in July; yet on August 31st more than a million gold was placed on board a steamer bound from London to New York. But to-day's gold engagements, and the relatively high exchange, which makes them possible, are important as proving something else on which opinion has been conflicting. If London had been buying in New York this week much more of securities than it has been selling, to-day's gold engagements would have been absolutely impracticable. It is true, the three-months bills in which payment was made for April's abnormal merchandise importations are now maturing. But purchase for London of 100,000 shares of St. Paul stock alone, at current prices, would offset the whole foreign indebtedness created by a week's import of European goods. The truth of London's position in our market has been often enough referred to in this column. The large financial interests of that city are fighting, exactly as they did in the summer of 1879, to stave off such a movement in foreign securities as should precipitate a heavy drain of gold for the United States on an English market already depleted by the gold demand from other quarters. This year, as in 1879, the undertaking was helped by the fact that the New York market gave a profit on realizing sales of securities bought some months before; in 1879, as in 1897, gold actually left New York for London in midsummer."

It is a singular fact that while gold is going out from New York a considerable amount—about $2,500,000—is reported on its way from Australia to San Francisco under orders from London. The situation at present looks rather mixed.

Imports of specie at San Francisco by water for June and for the first six months of the year were as follows:

	June.	Six mos.
Mexico	$193,535	$1,231,948
British Columbia	17,410	106,095
Miscellaneous	2,840	37,713
Total	$213,785	$1,375,756
In 1896	330,953	$1,529,564

For the six months this year there was $436,591 gold, $38[illegible],908 in bullion and $49,683 in coin. The silver amounted to $939,165, of which $822,834 was in bullion and $116,331 in coin. This statement includes only receipts by water; a much larger amount comes by rail.

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

	July 22.	July 29.	Changes.
Gold	$143,362,909	$143,471,554	I. $108,645
Silver	31,872,478	33,665,593	I. 1,733,115
Legal tenders	27,249,336	28,764,884	I. 1,515,548
Treasury notes, etc.	31,671,022	31,873,314	I. 202,292
Totals	$234,155,745	$237,775,345	I. $3,619,600

Treasury deposits with national banks amounted to $18,300,000, an increase of $98,273 during the week.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending July 24th gives the following totals, comparisons being made with the corresponding weeks in 1896 and 1895:

	1895.	1896.	1897.
Loans and discounts	$506,176,000	$474,229,900	$540,074,600
Deposits	570,942,900	493,358,200	622,525,700
Circulation	13,138,600	14,676,700	13,531,600
Reserve:			
Specie	65,297,400	56,231,300	91,377,900
Legal tenders	119,434,900	85,607,800	111,615,100
Total reserve	$184,732,300	$141,839,100	$202,993,000
Legal requirement	142,733,125	123,337,650	155,631,425
Surplus reserve	$41,999,175	$18,502,050	$47,361,575

Changes for the week this year were increases of $5,920,200 in loans and discounts, $9,258,500 in deposits, $146,700 in specie, $3,492,600 in legal tenders, and $1,324,675 in surplus reserve; a decrease of $106,600 in circulation.

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:

Banks.	1896. Gold	1896. Silver	1897. Gold	1897. Silver
N. Y. Asso.	$56,231,300	.....	$91,377,900	.....
England	239,400,715	.....	183,092,060	.....
France	413,676,438	$250,811,658	403,896,100	$245,324,900
Germany	217,930,000	.....	235,020,000	.....
Austro-Hun.	136,210,000	64,294,000	179,720,000	63,407,000
Netherlands	13,178,000	35,086,900	13,053,000	25,183,000
Belgium	19,209,000	.....	29,454,000	.....
Spain	42,028,000	56,811,000	44,597,000	54,448,000
Italy	60,675,000	10,320,000	60,295,000	10,995,000
Russia	451,710,000	.....	483,310,000	.....

The return for the Associated Banks of New York is of date July 26th; all the others are of July 15th, except the Bank of England and the Bank of France, July 29th; the Bank of Italy, June 20th; the Bank of Russia, June 16th–28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England and the Bank of Russia report gold only. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year up to July 15th are reported by Messrs. Pixley & Abell's circular as below:

	1896.	1897.	Changes.
India	£1,918,578	£2,847,700	I. £929,122
China	564,612	100,942	D. 463,670
The Straits	537,532	106,405	D 431,127
Totals	£3,020,122	£3,055,047	I. £34,925

Arrivals for the week this year were £39,000 in bar silver from Chile, and £137,000 from New York; a total of £176,000. Shipments for the week were £151,000 in bar silver to India.

The demand for Indian Exchange has been strong and all the Council bills offered, 25—lakhs—were, promptly taken up at an average of 15·19d. per rupee. The announcement that a new issue of rupee paper would be made was the chief cause of the demand.

The rise in exchange and the resulting fact that gold can be sold in India more cheaply—that is that a greater quantity of gold can be obtained for a given number of rupees—has lead to a considerable sale of gold in that country to native merchants and princes. For the week ending July 17th the shipments of gold from London to India amounted to $1,250,000, or more than in any week for a long time past.

Prices of Foreign Coins.

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

	Bid.	Asked.
Mexican dollars	$ .45¼	$ .47
Peruvian soles and Chilean pesos	.40	.43
Victoria sovereigns	4.88	4.90
Twenty francs	3.87	3.90
Twenty marks	4.78	4.80
Spanish 25 pesetas	4.78	4.85

Other Metals.

Copper.—The inactivity characteristic of the market during the last few weeks still prevails. Manufacturers, although somewhat busier, do not as yet show any inclination to provide for future supplies, but inasmuch as producers, with but few exceptions, show no disposition to market any metal at the lower values which buyers are trying to establish, prices have not yet perceptibly changed. Inquiry from abroad, which had recently fallen off, again shows a decided improvement; the shipments in that direction continue heavy and as long as these conditions prevail, prices cannot—notwithstanding the large production—experience much change. Although the kinds of copper which are speculatively dealt in abroad have not materially advanced, orders for the better grades of copper can now be secured on the other side at considerably higher values than has been possible of late. We quote: Lake, 11c.; electrolytic in cakes, bars or ingots, 10⅝@11⅛c.; cathodes, 10⅜@10½c., and casting copper, 10⅜c.

The foreign market, which closed last week at £47 15s. for g. m. b.'s spot, has since then experienced but narrow fluctuations, prices at one time receding to £47 12s. 6d., but closing to-day at £48 for spot and £48 5s. for three months prompt. For refined and manufactured we quote: English tough, £50 15s.@£51 5s; best selected, £51 10s.@£52; strong sheets, £58; India sheets, £53@£54; yellow metal, 4⅞d.

Tin.—The market was softer, almost throughout the week, in sympathy with the quotations cabled from London, where prices gave way in consequence of the heavy decline in silver, but with the latter improving somewhat, tin, too, regained part of the loss which it had suffered. The market closes with

Imports and Exports of Metals.

Port.	Week, July 22. Expts.	Week, July 22. Impts.	Year, 1897. Expts.	Year, 1897. Impts.
***New York.**				
Aluminum, boxes	.....	.....	1,965	.....
Antimony ore...short tons	.....	.....	.....	808
" regulus...casks	.....	.....	.....	471
Brass, old.....short tons	70	.....	408	160
Copper, fine.....long tons	$1,195	227	23,492	2,966
" matte.... " "	.....	.....	4,780	161
" sulphate " "	.....	.....	4,632	.....
Ferro-mangan'se " "	.....	.....	1,606	52
Iron ore " "	.....	.....	.....	9
Iron, pig, bar, rod " "	.....	92	6,736	2,667
" pyrites " "	.....	.....	.....	5,570
Lead, antimonial " "	.....	.....	.....	100
" bullion " "	746	1,103	22,175	45,157
Manganese ore " "	.....	.....	.....	3,545
Nails " "	.....	.....	150	.....
Nickel " "	4	10	775	35
Rails, old " "	.....	.....	5,785	.....
Spiegeleisen " "	.....	.....	9,123	11,462
Steel billets, rods " "	737	583	14,781	12,208
Tin " "	8	175	1,127	3,804
" dross " "	.....	.....	.....	41,793
" and black plates, boxes	.....	23,381	.....	160,145
Zinc .....long tons	.....	.....	1,119	.....
" dross " "	16	.....	164	.....
‡§**Baltimore.**				
Brass scrap	.....	.....	1	.....
Chrome ore.....long tons	.....	.....	10	5,511
Copper, fine..... " "	1,200	.....	23,202	27
" sulphate " "	30	.....	1,610	.....
Ferro-manganese " "	29	.....	3,293	295
Ferro-silicon " "	.....	.....	.....	69
Iron ore " "	.....	9,416	.....	161,131
" pig, bar, etc.	.....	.....	180	1,556
Lead " "	.....	.....	120	500
Manganese " "	.....	.....	.....	6,459
Spiegeleisen " "	.....	.....	.....	830
Steel " "	.....	750	2,710	3,250
wire.....bundles	.....	381	1,603	8,808
Tin.....long tons	59	441	770	5,744
" and black plates, boxes	.....	95	.....	18,727
Zinc.....long tons	.....	.....	63	48
" dross " "	.....	.....	129	115,202
††**Philadelphia.**				
Antimony.....casks	.....	.....	.....	2,712
Chrome ore	.....	.....	.....	300
Copper ore.....long tons	.....	3,565	.....	21,915
Ferro-manganese " "	.....	.....	.....	48
Iron ore " "	.....	4,300	.....	159,602
Iron pyrites " "	.....	.....	.....	1,500
Manganese ore " "	.....	.....	.....	76,865
Tin " "	.....	50	.....	448
" and black plates, boxes	.....	.....	.....	.....

*New York Metal Exchange returns. †From our Special Correspondent. †† Week ending July 23. ‡Week ending July 29.

spot quoted at 13 90c., futures still remaining entirely neglected.

In London the market last week closed at £61 17s 6d., declined since to £61 7s. 6d., but closes today at £61 15s. for spot and £62 5s. for three months prompt.

Lead.—The excitement of last week has given way to extreme dullness without, however, visibly affecting values. Consumers still show a good deal of reluctance to enter the market, but refiners on the other hand adhere to the policy of either not quoting at all, or name prices indicative of a further advance. Consumption, especially in the West, shows an improvement, and with the certainty that at present prices ruling here, lead from foreign ores will have to be exported; and, furthermore, in view of the decline in silver, which will ultimately affect the production of lead unfavorably, it seems as though a higher level would be permanently established. At the close, offerings, particularly from second hands, are more plentiful than they have been, the best bids being 3·80c

The foreign market has scored another advance, the quotation for Spanish being £12 10s., and for English £12 12s. 6d.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is quiet but reasonably steady at the late advance. Missouri brands are selling in a limited way at 3·65 @3·67½c. and argentiferous corroding brands at 3·70c. There appears to be a disposition on the part of consumers to refrain from buying as long as possible and quite a number of them are firm believers that this late boom will not last.

Spelter is not quite so firm, the price in New York having receded to 4·30c., and in St. Louis to 4·10c. Production is constantly on the increase, and consumption not nearly sufficient to absorb the supplies, a large percentage of which has to be exported at considerably lower figures than can be realized at home.

The foreign market, too, is somewhat easier, closing at £16 18s. 9d. for good ordinary brands, and 2s. 6d. higher for specials.

Antimony is firmer, owing to the fact that no more of this metal can now be imported except on payment of a duty of ¾c. per lb. Quotations have advanced to 7¾c. for Cookson's; 7¼c. for Hallett's, and 7c. for Japanese.

Nickel.—Business continues quiet, and no change in prices can be reported. We quote for ton lots 33½@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size of order. The London price is about on a parity with New York, allowing for the duty of 6c. per lb.

Platinum.—Prices are firm at $14@$15 per oz. New York. The London quotation is 55s.@56s. 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, 54c., 55c. and 56c. per gram. Wire and foil are 52c., 53c. and 54c. per gram.

Quicksilver.—The New York quotation has been reduced to $39 per flask. The London price is £7 5s. per flask, with £7 2s. 6d. quoted from second hands.

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

Aluminum:		Bismuth, ₽ lb.	$1.50@$1.80.
No. 1, 98% ingots, ₽ lb	37@43c.	Phosphorus, ₽ lb.	50@55c.
No. 2, 94% " "	31@34c.	Tungsten ..... ₽ lb.	70c.
Ingots, scrap, "	30c.	Tungstic acid.....	45c.
Rolled sheets, "	46c. up	Ferro-tungsten, 63%	60c.
Alum.—Nickel, "	35@40c.		

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

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....	11·48	10 98	13·31	13·34	3·32	3·07	4·13	4 07
May.....	11·03	11·15	13 44	13 51	3 26	3·03	4 21	3·98
June	11·11	11 67	13·77	13·59	3 33	3·03	4·21	4 10
July.....	11·11	11·40	13 89	13·63	3 72	2 96	4·32	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	.....	3·93
Dec	.....	11·28	.....	12·96	.....	3·04	.....	4·14
Year ..	.....	10·88	.....	13·29	.....	2·98		3·94

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements see page 150.)

New York. July 30.

Heavy Chemicals.—Once more importers and dealers are looking satisfied now that the tariff business is settled. In many cases prices have advanced in consequence of the new bill, but the articles that are manufactured here still retain their former valuations. For alkali there is a fair demand for spot supplies. Bleaching powder is somewhat quiet and the same may be said of the other chemicals.

Quotations generally are about as follows: Caustic soda, 60%, $2.22½@$2.42½; 70@76%, $2@$2.25 per 100 lbs. Alkali, 58%, 60c. for 50-ton lots and over, and 70@80c. for smaller quantities; 48%, $1@$1.20 for jobbing lots. Carbonated soda ash, 48%, 90@95c. per 100 lbs: 58%, 75@80c. per 100 lbs. Bleaching powder, prime brands, $1.80@$2: Continental F brand, $1.85@$1 90; other brands, $1.80@$2 per 100 lbs. Bicarb. soda, English, 1·75@2c. per lb.; American, bulk, $1.50@$2.50 per 100 lbs., according to brand. Sal-soda, English, 62@67c per 100 lbs.; American, 55@60c. (in barrels), and 75@80c. in kegs. Chlorate of potash, $9.50@$10 per 100 lbs.

Acids.—There has been a moderate volume of business done in acids this week. Some mills have made good purchases of oxalic acid, while acetic is moving principally in a jobbing way. Sulphuric acid has been almost featureless this week. Our quotations show little change. They are per 100 lbs. in New York and vicinity in lots of 50 carboys or over 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 ex-dock and $7.25 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.—This market is very dull at present but prices are not receding. There are four vessels on the water to this port, and they will land about 3,500 tons of crude sulphur. Quotations are $20.50 for best unmixed seconds and $19.75 for thirds.

Fertilizing Chemicals.—A satisfactory amount of business has been transacted this week, principally for Southern consumption. Generally speaking the market is firm and the tendency is toward higher prices. Quotations are as follows: Sulphate of ammonia, gas liquor, $2.10 for shipment, and $2.20 for spot; bone, $2@$2.05 per 100 lbs. Dried blood, high grade Western, $1.75@$1.80 per unit New York; $1.60@1.65 per unit 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, 80c. per unit. Acidulated fish scrap, $8.50@$9, and dried scrap $17.50@$18, f. o. b. fish factory. Tankage, high grade, $14@$14.50 per ton; concentrated, $1.35@$1.40 per unit, f. o. b. Chicago; New York $18.50; low grade, $16.50@$17. Bone tankage, $19@$20; ground bone, $21@$23. Bonemeal, $19.50@ $22 50.

Sulphate of Potash: 90%, New York and Boston, $1.99½; Philadelphia, Baltimore and Norfolk, $2.01; Southern ports, $2.03.

Double Manure-Salt: Quotations for 48@49%, less than 2½% chlorate, are 1·01@1·01½c., to arrive, and 1·02@1·03c. on spot: basis of 48%. High grade, 90@ 98% sulphate of potash, 1·96½@2·00½c. to arrive; basis of 90%. In bulk 24@36%, 56½@37½c. per unit O. P.

Muriate of Potash: We quote: New York and Boston, 1·75@1·78c. Philadelphia and Norfolk, 1·76@1·79½c.; Charleston, Savannah, Wilmington and New Orleans, for 80@85% basis of 80%, 1·78½@ 1 81c. 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, $8.80 @$8.90.

Nitrate of Soda.—A quiet market ruled this week, but remains firm at 1·67½c. per lb.

Liverpool. July 21.

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

The chemical market is quiet generally, while prices are practically without change.

Soda ash is rather dull at late rates. Quotations vary considerably according to export market, and range for tierces may be called about as follows: Leblanc ash, 48%, £4 5s @£4 10s.; 58%, £4 10s.@£4 15s. per ton net cash; ammonia ash, 48%, £3 7s. 6d.@£4; 58%, £3 12s. 6d.@£4 5s. per ton, net cash. Bags are 5s. per ton under price for tierces. Special terms for American orders. Soda crystals are selling at from £2 7s. 6d. @£2 17s. 6d. per ton, less 5% for barrels, and 7s. less for bags, according to export markets. Special quotations for American business.

Caustic soda is in a firm position and spot range may be quoted as follows: 60%, £6 3s. 9d.@£6 5s.; 70%, £7 3s. 9d.@£7 5s.; 74%, £8 2s. 6d.@£8 5s.; 76%, £8 15s.@£9 per ton, net cash.

Bleaching powder is in retail request and is nominally quoted at about £6 12s. 6d.@£6 17s. 6d. per ton net cash for hardwood packages as to destination.

Chlorate of potash is quiet, at nominally 4d. per pound.

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

Sulphate of ammonia is without special feature and is quoted at £7 16s 3d.@£8 per ton, less 2½% for good gray 24%@25% in double bags f. o b. here, as to quality.

Nitrate of soda is retailing at from £7 17s 6d.@ £8 per ton, less 2½%, for double bags f. o. b. here, as to quantity and quality.

Carb. ammonia, lump, 2¾@3d. per lb.; powdered, 3d.@3¼ per lb., less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 146, 147 and 148 of mining stocks listed and dealt in at:

Aspen.	Helena.	London.
Baltimore.	Los Angeles.	Mexico.
Boston.	New York.	Paris.
Butte.	Philadelphia.	Rossland.
Cleveland.	Pittsburg.	Shanghai.
Colo. Springs.	Salt Lake.	Valparaiso.
Denver.	San Francisco.	

New York. July 30.

The local mining market has not been active this week, and business that has been reported was confined principally to a few stocks. On the Consolidated Stock and Petroleum Exchange the Comstocks have shown some fluctuations, and among these Sierra Nevada was most in favor. This stock advanced to $1.60 from 78c. last week on the strength of some good low-grade ore being found on the property.

At the Mining Exchange several changes took place this week. All the old officers, with the exception of W. C. Dornin, the president, have now retired and have been replaced by new men. The changes are: George A. Drake, vice-president, in place of Louis Ross; J. G. Dale, treasurer, in place of C. M. Stead; G. D. Hedian, secretary, in place of W. C. Dornin, Jr., and Bruce E. Chilton, chairman, in place of John Gray. A meeting of the members was held on July 27th, at which action was taken on several proposed amendments to the constitution. One of the amendments was to the effect that no stock would be listed unless the company has actual possession of property. This applies especially to the Klondike companies that are asking for subscriptions to stock, the money to be used in exploring the district. Another amendment limits the membership of the exchange to 200 instead of 300 as heretofore. It was also decided to have three calls a day instead of two; at 10.15, 12:15 and 2 o'clock. A new member was elected in the person of L. A. May, of the firm of L. A. May & Company, of No. 1 Broadway, New York, a member of the New York Produce Exchange and of the Philadelphia Stock and Petroleum Exchange. Many applications were received by the listing committee from new Klondike companies. Among them was the Alaska-Klondike Gold Mining Company (Acme Development Company) with a capital of 500,000 shares at $10 par. This company was incorporated under the laws of West Virginia with James Rice, ex-Secretary of State of Colorado, president. The secretary of the company is Reginald Paris. Among the directors are: William Shaw, of Chicago; Edgar Titcomb, of Springfield; Ill., and George W. Morgan, who is now in Alaska looking after the corporation's interests. Several claims are said to be owned by this company, and one which is considered valuable is near Dawson, Alaska. The object of the company is to mine and sell its product, besides transporting that of other properties, and in general to act as a trading concern. Application has been made to the Crescent Steel Company for bids on five boats which the company expects to have built, and for which it will pay about $100,000. These boats will, it is said, be completed by the middle of November next, when it is expected they will be sent forward with stores, etc. Each boat will be 120 ft. long, and have a capacity of 100 tons, and will be guaranteed to travel 10 miles an hour. They will be of the stern-wheel type. Among the cargo will be a 10-stamp mill which will be erected on the property in Alaska, to treat the ore as it is mined. Each part of the boats will be interchangeable and they will be managed by three men from the Crescent works. It is said that stockholders have already come into the company's scheme and that they will aid in the work outlined by the company to make the enterprise a success. The headquarters of the Acme Development Company will be at Circle City, Alaska. The funds of the company will be deposited at the Knickerbocker Trust Company, of New York City.

