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The breaking up of the Steel Rail Combination, described in our market columns, seems to have been the result of pressure for business on the part of some of the companies, combined with discontent over the allotments proposed for the year. The price of $25 per ton at mill, which had been fixed for 1897, has practically disappeared; and rails are selling at $18 to $20 with a prospect of still lower quotations. The price named is certainly much more in accordance with the current cost of steel billets and other raw materials than the combination rate. The drop will certainly stimulate buying on the part of the railroad companies, very few of which have as yet made their contracts for the year.

The coal production of Alabama in 1896, according to the preliminary statement of Mr. J. D. Hillhouse, the State Mine Inspector, will reach at least 5,100,000 tons. As several mine reports are yet to come in, it is probable that the actual total will approach very closely the estimate of 5,200,000 tons given in the *Journal* for January 2d last. The 5,100,000 tons now given shows a decrease of 591,000 tons, or 10.4 per cent., from the total of 1895. Of the output last year 3,493,098 tons, or about 68.1 per cent., was from the mines of Jefferson County. The decrease was chiefly due to the lessened activity of the blast furnaces, which are the chief consumers of Alabama coal.

Shipments of coal to Mississippi River points are on the increase, and the line by way of Greenville, Miss., and thence down the river is increasing its business. Alabama coal promises to be of a good deal of importance in the lower river markets, as it can be delivered very cheaply at New Orleans and the other cities and towns along the river.

While short crops, famine and general poverty are likely to limit the power of India to buy silver this year, there seems to be a larger demand from China and the Straits, with some increase from Japan also, so that the call for silver from the East shows no marked change in the total. There is a variation in the course of the movement, however, which has reduced Eastern orders in the London market. The shipments of silver from San Francisco direct, though less than had been expected, have still been very considerable. There has also been a large shipment from Australia to China and the Straits, and for some months past practically all the silver from the Broken Hill mines has been taken for the East. The lighter shipments from London have indicated, therefore, a change in the direction of the movement rather than any cessation in demand.

At the same time, a recent effort to work up some speculation in the metal, on the basis of a probable demand for coinage in Russia, has dropped entirely for want of support. Russia is coining a large amount in pieces of one rouble, 50 and 25 kopeks (about 50, 25 and 12½ cents respectively) to serve as subsidiary coins in her new system, but the silver required is already on hand, and little, if any, more will have to be bought.

The price of silver has been very steady for some time past, and the indications are that little change is to be expected at present.

The slight increase in the stocks of copper on hand which was shown near the end of last year has disappeared, and the visible supplies show a decrease instead. This indicates no diminution in the European demand for the metal, which continues extraordinarily active. There are signs of a growing demand in this country also as business revives, and there is, for the present, not much chance for an over-supply. The uncertain factor is how much longer the consumption in Europe will keep up at the present high level. The demand for electrical work is increasing rather than diminishing. In France and Germany, and even in England, the electric street railroad is just beginning to take hold, and a large amount of work of that kind is promised; in fact it will take two or three years at least to carry out all the projects now started. In other kinds of electric work there is also great activity. For the manufacture of war material a demand will be maintained as long as the nations of Europe keep up their armies on the present footing. These two have been the chief causes of the great demand for copper, and they seem likely to continue active for some time yet.

The demand for copper from India has been only moderate. This is chiefly supplied from London, the Eastern supplies being taken from stocks there rather than from producers. It might be well to inquire whether this trade might not be supplied directly, to our own advantage.

A company is being advertised in London at present, called the "New Gold Fields of British Columbia, Limited." Among the directors are such eminent men as Sir Charles Tupper and Mr. C. Ashworth, late London manager of the Bank of Montreal. But judging from the prospectus and from facts which have come to our knowledge relating to the intentions of the promoters, we are disinclined to believe that these gentlemen know what they are doing. In the first place the prospectus as advertised in the daily papers is "abridged"; that is, it omits a very vital paragraph relating to the contracts entered into and the considera-

tions for these contracts. The statement is made that no promotion money has been or will be paid; but as a matter of fact the considerations for the said contracts amount to the payment of promotion money. The directors also omit to say what these contracts relate to. Another part of the prospectus to which we object is the announcement that although the company has not yet secured any mines, prospects or claims, it has in view several properties, but has not entered into obligations to purchase. Now we happen to know where these properties are, though they are not specified in the prospectus. The directors of the company a short time ago proposed to secure options on these properties, and the deal was nearly completed, when certain parties, who really controlled the properties, obtained an injunction and the whole matter is now before the Provincial Court. Then, again, although the company is called the New Gold Fields of British Columbia, the properties they "have in view" are silver-lead properties. Finally, the name of the company is objectionable, because there is already one in existence called "The Gold Fields of British Columbia."

The results obtained, chiefly in this country, with nickel-steel have had a marked effect abroad and France, Russia and Germany have decided to reconstruct their artillery using nickel-steel entirely for the new guns. The first work to be done in France will be in the construction of a large number of cannon for the field artillery service on the modified Canet rapid-fire system. This will be followed by the building of a number of heavy guns for the fortifications out of the same material. The term "building" a gun is now an appropriate one, since the modern heavy cannon is not cast or forged in one piece, but is a complex structure built up of successive rings or jackets, each of which is a separate forging. Germany is more reticent about her plans than France, but it is understood that the adoption of nickel-steel has been fully decided on. The French government, it is said, has appropriated 200,000,000 fr. for this purpose, and it is said that steel containing as high as 15 per cent. nickel will be used, though experiments here indicate 4 or 5 per cent. as the limit of practical economy.