Another concern which is soliciting subscriptions for its stock to enter into the Alaskan gold venture is the Yukon-Klondike Gold Mining and Trading Company. The capital of this company is $125,000, divided into shares of $5 each. The president is Col. R A. Ammon (of Mining Exchange fame), John F. Enright is secretary, and Louis A. May, treasurer. The announcement is made that this company is organized for the purpose of mining gold, and not for the purpose of selling stocks. The offices of this company are at No. 1 Broadway.

Two stocks have been withdrawn from the Mining Exchange list, Eagle and Russell. The former is a Colorado stock which has been in litigation between Dr. William Brandreth and Warner Miller. The latter is a North Carolina property, whose stock quotation has been lifted from about 15c. to 52½c. Dr. Brandreth, who is treasurer of the Eagle Gold Mining Company, stated that he did not see the justice in eliminating these two stocks, claiming that the Eagle during September, 1896, had treated 116 tons of ore at the mill from the first level which showed returns of $100, or an average of $8.60 per ton. He further contended that during the same month 75 tons of ore were treated at the Allegheny Mill from the first level also, which showed mint returns of $613, or an average of $8.07 per ton. At the end of the month Dr. Brandreth says the company struck $30 ore 50 ft. below the first level, and 5½ tons of this ore were sent to the San Miguel mill, which returned $135, or an average of $24.63 per ton. He also said

that William A. Farish made a very thorough examination of the property, and that he handed in a satisfactory report. About the Russell property Dr. Brandreth merely stated that the brokers on the Mining Exchange thought its real value to be 10c. instead of 52½c., at which the last stocks sold changed hands.

The Mining Exchange is looking with interest on these ventures, and the fact is that the existence of that institution depends upon the listing of new companies, as but few of the concerns in whose stocks it is now dealing have transfer offices in New York. It is feared by some that the harmony of the Exchange has been shaken by the recent change of management. However, we shall wait and see what impetus the gold craze in the North will give to speculation.

Boston. July 29.

(From Our Special Correspondent.)

The speculation in copper stocks has in a great measure subsided, although prices generally have been well maintained. The general stock market has absorbed the attention of operators and the coppers have been neglected. The two leaders in the market, Boston & Montana and Butte & Boston, have been only fairly active, the former selling down to $128½ at one time, and recovering to $133, the highest point for the week. Butte sold at $22⅛ early in the week and advanced to $23¼, with sales of about 15,000 shares, closing at $23.

Calumet & Hecla sold at $395@$396 and back to $395, with fairly good investment buying. Quincy has been dull, selling at $114@$113, ex-dividend. Tamarack sold at $127, but recovered to $130 on small sales. Osceola declined from $35 to $34, gaining $½ in later sales. Kearsarge sold ex-dividend of $1 at $18 and declined to $17½. There was some buying of Franklin at $14½ an improvement of $⅛. Old Dominion declined from $18½ to $18; to-day, on reports that the bonds for building the railroad had all been taken, the stock advanced to $19¼. There were some sales of Atlantic at $21 and also at $20. Tamarack, Jr., declined $½ to $17, but Wolverine was strong and advanced from $11¼ to $11¾. Centennial declined to $6½, gaining $⅛ in later sales. Arnold sold at $3½@$3 and Allouez at 50c. Tecumseh sold at $2, assessment paid.

The gold stocks were dull and showed but little change in prices. Gold Coins gained $½ to $3½, but lost it later. Pioneer was heavy and declined to $4¾, but later recovered to $5⅝. Santa Ysabel declined from $15 to $14¼, a small lot selling at $13¾. Merced sold at $8, same at last week.

3 p. m. There was a little more activity and firmer prices this afternoon. Boston & Montana advanced to $133¾, but lost the fraction later. Butte & Boston sold up to $23½, closing at $23¼. Old Dominion advanced to $19¾, but closed at $19¼. Tamarack sold at $130, and one share at $132. Tamarack, Jr., gained $1, selling at $18. Osceola was better and sold at $36¼ against sales at $34½ yesterday. Kearsarge advanced $½ to $18.

Salt Lake City. July 24.

(From Our Special Correspondent.)

King Jubilee has ruled magnificently in Zion throughout the week; the five days' gala celebration of the 50th anniversary of the arrival of the first pioneers in Salt Lake Valley is at an end, appropriately closing to-night in a blaze of pyrotechnic glory. Never were more gorgeous fireworks seen in the West. From the beginning of the semi-centennial jubilee, on Tuesday, the parades and all festivities fully came up to every reasonable anticipation, even to the weather, which continued cool and clear throughout. Under such surroundings it would be phenomenal had there been any particular movement in Utah mining shares, as the present is not a favorable era for active, wild speculation. Prices rule about steady, with light sales. Eastern inquiries continue to be noticeably few, though many investors show faith in the favorites and there is a quiet demand for several of the golds. Were it not for the weak silver market, all the best Utah stocks would quickly respond to any general business improvement, which the mines fully warrant. Most of the local transactions last week were for small lots—100 to 500 shares—unmistakably for holiday pocket money and in many instances a shade, or more, below ruling figures. Particularly is this true of Northern Light, offered this afternoon at 82½c. in 100 or 200 share lots, though a block of 1,000 shares cannot be had below 90c.

All threatening clouds of trouble over the wage cut in Ontario and Daly are dissipated. The vote of the miners on Wednesday to accept the reduction was final, though a few radicals urged hard to have the decision reconsidered. No friction over wages need now be looked for in any Utah district for a long period. Naturally, Ontario weakened somewhat, but should immediately recover and is liable to move higher. No dividend announcement is yet made. Daly likewise fell off from the same cause, while Daly West is firm and unchanged. Anchor was inactive and Silver King very strong with none on the market.

Sales of Mercur were made above $8, but to-day small lots can be had for $7.85. Geyser-Marion has announced the usual $9,000 dividend, payable July 30th. South Swansea has also just distributed its customary monthly premium—$7,500—among its share owners.

There were sales of Sacramento at last week's figures. Little Pittsburg grows in favor and scores an advance. The same is true of Sunbeam, which has moved up to 8½c. asked. Of the other stocks it can be said, generally, they will hold their own and there is nothing of moment to chronicle.

There has been a good deal of talk about Ajax, and possibly it is a shrewd guess, that, at the directors' meeting on July 31st, Geo. H. Robinson, Henry M. Ryan and William G. Nebeker will retire from the board, and Col. A. E. Wall, Henry and Clarence McCormick will be chosen.

San Francisco. July 24.

(From Our Special Correspondent.)

The market was very quiet at the opening this week and little business was done. The only strong point was in Sierra Nevada, and a general impression that a streak of good ore has really been found in this mine helped matters here considerably.

Later there was some improvement, and the week on the whole might be called fairly active. Prices were variable, however; the north end Comstocks generally showed a little advance at the close over the earlier quotations of the week, but the middle Comstocks declined a little, and the Gold Hill stocks were also off in price. There was no special reason for this in the weekly letters or otherwise, but buyers seemed to take no interest in anything outside of the north end.

Outside of the Comstocks there was no business, except a few sales of Standard Consolidated at about $1.55@$1.60.

Some closing quotations were: Consolidated California & Virginia, $1.35@$1.40; Confidence, $1.15; Sierra Nevada, 96@98c.; Challar, 75@76c.; Ophir, 70@71c.; Best & Belcher, 42@43c.; Gould & Curry, 34@35c.

The Cadmus Gold Mining Company of Nevada County has levied an assessment of 5c. per share, delinquent August 23d.

The annual meeting of the Eureka Consolidated Drift Mining Company has been called for August 5th.

The delinquency in office of the assessment of 2½c. per share on Thorpe Gold Mining Company stock has been postponed to July 31st, and the day of sale to August 21st.

A despatch from the office of the Consolidated California & Virginia Mining Company states that the output of the mine this week amounted to 31 tons of ore of the average assay value of $34 49 per ton. The output for the previous week was 35 tons of the average assay value of $38.75 per ton. The ore now being taken from the mine continues to come chiefly from narrow streaks, which are being followed in working upward from the end of the north drift from upraise No. 2, some 40 ft. above the sill floor of the 1,650-ft. level.

London. July 20.

(From Our Special Correspondent.)

The London mining stock market is suffering from the holiday spirit, and in all probability things will be quiet for a month or two. Though the amount of business is very small the South African section has kept strong and everything tends to prevent sellers from desiring to come forward. The messages from South Africa to private business houses that I have seen state that the report of the commission to inquire into the mining industry in the Transvaal is practically complete and that important concessions are pending. No public or official announcement on the question has been made, but the recipients of the private telegrams are acting on them and strengthening the market accordingly. The raising of new capital to extend the Bechuanaland Railway to Bulawayo has also had a strengthening effect, and many Rhodesian companies that have found the absence of railway communication a bar to their operations have commenced the consideration of a revival of their work.

The report of the Parliamentary committee on South African affairs has had no effect on the market, as nothing new was disclosed and nothing very sage was contained in it; in fact, the committee is made fun of by most people, both in the city and elsewhere. In spite of this chaff the committee has done the excellent service of taking the South African controversy out of the region of opinions and placed it within the circle of actual facts. Everyone knew or guessed what was the cause of the Jameson raid long since, but no one had any legal evidence to support his opinion.

The West Australian, Indian and other markets are quite dead and nothing is going on of any sort.

The chief attraction in the American section has been the circulation of rumors about the Klondike placer mines in Alaska and Canada. Of course, no reliable information has come to hand, but whatever does arrive is promptly made use of by the London companies exploiting the Yukon District.

Palmarejo has once more come to the front. It will be remembered that a few months ago the directors and shareholders took the bull by the horns and forced the resignation of Mr. Applegarth as director and Captain Drake as manager. A new manager has since been appointed, and he has inspected the property. He reports that the working has been conducted in a very inefficient manner and that a good deal of money must be spent in putting things straight, as well as in developing and prospecting. At the present time it does not appear that the mine can be worked at a profit and many economies will have to be effected.

A new company called El Mundo (Mexico) Gold Mining Company, Limited, has been formed and subscriptions to the capital are invited. The property consists of six claims in the Altar District, Sonora, Mexico, belonging to J. M. Zepeda and acquired by L. H. Manning and Brewster Cameron, of Arizona. No independent report is given of the property nor are the claims specified. The company is promoted by Todd & Stormont, of London. The capital is £100,000 and the purchase price £80,000, mostly in shares. The directorate is not particularly influential and the issue of the prospectus has no effect on the London market.

Paris. July 11.

(From Our Special Correspondent.)

The past week has been one of few events, and there is very little to be said of the stock market. In fact, the only changes of moment have been in other departments, chiefly in that of foreign securities.

The African gold stocks are stronger than they have been for some time, and are supported by a continued increase in production and reports of approaching reforms and economies in management. The disposition of French holders to sell has been checked a little, though many sales are still being made quietly.

In the copper stocks there is still an upward tendency, with one or two slight reactions in special stocks. I understand that a request has been made to list Anaconda stock here.

You will note a material change in the quotations of Rio Tinto. This is due to the fact that from this week the new shares only will be quoted. Each of the old 250-fr. shares is divided into two, one of preferred stock, which will carry a fixed interest, the other ordinary stock, whose dividend will vary, as heretofore, with the company's earnings. Each will have a par of 125 fr. The new quotation, therefore, will be for the half share.

The foreign merchandise trade of France for the six months ending June 30th is reported by the Ministry of Commerce as follows:

	1896. Francs.	1897. Francs.
IMPORTS:		
Food	507,691,000	444,756,000
Raw materials	1,195,162,000	1,226,337,000
Manufactures	312,659,000	309,897,000
Total	2,015,512,000	1,974,990,000
EXPORTS:		
Food	314,968,000	334,014,000
Raw materials	411,465,000	470,862,000
Manufactures	903,649,000	945,691,000
Postal parcels	77,334,000	82,427,000
Total	1,707,417,000	1,832,994,000
Excess, imports	308,095,000	141,996,000

The decrease of 40,522,000 fr. in the imports was accompanied by an increase of 125,577,000 fr. in the exports, the result being a diminution of 166,099,000 fr. in the excess of imports. The best feature in the return is the increase in exports of manufactures.

Our financiers are going to the seaside generally, and matters will be quiet for the next month. The world must wait while its owners amuse themselves.

AZOTE.

Rossland, B. C. July 21.

(From Our Special Correspondent.)

The great increase in the amount of shipping ore produced in the Trail Creek camp of late is not without a beneficial effect on those who have worked hard and legitimately to build up the camp and make it prosperous. The danger here, as elsewhere, lies in the tendency to project all kinds of absurd schemes as serious business projects, and capital is needed to take hold. It is unnecessary to say that these projects are more or less started by men without past experience, especially of the kind necessary to achieve success, but unfortunately not a few of the projectors cannot be classed as among the successful ones, but rather of the failures. The system of financiering stocks and properties here is very primitive and, of course, it has not been attended with much success. I do not refer to the reckless schemes of last year, but rather to those ventures which primarily had merit but which have been more or less tied up from inexperience and cupidity. No great change for the better has taken place since my last report.

MEETINGS.

Alice Mining Company, annual, at Silver City, Colo., on August 2d, at 2 p. m.

Calumet & Hecla Mining Company, of Michigan, annual, at 12 Ashburton Place, Boston, Mass., on August 18th, at 10 a. m.

Parrot Silver and Copper Company, special meeting, at Butte, Mont., on August 24th, at 11 a. m.

St. Elmo Mining and Milling Company, annual, at Deadwood, S. Dak., on August 2d, at 2 p. m.

LATE NEWS.

A despatch from Houghton, Mich., July 30th, says: "Five drill holes blasted in Six Mile Hill shaft yesterday broke seven tons of ground, over one ton of which was native copper. This is by far the richest strike of copper ever made, and has caused great excitement throughout the Lake Superior mining district."

STOCK QUOTATIONS.

NEW YORK.‡

NAME OF COMPANY.	Location.	Par val.	July 24. H.	July 24. L.	July 26. H.	July 26. L.	July 27. H.	July 27. L.	July 28. H.	July 28. L.	July 29 H.	July 29 L.	July 30. H.	July 30. L.	Sales
Alamo	Colo	1							04					.42	1,900
*Anaconda	Colo.	1												98	
*Anchoria-Le	"	1													
Annetta	"	1	.46	.42¾	.43	42	.43	.42¾	.43	.43⅝	.43⅝	.42¾	.43⅛	.43	8,650
Argentum-Jun	Nev.	5													
Barcelona	"	100													
Belcher	"	100													
Best & Belcher	"	100							55				.50		300
Brunswick	Cal	1	.12							12					1,800
Cannon Ball	Colo.	1			.01				.011	.0095	.01	.009			9,000
Catalpa	"	10													
Chollar	Nev	10			.20										200
Chrysolite	Colo	50													
Colombian G	R. of C	1													
Comstock T	Nev	100			.01										1,000
do. pref	"	100													450
Con. Cal. & Va	"	100	1.50												7,800
Creede & C. C	Colo.	1			.01½	.01			.02		.01½	.01			2,300
Cripple Cr. Con	"	1			.10				.10		.08¾	.08¼			
Crœsus	Colo	1													
Deadwood	S. Dak	25													
Eagle	Colo.	5													
*Elkton	"	1			1.50	1 00								.99	
Fanny B	"	1							.05				.05½		1,000
Father de Smet	S. Dak	100													
Favorite	Colo.	1		.05											
*Garfield Gro'sc	"	1													
Gold Cliff	"	1	.20				20				.20				370
Gold Coin	"	5													
*Golden Fleece	"	1				.2							.13½	.25	
*Gold, San Juan	"	1													
Gould & Curry	Nev.	100													
Hale&Norcross	"	100	.90												200
Homestake	S. Dak	100	35.00	31.00											65
Horn Silver	Utah	25													
Iron Silver	Colo.	2													
Isabella	"	1	.30												400
Jack Pot	"	1			.05½	.06¼	.06	.05½	.05½	.05½	.06	.05¾	.05½	.05	12,200
Japan	"	10													
Jefferson	"	1	.08¼	.08	.08		.08¼	.08	.08		.08¼	.07½	.08¼	.08	6,800
King & Pemb	Ont	10	.28												100
Lacrosse	Colo.	10													
Leadville Con	"	10													
Little Chief	"	50													
Mercur	Utah	25													
Mexican	Nev.	10							.44						300
Miami	Colo	1	.33¾	.33½	.34	.33½	.34	.33⅜	.34	.33⅜	.34	.33⅜	.34¼	.33⅜	10,900
Mollie Gibson	"	5			.50						.35				400
Moulton	Mont	5													
Mt. Rosa	Colo.	1	.09				.10		.09		.09				2,600
New Haven	"	1			.02										3,000
Old Dominion	Ariz.	25													
Ontario	Utah	100			6 50	5 50			6.00						92
Ophir	Nev	100													
Pharmacist	Colo	1			.10		.11	.10	.10		.10		.16		5,100
Phœnix Con	Ariz.	100			.07				.07		.07				2,200
Plymouth	Cal	10					.20								300
Portland	"	1									.81				400
Potosi	Nev.	100											.50		130
*Quicksilver	Cal	100	2.50	2 00	2.50	1.00	2.50	1.00	2.50	1.00	2.50	1.00			
*do. pref	"	100	8.00	7 00	8.00	7.00	8.00	7.00	8 00	7.00	8 00	7.00			
*Red Mountain	Colo.	5	.12	.10	.20	.10							.19	10	
*Russell	N. C.	1	.55												
Savage	Nev.	100											.36		400
Sierra Nev	"	100	1 05				1.50		1 60						8,000
Specimen	"	1	.03						.02½	.02					3,500
Standard Con	Cal.	100													
Syndicate	Colo.	100							.06				.06		500
Templar	"	1													
*Union	"	1				.14								.17	
Union Con.	Nev.	100					.50								500
Utah Con	"	100					.40								500
Victor	Colo.	5													
Work	"	1											.05		800
Yellow Jacket	Nev.	100					55								300

COAL AND INDUSTRIAL STOCKS.

American Coal	Md.	25	130	120			130				120		20		
*Col. C. & I. Dev	Colo.	100			1	¾	1	½	⅝	½	⅝	½			
Col. Fuel & I	"	100	.85¾				1⅜		1.85¾		1.93¾	1.85¾	20		3,573
Col. & H.C. & I	Ohio.	100									49¾	45¾	55¾		1,000
*Con Coal	Md.	100	38		38		38		38		38				
*Edison E I of B	N Y	10			110		110				108¾				
do. E I of N.Y	"	100	120	119½	121	120	121¼		122		122¼				654
General Elec	"	100	35	35	34¾	33¼	34¼	33¼	34¼	34	26¾	24½	35¼		20,263
Illinois Steel	Ill.	100							34						100
*Maryland C. pr	Md.	100	60	40	60	40	60	45	60	45	60	45			
Minnesota Ir	Minn	100							58		59				211
National Lead	N. J.	100	35¼	34¾	35⅞	34¾	35¾	33¾	34¾	33¾	34⅜	34¼	34½		11,606
*New Central C	Md.	10	7	4	7	4	7	5	8	5	8	5			
New N.S.& D.D	Va.	100													
Oregon Impr	Ore.	100													
*Pennsylv'nia C	Pa.	100		325		330		320		320		320			
Penn steel	"	100													
‡Standard Oil		100	310†	309	311	310	310†	309	310	309	309	307			
Tenn C., I.& R.R.		100	25	24¾	25	24	24⅞	24⅝	25½	25	26⅛	25¼	25⅜		12,812
Worth. Pump	N. Y	100													
*Worth P., pref	"	100	84	80	84	80	84	80	84	83	84	80			

‡Official quotations. New York Stock Exchange, mining, 2,057 shares; other stocks, 50,419 shares; Consolidated Stock and Petroleum Exchange, mining, 2,500 shares; Mining Exchange, 62,959 shares. Total shares sold, 1,4,955 * Bid and ask quotations. † Ex-div.