The work thus begun will require a considerable amount of nickel, though after all the total will not be more than can be easily supplied by the companies which now control the supply of that metal. Moreover, the work will be spread over several years so that the effect upon the market should not be great. The announcement of the French orders, however, was the cause of an extraordinary movement in the stock of the French company Le Nickel. The shares, which had been for some time fluctuating between 145 fr. and 195 fr., were run up in one week from 195 fr. to 310 fr. in price. The next week, however, they dropped back to 215 fr., the object of the speculators having probably succeeded, while the public began to realize how small the basis for a rise really was.

Some Australasian Gold Outputs.

The gold production of New Zealand for 1896, as fully reported, showed some decrease from 1895 instead of a small increase, as had been expected. This was due to the small returns for the closing quarter of the year, which were 24,366 ounces less than those for the last quarter of 1895. The total production for the year was 263,722 crude ounces, which was, at the values reported, equivalent to 237,350 fine ounces, or $4,906,025. In 1895 the total was 293,491 crude ounces, equal to 264,142 fine ounces, or $5,459,815. The decrease last year was, therefore, 26,792 fine ounces, or 10·2 per cent. There was a great deal of work done in New Zealand in 1896, but much of it was in development and preparation, and some promising mines have not yet reached the producing stage. There was a large increase in the number of prospecting and mining licenses issued by the Mines Department during the year.

Two New Zealand mines distinguished themselves in 1896. The Waihi Company obtained $609,330 in bullion from 32,850 tons of ore, the average being $18.55 per ton, and paid dividends of 40% on its capital stock of $750,000. The Hauraki Company, with a much smaller mine, showed much higher grade ore. Its mill worked 4,193 tons of ore, and the result showed a total of $473,465 in bullion, or $112.92 per ton. On such ore the company was able to pay 160% in dividends on $200,000 capital stock.

Victoria increased its gold production over the preliminary estimate, and showed a total for 1896 of 805,089 crude ounces, equal at the usual rate, to 756,782 fine ounces, or $15,642,684. In 1895 the output was 740,086 crude ounces, equal to 695,681 fine ounces, or $14,379,726. The gain shown in 1896 was therefore 61,101 fine ounces or $1,262,958 in value, an advance of 8.8 per cent. over the previous year. Victoria thus remains far in advance of the other colonies, furnishing over one-third of the total gold of Australasia. Bendigo remained the most important district in Victoria, producing 191,940 crude ounces, while Ballarat was second with 160,317 ounces. Gippsland furnished 116,599 ounces, and the Beechworth mines 109,865 ounces. The total dividends for 1896, as reported to the Mines Department, were $2,602,225.

The gold output of Western Australia, as officially reported for 1896, reached a total of 281,263 crude ounces, equivalent to 251,646 fine ounces, or $5,201,518. The values given by the report indicated an improvement in the bullion, the average in 1896 having being ·895 fine, against ·815 fine in 1895. The increase shown last year, as compared with 1895, was 49,750 crude ounces; but, reduced to proper terms, it amounted to 62,963 fine ounces, or $1,301,440. Under ordinary circumstances this would be a remarkable growth for one year, amounting to 33 per cent.; but it is still a disappointing result when we compare the product with the enormous amount of money invested in the mines ef the colony during the past three years. On a rough calculation, English capital to the amount of between $275,000,000 and $300,000,000 has been put into West Australian gold mines, nearly $200,000,000 having been paid for the mining claims themselves—either in cash or stock—and the balance subscribed for machinery and working capital. Even if the gold reported were all net profit the return would be a very insufficient one on the investment; but it is altogether probable that nearly all the output was absorbed in expenses, and that the actual profit was infinitesimally small. A very few companies made some profit; but the great majority have so far nothing to show.

We have now official returns from three of the Australasian colonies, including the chief gold producer. While some changes are made, they nearly balance each other, and very little change will have to be made in the total gold production, as estimated by us at the close of the year.

Anthracite Coal Production and Trade.

The anthracite coal mining and carrying companies have for a number of years maintained a statistical bureau in Philadelphia, which formerly issued monthly statements giving the shipments from the different regions for the information of all concerned. These reports were of material service to the trade, and their regular publication continued for a number of years without objection from anyone. About two years ago, however, the bureau ceased to issue reports, in pursuance of the policy of concealment which all the coal companies seem to have adopted, and this ill-judged and almost ridiculous course has been closely adhered to. We have, however, obtained from reliable sources a full statement of the shipments of the different companies for 1896, which is given below in comparison with the returns for 1895. The shipments are in long tons of 2,240 pounds, as usual with anthracite; the final column shows the percentage allotted to each company for 1896 by agreement.

	1895.		1896.		
	Shipments.	Per ct.	Shipments.	Per ct.	Allotted.
Philadelphia & Reading	9,905,059	21·47	9,019,533	20·89	20·50
Lehigh Valley	7,360,454	15·81	6,749,128	15·63	15·65
New Jersey Central	5,388,194	11·57	4,939,003	11·58	11·70
Delaware, Lackawanna & Western	6,129,260	13·16	5,627,533	13·03	13·35
Delaware & Hudson	4,347,813	9·34	4,152,273	9·52	9·60
Pennsylvania Railroad	5,025,645	10·79	4,752,120	11·06	11·40
Pennsylvania Coal Company	1,746,832	3·75	1,728,972	4·05	4·00
Erie Railroad	1,820,038	3·91	1,718,262	3·98	4·00
N. Y., Ontario & Western	1,424,407	3·03			
N. Y., Susquehanna & Western	1,492,244	3·06	4,430,659	10·26	9·80
Delaware, Susquehanna & Schuylkill	1,905,784	4·11			
Totals	46,545,760	100·00	43,177,483	100·00	100·00

In order to compare the total output for a series of years we have added below the shipments to market for 12 successive years, again in long tons:

Year.	Tons.	Year.	Tons.	Year.	Tons.
1885	31,623,529	1889	35,407,710	1893	43,089,536
1886	22,136,362	1890	35,855,174	1894	41,391,198
1887	34,641,017	1891	40,448,336	1895	46,545,760
1888	38,145,718	1892	41,893,320	1896	43,177 485

As it is customary to add 6 per cent. to the shipments for coal consumed at the mines and in their immediate neighborhood, this would give a total production for 1896 of 45,768,132 long tons, equal to 46,500,422 metric tons. The shipments for 1896 show a decrease, as compared with 1895, of 3,368,277 long tons, or 7·2 per cent.; but they were greater than those of any year prior to 1895.

An examination of the table will show that the companies generally kept quite closely to their allotment. In January there was no agreement existing and a very large quantity of coal was mined, each company shipping freely, and in February, when the agreement or understanding took effect, there were many existing discrepancies to be made up later. This was generally done, and the variations from the division shown by the actual shipments were very small. This was the more remarkable because of the indefinite nature of the understanding. For reasons well understood, no formal agreement was entered into either then or later. That companies which have heretofore showed themselves quite willing on occasion to disregard written contracts should thus respect an informal one, is certainly worthyof note.

Notwithstanding the decrease in shipments, that in sales and deliveries for the year was still greater. No report of the actual stocks at tidewater and at Western delivery points can be obtained, but the reports of all the companies which have so far been published for 1896 show large increases in the "coal on hand" as charged in the balance sheets. Thus for the Lehigh Valley Coal Company this amounted to $1,300,000, and for the Delaware, Lackawanna & Western to $557,000; in both cases

showing an excess of coal mined and shipped over the deliveries. There is little doubt that the same condition exists with all the companies.

Under the circumstances it seems hardly necessary to enquire whether prices were maintained on the coal sold during the year. Prior to the agreement in February, large quantities of coal had been sold on a basis as low as $3.60 per ton, f. o. b. tidewater, for stove, and long after the regulation of shipments began, the deliveries continued to be made on these January contracts, though the basis at first adopted had been $4 per ton for stove. A formal increase was made to $4.25 in July and to $4.50 in September; but the quantity of coal actually sold under the July rate was small, and the September increase was so purely nominal that after three months the companies abandoned the pretence of keeping it up, and sold under "July circular." Even the latter has been evaded under the form of "old contracts" and other devices well known to the trade, and it is quite safe to say that the average price obtained for tidewater coal was about $3.80 or $3.85 per ton, rather than the nominal "list" price. With the Western trade matters were even worse than at tidewater.

With low prices it is not probable that any profit was made by the anthracite companies during 1896. We have before pointed out that it is impossible to ascertain from the reports of any of the companies which are made public the cost of mining and shipping coal. So far as the statements of the Philadelphia & Reading Coal and Iron Company and the Lehigh Valley Coal Company can be interpeted, both of them lost money during the year. The Delaware, Lackawanna & Western makes no separate statement of its coal business; and the others have not yet been issued. In any event the accounts of the companies, which are both miners and carriers of coal, are so kept that it is easy for them to transfer costs and to regulate railroad rates so that the balance of profit can be transferred to the mining or railroad account as desired. Usually it is to the railroad account, since that is the one presented to the stockholders and dwelt on in the roports. In a recent comment on the Lehigh Valley report (*Journal* for January 23d, page 86) we noted the fact that that company reported a higher rate per ton-mile on coal than on general freight—0.646 cent against 0.48 cent—though this condition is the reverse of that existing everywhere else, and is only possible in a case like this, where the carrying company itself owns the freight and can put the nominal rate at any point to suit itself.

The anthracite coal companies command a certain market and will doubtless continue to hold it, but the outlet for their coal cannot increase largely. They have largely lost the trade of the Eastern States for steam purposes to the bituminous coal mines. They will have in the future to meet two contingencies. One is the exhaustion of the mines, which is surely approaching, and against which none of them—except the Pennsylvania Coal Company—is making any provision in the form of sinking funds or depreciation accounts. The other, which will affect the handling of coal rather than its mining, is the possible substitution of gas or electric transmission for the present system of carrying the coal itself. Any change in the latter direction will doubtless be postponed as long as possible by the opposition of the companies; though if they were wise they would take up the matter themselves and thus control the future, seeking some other way of utilizing their transportation plant. The small degree of foresight shown in the past, however, gives but little hope for the future.

NEW PUBLICATIONS.

L'ARGENT. By L. de Launay. Paris, France; J. B. Bailliere & Fils. Pages, 382; illustrated.