PHILADELPHIA, PA.†

NAME OF COMPANY.	L'cation.	Par Val'e	July 22. H.	July 22. L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	July 26. H.	July 26. L.	July 27. H.	July 27. L.	July 28. H.	July 28. L.	Sale
Cambria Iron	Pa.	50	36 00	34 00	36 00	35 88	36.50		38 00	36 00			36 50		1 015
Choc.&Gif.Ctfs	I T.	50	9.00	8 65	9.00	8 75	8 88		8 88	8 75					1,342
Conn'is.Gas C	Pa.	5													
Hunt & Br.Top.	"	50													
" pref	"	50											45.00		50
Penn.Gas Coal	"	50													
*Pa.S'ltMfg.Co	"	50		103		.03		103		103					
Penna. Steel	"	100							26.00						15
" pref.	"	100													
UnitedGas Im	Can.		74 00		74.00		74 00		74 00	73.88			74.50	74 00	1,151
Welsb.of Can	"	5													
Welsb.Com'l	Pa.	100													
" Com.pr	"	100											67 00		76
" Light	"	100	44 88		45 00	44.88	45 50	45 25					47.50		568
*West. Coal	"	50	50.00	49.00	50 00	49 00	50 00	49 00	50.00	49.00					

† Official quotations Philadelphia Stock Exchange. *Bid and asked quotations ‡ Ex-div. Total sales, 4,257.

PITTSBURG, PA.* Week ending July 28.

NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	Selling price	NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	Selling price.
Allegheny	Pa.	$10	5 ½	53		N.Y. & C. Gas C.	Pa.	$50			
Carborundum	"	100				Peoples' Nat. Gas.	"	50			
Chartiers Val.	"	10				Peoples' Pipeage.	"	25	14	14½	
Enterprise Mg	Colo.	5				Pennsylvania Gas	"	50		6	
Lustre Mg.	Mex.	10				Philadelphia Gas	"	5	18¾	19⅛	
Mansfield Coal	Pa.	50				Silverton Mg	Colo.	10			
Manufact. Gas	"	50				Wheeling Gas	W.V.	50			

* Official quotations Pittsburg Stock Exchange.

BOSTON, MASS.‡

NAME OF COMPANY.	Location.	Par val.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	July 26. H.	July 26. L.	July 27. H.	July 27. L.	July 28. H.	July 28. L.	July 29. H.	July 29. L.	Sales.
Ætna Con., q	Cal	5	4.00	3.50	4.00	3.50	4 00	3 50	4.00	3 50	4 00	3.50	4.00	3.50	
Allouez, c	Mich.	25							.50						50
Anaconda, c	Mont.	25													
Arnold, c	Mich.	25							3.50				3.50	3 00	30
Atlantic, c	"	25	21.00	20 25	20.00										120
Bonanza	Colo.	10													
*Bost. & C.C., g	"	1		.17		.10		.10		.10		.10		.10	
Bost.&Mont,gsc	Mont.	25	132¼	129½	132¼	131½	131½	131¼	131	128½	132¼	130	133¾	131½	9,295
Butte & Bost., c	"	25	23 00	22.13	23 25	22 75	23 00	22 38	22.50	22.00	23.25	22 63	24.63	22.75	10,999
Cal. & Hecla, c	Mich.	25	395		390½		395	390	395	392	395	392	395		195
Catalpa, s l	Colo.	10													
Centennial, s	Mich.	25	7 00	6 63	6.75	6 50	6.75	6.63			7.00	6.63	6 88		1,250
Central, c	"	25													
Dominion Coal	N. S...	100	11 25	11.00	11.50	11.25	11.50	11.00	11.50	11.00	11.00		11 50	11.50	4,158
do. pref	"	100					83.50		83 00				83 00		125
Franklin, c	Mich.	25	13 00								14 50				150
Gold Coin, g	Colo.	5	3 13	3 00	3 50		3 50				3 25		3.13	3.00	3,245
Humboldt, c	Mich.	25													
Illinois Steel	Ill.	100													
Kearsarge, c	Mich.	25	18 75		18¾	17 50	18.00		18.00	17.50			18.00	17.25	996
Lake Sup. Iron	"	25													
Merced, g	Cal.	15	8 00							8 00					225
*Napa Con, q	Cal.	7		6 50		6 50			6 50		6.50			6.50	
National, c	Mich.	25													
Old Dominion, c	Ariz	25	18.50	18 00			18 25	18.00	18 50	18 00	19.00	18.50	19.63	18.50	2,670
Osceola, c	Mich.	25	35.00	34.5	35 00	34.50	35.00		34 50	34.00			36.50	35 0	1,045
Pioneer, g	Cal.	10	5 00		5 00				5. 0	4 75	5 38	4 88	5.63	5 25	1,425
Quincy, c	Mich.	25	114⅜		114⅜		113⅜				114	113			109
Ridge, c	"	25													
San. Ysabel, g	Cal.	5	14 25				14.25				13.75		14.00		125
Tamarack, c	Mich	25	130	127			149				130		132	130	107
Tamarack,Jr.,c	"	25	17 50	17.00			17 50	17.00					18.00		370
Tecumseh, c	"	25	1 00		1 00						2.00				350
Wolverine, c	"	25	11.50	11.38			12 00	11 50	11.25		11 75	11 25	11 75	11 25	910

‡ Official quotations Boston Stock Exchange. *Bid and ask quotations. Total sales, 37,935. ‡Ex-dividend.

BALTIMORE, MD.* Week ending July 29.

NAME OF COMPANY.	Location.	Par value	Bid.	Ask.	NAME OF COMPANY.	Location.	Par value.	Bid.	Ask.
Atlantic Coal	Md.	$10			Howard C.&C	Md.	$5		
Big Vein Coal	"	10			Newburg Orrel C.	"	25		
Consolidation Coal	"	10	38¾	39¾	Silver Valley	N. C.	5		
Georges Creek Coal	"	99		106					

*Official quotations Baltimore Stock Exchange.

CLEVELAND, O.*

NAME OF COMPANY.	Par value.	July 23. Bid.	July 23. Ask.	NAME OF COMPANY.	Par value	July 28 Bid.	July 28 Ask.
Aurora	$25		$4	Lake Superior	$5	$18	$20
Chandler	25	$35	40	Minnesota	100	54	57
Cleveland-Cliffs	100	28	32	Pittsburg & L'ke Angeline	25	60	70
Jackson	25			Republic	25	8	10

*From our special correspondent.

ASPEN, COLO. July 23.

NAME OF COMPANY.	Location.	Capitalization	Par value.	Quotations. Bid.	Quotations. Ask.
Agnes C	Manitou, Colo		$1.00		
Alta Argent	Aspen	$2,000,000	1.00	$0.03½	$0.03¾
Argentum-Juniata	"	2,500,000	2.00	.41	42
Ascen Contact	"		5.00		.13
Aspen Deep	"		1.00	.02¾	.03¼
Aspen Mining and Smelting	"	2,000,000	10.00	1.20	1.25
Bankok-Cora Beli	Leadville	60,000	.00	.02¼	.02¾
Best Friend	Aspen		1.00	.01½	.02
Bi-Metallic	"		1.00	.00¾	.01¾
Bushwhacker	"	2,000,000	1.00	.04	.05
Della S. Consolidated	"	1,000,000	1.00	.20	.25
Gold Valley Placer	"		1.00	.01	.01½
Homestead	Rapid City, S. D.			.08	.09
Ingersoll	Neihart, Mont			.02	.02½
Little Annie	Aspen, Colo			.01½	.02
Mineral Farm Consolidated	"		1.00	01	.02½
Mollie Gibson Consolidated	"	5,000,000	5.00	.50	.50¾
Roaring Fork	"	3,000,000	1.00		.12
Sheep Mt. Tunnel	"	2,000,000	1.00	.01¼	.01¾
Smuggler	"	1,000,000	1.00	.60	.62
Tenderfoot Consolidated	"	2,000,000			.00¾
Union Leasing & Mg	Leadville, Colo	500,000	1.00	.03	.04

COLORADO SPRINGS, COLO.‡

NAME OF COMPANY.	Par val	July 19. H.	July 19. L.	July 20 H.	July 20 L.	July 21 H.	July 21 L.	July 22 H.	July 22 L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	Sales.
Alamo	$1					.03	.03							2,000
Anaconda	5					4½	.44	4.4½				.45½	.45	10,019
Arg'ntumJ	2	.39	.38¾	.40	.39½	.41¼	.40	.41		.40¾	.37	.42½	.40¾	65,000
Banner	1													
Bob Lee	1	.006						.0 6				.006	.005	2,000
C O. D	1			.02										1,000
Cr. & C. C.	1					.02¾								1,000
C. C. Con.	1			.09¾						.09¾	.09¼			7,245
Des Moines	1													
Elkton	1	1 03½	1.02	1.05	1.04½	1.05	1.04¾	1.05		1 05	1.04½	1 04		19,400
Fanny R	1			.12½		.18	.17¼	19¾	.19	.20½	.20	2.3	.0	30 500
Favorite	1			.04¾										3,000
Findley	1													
Franklin	1			.003										2,000
Gold Fl'ce	1													
Gold & Gl.	1													
Hayden G	1													
Isabella	1			.30½	.30	.3.½		31½	3.3/8	31	.30½	.30⅜		27,000
do.stamp.	1			.29¼										500
Jack Pot	1			.05¾	.05⅜			05⅜	.05¾	.05½		.05½		9,000
Lillie	1				.16									400
Magnet R	1									0 1½	.01⅜			3,000
Marion	1									.0 3				10,000
Matos	1													
Mollie G	1			.54¼	.52⅜	.6	.51½	54½	52½	52	5.¾	.49½	47	33,250
Moon-A'c'r	1			.61	.57½			66	.63					1,000
Mt. Rosa	1	.03	01¾			.07¾	.07⅝							3,000
NewHaven	1			.01¼		.01⅜				.01¾				10,000
Oriole	1													
Pharmacist	1			.09¼	.09	.09¾	.09¼	.09¾	.09¼			.09¾		25,500
Pilgrim C	1					.01								1,000
Portland	1	.75		.77½						.76		.75	.74½	2,400
Silver Gold	1													
Specimen	1			.03¾		.03¾				.03¾				7,500
Theresa	1	.05								05⅞				2, 00
Trachyte	1					.01						.01		1,5 0
Union	1			.13¾	.13¼	13¾	.13½	.14¼	.14	.14¾	14	14¾	.14¾	29 500
Work	1			.01¾		.04¾								3,000

‡ Official quotations Colo. Springs Mg. Stock Assoc. Total shares sold, 316,714.

STOCK QUOTATIONS.

DENVER, COLO.‡

NAME OF COMPANY.	Par val.	July 19. B.	July 19. A.	July 20. B.	July 20. A.	July 21. B.	July 21. A.	July 22. B.	July 22. A.	July 23. B.	July 23. A.	July 24. B.	July 24. A.	Sales
Adelie C	$1	.005	.....	005	.....	.005	.....	.....	.....	0 5½	.007	.005½	008	2, 00
Ætna Gold.	1	.....	.003	.003	0 3½	.....	.....	0 3	.03½	.003	.03¾	003	.03¾	4,000
Alamo	1	.02½	.03¾	.....	.....	2¾	.03½	03½	.....	.....	.....	.....	.....	1,000
Anac'da G.	1	.42½	47	43¾	.44	.44	.....	46	.....	45	.....	45½	.46½	500
Aola	1	.010	.014¾	.010¼	.0 3½	01¼	.....	010	.....	.010¾	011	010¼	011	8,000
Arg. J.	1	.38	41	38	.39½	.41	.....	40½	.41½	.41	.41½	41	.....	3,800
Big Johnny	1	.003	.004	.003	004	.003	.003¾	.003	.....	.003	.....	.0023¾	0 3¾	5,7 0
Blue Jay	1	.....	.....	001	.....	001	.....	.00	.....	001	.....	0 0¾	0 1½	8,000
Bob Lee	1	.0055¾	.....	.0 5¾	.....	005	.....	0 5½	.06½	006	.....	.005½	.006	24,000
Cannon B	1	.006	.....	.005	.....	005¾	.006½	005	.005	006	.....	.006	010	6,000
Colo Giant.	1	.008	.009	.007½	0 0	0 8	.010	.008	.008¾	007½	.009	007½	009	7,00
C. K. & N.	1	.009	.....	.008¾	.....	.009¼	.....	.0085	.009¼	.009½	.009½	0 9¾	.....	2,5 0
*C. C. Con.	1	.....	.....	.....	09¼	.....	.093⅝	.....	.09¼	09	.09⅝	.9¼	10	.....
Dictator	1	.....	.....	.001	.....	.003¾	.01	.....	.....	00¾	.001	.0 3¾	.002	1,0 0
*Dixie	1	.005¼	.00¾	005¾	.00¾	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eclipse	1	.....	.....	00	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
*Elkton	1	1 00	1.02½	1 02	1.10	1.01	1.06	.....	.....	1 04	1.06	1 00	.....	.....
Finance	1	.003¾	.....	003½	.....	.003	.00 3¾	.0035¾	.....	0035¾	003¾	.004	.0043¾	28,000
Garf. Gr	1	.....	.....	.00 3¾	.043¾	04	.....	.043¾	.....	.....	.....	.01¾	.....	4 0
*Gene Field	1	.001	.002	001	0013¾	.....	.....	.....	.....	.....	.....	.001	.0013¾	.....
Geo. Wash.	1	.002¾	003¾	002½	.003¾	003	.....	.003	.003¾	.003	.003¾	0 3	.003¾	7,000
*Gold Coin	1	.58	65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Field	1	.....	.....	001	.0013¾	.003¾	.....	.001	.....	.....	.....	.003¾	.0013¾	1,000
*G. Fleece	1	.....	.....	.....	.....	.....	.....	.....	.....	19	.20¾	.....	.....	.....
*Gold & Gl	1	.....	.....	.....	05	.....	.....	.....	.....	.....	.....	.....	.....	.....
G Queen	1	.003¾	.00¾	.005¾	.....	.....	.....	.003¾	.00¾	005¾	.....	0 3¾	.001	1,000
GoldStand	1	.03¾	.....	.033¾	.03¾	03	.033¾	.033¾	.04	.033¾	.03¾	.033¾	.03¾	23,300
Gregory	1	.04¾	0 5¼	.005	.005¾	.005	.....	.005	.....	.005	.....	.005	.0054	199,100
" Leasing	1	.1	12	.11¾	.02¾	.....	.....	.013¾	.....	.01¾	.02¾	.01¼	.02¾	5 0
Hansel	1	.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15,0 0
Henrietta	1	.003¾	.....	.03¾	.07	.03¾	.....	.....	.....	.....	.....	.....	.....	10,00
Illinois	1	0 6¾	.....	0 6¾	.....	0.5¾	.07	.005¾	007	006	.....	006	.....	12,00
insley	1	.03¾	.0043¾	003	.0043¾	0 3¾	.0 4¾	.0043¾	.....	.0043¾	0 6	.0043¾	.....	4, 0
Iron Chief	1	.....	.....	.03¾	.043¾	.0 3¾	.0 4¾	.0043¾	.....	.0043¾	.006	.0043¾	.....	1,000
Isabella	1	.30	.30¾	.30¾	.3 ¼	.31	.....	3	.....	.....	.....	.30	.31	4,0 0
*Jack Pot	1	.05¾	.06	.05	.05¾	.0 3¾	04	05½	.06	.05¾	.....	.....	.....	.....
Jefferson	1	.....	.....	.03¾	.....	.....	.09	.....	.08	.....	10	.07	.07¾	1,000
Kaffirs	1	.004	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25,0 0
Kimberly	1	.04½	.....	04	.....	03½	.04½	.03¾	.....	.....	.....	.03½	.....	3,00
Ladessa	1	.....	.....	.02¾	003	.....	.....	.....	.....	02¾	.....	.....	.....	1 000
*L. Dorrit	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 1¾	.....	.....
Mable	1	.....	.....	.....	.....	.0 3¾	.....	.....	.....	.....	.....	.....	.....	1,400
*Magnet R.	1	.....	.....	.....	.....	.....	.....	.....	.....	.01¾	.0 ½	.....	.....	.....
*Miliona're	1	.....	.....	.00¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mol ie Gib	5	.70½	53	.54¾	.55¾	.56	.....	.....	.55	.51¾	.....	.49¾	.49¾	2 700
*Monon	1	.....	.....	.00¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Moon-A	1	.....	.....	.51	.....	.....	.....	65	.75	.....	.....	.....	.....	00
Mt. Rosa	1	.....	07¼	.04¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,0 0
Nugget	1	.08¾	.10¼	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Old Gold	1	.05	.....	.0 4¾	.005¾	.0 5	.....	00 3¾	.....	.005	.005¾	005	.....	39,000
*Peoples	1	.01¾	.01¾	01¾	.02	.01¾	.03	.01¾	.02	.....	.....	01¾	.....	.....
Pharmac't	1	.08¾	.....	08¾	09	08¾	.09¾	.....	.....	.....	.....	.....	.....	1,0 0
Pine Creek	1	.....	.....	0 5	.....	.....	.....	.....	.....	.....	.....	.0 6	.....	11 000
Portland	1	.71	.73¾	.73	.76	75	.....	.70	76	.71	75	70	.74¾	200
Puritan	1	.02	.03	002¾	.....	.002¾	.003	.002½	.003	.002½	.03	.....	.....	1,000
*Q. Victoria	1	0 1¾	.002½	.01¾	.02½	01¼	.....	.0 1¾	.....	.001¾	.02½	.01¾	.....	.....
Reno	1	.01¾	.02¾	01½	02	.....	.....	.01½	02	.....	.....	.0 ½	.....	.....
Royal Age	1	.02½	.....	.002¾	.....	.02½	.002½	.0 2	.02¾	002	.002½	0 2	.0 2½	13,000
*sacr'm'nto	1	.02½	03	.02¾	.03	.02¾	03	.02¾	.04	.03	.03	.02¾	.03	.....
Santa Fe	1	.00½	.02½	.01½	.0 1¾	.01¼	.....	.0 1¾	.01½	.0 ¼	.0 1¾	.....	.....	2,000
*Senator	1	.....	.....	.....	.....	.....	.....	.00¾	.....	.00½	.....	.....	.....	.....
*sentinel	1	.001¾	.0 2½	.001¾	.002½	.001¾	.002	.001¾	.0 2	.001¾	0 2	.001¾	.002½	.....
Seven Hills	1	0 4½	.....	.0 3¾	0 4¾	.....	.....	.0 4¾	.....	.003¾	.003¾	003	.....	1,000
Tamarack	1	.02½	.03	0 3½	.....	.02½	.04	.02¼	.03	.....	.....	02½	.03	25,000
Three H's	1	.002½	.....	.002½	.003	002¾	.....	.0 2	.003	.002	.002¼	0 2	.002¾	10, 0
*Un'onGold	1	12¾	.13¾	.12½	.13¾	.13¾	.13¾	.13¾	45½	.14¾	.14¾	.14½	.14½	.....
*Unity	1	.....	.....	.001¼	0 2¾	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Va. M	1	.....	.....	03	.....	03¾	.....	03	.03¾	.02¾	.03¾	.3	.03¾	.....
W. Cr. Con.	1	.....	.00¾	0 ¾	.00¾	0 4¾	00¾	0 4¾	.00¾	.00¾	.....	.00¾	.....	120,000
Wa. of F.C.	1	.....	.....	.003¾	.....	.003¾	.....	.....	.....	.....	.....	.00¾	.....	1,0 0
*Work	1	.....	.....	.....	.....	.04¾	05	.....	.....	.....	.....	.....	.....	.....