This little book is one of a series on different metals issued by the same publishers, and intended to give information of the latest date in a condensed form. M. de Launay's standing as a mining engineer and writer on geological topics is well known. The book is divided into five parts, the first treating of the metal itself, its properties and alloys. The second relates to the geology of the silver deposits, the minerals with which its ores are associated and the probable origin of silver ores. The third part refers to the metallurgy of silver, ore treatment and refining. The fourth describes the uses of silver in the arts. Finally the fifth deals with the use of silver as money, its economical position and value and its commercial relations. The section on metallurgy is the longest, occupying nearly one-third of the book; but it is still very much condensed, and the processes described are very briefly treated. This was necessary, considering the limits of the book, but some extension here would have been desirable.

Of course the book is largely a compilation and M. de Launay has given full credit to the works from which he has drawn material, among which we note Professor Egleston, Professor Hofman and other American authorities. A fair amount of space has been given to American silver deposits, and some also to American metallurgical processes, though the latter have hardly received as much attention as their success deserves. The statistical tables in the book have been brought up, as a rule only to 1893, which is to be regretted, when figures for at least two years later were accessible.

GEOLOGICAL SURVEY OF ALABAMA. REPORT ON THE VALLEY REGIONS OF ALABAMA (PALEOZOIC STRATA.: PART I. ON THE TENNESSEE VALLEY REGION. By Henry McCalley, Assistant State Geologist, Montgomery, Ala.; State Printer. Pages 436; with map and illustrations.

This report is the result of several years of careful work, and is the first attempt at a systematic description of the region covered. It deals equally with the geology and the economic resources of the region, a proper understanding of the former being essential in the determination and development of the latter. Bearing in mind the importance of these resources, the author has carefully avoided hypotheses and theoretical discussions and has said comparatively little about the many purely scientific questions arising in considering this subject. Section I of the report treats of the Tennessee Valley region generally, its physical features, geology, natural resources, soils, timber, water-powers, drainage and other points. The mineral resources include coal, iron ores, manganese ores, limestones, building stones and clays of various kinds, while petroleum, asphalt and salt are believed to exist, though not yet developed or worked to any extent. This region is not so rich in mineral values as the Coosa Valley, which will be described in Part II., but it is still a very important and valuable district.

Section II. takes up the region by counties, describing each in turn with considerable detail, which is of much local service. The whole makes a very interesting and valuable report, and illustrates well the service which the Geological Survey is doing for the State.

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.

Proceedings of the American Forestry Association, Volume XI. Washington, D. C.; Published by the Association. Pamphlet, pages, 59.

British Iron Trade Association: Annual Statistical Report on the Iron and Steel Industries in 1895-96 *by the Secretary, J. Stephen Jeans, to the Members.* London, W. C., Eng.; Published by the Association. Pages, 84.

Report on the Slocan, Nelson and Ainsworth Mining Districts in West Kootenay, British Columbia. Bulletin No. 3. By William A. Carlyle, Provincial Mineralogist. Victoria, B. C.; H. M. Printer. Pages, 95; with map.

Getting Gold. A Practical Treatise for Prospectors, Miners and Students. By J. C. F. Johnson. London, Eng.; Charles Griffin & Co., Ltd. Philadelphia, Pa.; J. B. Lippincott Co. 1897. Pages, 204; illustrated. Price, $1.50.

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.

American Diamond Drills Abroad.

Sir: In the summer of 1894 the government of the Province of Ontario decided to adopt the policy of the Australian government and purchase a diamond drill to be rented at a nominal price by mining concerns in the Province who wished to develop mineral properties by the use of one of these machines. After giving the matter considerable investigation, they purchased from the Sullivan Machinery Company, of Chicago, one of its "C" Sullivan drills with complete outfit, and have been using it very successfully ever since.

The Province of New Brunswick had this same matter under consideration for some time and when the necessary appropriation was made, investigated the question of diamond drills very carefully. The Hon. A. T. Dunn, Surveyor-General, visited many of the manufacturers of these machines and has just placed an order with the Sullivan Company for a duplicate of the Ontario plant. C.

CHICAGO, Feb. 5, 1897.

Use of Chrome Ore in Copper Furnace Linings.

Sir: Mr. Lang's reference in the *Journal* of January 23d to the use of chrome iron ore as a promising substance for a neutral furnace lining, recalled an experience of the writer at South Strafford, Vt., in 1890. The ore, which was chalcopyrite mixed with much pyrrhotite, was heap roasted and then smelted to a matte, carrying about 40% copper in a water-jacket furnace, the separation of slag and matte taking place in a basin cut out of a fore-hearth tamped with brasque.

Considerable trouble was experienced on account of the rapid corrosion and deepening of the channel, cut in brasque, through which the matte and slag flowed from the furnace to the separating basin and as an experiment this channel was lined with chrome ore. The result, as far as the non-corrosion of the chrome ore was concerned, was satisfactory, but as the channel was formed of a number of pieces of ore, we were obliged, after fitting the pieces as carefully as possible, to tamp brasque around them. This was sooner or later cut out, allowing the slag and matte to undermine and displace the pieces of ore.

With the use of something satisfactory for holding the chrome ore together, it would seem to be a good material for a furnace lining.

BUTTE, MONT., Jan. 30, 1897. GEO. A. PACKARD.

Economic Minerals in the West.

Sir: Few persons have any definite idea of the abundance or value of economic minerals in the West. It is the prevalent idea that gold and silver are the only profitable minerals. While not making extraordinary returns on the investment as gold mines sometimes do, yet the economic minerals are usually found in such quantities that they yield a steady return, the amount being determed by the method of working and cost of transportation to a point of consumption. As railroads extend their lines, products become valuable that were previously too far from transportation to be profitably worked. Well-known deposits of valuable minerals are now undeveloped, because there is no transportation, and because capital is ignorant of them.

There are, in the West, many deposits of soda, borax, lime, sulphur, gympsum, coal, alum, manganese ores, kaolin, steatite, onyx, graphite, etc. Many of these are near enough to a railroad to be profitably worked. There are also deposits of fine, soft and even-textured marble to be formed. Sulphur is found in inexhaustible quantities. The sulphuric acid and brimstone products do not have to be shipped to the East for a market, as is generally supposed, since great quantities are used in the West. Improvements in sulphur refining machinery make mines profitably now that were not so a few years ago. There are salt and alkaline deposits without number.

Why would it not be a profitable investment for capital to send out good mining engineers in search of economic minerals? There are many Western mining engineers who are familiar with the most favorable localities, and know something of Western prices, cost of labor, buildings, plants, etc. The writer has neither direct nor indirect interest in any such deposits mentioned, and has no "ax to grind," but would be pleased to see our own resources developed instead of importing from foreign countries. He has traveled over the greater part of the West, and has always been observant of points of economic interest.

JUNCTION, Nev., Feb. 1, 1897. O. H. PACKER.

SAMPLING CERTAIN ORES.

Written for the Engineering and Mining Journal by William W. Taylor.

Some months ago, when chemist for the Missouri Furnace Company, of St. Louis, I was sent to Iron Mountain, Mo., to sample certain piles of jigged iron ore. This ore varies, from particles the size of sand to lumps as large as hickory nuts. Former experience with this ore, had taught me that it would be practically impossible to get an average sample of each pile by tunneling in the usual way. The ore had laid for years, exposed to the elements, and the outside alone would show a different analysis from that which was inside and partially at least protected from weather influence. To move the pile, was, of course, out of the question, but I hit upon a plan which gave, I think, as reliable results as could be attained in any way.

I experimented with iron pipes, by driving them into the ore piles. Trial showed me that for this ore a 2-in. pipe gave the best results. The first pipe used lasted for the boring of only five holes, the sledge upsetting the end of the pipe badly, causing it to crack on the weld.

The noon following my first morning's work, I had the blacksmith make a collar and pin, for a new section of pipe. The collar was made of ⅝-in. iron, 1 in. wide and was shrunk on the outer end of the pipe; the object being to protect the pipe. The pin, or plug, was also made of iron and should comfortably fill the pipe for about 6 in. A shoulder on the pin transmits the blow of the sledge to the pipe. I used a pipe 13 ft. in length and drove it 12 ft. deep at intervals of 10 ft. into the ore piles. Two men using 6-lb. sledges could drive 25 holes a day in this ore.

To draw the pipe from the pile, where I could do so, I used a mule. In places where the mule could not go, the pipe was pulled by two men. A stout chain, with a ring on the end slipped over the pipe, facilitated matters. The ore will core in the pipe, and, after drawing, by raising the pipe to vertical position, it was easily removed by a few raps on the pipe with a hammer.

By this means a continuous sample was obtained, and the correct proportion of coarse and fine materials was kept. I also used a pipe with marked success sampling fine jig ore. This ore resembles sand in degree of fineness and was the product of bumping tables.

Some care must be taken in drawing the pipe, particularly when it has been driven downward, as in that case sudden starting will cause part of the ore to remain in the pile. I found, by exercising caution, I could draw the pipe at an angle of 30° and be sure I got all my core. With a very wet, fine ore, the pipe could be driven downward on a much greater angle.

With my acquaintance with Mesabi ore, it seems to me, some such method would be very applicable for sampling, both in the mine and for car lots. I see no reason why ores of other metals, which are in a similar mechanical state, cannot be sampled in this way. Also cements, clays, etc.

I personally lay great stress on accurate sampling, for if your samples are wrong, the subsequent chemical results are worse, for they are misleading.

CONSUMPTION OF TIMBER IN THE BUTTE MINES.

By Charles W. Goodale.

In a paper on this subject, read at the recent annual meeting of the Montana Society of Civil Engineers, Mr. Goodale said that among other inquiries now being made by the Forestry Division of the United States Department of Agriculture, is one regarding the consumption of timber in the mines of the country. The assistance of the writer was requested in estimating the amount consumed in the mines of Montana and the following notes embody some of the points obtained in the investigation:

In view of the disinclination of mining companies to give information in this line for publication, it has been necessary to work back from figures of production which have appeared from time to time, and rely to a certain extent on supposition. Of course the mines of Butte are the most important consumers of timber, and they will therefore be mentioned first. It is unnecessary to go into the details of the calculations by which the final figures have been obtained, but it may be taken as a safe estimate that each ton of Butte copper ore extracted requires about 15 ft. board measure, of timber, including all underground uses.

It may be assumed that the average assay of the Butte ore as it comes from the mines is 6% copper, and, allowing for the losses in concentrating and smelting, we may estimate that the recovery in metallic copper is about 80 lbs. to the original ton of ore. In *The Mineral Industry* for 1895 the production of copper from Montana mines is given at 194,768,925 lbs. This metallic copper would then represent 2,434,611 tons of ore. If the timber required in mining this amount was 15 ft. per ton, as above estimated, the consumption of timber for underground purposes in the Butte copper mines amounted to 36,519,165 ft. An addition should be made to this for the silver mines of the district and for the considerable amount which went into unproductive prospecting work on copper claims. Of course it is difficult to arrive at exact figures for this addition, but it is probably not less than 1,000,000 ft. We therefore reach a total for the Butte mines of about 37,500,000 ft. B. M. for 1895. The consumption for the year just closed is doubtless in excess of this, as the copper mines have a marked increase in their output.