‡Official quotations Colorado Mining Stock Exchange. *Bid and ask. quotations. Total shares sold, 672,700.

BUTTE, MONT.

July 16.

NAME OF COMPANY.	Par value.	Bid.	Ask.	NAME OF COMPANY.	Par value.	Bid.	Ask.
Alice, g. s	$25	$0.70	$0.75	Havana G & S. M	.....	$0.50	$0.55
Am. Dev. & M.	1	1.00	1 75	Hope (Granite Co.)	$10	1.50	2.00
Bald Butte	1	.80	1 0	Iron Mtn, s. l	10	.35	.38
Bi-Metallic. g. s	25	1.80	1.85	Merrill Gold	1	.....	.....
Combination	10	.20	.25	Moulton	5	.30	.25
Con. Tiger & Poorman	1	.30	35	Potosi	.....	.....	.05
Elizabeth	.....	.....	.....	Royal Gold	.....	15	.16
Exemption	.....	.....	.05	Southern Cross	.....	.....	15
Granite Mtn., g. s	25	1.00	1.10	Sunrise	.....	.....	.20

HELENA, MONT.* Week ending July 21.

NAME OF COMPANY.	Location.	Company's office.	Par value.	Bid.	Asked	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	St. Paul, Minn., &Gib'ville,Id.	$1	$0 90	$1.10	2,000	1.00
Bald Butte	L. & Cl'ke Co.	Helena, Mont.	1	1.75	2 50	1,500	1 75
Bi-Metallic	Granite "	St. Louis, Mo.	5	....	.....	.....	.....
Combination	" "	" "	10	.....	.....	.....	.....
Helena & Frisco	Shoshone, Id.	Helena, Mont.	5	7.50	8.50	....	.....
Helen & Victor.	Missoula "	" "	5	.15	.25	500	.25
Iron Mountain.	" "	" "	20	.22½	25	2,400	.25½-.25
Judge	Meagher "	" "	5	08	.10	.....	.....
Merrill (Gold)	Jefferson "	Butte "	1	.....	.....	.....	.....
Ontario	DeerLodge "	Helena "	1	.....	.....	.....	.....
Yellowstone	Meagher "	" "	5	.08	.10	.....	.....

* Special Report of Samuel K. Davis. Total shares sold, 5,900.

SAN FRANCISCO, CAL.*

NAME OF COMPANY.	Location.	Par. value.	July 23.	July 24.	July 26.	July 27.	July 28	July 29.
Alpha Con.	Nev.	100	.13	.....	.12	.15	.14	.14
Alta	"	100	.06	.....	.06	.07	.06	.06
Andes	"	100	.14	.....	.14	.17	.15	.15
Belcher	"	100	.20	.....	.24	.28	.27	.27
Best & Belcher	"	100	.44	.....	.46	.50	.48	.46
Bullion	"	100	.09	.....	.07	.09	.08	.09
Caledonia	"	100	.08	.....	.07	.08	.08	.08
Challenge	"	100	.41	.....	.....	.42	.40	.40
Chollar	"	100	.76	.....	.82	.81	.76	.76
Confidence	"	100	1.10	.....	1 15	1. 0	1.05	1 05
Con. California & Virginia	"	100	1.35	.....	1.45	1.50	1 35	1.35
Crown Point	"	100	.28	.....	.30	.25	.28	.28
Exchequer	"	100	.....	.....	.02	.02	.....	.....
Gould & Curry	"	100	.39	.....	.42	.45	.43	.50
Hale & Norcross	"	100	.91	.....	.90	.92	.92	.90
Julia	"	100	.....	.....	.....	.....	.....	.....
Kentuck Con	"	100	.05	.....	.05	.05	.06	.06
Mexican	"	100	.35	.....	.39	.41	.43	.34
Occidental Con	"	100	.10	.....	09	10	.09	.11
Ophir	"	100	.72	.....	.79	.85	.75	.77
Overman	"	100	.08	.....	08	.09	.08	.08
Potosi	"	100	.45	.....	.49	.49	.43	.45
Savage	"	100	.29	.....	.31	.34	.34	.34
Sierra Nevada	"	100	1 00	.....	1 35	1.45	1.35	1.55
Silver Hill	"	100	.01	.....	01	01	01	01
Standard	Cal.	100	.....	.....	1.25	1.55	1.55	1.55
Union Con	Nev.	100	.45	.....	.54	.55	.52	.55
Utah Con	"	100	.06	.....	.08	.07	.06	.09
Yellow Jacket	"	100	50	.....	51	54	52	.51

*Official telegraphic quotations, San Francisco Stock Exchange.

LOS ANGELES, CAL.*

NAME OF COMPANY.	Location.	Par val	July 9. H.	July 9. L.	July 20. H.	July 20. L.	July 2 . H.	July 2 . L.	July 22. H.	July 22. L.	July 23 H.	July 23 L.	July 24. H.	July 24. L.	Sales
Anaconda	Colo.	$1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Argentum-I	"	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Brown Dake	Ariz.	1	.11	.....	.....	.....	.11	.....	.11	.....	.11	.....	.....	.....	.....
Brown M. & M	Cal	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Caribo o	B.Col.	1	.....	.....	.....	.....	.55	.....	.....	.....	.....	.....	.....	.....	.....
Iron Mtn.	Colo.	1	.01¾	.01¾	.01¾	.....	.01¾	.....	0 3¾	.....	.....	.....	.....	.....	.....
Laguna	Cal.	2½	.05¼	.04¾	.....	.....	.07½	.05	.07½	.04¾	.....	.04¾	.....	04¾	.....
Maganetta	"	1	02½	.03¾	.03¼	.02¾	.03½	.03	.....	.....	.....	.....	.....	.....	8,000
*Lit'le Butte	"	1	.09	.....	.26	.....	.26	.06	.26	.05	.....	.....	.....	.....	24,000
*Mollie Gib-on	Colo.	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pacific Con	Cal	1	.0 3¾	.01¾	.01¼	.....	01½	0 ½	.01¾	.01¾	.01¼	.....	01¾	.01¾	211000
Portland	Colo	1	70	.....	.....	.....	.70	.....	.....	.....	.....	.....	.....	.....	200
R nd Mtn	Cal	1	03¼	03¾	.03	.03	.03¾	.03¼	.03¼	.03	.03¼	.04	.03¾	.03	157,00
Red Cloud	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Val Verde	Cal.	1	.07½	.07	.....	.....	.06¼	.05½	.....	.06	.....	.05	.03	.02	2,100
Wedge	"	1	1.00	.....	1 02	1.02	.....	.....	1.01	.....	.....	.....	1 02	1.01	1,700
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

‡ Official quotations, Los Angeles Mining and Stock Exchange. * Bid and ask quotations. Total sales, 395,100 shares.

SALT LAKE CITY, UTAH.* Week ending July 24.

STOCKS.†	Numb'r of shares	Par val.	Bid.	Asked.	Actual selling price.	STOCKS †	Numb'r of shares	Par val.	Bid.	Asked.	Actual selling price.
Ajax	300,0 0	$.0	$0.30	$0.40	$0.40	Homest	400 000	$1	$0 02	$0.02¾	.....
Alliance	100,000	1	.....	.25	.....	Horn Silv	400,000	25	1 40	1.60	.....
Anchor	2 0 000	10	.70	1 00	.....	LittlePitts	400,000	5	.04¾	.05¼	$0.05
Annie	250,0 0	1	.....	.....	.....	Lucky Bill	120,000	2½	.....	.....	.....
Bogan	12 ,00	10	.....	.....	.....	Malvern	600 0 0	2½	.....	.....	.....
§BrickCon	5 0,000	1	.....	.70	.....	Mammoth	400,000	5	1.40	1.50	1 40
B. B. & C	1 0,0 0	10	5 30	5 65	.....	Mercur	200,000	2	7.80	7 90	8 02
Buckeye	500 000	1	96	08	.....	No. Light	400 000	5	84	.85½	.85
Cent. Eur.	30,000	50	36.00	43 00	.....	Omaha	200 000	2	25	30	.27½
Dalton	500,000	5	01½	.02	.....	Ontario	150 000	10	6.50	7.00	6.75
Dalt'n & L	2,50 ,0 0	1	09	.10	.....	Opex	300 000	1	.....	.....	.....
Daly	1 0,000	20	3.25	3.75	4 00	Rich.-An	500 000	1	.01	.02	.....
Daly West	75,000	20	6.00	6.50	.....	Sacram	1,000,000	5	.19	.22	.....
§Dexter	30 , 00	5	1.75	1.80	1.75	Silver K	1 0,000	20	13.00	15.00	.....
Eagle	150,000	1	.04	05	.....	Sunbeam	2 0 000	1	07	.08¼	.08
Emerald	500,000	1	.04½	.05	.05	Sunshine	250,000	10	23	.35	.....
Four Aces	2 0 000	1	.06	.08	.08	Swansea	100,00	5	2.35	2.45	.....
Galena	100,000	10	94	1.10	.....	So. Swan	1 0 000	1	1.65	1 75	1.60
G'ser-Mar	300 000	5	1.22½	1.27½	1.31	Tetro	200,000	1	.02½	.03¾	.....
Gr. Cent	250,000	1	.90	1.25	.....	Utah	100,000	10	.75	.80	.....

*From Our Special Correspondent. † Utah companies. § Mines in Vanderbilt, Cal. ‖ Mines in Tuscarora, Nev.

ROSSLAND, BRITISH COLUMBIA.* July 14.

NAME OF COMPANY.	No. of shares.	Par value	Selling price.	NAME OF COMPANY.	No. of shares.	Par value	Selling price.
Alberta	1,0 0,0 0	$1	$0.06	Le Roi	500,000	$5	$8 00
Big Chief	1 000,000	1	.07	Lily May	1,000,000	1	.18
Big Three	5,000,000	1	.05	Mayflower	1,000,000	1	.08
Blue Bird	000,000	1	.04	Monita	500,000	1	.08
Butte	1,000,000	1	.05	Monte Cristo	1,000,000	1	.15
Caledonia Con	1,000,000	1	04	Morning Star	1,000,000	1	.15
California	2,500,00	1	15	Noble Five	1,200,000	1	.25
Cariboo	800,000	1	.50	Novelty	1, 00,000	1	.04
Curlew	.....	1	04	O. K	1,000,000	1	.....
Colonna	1,000,000	1	.15	Palo Alto	500,000	1	.05
Commander	500,000	1	12	Phœnix	500 000	1	03
Dardanelles	1,0 0,000	1	15	Poorman	1,000,000	1	.05
Delaware	1,000,000	1	....	Rambler Con	1,000,000	1	.50
Deer Park	1,000,000	1	.15	Reco	1,200,000	1	.40
Dundee	.....	1	.30	Red Eagle	1,000,000	1	.10
Ellen	1,0 0,000	1	.05	Red Mt.View	1,000,000	1	.08
Eric	1,000,000	1	.05	Red Point	000,000	1	.05
Evening Star	1,000,000	1	.10	RosslandDevelop.Co	1,000,000	1	.....
Giant	2,2 0,000	1	.05	Rossland R Mtn	500,000	1	.....
Great Western	1,000,000	1	.12	Rossland Star	1,000,000	1	.10
Hattie Brown	1,000,000	1	04	St. Elmo	1,000,000	1	05
Helen	1,000,000	1	.05	St. Paul	1,000,000	1	.15
High Ore	1 000,000	1	.05	Silverine	50 , 00	1	04
Iron Horse	1,000,000	1	15	Slocan Star	500 000	1	2.50
Iron Mask	500,000	1	.50	S nset	.....	1	.12
Ivanhoe	1,000,000	1	04	Virginia	500,000	1	.....
I. X. L.	1,000,000	1	.10	War Eagle	2,000,000	1	98
Josie	700,000	1	.50	Wild Horse	.....	1	.05
Jumbo	50 0 000	1	.38	Yale	1,000,000	1	.....
Keystone	.....	1	10				

* From Our Special Correspondent.

MEXICO.

Week ending July 21.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Alianza	Hidalgo	12,800	.....	.....	$5	$5
Amistad y Concordia	"	9,600	$0.70	.....	22	25
Angustias	Guanajuato	2,400	10.00	.....	840	865
Arevalo y Anexas	Hidalgo	.....	10.00	.....	300	300
Asturiana y Anexas	Zacatecas	2,500	10.00	.....	210	200
Barradon y Cabras	Durango	2,100	.....	.....	300	300
Bartolome deMedina	Hidalgo	4,000	3.50	.....	90	100
Cabezon y An	Zacatecas	2,400	.....	.....	30	30
Candelaria de Pinos	"	2,500	.....	.....	150	180
Candelaria delPanuco	"	1,200	.....	.....	20	20
Candelaria deChalch	"	1,600	.....	.....	80	80
Capuzaya	Durango	2,400	.....	.....	160	120
Carmen	Hidalgo	1,100	7.75	.....	400	410
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	.....	800	800
Concepcion y Anexas	S. Luis Potosi	2,700	.....	.....	100	100
El Oro	Guanajuato	500	.....	.....	40	60
Esperanza y An	Mexico	3,000	.....	.....	1,550	1,500
Guadalupe	Guanajuato	10,000	2.00	.....	200	180
Huautla	Santa Ana	4,000	.....	.....	70	80
Luz de Borda	Michoacan	4,000	.....	.....	40	50
Luz de Maravillas	Hidalgo	1,100	.....	.....	160	200
Pabellon	"	1,000	27.89	.....	180	200
Palma	Zacatecas	2,400	.....	.....	250	300
Purisima de los Com.	"	2,400	.....	.....	10	5
Real del Monte	Hidalgo	2,554	10.00	.....	900	950
Refugio y Va	"	.....	.....	.....	6	6
Restauradora	Durango	10,900	.....	.....	60	60
Rosario y Anexas	"	4,800	.....	.....	50	60
San Francisco	Hidalgo	3,000	3.00	.....	310	300
S. Ped. Chalchihuites	"	1,400	2.00	.....	80	100
San Rafael y Anexas	"	1,300	20.00	.....	900	900
do. free stock	"	1,200	14.00	.....	400	350
San Rafael del Oro	Hidalgo	3,000	.....	.....	30	25
Sta. Maria de la Paz	S Luis Potosi	2,400	.....	.....	550	570
Sirena	Durango	2,400	.....	.....	80	100
Soledad	Hidalgo	960	7.50	.....	400	350
Sorpresa	"	960	5.00	.....	300	250
Trinidad	Guanajuato	2,000	.....	.....	60	50
Tlauzingo	Puebla	2,400	.....	.....	30	40
Union	Hidalgo	2,000	8.00	.....	350	300
Zaragoza	"	1,100	.....	.....	15	15
Zomelahuacan (gold)	Vera Cruz	5,000	.....	.....	100	100
Zona Min. de Pozos	Guanajuato	2,400	.....	1.50	30	10

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $5 or $100. Prices are in Mexican dollars.

STOCK QUOTATIONS.

LONDON.

July 16.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Apr., 1897	1 5 0	1 10 0
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	4 12 6	4 17 6
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¾	May "	5 18 9	6 1 3
Cariboo Goldf., pref., g	British Col.	100,000	1 0 0	.. ..	.....	15 0	1 0 0
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
De Lamar, g. s	Idaho	400,000	1 0 0	1 0	Nov., 1896	5	6 0
Doric, g	Colorado	125,000	1 5 0	...	.....	3 6	4 0
Elkhorn Priority (New), s	"	300,000	1 0 0	.....	.....	12 6	17 6
Golden Feather, g	California	240,000	1 0 0	.....	.....	6 6	7 6
Golden Gate, g	"	80,000	1 0 0	.....	.....	2 6	3 0
Golden Leaf, g	Montana	320,000	1 0 0	.....	.....	0 6	1 0
Grand Central, g., s	Mexico	250,000	1 0 0	2 0	Dec., 1896	8 5	11 3
Hall Mines, c., s	British Col	250,000	1 0 0	.....	.....	1 10 0	1 12 6
Lillooet, F. R. & Car., g	" "	300,000	1 0 0	.....	.....	1 5 0	1 10 0
Montana, g., s	Montana	660,000	1 0 0	0 6	June, 1896	3 5	5 0
Palmarejo, g., s	Mexico	800,000	1 0 0	.....	.....	1	1 6
Plumas-Eureka, g	California	281,250	2 0 0	0 6	Oct., 1896	2 6	5 0
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	8 9	11 3
Sierra Buttes, g	California	245,000	4 0 0	0 6	Apr., "	1 5	3 9
Central Chile Copper	Chile	225,000	1 0 0	.....	.....	3 9	6 3
Columb. Hydraulic, g	Colombia	75,000	1 0 0	1 0	July, 1895	1	7 6
Copiapo, c	Chile	240,000	2 0 0	1 6	June, 1897	2 0 0	2 5 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	2 0	" "	1 8 5	1 11 3
Santa Anna, g	Brazil	150,000	1 0 0	.....		5 0	6 0
St. John del Rey, g	"	562,000	1 0 0	xn	Jan., 1895	17 6	1 0 0
‖Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	3 15 0	4 5 0
‖Tolima B., s., g	"	30,000	5 0 0	5 0	" "	3 15 0	3 5 0
Libiola, c	Italy	252,500	5 0 0	4 0	May, 1897	2 2 6	2 7 6
Mason & Barry, c., sul	Portugal	1,250,000	4 0 0	3 6	" "	2 17 6	3 0 0
Rio Tinto, c	Spain	3,250,000	0 0 0	£1	" "	21 17 6	22 2 6
Tharsis, c	"	625,000	2 0 0	7 6	April, "	5 15	6 0 0
Bayley's United, g	W. Australia	600,000		5 0 0	4 Dec., 1894	4 6	5 0
‖Broken Hill Prop., s	N.S.Wales	384,000		8 0 0	1 0 July, 1897	2 13 9	2 13 9
Con. Gold Mines, g	W. Australia	375,000	1 0 0	.....	.....	3 5	6 3
Great Boulder, g	" "	175,000	1 0 0	4 0	M.y, 1897	7 18 9	8 1 3
Harquahala, g., s	" "	300,000	1 0 0	1 6	Nov., 1894	1	2 0
Hauraki, g. s	New Zealand	40,000	2 6 0	0 6	Apr., 1897	6 6	7 6
Kapanga, g	"	250,000	1 0 0	b.&rt	May, 1896	6 6	7 0
Lake View Consols, g	W. Australia	250,000	1 0 0	.....	.....	8 5 0	8 7 6
Menzies Gold Reef, g	"	175,000	1 0 0	2 0	June, 1896	7 6	8 9
Mt. Lyell Min. & R., l., c	Tasmania	900,000	3 0 0	rts.	"	10 7 6	10 12 6
‖Mt. Morgan, g	Queensland	1,000,000	1 0 0	1 6	July, 1897	3 7 6	3 12 6
Waihi, g	New Zealand	160,000	1 0 0	2 0	" "	6 2 6	7 7 6
Waitekauri, g	"	136,000	1 0 0	1 0	June, "	2 7 6	2 12 6
Wentworth, g., s	N. S. Wales	500,000	1 0 0	1 0	Apr., 1896	7 6	10 0
White Feath. Rew., g	W. Australia	80,000	1 0 0	.....	.....	18 9	1 1 3
Champion Reef, g	Colar Fields	200,000	10 0	8 0	Apr., 1897	4 12 6	4 5 0
Coromandel, g	"	120,000	1 0 0	1 0	Feb., "	3 12 6	3 15 0
Mysore Gold, g	"	250,000	10 0	3 0	June, "	4 17 6	5 0 0
Nundydroog, g	"	220,000	1 0 0	2 6	" "	4 2 6	4 5 0
‖Ooregum, g	"	145,000	1 0 0	2 0	Apr., "	2 13 9	2 16 3
‖Ooregum, pref., g	"	120,000	1 0 0	2 0	" "	3 7 6	3 10 0
British S. Af., chartered	So. Africa	2,500,000	1 0 0	xn	Jan., "	2 13 9	2 16 3
Cape Copper, c	"	600,000	2 0 0	2 6	June, "	2 6	2 8
‖City & Suburban, g	Transvaal	1,360,000	4 0 0	4 0	July, "	4 16 3	4 18 9
Con. Deep Level, g	"	200,000	1 0 0	6 0	Oct., 1896	4 10 0	4 15 0
Crown Reef, g	"	120,000	1 0 0	16 0	May, 1897	11 12 6	11 7 6
‖De Beers Con., d	"	3,950,000	5 0 0	£1	July, "	2 7 6	28 8 0
Durban Roodepoort, g	"	135,000	1 0 0	3 0	June, "	6 5 0	7 0 0
†Ferreira, g	"	90,000	1 0 0	30 0	Jan., "	20 0 0	20 10 0
Geldenhuis Est., g	"	200,000	1 0 0	3 0	Apr., "	4 0 0	4 2 6
Geldenhuis Main Reef, g	"	150,000	1 0 0	2 0	June, 1896	17 6	1 0 9
Goldfields Deep, g	"	600,000	1 0 0	.....	.....	7 18 9	8 1 3
‖Henry Nourse, g	"	125,000	1 0 0	10 0	July, 1897	7 12 6	7 17 6
‖Meriot (New), g	"	115,000	1 0 0	5 0	" "	8 0 0	8 5 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	6 0	Apr., "	9 2 6	9 7 6
‖Langlaagte Estate, g	Transvaal	500,000	1 0 0	3 0	July, "	4 2 6	4 7 6
Malabele G. Reefs, g	So. Africa	160,000	1 0 0	.....	.....	2 17 6	3 2 6
‖Namaqua, c	Cape Colony	200,000	2 0 0	3 0	July, 1897	1 17 6	2 2 6
Primrose (New), g	Transvaal	300,000	1 0 0	4 0	May, 1897	4 7 6	4 10 0
‖Rand Mines, g	"	400,000	1 0 0	.....	.....	28 7 6	28 7 6
Rhodesia, Exp., lands, etc	"	50,000	1 0 0	.....	.....	4 17 6	5 2 6
†Robinson, g	Transvaal	2,750,000	5 0 0	5 0	Jan., 1897	7 17 6	8 2 6
Sheba, g	"	1,100,000	1 0 0	1 0	June, "	2 6 3	2 8 9
Sim. & Jack (New), g	"	5,000,000	5 0 0	.....	.....	3 10 0	3 12 6
‖Wemmer, g	"	80,000	1 0 0	5 0	July, 1897	7 10 0	7 15 0

† Dividend pending. ‖ Ex-dividend. ‖ Rights pending.