Inquiries have been made in other sections of the State, particularly among the coal mines, in order to ascertain what the consumption has been outside of Butte, but information so far obtained is incomplete.

Referring to the amount of timber consumed in the Butte mines, it may be interesting to know the approximate cost. The average price paid may be taken at $13 per thousand, making a total of $487,500 for the timber laid down at the mines in 1895. It is probable that the expense of framing these timbers, lowering them into the mines, and getting them into position, was not less than $15 per thousand, or a total of $562,500, making a grand total of $1,050,000 for the timbers in place.

Some idea of the railroad business involved in handling this amount of mining timber may be obtained when it is stated that 37,500,000 ft. would represent 60,937 tons, or 3,750 carloads, the above figures being based upon an assumed weight of 3,250 lbs. per 1,000 ft.

The report of the Montana Bureau of Agriculture, Labor and Industry for 1895 gives about 103,000,000 ft. B. M. as the amount of lumber manufactured for all purposes, and it is estimated by the manager of one of the leading lumber companies that the amount for 1896 was much greater, about 115,000,000 ft.

Coal in Tonkin.—The Societé Francaise des Charbonnages de Tonkin reports that its sales of coal at Hong Korg in 1896 amounted to 118,912 metric tons, showing an increase of 38,521 tons over 1895. The company has already made contracts for delivery in 1897 amounting to 100,000 tons of coal and briquettes.

Shipments of Algerian Phosphates.—The shipments of phosphates from the port of Bona in Algeria in 1896 amounted to 142,340 metric tons, showing an increase of 30,345 tons, or 27.1%, as compared with 1895. Of the total shipments in 1896 there were 39,285 tons in French vessels and 103,055 tons in foreign bottoms.

Contracting Profits in Japan.—The great activity in new construction and engineering works in Japan for the past year has resulted in large profits to engineers and contracting companies. For 1896 the Osaka Civil Engineering Company paid a dividend of 110%—a result which must make the mouths of engineers water. We note that another company is being started in Osaka, to be called the Oriental Civil Engineering Company, with a capital of 500,000 yen, its main object being to carry out works in Formosa.

German Iron Production.—According to the statistics collected by the Association of German Iron and Steel Manufacturers, the production of pig iron in the German Empire (including Luxembourg), during the year 1896, was 6,360,982 metric tons, against 5,788,798 tons in 1895, showing an increase over the total output of the previous year of 488,194 tons, or 8·43%. In 1895 the increase over 1894 had been only 84,465 tons, or about 1·5%, and in 1894, the increase over 1893 amounted to 284,035 tons, or 5·43% of the total output.

Depositing Copper on Aluminum.—In order to deposit copper on aluminum by electrolysis, M. Margot, in the *Archives des Sciences, Physiques et Industrielles*, recommends that the aluminum be first bathed in a solution of an alkaline carbonate, then washed in running water and immersed in a hot 5% solution of hydrochloric acid. A second washing in pure water should follow, and then the article should be immersed in a dilute and slightly acid solution of sulphate of copper, from which a slight deposit of the metal will take place. A third washing to remove all traces of chlorine is then in order, after which the real deposit may effected by electrolysis.

The Largest Ocean Steamer.—The new steamer *Pennsylvania*, of the Hamburg-American line, which recently arrived in New York on her first trip, is said to be the largest cargo steamer afloat. Her displacement is 23,400 tons, and her dead weight capacity is 13,500 tons. The vessel has a deck measurement of 585 ft. in length and a beam of 62 ft. Her depth from keel to awning deck is 42 ft. The *Pennsylvania's* machinery is of the most modern type. Accomodations for 200 first cabin passengers, 150 second cabin and 1,000 steerage passengers are provided. On her trial trip she attained an average of 14½ knots per hour, or one-half knot more than the speed contracted for.

A Notable House for Engineers.—The Société des Ingenieurs Civils de France has built itself a magnificent house, which was opened with great ceremony, on January 14th, by the President of the French Republic. A large number of guests were present at the soirée, including representatives of the various French technical societies. The new building, which is situated in the Rue Blanche, Paris, was designed by M. F. Delmas, and was erected in 2 2 days. It comprises in the basement engine-rooms and store-rooms, on the ground floor the meeting-room, on the first floor reception-rooms for the members, on the second floor the secretary's offices and the council-room, and on the third floor the library. Access to the various floors is obtained by means of an electric elevator. The meeting-room contains seats for 500 persons, and the floor is so arranged that it may be horizontal for receptions, or inclined so as to convert the room into an amphitheater for the meetings. The floor weighs 30 tons, and its transformation from a horizontal to an inclined position is effected with great rapidity by means of hydraulic machinery.

ECONOMIC FEATURES OF MINING ON THE WITWATERSRAND GOLD-FIELDS.

By Edgar P. Rathbone.

In this paper, which was read recently before the Institution of Mining and Metallurgy in London, the author says that probably in no other mining country in the world, and certainly in none connected with gold mining, has the statistical information relating to almost every possible point of economic value been elaborated as it has been in the South African Republic. The credit of this condition of affairs is largely due to what is known as the "Technical Department" in connection with the government service, which practically owes its existence to Mr. J. Klimke, the State mining engineer, who by his energy and devotion to work has succeeded in so far perfecting his department that there is probably no department of a similar nature connected with any government in the world which can boast of giving such statistical information.

The gold-fields of the South African Republic have been divided by the government into five principal separate districts, from which practically the whole gold output of the Republic is derived, although there are some half dozen others which have at various times attracted attention; but they have as yet produced little gold.

Of these five districts those known as the Witwatersrand, Schoonspruit (Klerksdorp) and the Heidelberg (Nigel) districts practically constitute one district, although thus nominally divided up for the sake of better official administration. These districts are, moreover, all working under practically the same conditions, and in the same geological deposits, that is, gold-bearing beds of conglomerates. The other two districts are those known as the De Kaap and Lydenburg gold-fields, which are quite distinct from one another, the occurrence of gold also being different to that on the first three.

The Witwatersrand goldfields, as officially divided, extend from the neighborhood of Boksburg on the east to the neighborhood of Blauwbank on the west of Johannesburg, which town thus occupies a more or less central position: the distance from Johannesburg to the other two districts mentioned being about the same, that is, some 20 miles. To the east of this again, the Heidelberg section must be added, lying more or less to the southeast of Boksburg, and on the west, the Klerksdorp district, which also includes the district in the neighborhood of Potchefstroom. The total length of this channel-shaped basin on its northern fringe only, extending from, say, Klerksdorp to Heidelberg, may, roughly speaking, be said to be about 100 miles. The actual mining area which has up to the present been pegged out in claims, and upon which mining at the present time is being actually conducted or in all probability will be at some future date, is equal, according to the latest government returns, to 370,000 acres. In 1895 the government received over $5,000,000 for licenses on the claims included in this area. It is upon less than half this area that 95% of the total gold production of the Republic is now being extracted.

In most of the other gold regions of the world the gold mines are separated by great distances, whereas on the Witwatersrand they form one continuous line of mines laid out in almost parallel rows, as represented by the Outcrop and Deep Level companies. All the mines in this district are working more or less under similar conditions, and the factors upon which the cost of working depends, as defined through the experience of any one company, are more or less applicable to any other.

It is difficult to state exactly how many mines are in active work throughout this district. It is probable, however, that there are fully 100 mining undertakings which merit the name of mine, and of these at the present time fully 50 are equipped with stamp mills, and are either producing gold or are being developed with a view of shortly doing so.

During the past 12 years, or practically since the first discovery of the Witwatersrand goldfields, some 10,000,000 oz., equivalent to over 300 tons weight of gold, have been extracted from the gold-bearing conglomerates traversing the Witwatersrand, which, in round numbers, represents a value of, say, $175,000,000. It is somewhat difficult to arrive at any exact estimate of the actual cost of production of all this gold, but so far as relates to the cost of labor and mining stores the government returns indicate that some $35,000,000 yearly is expended by the mines in this district alone, that is, both the producing and non-producing. To this amount must be added $5,000,000, payable annually to the government, for licenses on claims.

The following tabular statement represents under the various headings the actual amounts which are expended per annum for labor and stores in the Witwatersrand district:

White labor	$12,000,000
Kaffir labor	10,000,000
Coal	3,500,000
Explosives, dynamite and gelatine	3,000,000
Mining timber and sawn lumber	1,500,000
Cyanide	1,200,000
Meat, mealies and mealie meal for Kaffirs	1,250,000
Iron	425,000
Candles and paraffin	475,000
Tools	350,000
Steel	325,000
Mercury, zinc and chemicals	225,000
Caps, safety fuse, rope, cement, etc.	750,000
Total	$35,000,000

White Labor.—The white labor may be divided up as follows:

Occupation.	Number.	Average monthly.	Occupation.	Number.	Average monthly.
Shift bosses	185	$165	Bricklayers	75	$110
Miners	1,430	115	Stone-masons	213	145
Rock-drill machine-men	956	85	Daily laborers	149	90
Trammers	226	90	Mine and store clerks	287	115
Engine-drivers	765	120	Amalgamators	291	115
Pump-men	129	115	Cyaniders	217	110
Stokers	89	95	Concentrators	35	110
Carpenters	1,058	130	Vannermen	32	100
Smiths	638	130	Smelters	21	130
Mechanics and fitters	900	130	Various workmen	472	105

It will at once be seen from this statement that the average wages for skilled labor on the Witwatersrand are much higher than those which obtains in any other mining country in the world. It is only fair to state that the cost of living is also higher, and the ordinary rents for houses in the town of Johannesburg are probably greater than any other part of the civilized world. Many of the larger mining companies, however, provide their skilled labor with either free quarters or only charge their employees at a very small rate. In other respects the cost of living, exclusive of clothes and drink, may be said to be covered by the sum of $25 to $30 a month, the larger companies having boarding houses, at which three meals daily are provided for this amount.

It may be fairly contended on general principles that when white labor has become demoralized by constant contact with black labor, its efficiency is considerably reduced. On these grounds, therefore, the author considers that the rate of pay for white labor on the Rand is frequently excessive. However good a workman may be in England or America, he no sooner finds that he can get black labor to assist him, than as a rule he takes advantage of it. Unfortunately until the miner has a fair acquaintance with the Kaffir languages, his value as a superintendent of native labor is comparatively small, while those who were born in the country and possess such knowledge have not had any practical experience in mining. From various returns issued by the larger companies it would appear that white labor, reckoned on the cost per ton crushed, varies from 60c. to 85c. for mining only.