PARIS.*

Week ending July 17.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	80.00	2,020.00	2,050.00
" " Firminy	"	" "	3,000,000	500	85.00	1,880.00	1,890.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	79.00	797.00
" " la Marine	"	" "	30,000,000	500	37.50	1,110.00	1,115.00
" " Longwy	"	" "	.....	500	35.00	9 0.00	900.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	86.00	86.00
Anzin	France	Coal	.....	.....	190.00	5,3.0.00	5,400.00
Biache-St Vaast	"	Steel	.....	1,000	160 00	3,690.00	3,690.00
Bully Grenay	"	Coal	.....	500	80.00	2,400.00	2,550.00
Bolco	Lower Cal.	Copper	.....	500	93.50	1,875.00	1,885.00
Briansk	Russia	Coal & Iron	.....	.....	.....	1,247.50	1,257.50
Bruay	France	Coal	3,000,000	400	800.00	26,765.00	28,705.00
Callao	Venezuela	Gold	32,200,000	125	.....	3.5	3.50
Cape Copper	S. Africa	Copper	.....	50	1.50	59.00	58.25
Champ d'Or	"	Gold	.....	25	.....	34.00	35.00
Courrieres	France	Coal	60,000,000	500	160.00	1,650.00	1,700.00
De Beers Consolidated	S. Africa	Diamonds	93,750,000	125	15.65	739.50	732.00
Denain-Anzin	France	Steel	.....	500	20.00	615 .0	630.00
Dombrowa	Russia	Coal	.....	500	12 50	585.00	585.00
Donetz	"	Steel	.....	.....	.....	935.00	935.00
Dourges	"	Coal	.....	1,000	250.00	12,0 0.00	12,100.00
Dynamite Centrale	France	Explosives	.....	500	12.50	440 00	450.00
Epinac	"	Coal	.....	2,500	.....	600 00	600.00
Fraser River	Brit. Col'mb	Gold	.....	.....	.....	34.50	30.50
Huanchaca	Bolivia	Silver	.....	125	5.00	58.00	53.50
Huta-Bankowa	Russia	Iron & steel	.....	.....	.....	3,89 0.0.	3,845 00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	109.00	108.50
Lagunas	Chile	Nitrates	.....	125	12.50	65.00	70.50
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	627.00	614.00
Lautaro	Chile	Nitrates	.....	125	.....	125.00	115.00
Malfidano	Italy	Zinc	12,500,000	500	40 00	1,01 .00	1,007.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	12.00	666.00	677.00
Mokta-el-Hadid	Algeria	Iron	18,812,500	500	40.00	76 .00	755.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	821 50	825.00
Napthe, Le	"	"	.....	.....	.....	2,70 0.0	2,0 0.00
Napthe Nobel	"	"	.....	.....	.....	437.50	415 00
" " parts	"	"	.....	.....	.....	8,6 0.00	8,275 .0
Nickel	N. Caled'nia	Nickel	2,720,000	500	30.00	203.00	2.3.00
Paccha-Jazpampa	Chile	Nitrates	.....	.....	.....	14.50	14 50
Penarroya	Spain	Coal, etc	.....	500	65.00	1,925.00	1,845 00
Rebecca	Colo'do, U.S.	Gold	.....	.....	.....	3.75	3 75
Rio Tinto	Spain	Copper	81,250,000	250	27.62	548.50	561.00
Rive-de-Gier	France	Coal	.....	.....	.....	18.00	19.50
Robinson	S. Africa	Gold	.....	125	12.50	2 5.00	2 4.00
St Etienne	France	Coal	.....	.....	17 00	395.00	395.00
Saint Elie	Fr. Guiana	"	4,000,000	25	.....	25.00	25.00
Salines de l'Est	France	Salt	.....	500	20.00	28 .00	30.00
Salines du Midi	France	" etc	.....	5 0	40.00	850.00	835.00
Sels Gem. de la Rus. Mer	Russia	" etc	.....	.....	25 00	568.00	550.00
Tharsis	Spain	Copper	.....	50	8.75	151.00	151 00
Vieigne-Neux	France	Coal	.....	1,000	700 00	19,7 0.00	20,00 .00
Vieille Montagne	Belgium	Zinc	9,000,000	80	20.00	545 00	553.00

*From our special correspondent.

VALPARAISO, CHILE.*

June 19

NAME OF COMPANY.	Location.	Capital paid.	Sh. Val. paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile	$3,300,000	$100	1 per cent.	$18	$20	$18
Caracoles, silver	"	315,000	100	5 "	.. ..	.. ..	.. ..
Huantajaya (mine) silver	"	1,000,000	100	13 "	.. ..	.. ..	.. ..
Huanchaca, silver	Bolivia	8,000,000	25	4 "	31	32	31
Oruro, silver	Chile	800,000	200	.....	320	330	320
S. Agus. de Huanta, silver	"	1,500,000	100	2½ per cent.	.. ..	.. ..	.. ..
Todos Santos, silver	"	2,000,000	100	1 "	8	10	10
Agua Santa, nitrate	"	3,000,000	20	7 "	130	32	31
Antofagasta, nitrate	"	2,000,000	200	.....	138	140	138
Huantajaya (mill) nitrate	"	800,000	100	5 "	.. ..	.. ..	.. ..
Madera, coal	"	460,000	92	.....	.. ..	.. ..	.. ..
Union, nitrate	"	2,100,000	200	.....	15½	17	17

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

SHANGHAI, CHINA.*

July 2.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Celebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 4 6
Kunjom Mg., Ltd.	"	59,349	4	4	Jan., 1897	.20	" 4.96
do. pref	"	3,000	1	1	" "	.50½	" 1.35
Laub A'tan G. Mg	"	300,000	£1	13s. 10d.	June, 1896	.22	" 21 90
Sheridan Con. M. & M.	Colorado, U.S	2,000	Taels 100	Taels 100			" 2.00

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

DIVIDENDS.

NAME OF COMPANY.	Current Dividends. Date.	Current Dividends. Am't.	Paid since Jan. 1, 1897.	Total to date.
Aetna Con. Q	.....	.....	$60,000	$100,000
Alaska-Mexican	.....	.....	36,000	209,031
Alaska-Treadwell	.....	.....	150,000	3,175,000
Alice	.....	.....	20,000	1,015,000
Anaconda	.....	.....	1,500,000	3,750,000
*Anchoria-Leland	.....	.....	42,000	72,000
Arizona Copper	.....	.....	48,000	.....
Atlantic Copper	.....	.....	40,000	740,000
Bald Butte	.....	.....	2,500	482,500
Big Six	.....	.....	12,500	5,000
Boston&Montana	Aug. 20	450,000	1,350,000	6,275,000
Bullion Beck	.....	.....	170,000	2,117,000
*Calumet & Hecla	.....	.....	3,000,000	49,850,000
Cariboo	.....	.....	32,000	156,965
Centennial Eureka	.....	.....	98 000	2,010,000
*Central Lead	.....	.....	8,000	8,000
Champion	.....	.....	17,000	86,700
Charleston	.....	.....	10,000	150,000
Coronas	.....	.....	4,500	9,500
Daly	.....	.....	37,500	2,925,000
Deadwood Terra	.....	.....	80,000	1,320,000
Della S	.....	.....	10,000	60,000
Elkton Con	.....	.....	125,000	286,960
Florence	.....	.....	18,030	132,530
Galena	.....	.....	5,600	71,000
Garfield-Grouse	.....	.....	12,000	24,000
*Geyser-Marion	.....	.....	36,000	36,000
Gold Coin	Aug. 1	10,000	45,000	150,000
Golden Fleece	.....	.....	6,000	569,179
Gwin	.....	.....	6,000	6,000
Hecla Con	.....	.....	30,000	2,175,000
Highland	.....	.....	20,000	3,244,918
*Homestake	.....	.....	218,750	6,306,250
Hope	.....	.....	40,000	692,252
Idaho	.....	.....	80,000	152,000
Iowa Gold	.....	.....	5,000	65,000
Isabella	.....	.....	.....	270,000
Kearsarge	Aug. 1	4,000	40,000	160,000
Last Chance	.....	.....	20,000	40,000
*Le Roi	.....	.....	175,000	450,000
*Mercur	.....	.....	175,000	750,000
Merrimac	.....	.....	9,400	9,400
*Mont. Ore Pur. Co	.....	.....	120,000	600,00
*Moon-Anchor	.....	.....	6,000	30,000
Morning Star	.....	.....	69,6 0	519,600
*Napa Con	.....	.....	40,000	850,000
New Idria Quicksilver	.....	.....	10,000	10,000
*N. Y. & Honduras Rosario	.....	.....	105,000	787,500
Ontario	.....	.....	90,000	13,445,000
*Osceola	.....	.....	100,000	2,172,500
Pennsylvania	.....	.....	10,300	15,500
*Portland	.....	.....	210,000	1,073,000
Princess	.....	.....	5,000	45,000
Quincy	A'g. 16	400,000	800,000	9,470,000
Rambler-Cariboo	.....	.....	40,00	40,000
Reco	.....	.....	150,000	187,500
Sacramento	.....	.....	15,000	22,000
*Silver King	.....	.....	262,500	1,125,000
Slocan Star	.....	.....	50.000	350,000
*South Swansea	.....	.....	45,000	52,500
Standard Con	.....	.....	20,000	3,737,868
*Swansea	.....	.....	30,000	51,500
Tamarack	.....	.....	180,000	4,950,000
Utah	.....	.....	2,000	175,000
Victor	.....	.....	60,000	765,000
Western Mine Enterprise	.....	.....	6,000	12,000
Totals	.....	.....	$90,000	10,288,080 $150,643,613

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. * July dividend paid.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Dinq		Sale.		Am.
Alpha Con	Nev.	19	Aug.	12	Sept.	2	.10
Alta	"	56	July	20	Aug.	10	.05
*Belcher	"	55	Aug.	23	Sept.	13	.10
Benton Con	Cal.	19	"	2	Aug.	25	.25
Best & Belcher	Nev.	62	"	5	"	26	.25
Brunswick Con	Cal.	12	July	22	"	14	.03
California	Utah	...	"	5	"	7	.01
*Central Eureka	Cal.	5	Aug.	14	Sept.	7	.01
Christmas	Utah	....	July	23	Aug.	17	.0016
Confidence G	Cal.	....	Aug.	2	.....	.....	.10
Emerald	Utah	....	July	15	Aug.	7	.60½
Eureka Con	Cal.	9	Aug.	7	"	28	.02
Gibraltar Con	"	15	July	5	"	5	.001
Goleta	"	5	"	12	"	9	.10
Hale & Norcross	"	111	"	28	"	18	.10
Homestake	Utah	....	"	17	"	9	.01
Merrill Con	Mont.	....	"	20	"	7	.15
Montecito	Cal.	4	"	12	"	9	.10
North Gould & Curry	Nev.	18	"	28	Aug.	14	.10
Osceola	Cal.	....	Aug.	18	.....	.....	.01
Reward Gold	"	3	"	13	Sept.	4	.02
Shasta Iron	"	4	July	20	Aug.	10	.00½
Sterling	"	4	"	12	"	9	.10
Tecumseh C	Mich	.....	.....	.....	.....	.....	1.00
Transit	S. D.	9	Aug.	2	Aug.	17	.001½
Utah Con	Nev.	25	"	9	"	30	.25

* New assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c.	Colo..	$1,500,000	150,000	$10	*				$693,500	Oct..	1895	.04
2	Ætna Cons., q.	Cal ..	500,000	100,000	5	*				100,000	June.	1897	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					209,031	April.	1897	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				3,175,000	April.	1897	.37½
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*				1,015,000	April.	1897	.05
6	Anaconda Copper	Mont.	30,000,000	1,200,000	25					3,750,000	May..	1897	1.25
7	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*				66,000	June.	1897	.01
8	Argentum Juniata, g.s.l	Colo..	2,600,000	1,300,000	2	*				39,000	July..	1895	.03
9	Aspen Mg. & S., s. l.	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
10	Atlantic, c.	Mich.	1,000,000	40,000	25					740,000	Feb..	1897	1.00
11	Aurora, l.	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
12	Bald Butte.	Mont.	250,000	250,000	1	*				482,500	May..	1897	.03
13	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
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					5,000	April.	1897	.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	*				5,825,000	May..	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	*				2,117,000	Mar..	1897	.50
20	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					49,850,000	July..	1897	10.00
21	Cariboo.	B.C..	800,000	800,000	1					156,965	May..	1897	.02
22	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	2,010,000	Mar..	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	Champion, g. s.	Cal..	340,000	34,000	10					86,700	June.	1897	.25
25	Charleston, p. r.	S. C..	1,000,000	10,000	100	*				150,000	Feb..	1897	1.00
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	5,014,130	April.	1897	.25	3,898,800	Feb..	1895	.25
29	Copus, g. s.	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
30	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
31	Daly, s. l.	Utah.	3,000,000	150,000	20					2,925,000	Mar..	1897	.25
32	†Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*				1,240,000	Aug..	1896	.50
33	De Lamar, g. s.	Idaho	2,000,000	400,000	5	*				2,250,000	Oct..	1896	.25
34	Della S.	Colo..	1,000,000	1,000,000	1					60,000	Jan ..	1897	.10
35	Doe Run, l.	Mo..	1500,000	5,000	100						April.	1897	.50
36	Elkhorn, s.	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
37	Elkton Cons., g.	Colo..	1,250,000	1,250,000	1					286,960	June.	1897	.02
38	Enterprise, g. s.	Colo..	2,500,000	500,000	5	*				825,000	May .	1893	.25
39	Florence, s.	Mont.	2,500,000	500,000	5	*				132,530	May .	1897	.01
40	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan ..	1894	2.00
41	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan ..	1897	.65
42	Garfield-Grouse, g.	Colo..	1,200,000	1,200,000	1	*				24,000	Dec ..	1896	.01
43	Geyser-Marion, g.	Utah.	1,500,000	300,000	5					27,000	June.	1897	.03
44	Gold Coin, g. s.	Colo..	1,000,000	200,000	5	*				140,000	May..	1897	.10
45	Golden Eagle, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
46	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*				569,179	Feb..	1897	.01
47	Gold & Globe, g.	Colo..	750,000	750,000	1					36,000	Aug..	1896	.00 3/10
48	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
49	Gt. West'n Quicksilv., q.	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
50	Harquahala, g.	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
51	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,175,000	Feb..	1897	.50
52	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
53	Highland, g.	S. D..	10,000,000	100,000	100					3,244,918	Feb..	1897	.20
54	Homestake, g.	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	6,275,000	June.	1897	.25
55	Hope, s.	Mont.	1,000,000	100,000	10	*				692,252	May .	1897	.10
56	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,130,000	Jan ..	1896	.12½
57	Idaho.	B. C..	500,000	500,000	1					152,000	Mar..	1897	.05
58	Iowa, g.	Colo..	1,000,000	1,000,000	1					65,000	Feb..	1897	.00½
59	Iron Mountain, s. l.	Mont.	5,000,000	500,000	10	*				492,500	Nov..	1896	.06
60	Iron Silver, s. l.	Colo..	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
61	Isabella, g.	Colo..	2,250,000	2,250,000	1					270,000	June.	1897	.00½
62	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct..	1887	1.00	120,000	Dec..	1895	1.00
63	Kennedy, g.	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
64	Last Chance, s. l.	B. C..	500,000	500,000	1	*				40,000	Jan ..	1897	.04
65	Leadville Cons., s. l.	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
66	Le Roi.	B. C..	500,000	500,000	1					425,000	July .	1897	.05
67	Little Chief, s. l. i-o.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
68	Maid of Erin, g. s. c. l.	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
69	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,150,000	Nov..	1896	.05
70	Mayflower Gravel, g.	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
71	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct..	1891	.03¾
72	Mercur, g.	Utah.	5,000,000	200,000	25	*				725,000	June.	1897	.12½
73	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
74	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	20,000	Jan ..	1891	.02	4,080,000	Jan ..	1895	.05
75	Monitor, g.	S. D..	2,500,000	250,000	10					45,000	Oct..	1890	.03
76	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,890 637	Oct..	1895	.06¾
77	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				600,000	July..	1897	1.00
78	Moon Anchor Gold.		600,000	600,000	1	*				24,000	July..	1896	.01
79	Moose, g.	Colo..	600,000	600,000	1					186,000	Jan ..	1896	.01
80	Morning Star, g.	Cal..	240,000	240,000	100	70,800	Feb..	1887	.75	510,000	May .	1897	.50
81	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1					30,000	Oct..	1896	.00½
82	Napa, q.	Cal ..	700,000	100,000	7	*				850,000	July..	1897	.20
83	New Elkhorn	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
84	New Guston, g. s. c.	Colo..	550,000	110,000	5	*				1,198,120	Oct..	1892	.25
85	New Hoover Hill, g.	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1895	.20
86	New Idria Quicksilver.	Cal..		100,000						10,000	June.	1897	.10
87	N.Y.&Hon.Rosario, s. g.	C. A..	1,500 000	150,000	10	*				772,500	June.	1897	.10
88	North Star, g.	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
89	Nugget, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Jan ..	1895	.00½
90	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,445,000	June.	1897	.10
91	Osceola, c.	Mich.	1,250,000	50,000	25	*				2,172,500	July..	1897	1.00
92	Pacific Coast Borax, b.	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
93	Parrot, c.	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
94	Pennsylvania Cons.	Cal..	5,150,000	51,500	100	14,000	Feb..	1892	.05	15,500	June.	1897	.05
95	Pharmacist, g.	Colo..	1,200,000	1,200,000	1					80,000	Jan ..	1893	.01
96	Portland, g.	Colo..	3,000,000	3,000,000	1	*				1,043,000	June.	1897	.01
97	Princess, g.	Colo..	1,000,000	1,000,000	1					45,000	Feb..	1897	.00½
98	Quincy, c.	Mich.	2,500,000	100,000	25	*				9,070,000	Feb..	1897	8.00
99	Rambler-Cariboo	B. C..	1,000,000	1,000,000	1					40,000	April.	1897	.02
100	Reco, s. l.	B. C..	1,000,000	1,000,000	1					187,500	May .	1897	.50
101	Reed National, s.	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
102	Robinson Cons., s.	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
103	Running Lode, g. s.	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
104	Sacramento, g.	Utah.	5,000,000	1,000,000	5					22,000	Mar..	1897	.00½
105	St. Joseph, l.	Mo..	2,500,000	250,000	10						Mar..	1897	.15
106	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan ..	1897	.02	1,087,500	June.	1897	.25
107	Slocan Star.	B. C..	1,000,000	2,000,000	0.50					350,000	Mar..	1897	.05
108	Small Hopes, s.	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
109	‖Smuggler Union, g. s.	Colo..	5,000,000	50,000	100					150,000	Oct..	1896	1.00
110	South Swansea, s. l.	Utah.	150,000	150,000	1					44,960	June.	1897	.05
111	§Standard Cons., g. s.	Cal..	20,000,000	200,000	100					3,737,868	Mar..	1897	.10
112	Swansea, s. l.	Utah.	500,000	100,000	5					46,500	June.	1897	.05
113	Tamarack, c.	Mich.	1,500,000	60,000	25					4,950,000	June.	1897	3.00
114	Tom Boy, g.	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
115	Trinity River, g.	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
116	Union, g.	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
117	Union Leasing.	Colo..	500,000	500,000	1					340,000	July..	1895	.04
118	Utah.	Utah.	1,000,000	100,000	10	*				175,000	Feb..	1897	.02
119	Victor, g.	Colo..	1,000,000	200,000	5	*				765,000	Mar..	1897	.10
120	War Eagle.	B. C..	500,000	500,000	1	32,500	Dec..	1894		187,000	Oct..	1896	.06
121	Western Mine Enterp.	Mont.	550,000	500,000	1	*				12,000	Mar..	1897	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01½
2	Ajax, g.	Colo..	1,000,000	1,000,000	1				
3	Alice, g. s. c.	Colo..	5,000,000	5,000,000	1	*			
4	Alliance, g. s. l.	Utah.	100,000	100,000	1	200,000	Dec..	1895	.10
5	Alpha Cons., g. s.	Nev..	10,500,000	105,000	100	262,750	April.	1897	.05
6	Alta, s.	Nev..	10,080,000	108,000	100	3,601,360	June.	1897	.05
7	American, c.	Idaho	5,000,000	500,000	10	*			
8	¶American Belle, g.s.c	Colo..	2,000,000	400,000	5	*			
9	¶Anaconda, g.	Colo..	5,000,000	1,000,000	5				
10	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
11	Aola, g.	Colo..	1,000,000	1,000,000	1	*			
12	Argonaut Cons., g. s.	Colo..	1,000,000	1,000,000	1	*			
13	Belcher, s. g.	Nev..	10,400,000	104,000	100	3,338,420	April.	1897	.25
14	Belle Isle.	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
15	Ben Hur, g.	Colo..	900,000	900,000	1				
16	Blue Bell, g.	Colo..	500,000	500,000	1	*			
17	Blue Jay Cons., s. l.	Utah.	2,000,000	400,000	5	4,750	July..	1893	.004
18	Bob Lee, g.	Colo..	1,200,000	1,200,000	1	*			
19	Boston & Crip. Creek	Colo..	200,000	200,000	1				
20	Bullion, s. g.	Nev..	1,000,000	100,000	100	3,050,000	June.	1897	.10
21	¶Bunker Hill & S., s.l.	Idaho	3,000,000	300,000	10				
22	Burlington, g. s.	Cal..	10,000,000	100,000	100	3,000	May..	1896	.03
23	Butte & Boston Con., c	Mont.	2,000,000	200,000	10				
24	Butte Queen, g.	Cal..	1,000,000	100,000	10	16,000	Feb..	1893	.10
25	Calumet, g.	Colo..	1,400,000	1,400,000	1	*			
26	Centennial, c.	Mich.	2,000,000	80,000	25	220,000	April	1897	1.00
27	Central Lead, l.	Mo..	400,000	4,000	100	*			
28	Central North Star, g.	Cal..	1,000,000	100,000	10	10,000	July..	1893	.10
29	Challenge, s, g.	Nev..	5,000,000	50,000	100	305 000	June.	1897	.10
30	Chollar, g. s.	Nev..	11,200,000	112,000	100	2,038,400	June.	1897	.15
31	¶Chrysolite, s. l.	Colo..	10,000,000	200,000	50	*			
32	Cleveland Cliffs, i.	Mich.	5,000,000	50,000	100	*			
33	Columbine, g.	Colo..	1,000,000	1,000,000	1	*			
34	¶Confidence, g. s.	Nev..	2,496,000	24,960	100	1,644,462	April.	1897	.30
35	Cons. Imperial, g. s.	Nev..	5,000,000	50,000	100	2,082,500	Mar..	1897	.01
36	Creede & C. C., g.	Colo..	800,000	800,000	1				
37	CrippleCreekCons., g.	Colo..	2,000,000	2,000,000	1				
38	Crip.Cr'k Gold Expl'n	Colo..	1,800,000	1,800,000	1				
39	Dante, g.	Colo..	1,250,000	1,250,000	1	*			
40	Denver City, s.	Colo..	5,000,000	500,000	10	*			
41	Denver Gold, g.	Colo..	300,000	60,000	5				
42	Dickens-Custer, g. s.	Colo..	2,100,000	420,000	5				
43	¶Enterprise, g.	Colo..	800,000	800,000	1				
44	¶Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	567,500	Feb..	1897	.25
45	Eureka Con. Drift, g.	Cal..	500,000	500,000	1	140,000	May..	1897	.05
46	Exchequer, g. s.	Nev..	10,000,000	100,000	100	725,000	Dec..	1896	.05
47	Favorite, g.	Colo..	1,200,000	1,200,000	1	*			
48	Free Coinage, g.	Colo..	1,000,000	1,000,000	1	*			
49	Galena, l. s.	Idaho	500,000	500,000	1				
50	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00½
51	Golden Age, g.	Colo..	1,000,000	1,000,000	1	*			
52	Golden Dale, g.	Colo..	2,000,000	2,000,000	1	*			
53	Golden Fleece Grav. g	Cal..	130,000	130	1000	56,260	Mar..	1897	2.00
54	Gold Flat, g.	Cal..	1,000,000	100,000	10	13,000	Aug..	1893	.03
55	Gold King, g.	Colo..	1,000,000	1,000,000	1	*			
56	¶Gold Rock, g.	Colo..	1,000,000	1,000,000	1	*			
57	Gold Standard, g.	Colo..	1,000,000	1,000,000	1	*			
58	Gould & Curry	Nev..	10,800,000	108,000	100	4,872,000	June.	1897	.20
59	¶Hale & Norcross, g.s.	Nev..	11,200,000	112,000	100	5,798,000	April.	1897	.10
60	Head Cent. & Tr., g.s.	Ariz..	2,000,000	200,000	10	22,824	Mar ..	1892	.03
61	Hidden Treas., g. s.	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
62	Humboldt Cons.	Colo..	2,000,000	2,000,000	1				
63	Idaho Co., Ltd., g.	Idaho	100,000	1,000	100	*			
64	Idlewild, g.	Cal..	1,000,000	100,000	10	*			
65	Jack Pot, g.	Colo..	1,250,000	1,250,000	1				
66	Jackson, l.	Mich.	300,000	12,000	25	*			
67	Justice, g. s. c.	Colo..	500,000	500,000	1	*			
68	Keystone, g.	Colo..	1,500,000	1,500,000	1	*			
69	Lacrosse, g.	Colo..	1,000,000	100,000	10	*			
70	Matoa, g.	Colo..	5,000,000	1,000,000	5				
71	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
72	Merced, g.	Cal..	1,500,000	100,000	15	200,000	July..	1896	2.00
73	Mexican, g. s.	Nev..	10,080,000	100,809	100	3,104,240	April.	1897	.20
74	Milwaukee, s. l.	Idaho	500,000	500,000	1				
75	Modoc Chief, g. s. l.	Idaho	1,000,000	200,000	5	4,375	Jan..	1892	.00½
76	Monarch, g.	Colo..	1,000,000	1,000,000	1				
77	¶Mt. Diablo, s.	Nev..	5,000,000	50,000	100	145,000	Nov..	1896	.10
78	Mutual, g.	Colo..	500,000	500,000	1				
79	New Gold Hill.	N. C..	1,750,000	350,000	5				
80	New Viola, s. l.	Idaho	750,000	150,000	5	*			
81	North Banner, g. s.	Cal..	1,000,000	100,000	10	21,794	Oct..	1896	.02
82	¶North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
83	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	473,652	June.	1897	.10
84	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
85	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
86	Orphan Bell, g.	Colo..	1,000,000	1,000,000	1				
87	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,200,080	May..	1897	.10
88	Peer, s.	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
89	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July.	1894	.05
90	Pine Hill, g.	Cal ..	1,000,000	100,000	10	30,000	July..	1897	.05
91	Potosi, g. s.	Nev..	11,200,000	112,000	100	2,044,000	April.	1897	.20
92	Princess, g.	Colo..	1,000,000	1,000,000	1				
93	Puritan, g, s.	Colo..	1,500,000	150,000	10	*			
94	¶Quicksilver, pref., q.	Cal ..	4,300,000	43,000	100	*			
95	¶ " com., q.	Cal ..	5,700,000	57,000	100	*			
96	Quincy, c.	Colo..	3,000,000	300,000	10				
97	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
98	Reward, g.	Cal..	64,000	64,000	1	57,280	June.	1897	.02
99	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
100	Savage, g. s.	Nev..	11,200,000	112,000	100	1,073,800	May..	1897	.20
101	Seg. Belcher & M., g.s.	Nev..	10,000,000	100,000	100	345,000	May..	1897	.05
102	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April	1897	.04
103	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*			
104	Silver Hill, s.	Nev..	10,800,000	108,000	100	1,992,600	July.	1894	.05
105	¶Silver King, s.	Ariz..	10,000,000	100,000	100	279,858	June.	1897	.25
106	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*			
107	Silver State, g.	Colo..	700,000	700,000	1	*			
108	Siskiyou Con., s.	Cal ..	2,000,000	200,000	10	44,000	June	1896	.01
109	Specimen, g.	Colo..	1,200,000	1,200,000	1				
110	¶Temonj, g.	Colo..	1,000,000	1,000,000	1				
111	Tombstone, g. s. l.	Ariz..	12,500,000	500,000	25	*			
112	Tornado Con., g. s.	Nev..	100,000	100,000	1	*			
113	Union Con., g. s.	Nev..	10,000,000	100,000	100	2,565,000	May..	1897	20
114	Utah Cons., s.	Nev..	10,000,000	100,000	100	420,722	Feb.	1897	.05
115	Victory, g. s.	S. D..	1,250,000	250,000	5	2,625	Nov.	1896	.001½
116	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
117	Waterloo, g.	Cal..	2,000,000	200,000	10	30,000	Aug..	1893	.15
118	West Granite Mt., s.	Mont.	500,000	100,000	5				
119	¶Whale, g. s. l.	Colo..	500,000	500,000	1	*			
120	Work, g.	Colo..	1,250,000	1,250,000	1				
121	World, g.	Colo..	1,500,000	1,500,000	1	*			

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. †The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡Previous to the consolidation in August, 1884, the California had paid $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. ¶ Dividends have not been paid in several years.
NOTE.—This table is corrected up to July 1. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

RARE ELEMENTS, CHEMICALS AND MINERALS—CURRENT PRICES.

NOTE.—This table is revised up to July 12th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable.

CHEMICALS AND MINERALS.

These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts.

	Cust.	Meas.	Price.
Abrasives—			
Carborundum, grains, f.o.b. Niagara Falls	lb.		$0.15@$0.16
Corundum, flour	"		.05@.07
Grain	"		.10@.12
Emery, Turkish flour	"		.03@.03½
Grains	"		.04½@.05½
Naxos flour	"		.03@.03½
Grains	"		.04½@.05½
Chester flour	"		.03@.03½
Grains	"		.04½@.05½
Peekskill flour	"		.01½
Grains	"		.02½
Pumice Stone, powdered	"		.01½@.02
Lump	"		.05@.12
Rottenstone, ground	"		.02½@.03
Lump, according to quality	"		.05½@.12
Acids—			
Acetic, Pure (30%)	lb.		.06@.07
Benzoic, English	"		1.12
German	"		.49
Boracic Am. refined cryst	"		.09
Powdered	"		.08½@.09½
Carbolic, cryst. in bottles	"		.25
In drums	"		.18@.19
Chromic, com'l	"		.25
Chem. pure	"		.35
Hydrochloric, c. p. (in carboys)	"		.10@.12
Hydrofluoric XX	"		.05
X	"		.15
Best	"		.25
Phosphoric, English, st. p	"		.24
Salicylic	"		.37@.42
Sulphuric, c. p. (in chys.)	"		.10@.12
Tartaric, cryst	"		.28@.28½
Powder	"		.28½@.29
Alcohol—94%	gal.		2.29@2.33
Refined wood, 95%	"		.65
" " 97%	"		.70
" " purified	"		1.20@1.50
Alum—Lump	100 lbs.		1.65@1.70
Ground	"		1.75@1.80
Porous	"		1.87½@2.25
Chrome, com'l	"		3.00@4.00
Aluminum—			
Chloride, pure cryst	lb.		1.00
Oxide, hydrated	"		.15
Sulphate, com'l	"		.01¼@.01¾
Pure cryst. (retail)	"		1.00
Ammonia—			
Aqua (in carboys), 16°	"		.03¼
18°	"		.04@.05
20°	"		.05¼@.05¾
36°	"		.06¾@.06¾
Ammonium—			
Bromide, pure	"		.52@.53
Carbonate, domestic	"		.07¼@.07¾
Foreign	"		.08
Chloride, granulated	"		.05@.07
Chem. pure	"		.10½
Muriate, gran. (100%)	"		.10
Gray	"		.04⅝
Nitrate, white, pure (99%)	"		.09
Sulpho-cyanide	"		.25
Chem. pure	"		.35
Antimony—			
Oxide	"		.12@.13
Sulphide, powdered	"		.06
Pentasulphide	"		.20
Argols—Red (80%)	"		.05@.05½
(50%)	"		.08½@.09
(80%)	"		.14½@.15
Arsenic—White, powder	"		.05¼@.05½
Red, Saxony	"		.07½@.07¾
Silesian	"		.07¼@.07½
Asbestos—Board	"		.02¾
Fiber, long	"		.10
Medium	"		.06
Short	"		.03½
Pipe covering, magnesia			
fib., av. size	sq. ft.		.11
Asphaltum—			
Cuban, prime	lb.		.04@.05
Hard	"		.01¼@.01½
Trinidad, refined	"		.01½@.01¾
Bermuda, refined, f.o.b., South Amboy, N. J.	sh. ton		45.00
Egyptian, refined	lb.		.05@.06
Barium—			
Carbonate, Am. lump	lg. ton		26.00@30.00
Powdered	lb.		.02@.02½
Foreign	sh. ton		25.00
Chloride, com'l	100 lbs.		1.60@.200
Chem. pure cryst	lb.		.05
Nitrate	"		.05½@.06
Nitrite, com'l	"		.05¾
Oxide	"		.18
Sulphate, com'l (pulp)	"		.01@.02½
Barytes—Crude	lg. ton		7.75@10.00
American, floated	"		22.00@23.00
Foreign, floated	sh. ton		15.00@18.00
Bauxite—Ga., At mine	lg. ton		3.00@3.75
Benzole—90%	gal.		1.00@1.10
C. p. water white	"		1.25
Bismuth—Nitrate, cryst.	oz.		.15
Oxide, hydrated	lb.		2.65
Bone Ash	"		.03
Borax—Am. refined	"		.05¼
Crystal	"		.05
Concentrated	"		.04⅞
Bromine—Com'l at wks.	"		.43
Cadmium—			
Metallic sticks (Ger)	kg.		8.14
Sheets (Ger)	"		7.57
Powder (Ger)	"		8.09
Calcium—			
Acetate, brown	100 lbs.		75@.80
Gray	"		1.25@1.30
Bromide (retail)	lb.		.70
Carbonate, ppt	"		.10
Chem pure	"		.75
Hypophosphite	100 lbs.		1.02½@1.07½
Oxide	lb.		.05
Phosphate, ppt	"		.30
Sulphite	"		.07
Cement—			
Portland, Am., 400 lbs.	bbl.		1.80@2.00
German, 400 lbs.	"		2.00@2.50
Danish	"		2.20
English, 400 lbs.	"		2.00@2.25
"Rosendale," 300 lbs.	"		.75@.80
Sand cement, 400 lbs.	"		1.80
Ceresine	lb.		.09½@.14
Chalk—Com'l, lump	sh. ton		2.00@2.25
English, ppt	lb.		.04@.04¼
French, lump	sh. ton		10.00
Powdered	"		16.00@30.00
China Clay—			
Lowest grade	lg. ton		9.00@11.00
Medium grade	"		10.00@12.00
Best grade	"		14.00@18.00
Chlorine—Liquid	lb.		.25
Chrome Ore—			
(50% chrome) ex ship	lg. ton		25.00
Oxide	lb.		.25@.55
Cobalt—			
Black peroxide (retail)	"		2.00
Carbonate (retail)	"		2.55
Chloride (retail)	"		2.00
Nitrate (retail)	"		2.20
Oxide	100 lbs.		1.60@2.00
Copperas	"		.42½@.52½
Copper—			
Acetate, com'l	lb.		.16@.20
C. p. cryst. (retail)	"		.50
Carbonate, pure ppt	"		.20@.22
Chloride	"		.25
Nitrate, solution (40° B.)	"		.06@.10
Cryst. (retail)	"		.50
Oxide, black	"		.15@.19
Red	"		.16@.20
Sulphate, com'l	"		.03½@.03¾
Chem. pure	"		.10
Explosives—			
Judson R.R. powder, by carload	"		.10
"Rackarock"	"		.25
Dynamite, (40% nitro-glycerine)	"		.20
(50% nitro-glycerine)	"		.23
(60% nitro-glycerine)	"		.27
(75% nitro-glycerine)	"		.36
Glycerine, for nitro (32 2-10° Be.)	"		.11
Nitro Benzole	"		.14@.15
Feldspar	sh. ton		13.00
Flint—(See Silica).			
Fluorspar—By carload	"		6.50@11.50
Fuller's Earth—Lump	100 lbs.		.75
Powdered	"		.80
Gilsonite—Ordinary	sh. ton		35.00
Select	"		60.00
Gold—			
Chloride, pure cryst. (retail)	oz.		11.75
Oxide	"		27.50
Gypsum—Am., ground	sh. ton		8.50
English	"		14.00
French	"		16.00
Iodine—Crude	lb.		2.55
Resublimed	"		3.00
Iron—Muriate	"		.02½
Nitrate, com'l	"		.01@.01½
Pure	"		.03½@.04½
Oxide, foreign	"		.01@.08
Kaolin—(See China Clay).			
Kryolith	"		.08½
Lead—			
Acetate, brown cryst.	"		.05@.05¼
White, cryst.	"		.07@.07½
Nitrate, com'l	"		.05½@.06
Chem. pure (retail)	"		.35
Lime—			
Building, about 250 lbs.	bbl.		.90
Slacked and quick	"		.60@.90
Fertilizing	"		.60
Chemists	"		1.00
Magnesite—			
Lump	lg. ton		7.00@10.00
Calcined	sh. ton		25.00
Powdered	lg. ton		30.00
Calcined	sh. ton		40.00
Magnesium—			
Metallic, ingots (Ger)	kg.		6.66@6.90
Powdered (Ger.)	"		7.14
Ribbon or wire (Ger.)	"		9.76
Carbonate	lb.		.11
Chloride, com'l	"		.05
Pure (retail)	"		.25
Manganese—			
Crude, powdered, 70@75%	"		.01¼@.01½
75@85%	"		.01¼@.02½
85@90%	"		.02½@.03¼
90@95%	"		.03¼@.05½
Metallic, (93%) (Ger.)	kg.		1.90
Pure	"		3.81
Carbonate, chem. pure	lb.		.20
Chloride	"		.05
Oxide, gran'l (90%)	"		.03@.03½
Powdered	"		.02@.03½
Peroxide, pure (90%)	"		.02½
Sulphate, powdered	"		.25
Pure cryst	"		.60
Marble Dust, 400 lbs.	bbl.		1.10@1.25
Flour	sh. ton		7.00
Mercury—Bichloride	lb.		.57@.59
Bisulphate	"		.59
Red, ppt	"		.78
White, ppt	"		.82
Mica—Ground	"		.03@.04½
Sheets, according to size and quality.			
Mineral Wool—Rock	"		.02½
Slag	"		.01½
Nickel—			
Oxide, black, No. 1	"		.65@.75
No. 2	"		.48@.50
Green	"		.55@.60
Oils, Mineral—Black, reduced 29 gr. 25@30%	gal.		06½@.07
Black, reduced 29 gr. 15 cold test	"		.07½@.08
Black, reduced 29 gr. zero	"		.11@.12
Black, summer	"		.06@.06½
Smith's Ferry, 33@34 gr.	"		.07½@.8¾
West Virginia, nat'l 29 gr	"		.22@.24
Stock, dark steam ref.	"		.07½@.12½
Oils, Mineral—Dark filtered	gal.		10½@.15½
Light	"		.12½@.14½
Extra cold test	"		.20½@.24½
Neutral fittered, lemon 33@34 gr.	"		.12½@.18½
White, 33@34 gr.	"		.09½@.22½
Wool grade, 32 gr.	"		.10½@.14
Bloomless, 32@34 gr.	"		.12½@.18
Naphtha, crude	bbl.		5.50
Deodorizee	"		6.00
Petroleum, refined, bulk	bbl.		3.50
Paraffine, high viscosity	gal.		.20@.25
Red No. 1	"		.11@.11½
No. 2	"		.10½
23½@24 gravity	"		.12@.13
28@32 gravity	"		.07½@.09¼
25 "	"		.11@.11½
Ozokerite—Imported	lb.		.05½@.09
Paints—Blanc Fixe	"		.02¼@.02¾
Benzoin, Samatra	"		.35@.40
Marbled	"		.27@.28
Chrome, green, com'l	"		.05@.09
Green, extra	"		.10@.19
Chem. pure	"		.20@.40
Yellow, common	"		.05@.09
Com'l	"		.10@.15
Chem. pure	"		.16@.33
Lampblack—Com'l	"		.03@.05
Refined	"		.08@.10
Calcined	"		.10@.20
Fine spirit	"		.20@.30
Litharge, American	"		.05¼@.05½
English flake	"		.06¾@.07
Metallic, brown	sh ton		20.00@22.00
Red	"		20.00@22.00
Ocher, Rochelle	lb.		1.10@1.20
American	sh. ton		8.00@17.00
Golden	lb.		.02½@.04
Dutch washed	"		.04¾@.05
French "	"		.01@.01¾
Orange mineral, Amer.	"		.06½@.06¾
English	"		.06½@.07¼
French	"		.08½@.09
German	"		.06½@.06¾
Paris green, in bulk	"		.13@.14
Red lead, American	"		.05¼@.05½
Foreign	"		.05⅝@.06½
Shellac, No. 2, Orange	"		.15@.17
T. N.	"		.16@.17
A. C. Garnet	"		.18@.19
Bleached	"		.17½@.18
S. S. & S. O. S.	"		.21@.22
Triangle G	"		.22½
V. S. O.	"		.23@.24
Diamond I	"		.26
D. C.	"		.26@.27
Sienna, American raw	"		.00½@.01
Burnt and powder	"		.01¼@.01½
Italian, raw, lumps	"		.01¼@.03½
Burnt and powder	"		.02⅝@.03½
Ultramarine	"		.03@.25
Umber, Turkey burnt	"		.02½@.03¼
Raw	"		.02½@.03
American burnt	"		.01¼@.01½
Raw	"		.01¼@.01½
Vermilion, Amer. lead	"		.14@.16
Quicksilver	"		.52@.55
Chinese	"		.70@.75
English, imported	"		.60@.65
Artificial	"		.10@.20
White lead, Am., dry	"		.05
In oil	"		.05¼@.06
Foreign, dry	"		.04¾@.07½
In oil	"		.04½@.05
Whiting, common	100 lbs.		.40@.45
Gilders	"		.50@.55
Zinc white, Amer., dry	lb.		.03¾@.04½
Antwerp, red seal	"		.05⅞
Green seal	"		.06¾
Paris, red seal	"		.06¾
Green seal	"		.08⅛
Palladium—			
Metallic (Ger)	grm.		.77
Black (Moor)	"		.71
Pearl Ash	lb.		.05@.05½
Pitch—Coal tar	gal.		.08
Platinum—Bichloride	oz.		9.00
Plumbago—American, pulverized, f.o.b., Providence, R. I.	sh. ton		25.00@30.00
German, lump	lb.		.01@.01½
Pulverized	"		.01¼@.01¾
Ceylon, crude	"		.01¼@.04½
Pulverized	"		.02@.05
Potash Alum—			
Caustic, pure white	"		.10
(76@78%)	"		.05@.06
(90%)	"		.06@.07
Potassium—			
Metallic, in Germany	kg.		18.56
Acetate (retail)	lb.		.30
Bicarbonate cryst	"		.08@.8¼
Bichromate	"		.10@.10¼
Bromide	"		.42
Carbonate	"		.04¾@.05½
Chloride, pure (retail)	"		.25
Chromate (retail)	"		.47
Cyanide (98@100%)	"		.25@.26
Ferricyanide, red, com'l	"		.36@.38
Chem. pure	"		1.25
Ferrocyanide, yellow, com'l	"		.14
Chem. pure	"		.75
Iodide, bulk	"		2.35@2.40
In bottles	"		2.45@2.65
Nitrate, double refined	"		.05
Chem. pure cryst	"		.05@.07
Oxalate, neutral (retail)	"		.20
Permanganate, pure cr.	"		.19@.20
Chem. pure (retail)	"		.34
Sulphide, com'l	"		.16
Chem. pure	"		1.00
Tartrate (soluble tartar)	"		.53
Pyrites—Roughs kiln, Am., iron (50%)	lg. ton		6.00
Smalls	"		5 80
Spanish, Non-cupreous	"		6·50
Iron, smalls	"		5.50
Quartz—(See Silica).			
Sal Ammoniac—White	lb.		.06
Gray	"		05¼
Salt—			
Domestic, gr. 200 lbs	sack		.55
Lump	sh. ton		12.00
Liverpool, gr. 200 lbs.	sack		.75
Fine	"		1.35
Lump	sh. ton		15.00
Turk's Island, 200 lbs.	sack		.25
Saltpeter—Crude	lb.		.03@.03¼
Silica—Precipitated	sh. ton		$12.00
Ground quartz, carload	"		8.50
Lump quartz	"		3.00@4.00
Silver—Chloride (retail)	oz.		.90
Cyanide (retail)	"		1.00
Nitrate	"		.40@.41¼
Oxide	"		1.10
Sulphide (retail)	"		1.00
Sodium—			
Metallic, in Germany	kg.		1.19
Acetate	lb.		.09¾@.06
Chem. pure, fused	"		.30
Bichromate	"		.08½@.08¾
Bisulphite, com'l dry	"		.07
Bromide	"		.47@.48
Carbonate, pure (retail)	"		.10
Chlorate, cryst	"		.10½@.11
Cyanide, pure (retail)	oz.		.55
Hyposulphite	lb.		1.47½@1.80
Molybdate, pure (retail)	oz.		.50
Nitrite	lb.		.07½@.07¾
Oxalate (retail)	"		.45
Phosphate, gran. pure	"		.03@.03¼
Cryst. c. p. (retail)	"		.30
Dry, c. p. (retail)	"		.50
Salicylate	"		.35
Silicate, p. cryst. (retail)	"		1.10
Com'l, lumps	"		.01@.04
Sulphate, pure	"		.10
Sulphite, cryst	"		.04@.06
Granulated (retail)	"		.16
Tartrate, c. p. cryst	"		1.00
Tungstate, com'l (retail)	"		.35
Pure	"		.50
Strontium—			
Carbonate, precipitate	lb.		.13@.14
Nitrate	"		.07¼@.07½
Oxalate	"		.39@.42
Sulphur—Flour	100 lbs.		1.65@1.75
Roll	"		1.60
Sublimed	"		1.90
Pure, precipitated	lb.		.12
Talc—American	100 lbs.		.40@.60
French	"		.90@1.50
Italian	sh. ton		20.00@35.00
Tellurium—			
Metallic, c. p. (Ger)	100 grms.		14.28
Powder	"		9.52
Tin—			
Chloride, pure cryst.	lb.		.22
Fused cryst. (retail)	"		.50
Crystals	"		.09¼@.09½
Muriate	"		.06@.08
Oxide	"		.21@.25
Protoxide	oz.		.25
Tripoli—Powder	lb.		.04
Uranium—Oxide	"		4.00
Zinc—			
Carbonate	"		.15
Chloride, gran	"		.05½@.08
Dust, indigo auxiliary,	"		.07
Sulphate	"		.02¼
Sulphide, com'l	"		.02½@.06
Zirconium—			
Oxide (retail)	oz.		.85
Oxide, hydr. (retail)	"		.66

THE RARE ELEMENTS.

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

	Cust. Meas.	Price.
Argon—Spectrum (N.Y.)	tube.	$5.00
Barium—Amalgam	grm.	1.19
Electrol	"	5 71
Beryllium—Powder	"	6.42
Crystals	"	9.52
Boron—Amorphous, pure	"	.62
Crystals, pure	"	1.79
Calcium—Electrol	"	4.28
Cerium—Fused	"	2.02
Chromium—Fused	100 grms.	5.95
Com'l pure powder	kg.	1.90
Chem. pure cryst	grm.	.24
Cobalt—(98@99%)	kg.	5.47@5.71
Pure	"	30.94
Didymium—Powder	grm.	4.28
Erbium	"	3.57
Gallium	grain	6.15
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	6.42
Crystals	"	9.52
Helium—Spectrum (N.Y.)	tube.	6.00
Indium	grm.	4.05
Iridium—Powder	"	1.25
Fused	"	1.31
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Lithium	"	2.38
Molybdenum—Com'l (95%)	kg.	2.86
Fused, electrol	100 grms.	15.47
Niobium—Chem. pure	grm.	3.81
Osmium	"	.83
Rhodium	"	3.57
Rubidium—Pure	"	4.76
Ruthenium	"	1.49
Selenium—Com'l powder	kg.	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicon—Amorphous	"	23.80
Crystals, pure	100 grms.	13.09
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	4.28
Thallium	kg.	29.75
Thorium	grm	7.85
Titanium	"	.71
Uranium	"	.60
Vanadium—Fused	"	1.43
Wolfram—Com'l (95@98%)	kg.	.95
Fused	100 grms.	15.47
Powder, pure	kg.	4.76
Yttrium	grm.	3.33
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71

ALPHABETICAL INDEX TO ADVERTISERS.

(—) Indicates every other week or monthly advertisements.

CLASSIFIED LIST OF ADVERTISERS.

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

Amalgamators.
Bucyrus Steam Shovel & Dredge Co.
Fraser & Chalmers.
Gates Iron Works.

Amalgam Plates.
Western Plating and Mfg. Co

Anti-Friction Metals
Besly, Chas. H., & Co.
Chester Steel Cast. Co.
Illinois Sm. & Ref. Co.

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

Assayers' and Chemists' Supplies.
Ainsworth, Wm.
Baker & Adamson.
Baker & Co.
Becker, Christian.
Bullock & Crenshaw.
Chur, Walter.
Denver Fire Clay Co.
Eimer & Amend.
Fuerst Bros. & Co
Henry/Heil Chem Co.
McCandless Chemical Laboratory.
Nelden Judson Drug Co
Penn sm. & Ref. Wks.
Penna. Salt Mfg. Co.
Roessler & Hasslacher Chemical Co.
Sargent, E. H., & Co.
Solvay Process Co.
Stand'd Fire Brick Co
Taylor, John, & Co.
Troemner, Henry.
Western Chemical Co

Attorneys, Corporation.
McColl & Hamilton.

Babbitt's Metal.
Besly, Chas. H., & Co.
Illinois Sm. & Ref. Co.

Bankers and Brokers.
Bennison, Wm., & Co.
Blackett, J. st. Clair.
Bonbright, W. P. & Co.
Breiting, E. N.
Brown Bros. & Co.
Dabney & Parker.
Dignowity & Co. C. L.
Grant, E. S.
Goldsmith Bros
Handy & Harman.
Hedburg, Eric.
Jarvis, A. & Co.
Miners & Prospectors Exchange.
Peery & Lowe.
Selbie, Wm.
Smith, C. H. & Co.
State Trust Co.
Timmis & Clapp.
White, Samuel.

Belting.
Detroit Sprocket Chain Co.
Hendrie & Bolthoff Mfg. Co.
Jeffrey Mfg Co.
New York Belting & Packing Co., Ltd.
Pearse, F. L., & Co.

Belt Lacing.
Bristol Co.

Blasting Caps.
Metallic Cap Mfg. Co.

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

Boiler Compound.
Parsons, J. H., Chemical Co.

Boilers.
Denver Eng. Wks. Co.
Fairbanks, Morse & Co
Fraser & Chalmers.
Pollock, Wm. B. & Co.
Billin, Chas. E. & Co.
Philadelphia Eng. Wks., Ltd.
Risdon Iron Works.
Stilwell-Bierce & Smith-Vaile Co.
(See Machinery.)

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

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

Bridges.
Berlin Iron Bridge Co.
Gillette-Herzog Mfg Co
(See Machinery.)

Brimstone Apparatus.
White, Edw. F.

Carbons
New York Diamond Drill Co.
Lexow, Theodor.

Chain and Link Belting (See Belting.)

Chemical Engineers.
Dunbar, R., & Son.

Chemicals
Baker & Adamson.
Bullock & Crenshaw
Kimer & Amend
Fuerst Bros. & Co.
Henry Heil Chem. Co
Penn. Salt Mfg. Co.
McCandless Chemical Laboratory.
Roessler & Hasslacher Chemical Co
Sargent & Co., E. H.
Solvay Process Co.
Western Chemical Co.

Chemical Plumbers.
Vollmer & Beaton.

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

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

Coal Washing Machinery.
Cuninghame & Co.
Jeffrey Mfg. Co

Compressed Air Shop Tools.
Clayton Air Compressor Works.

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

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

Contractors. (See Machinery.)

Conveying Belts.
Robins Conveying Belt Co.

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American Metal Co.
Arizona Copper Co
Atlantic Mining Co.
Balbach S. & Ref. Co.
Baltimore Cop. W'ks.
Bath, H., & Son
Bridgeport Copper Co.
Elliott's Metal Co., Ltd
James & Shakspeare.
Lambert's Wharf. Co.
Lewisohn Bros.
Orford Copper Co.
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Berlin Iron Bridge Co

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Baker & Co.
Denver Fire Clay Co.
Dixon, Jos. Crucible Co.
Garden City Sand Co.
Standard Fire Brick Co.
Stedman's Foundry & Machine Works.

Cyanide.
Fuerst Bros. & Co
Roessler & Hasslacher Chemical Co.

Cyanide Potash.
Fuerst Bros. & Co.
Gas Light & Coke Co.
Roessler & Hasslacher Chem. Co.
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Diamonds.
Lexow, Theodor

Diamond Drills.
American Diamond Rock Drill Co.
Bullock Mfg. Co., M. C.
Lexow, Theodor.
Sullivan Machinery Co.
(See Air Compressors and Rock Drills.)

Draughtsmen.
Young, Wm. R.

Drawing Materials.
Altenedер Theo. & Son
Besly, Chas. H., & Co.
Buff & Berger.
Gurley, W. & L. E.
Heer, Peter
Keuffel & Esser Co.
Lietz Co
Mahn & Co.
Saegmuller G. N.
(See Engineering Instruments.)

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

Dryers.
Brown, Horace F.
Cummer & Son Co.
Denver Eng. Wks. Co.
Dunbar, R., & Son.

Dump Cars
Denver Eng. Works Co.
Hendrie & Bolthoff Mfg. Co.
Hunt Co., C. W.
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Arizona School of Mines.
Chicago School of Assaying.
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Columbian University.
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University of Arizona.

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(See Wire Rope Tramway and Machinery.)

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

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

Engineers' Instruments and Supplies.
Braudis, F. E. Sons & Co
Buff & Berger.
Bullock & Crenshaw
Fauth & Co.
Gurley, W. & L. E.
Heer, Peter.
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(See Machinery.

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Chur, Walter.
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Billin, Chas. E. & Co.
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Denver Fire Clay Co.
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Sargent & Co., E. H.
(See Machinery.)

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Macbeth & Co.

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Union Gas Engine Co.

Gas Works
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(See Machinery.)

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Raymond Lead Co.

Link Belting. (See Belting.

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General Electric Co.
Hunt, C. W. Co.
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Detroit Lubricator Co.
Lunkenheimer Co.

Machinery, Dealers in Mining, Milling and Other Machinery
Allis, Edw, P., & Co.
American Diamond Rock Drill Co.
Bacon, E. C.
Besly, Chas. H., & Co.
Billin, Chas. E. & Co.
Blake, T. A
Bradley Pulverizer Co.
Bullock, M. C., Mfg. Co
Caldwell, H W., & Co.
Colorado Iron Works.
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New York Diamond Drill Co.
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Pollock, Wm. B., & Co.
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American Metal Co.
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Besly, Chas. H., & Co
Bridgeport Copper Co.
Elliott's Metal Co., Ltd.
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Matthiessen & Hegeler Zinc Co.
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Pass, C., & Son, Ltd.
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Picher Lead Co.
Raymond Lead Co.
Spanish-American Iron Co.
Tod, William, & Co.
Vivian, Y'nger & Bond.

Metallurgical Works and Ore Purchasers' Processes
American Dev. & Mg. Co.
American Zinc Lead Co.
Baker & Co
Balbach Sm. & Ref. Co.
Baltimore Copper Wks.
Bridgeport Copper Co.
Canadian Copper Co.
Con. Kas. City S. & R. Co.
Denver Eng. Wks. Co.
Elliott's Metal Co., Ltd.
Fraser & Chalmers.
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Mine Cars
Denver Eng. Wks. Co.
Fairbanks, Morse & Co.
Hendrie & Bolthoff Mfg. Co.
Hunt, C. W., Co.
Nelsonville Foundry & Machine Co.
(See Machinery.)

Mine, Mill and Smelters' Supplies.
Cuninghame & Co.
Denver Eng. Wks. Co.
Gates Iron works.
Roessler & Hasslacher Chemical Co.
(See Machinery.)

Mining and Land Companies.
American Dev. & Mg. Co.
Atlantic Mg. Co.
Arizona Copper Co.
Copper Queen Con. Mg. Co.
Detroit Copper Mg. Co.
Eureka Co.
Isabella Gold Mg. Co.
Rio Tinto Copper Co
Smuggler-Union Mg. Co.

Nickel.
Canadian Copper Co.
Orford Copper Co.

Ore Cars.
Gillett & Herzog.

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

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

Packing and Pipe Coverings.
Brandt, Randolph.
Jenkins Bros.
Robertson, J. L., & Son
New York Belting & Packing Co., Ltd.
Power Specialty Co.
Wyckoff & Son, A.

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

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Phosphor-Bronze.
Phosphor-Bronze Smelting Co.

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

Pipes
Billin, Chas. E. & Co.
Fairbanks, Morse & Co
Pollock, Wm & Co.
Power Specialty Co.
Wyckoff, A., & Sons.

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

Plumbago (See Graphite.)

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

Publications.
American Fertilizer.
Australian Mg. Stand.
British Columbia Mining Record.
Ir'n & C. Trade Review
McNeill's Code
Mining Investor.
Mining Journal.
Scientific Pub. Co.
Denver Republican.
El Minero Mexicano.
Indian Engineering.
So. African Mg. Jour.
Zeitschrift fur Praktische Geologie

Pumps
Billin, Chas E. & Co.
Cameron, A. S., Steam Pump Works.
Clayton Air Com. Wks.
Denver Eng. Wks. Co.
Fairbanks, Morse & Co.
Fraser & Chalmers.
Jeanesville Iron Wks
Snow Steam Pump Co
Stilwell-Bierce & Smith-Vaile Co.
Tod, Wm., & Co.
Worthington, H. R.

Pyrites:
Fuerst Bros. & Co.

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

Quicksilver.
Eureka Co.

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

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

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

Rock Drills. (See Air Compressors.)

Roofing
Berlin Iron Bridge Co.
Phelps, Dodge & Co.

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

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Fairbanks, Morse & Co.

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Aitchison, R., Perf. Metal Co
Denver Eng. Wks. Co.
Fraser & Chalmers
Gates Iron Works.
Harrington & King Perforating Co.
Link Belt Machinery Co.
Ludlow-Saylor Wire Co. (See Machinery
Tyler, W. S., Wire Works Co.

Second Hand Machinery.
McArthur Bros.
Robertson, J. L. & Son
Robinson & Orr.

Shoes and Dies
Chester Steel Cast. Co
Carome Steel Works.
Crescent Steel Co.
Denver Eng. Wks. Co.
Fraser & Chalmers
Gates Iron Works.
Semi-Steel Co.

Shovels (Steam).
Bucyrus Co.
Marion Steam Shovel Co.

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

Sprocket Wheels.
Detroit Sprocket Chain Co.

Steel Rails, Castings, Rolls, Drill Steel
Bethlehem Iron Co.
Chester Steel Cast. Co.
Chrome Steel Works.
Crescent Steel Co.
Jessop Wm. & Son Ltd.
King & Andrews Co.
moore, S. L., & Sons Co
Pollock, Wm. B. & Co.
Robinson & Orr.
Semi-Steel Co.
Taylor Iron & Steel Co
(See Metal Dealers.

Sulphur Apparatus.
White, Edward F.

Tanks.
Billin, Chas. E. & Co.
Denver Eng. Wks. Co.
Fairbanks, Morse & Co.
Gates Iron Works.
Williams Mfg. Co.

Telegraph Wires and Cables
Okonite Co., Ltd.,

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

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

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

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

Valves
Eddy Valve Co.
Fairbanks Morse, & Co
Jenkins Bros
Lunkenheimer Co
Powell, Wm., Co.

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

Voltmeters.
Weston Electrical Instrument Co.

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

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

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

Wharfage.
Lambert's Wharfage Co.

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Chester Steel Cast. Co.
Taylor Iron & Steel Co.

Wire Cloth.
Aitchison, R., Perf. Metal Co.
Harrington & King Perforating Co.
Tyler, W. S., Wire Works Co.

Windmills.
Fairbanks, Morse & Co.

Wire Rope & Wire
Besly, Chas. H., & Co.
Broderick & Bascom Rope Co.
California Wire Wks.
Cooper Hewitt & Co.
Hunt, C. W., Co
Phelps, Dodge & Co.
R'bling, J. A. Sons & Co
Ropeway Syndicate L't'd
Trenton Iron Co.

Wire Rope Tramway.
Brown Hoist. & Conv. Machine Co.
California Wire W'ks.
Colorado Iron Works.
Denver Eng. Wks. Co
Fraser & Chalmers.
Hunt, C. W., Co.
Roebling, J. A., Son & Co.
Ropeway Syndicate Steel.
Roberts Mfg' Co.
Vulcan Iron Works

POSITIONS VACANT

Free Advertising.

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

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

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

1534 WANTED — AN EXPERIENCED Placer Mining Foreman; one who is capable of taking full charge of a placer mine and is able to put in such improvements as will be required: building dams for holding water in reservoir, digging ditches, and putting in pipe and giant. Must also be familiar with under-currents. Must come with best recommendations as to ability and honesty. State experience and salary expected. Mines are located in Oregon. Address PLACER FOREMAN, ENGINEERING AND MINING JOURNAL.

1535 WANTED—MILL SUPERINTENDent for Peru; must fully understand the amalgamation of silver ores by the latest processes. House rent and table board furnished free. State experience, salary desired and references. Address PERU, ENGINEERING AND MINING JOURNAL.

1536 WANTED — AN ASSAYER AND Chemist for the City of Mexico; preferably one having had experience in Western smelter practice. Salary $150 Mexican currency per month. Address, stating age, experience and references, PUENTE, ENGINEERING AND MINING JOURNAL.

1537 WANTED — MINING ENGINEER for State of Durango, Mexico. Must be competent to assume full charge of mining operations, erect plant, conduct development and prospect work, assays, etc. Must speak Spanish and be thoroughly reliable. Address, with full particulars as to experience, ability and salary desired, DURANGO, ENGINEERING AND MINING JOURNAL.

1538 WANTED—A MINING ENGINEER experienced in silver mining and graduate of a technical school, to go to Peru; must have best references as to competency and reliability, and good knowledge of Spanish language. Address, stating salary expected, etc. LIMA, ENGINEERING AND MINING JOURNAL.

1539 WANTED.—A FIRST-CLASS SURveyor; also a chemist and assayer for a large mill and cyaniding plant. State qualifications, recommendations and salary expected. Address C., ENGINEERING AND MINING JOURNAL.

1540 WANTED—COMPETENT ASSAYER and Refiner for Jewelry Factory at Seattle, Washington. One who is ready to go without delay for good pay. Address SEATTLE, ENGINEERING AND MINING JOURNAL.

SITUATIONS WANTED.

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

A MAN, 27 YEARS OLD, WITH TECHnical education, previously assistant chemist at a large smelter and now with a consulting engineer, desires a position in the fall with a milling, smelting or refining company. Good references. Address C. D., ENGINEERING AND MINING JOURNAL. No. 18,040, Aug. 14.

WANTED BY MINING ENGINEER POSItion as superintendent of mine or mill; fully competent to take charge of iron, silver and gold mine, and understands steam and electric mining machinery; has had similar position, and is familiar with handling men; fine recommendations. Address No. 3a, ENGINEERING AND MINING JOURNAL. No. 18,059, Aug. 14.

SUPERINTENDENT.—POSITION AS MINE Superintendent wanted by an experienced man now under engagement with well-known mining company; first-class mechanic; understands all details of mining from the sinking of shafts to the development of same. Specialties: reduction of costs and increase in production of output. Address PRACTICAL, ENGINEERING AND MINING JOURNAL. No. 18,042, Aug. 7.

SOUTH AMERICA OR MEXICO—AN ASsayer and chemist who is familiar with heavy electric and steam machinery desires a position. Speaks Spanish; can give good recommendations. Address L. E. W., ENGINEERING AND MINING JOURNAL. No. 18,055, Aug. 7.

CHEMIST—LEHIGH UNIVERSITY GRADUate wants position as Chemist. Some experience. Best of references furnished. Address A. C., ENGINEERING AND MINING JOURNAL. No. 18,060, Aug. 21.

A MINING ENGINEER 26 YEARS OF AGE, now under engagement with well-known mining company, desires change; has been continuously employed for past five years in every capacity; thorough assayer and chemist. Address MINING, ENGINEERING AND MINING JOURNAL. No. 18,030, Aug. 14.

POSITION WANTED BY MINING ENGIneer and metallurgist; also good chemist; 20 years' experience; good references; will go to any country. Address ENGINEER, ENGINEERING AND MINING JOURNAL. No, 18,052; Aug. 7.

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CONTRACTS OPEN.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., July 27, 1897.—Sealed proposals will be received at this office until 2 o'clock P. M. on the 31st day of August, 1897, and opened immediately thereafter, for furnishing all the labor and materials required for trench excavation, concrete foundations, iron work and brick arches of terrace, and stone and brickwork of basement, area and terrace walls for the U. S. Mint Building at Philadelphia, Pa., in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent of the Mint at Philadelphia, Pa. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, should it be deemed in the interest of the government to do so. All proposals received after the time stated for opening will be returned to the bidders. C. E. KEMPER, Acting Supervising Architect. Orig.

SEWERS.—Sealed proposals will be received by the city of Corry until 8 p. m., Monday, August 9th, 1897, for the furnishing of the material and the construction of the Congress street system of sewers (about 2 miles of 10, 12, 15, 18, 22 and 24-in. pipe sewer), together with manholes, catch-basins, etc

Also for the furnishing of the material and the construction of the Smith street sewer (about 775 ft. of 18-in. pipe sewer), together with manholes, catch-basins, etc.

Also for the furnishing of the material and the construction of the Franklin and Mott street sewer (about 1,200 ft. of 10, 12 and 15-in. pipe sewer), together with manholes, catch-basins, etc.

Also for the furnishing of the material and the construction of the Spring and Church street sewer (about 1,397 ft. of 10, 12 and 15-in. pipe sewer), together with manholes, catch-basins, etc.

Also for the furnishing of the material and the construction of the West Church street, Euclid street and Second avenue sewer (about 2,790 ft. of 12, 15, 22, and 24-in. pipe sewer), together with manholes, catch-basins, etc.

Bids must be in duplicate, one addressed to City Clerk, and the other to City Controller. The bids addressed to City Clerk must contain cash or certified check, payable to the City Treasurer, as a guarantee that in case the contract is awarded, the successful bidder will, within 5 days after notice in writing from the City Engineer, execute said contract. The amounts of cash or checks are as follows:

Congress street system	$500
Smith street sewer	100
Franklin and Mott street sewer	100
Spring and Church street sewer	100
W. Church, Euclid and Second avenue sewer	200

Bonds to an amount not exceeding one-third of the contract price, with securities satisfactory to the City Solicitor, will be required of those to whom contracts are awarded.

The Councils reserve the right to reject any or all bids, also to waive defects in form. Plans and specifications may be seen at the office of the City Engineer, and bidding sheets may be there obtained.

ARTESIAN WELLS.—Sealed proposals will be received at the Mayor's office, Scranton, Miss., until 12 o'clock, noon, August 18th, 1897, for sinking and furnishing materials for a 6-in. artesian well, which will probably be about 800 ft. deep. No bid will be considered unless accompanied by cash or certified check payable to the order of the Treasurer of the town of Scranton, Miss., for 3% of the amount of the bid, to insure good faith and to be forfeited to the town of Scranton if the bidder fails to enter into a contract and file a satisfactory bond within five days after notice has been given that he has been awarded the contract. Specifications may be obtained by addressing J. D. Clark, Mayor, pro tem., Scranton, Miss., to whom all proposals or other communications are to be addressed. Bids must state fully and clearly therein just how the bidder proposes to finish the well on the bottom. The right to reject any or all bids is reserved.

WATER-WORKS.—Sealed bids will be received at the office of the Secretary of the Committee on Improvement of the Water-Works of the city of Newbern, Tenn., until 2 o'clock p. m., on Monday the 23d day of August, 1897, to furnish the necessary material, etc., and to erect and install the following; 1,300 ft. (approx.) of 8-in. cast-iron water pipe; 1,300 ft. (approx.) of 6-in. cast-iron water pipe; 7,200 ft. (approx.) of 4-in. cast-iron water pipe; 2½ tons of hub and spigot special castings; half ton of flanged special castings; two 8-in. gates; two 6-in. gates; eight 4-in. gates; 12 gate boxes; 22 fire hydrants; one 8-in. tubular well; one 65,000-gal. steel tank, and 50-ft. steel tower. All in accordance with the plans and specifications on file in my office. Each bid must be accompanied with a certified check for $250. The Committee reserves the right to reject any and all bids.

ELECTRIC LIGHTING.—Sealed proposals will be received at the office of the town clerk until 1 o'clock p. m., August 12th, 1897, for lighting the town of Lebanon, O., by electricity. Liberal franchise will be granted. Proposals to be for a term of five years or more, with price of purchase of plant on completion and at stated times thereafter. Each bidder to furnish his own plans and specifications and each bid must be accompanied by a certified check for $1,000. The council reserves the right to reject any and all bids.

DITCH.—Sealed proposals will be received by the Drainage Commissioners of the city of Momence, Ill., until August 12th, 1897, at 1 o'clock p. m., for the construction of a main ditch and six branches in the Hopkins Drainage District in Kankakee County, State of Illinois. The ditch and branches will be about 15 miles long and constructed by dredge, and will require the removal of approximately 320,000 cu. yds. of earth. Said bids will be opened at the office of B. F. Gray, over Exchange Bank, city of Momence, Ill. Plans and profiles and specifications of the proposed work may be obtained by calling at or addressing the office of J. L. Clark, engineer of the said district of Momence, Illinois. Each bid must be accompanied by a check certified for $500.

LEVEE CONSTRUCTION.—U. S. Engineer Office, Equitable Building, Memphis, Tenn.—Sealed proposals for Levee Construction in Third District, improving Mississippi River, will be received here until 1:30 p. m., August 11th, 1897, and then publicly opened. Information furnished on application.

HOISTING MACHINERY FOR HEAD GATES. —Proposals will be received by the Water Board until 3 o'clock p. m., August 9th, 1897., for hoisting machinery for head gates for water-works, Bangor, Me. Same are to be made in accordance with plans and specifications of the work, which can be seen at the office of the Water Board or may be obtained of A. B. TOWER, Holyoke, Mass. The right is reserved to reject any or all bids.

STONE BRIDGES.—Sealed proposals will be received by the Board of Selectmen of the town of Killingly, at the office of the Clerk of the Board in Danielson, Conn., until 12 o'clock noon, on August 7th, 1897, for constructing three stone arch bridges. Plans and specifications may be examined at the office of O. W. Bowen, Clerk of the Board of Selectmen. The selectmen reserve the right to reject any or all bids.

LANDS AND MINES FOR SALE.

J. F. CROSETT,
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On Pacific Coast. Correspondence solicited.

I HAVE SOME GOOD GOLD MINING PROPerties for sale at reasonable prices; some developed and paying propositions and some prospects, at Ward, Gold Hill, Jamestown and Magnolia. Write, stating what you want, or call on me. JAMES M. NORTH, Boulder, Colorado.

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Illustrated Description sent free to any parts of the world.
Address E. HEDBURG, M. E., Joplin, Mo

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IN SUDBURY DISTRICT.
Apply to . . THOMAS MULVEY,
Barrister and Solicitor,
Quebec Bank Chambers,
2 Toronto Street, Toronto.

I CONTROL A GOLD MINING PROPERTY near Yorkville, S. C., which I have developed to the depth of 35 ft. At this depth it shows a true fissure vein about 3½ ft. wide, and containing ore worth over $25.00 per ton. $10,000 is wanted to equip the mine with a plant and put the property on a big paying basis. To the right party furnishing the $10,000 I will give a one-third interest in the property, and in addition will allow the first moneys realized as profits from the property to go to him until he has received the $10,000 back, and in this way the one-third interest will have cost him nothing. Detailed information furnished on request, and every opportunity afforded for personal inspection of the property. Address
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FOR SALE OR LEASE.
A very extensive fine white Gypsum Quarry in Bay St. George, Newfoundland. Favorably situated for economical working and shipping. Apply to
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FOR SALE.—One five-million-gallon, Worthington, high-duty pumping engine. This engine has been used at the Eastern Pumping Station of the Baltimore City Water Department since 1892, and is in first-class repair, having been in service up to June 15th, 1897. The engine was removed, as the service required a larger engine. The engine is of the Worthington compound type, with high-duty attachment, and is as good as new, having been carefully cared for. The engine has given in regular service a duty from 75,000,000 to 85,000,000 foot pounds, pumping 6,500,000 gallons in 24 hours.
For price and other details apply to NICHOLAS S. HILL, JR., Chief Engineer Water Department, City Hall, Baltimore, Md.

MISCELLANEOUS WANTS.

SECOND-HAND RAILS.
If you have any Rails which are in good condition to relay—or if only good to be used as scrap—write us we buy both kinds.
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THE owners of valuable mines and claims in a new and active territory wish to meet capitalists to organize for the extensive working of same. Address ATLANTIC, Engineering and Mining Journal.

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DIVIDENDS.

ISABELLA GOLD MINING COMPANY,
COLORADO SPRINGS, COLO., June 10, 1897.
DIVIDEND NO. 11.
A dividend of ONE-HALF CENT PER SHARE ($11,256) has been declared, payable June 25th, 1897, to stockholders of record June 15th, 1897.
The stock transfer books will be closed June 15th, 1897, at 3 o'clock p. m., and will be reopened on the morning of June 26th, 1897.
PERCY HAGERMAN,
Vice-President and Treasurer.

NEW YORK AND HONDURAS ROSARIO MINING COMPANY.
ROOMS 703 TO 705 WELLES BUILDING, No. 18 BROADWAY.
Telephone: 1012 Broad.
NEW YORK, August 2, 1897.
DIVIDEND NO. 37.
The Trustees of the company have this day declared a dividend of TEN CENTS per share on its capital stock, payable August 20th, 1897.
The transfer books will be closed from August 10th to 20th.
S. JACOBY, Treasurer.

CONTRACTS OPEN.

Continued from Page 20.

WATER-WORKS AND ELECTRIC LIGHT Plant.—Sealed proposals will be received by the Secretary of the Board of Improvements of the city of Siloam Springs, Ark., until 12 o'clock noon on Tuesday, the tenth day of August, 1897, for furnishing the necessary material, machinery, etc., to erect and install the following: 1 stone tower, 30 × 50 ft.; with steel tank, 25 × 30 ft.; 7,000 ft. (approx.) of 12-in. sewer pipe; 18,000 ft. (approx.) of 4-in. iron pipe; 5,600 ft. (approx.) of 6-in. iron pipe; 3,400 ft. (approx.) of 8-in. iron pipe; 1,000 ft. (approx.) of 2½-in. hose; 34 fire plugs. Electric Lights—Power house, stone or brick; 125 H. P. engine; 2 boilers, 16 ft. × 54 in.; 1 arc and 1 alternating incandescent dynamo; 4 miles (approx.) street wiring; 25 1,200 c. p. arc lamps. All in accordance with the plans and specifications on file in this office. Each bid must be accompanied by a certified check in the sum of $250. The Board reserves the right to reject any and all bids.

HOISTING MACHINERY FOR HEAD GATES.—Proposals will be received by the Water Board until 3 o'clock p. m., August 9th, 1897, for hoisting machinery for head gates for water-works, Bangor, Maine. Same are to be made in accordance with plans and specifications of the work, which can be seen at the office of the Water Board or may be obtained of A. B. TOWER, Holyoke, Mass. The right is reserved to reject any or all bids.

STONE.—U. S. Engineer Office, Boston, Mass.—Sealed Proposals for cement, sand and stone, for Battery at Long Island Head, Mass., will be received here until noon of August 9th, 1897, and then publicly opened. Information furnished on application.

PAVING RIVER BANK.—Sealed proposals will be received by the Board of River Commissioners of the city of Corning, N. Y., until noon of Wednesday, August 11th, 1897, for paving with stone the banks of the Chemung River in the city of Corning, N. Y., according to plans and specifications now on file at the office of the Corning Gas Company in said city. The paving will be of two classes and will amount to between 1,700 and 2,800 cubic yards. A certified check for $100 must accompany all proposals. The Board reserves the right to reject any or all of such proposals.

LEVEE—U. S. Engineer Office, 99 Madison St., Memphis, Tenn.—Sealed proposals for closing crevasses, enlarging and repairing levees in Lower St., Francis, White River and Upper Yazoo Levee Districts will be received here until 12 o'clock noon, August 16, 1897, and then publicly opened. Information on application.

STEEL BRIDGE.—Sealed proposals will be received by the Joint Committee of the Boards of Chosen Freeholders of the Counties of Morris and Essex, for the rebuilding with steel the superstructure of the bridge over the Passaic River at Two Bridges.
There will be four spans of 44 ft. and one of 88 ft. Bids are to be submitted to the Joint Committee on Saturday, August 7th, 1897, at 4 p. m., at F. A. Wilkins Hotel, Singac, N. J., and at no other time or place.
Plans and specifications may be seen at Freeholder's office, Court House, Morristown, N. J., or at rooms of Committee on Roads and Assessments, 890 Broad Street, N. J. The committee reserves the right to reject any or all bids. Bidders must be prepared to execute a bond for the amount of the contract.

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