Native or Black Labor.—Some 60,000 natives in all are employed on the surface and underground. In addition to this amount, in order to arrive at what in reality represents the true average cost of Kaffir labor per day, it would be necessary to reckon board and lodging, which has also to be paid by the companies. This adds fully $1,250,000. The cost of superintending Kaffir labor on the surface is not reckoned in this estimate, nor the outlay in building the compounds in which the Kaffirs live. With all these items included, it may be said that the average Kaffir receives as high a wage as the ordinary day laborer in England, namely, from 60 to 75c. a day. The Kaffir's whole object in earning wages is as a rule to save sufficient to enable him to return to his kraal and there to purchase sufficient cattle to enable him to barter for a wife or wives, when he will make them do the work while he sits down and only hunts when he feels inclined. It therefore follows that the higher the wage a Kaffir gets the sooner you make him independent; and, indeed, should he return to the goldfields, as is frequently the case, in order again to seek work, the company which paid for his inefficient labor during the period while he was being taught his work will not derive the advantage of such experience, since it is quite as likely that he will drift away to some other company for employment. The raw Kaffir, who has absolutely no experience in mining, is at current wages an extremely expensive article and spoils more work than he actually performs. When one adds to this condition of affairs the frequent careless superintendence by white labor, especially in the direction and placing of the drill holes, the author has no hesitation in saying that the present high cost in mining on the Rand, especially on the stoping work, is due largely to extravagance in the quantity of explosives used, loss of time in getting to work and excessive wear and tear of tools through ignorant handling.

The only satisfactory manner by which black labor could be brought into a state of efficiency would be to colonize some, say, 20,000 or 30,000 natives in such close proximity to the gold mines as would admit of their traveling to and from their work each day, for which purpose, of course, some small railway could be constructed—should the proposed site for such colony not already be in the near neighborhood of a railway. Naturally such a colony would consist of natives and their families, which latter could easily find employment in light agricultural work, such as the planting of mealies (corn), for which most land is suitable in the neighborhood of Johannesburg, with very little especial cultivation and irrigation. Under such conditions, of course, it would then be practicable for the same set of natives to find constant employment at the same mine, and, in consequence, it would not take long to train them to as high a state of proficiency in ordinary work as the average daily white labor possesses, especially when their naturally fine physique is taken into consideration. Some such suggestion has frequently been put forward, but has generally met with disapproval, partly on account of the laws of the State, which, as at present framed, prohibit such a scheme, and partly by those who, like native commissioners and compound managers, possess an intimate knowledge of the Kaffir, and who state that from their experience the Kaffir is not amenable to any such treatment, as, when once permanently withdrawn from his native hunting-grouud and, in fact, brought into contact with so-called civilized life, he degenerates so quickly as to become shortly useless for work.

Finally, one need not hesitate to assert that on the Witwatersrand there are very few mines, if any, which so closely watch their native labor that it is reduced to the most economic limits. From the returns of various Main Reef companies it will be found that native labor for mining alone, worked out on the ton crushed, varies from $1.25 to as much as $2.50, inclusive of food, which cost varies, reckoned by itself, from 25 to 50c. per ton.

Coal.—The next largest factor of expense in connection with mining is that of fuel, which in this case consists practically entirely of coal. There can be no doubt that, had it not been for the wonderfully close proximity of coal deposits to the gold deposits on the Witwatersrand, it would have been impossible to have worked a great number of the gold mines. A very great economy might easily be effected in this huge coal bill, not by employment of better boilers or a more economic type of engines, for in these respects the Witwatersrand gold mines have few compeers. The coal is of a somewhat inferior nature, containing a high percentage of ash, and, in fact, has a low calorific value; on the other hand, there is an enormous quantity of it, and the deposits themselves are so thick, being generally 15 to 20 ft. at least, that they can be mined very economically. There are no actual figures to show what the cost of mining is at the various collieries, as, so far as can be ascertained, none have been published, but it is certain that $1 or $1.25 a ton for coal mined and brought to the pit top should be the very outside. As probably the average price of coal delivered at the various gold mines on the Witwatersrand amounts to some $5 a ton, it is evident that a very large amount is added to its price after it leaves the pit top, even after allowing for a very good profit to the colliery proprietors. A great saving could be made by abandoning the present system of shipping coal in sacks and by adopting dump cars, with proper sidings and coal bins at the different mines and mills,

By such an arrangement not only would the working efficiency of the railway itself be greatly increased, but it would also effect a direct saving to the gold industry of fully some $1.25 on every ton of coal consumed, 60c. being due the sacking of the coal alone. It would only require, for instance, the new system which is shortly to be introduced on the Rand of transporting electric energy through a wire direct from the coal mine to the gold mine, for the carriage of coal to be almost entirely dispensed with.

The total coal supply for the mining industry and town of Johannesburg amounted in 1895 to 920,000 tons. Of this, 727,680 tons is shown, according to the government returns, to have been consumed by the gold mines. Practically the whole of this coal is produced from a district situated some 20 to 30 miles to the east of the town of Johannesburg, the collieries being connected by railway. It would be no exaggeration to state that the deposits of coal are so extensive as to be capable of supplying all requirements for the next half century. The question of prevention of waste in small coal, in its undercutting or holing, is worthy of more attention; in fact, now that a large electric-power station has been erected in the near neighborhood of the largest of these coal mines, there is no reason why further economy in the working should not be introduced by undercutting the coal with machines operated by electric power. From various returns made by some of the larger companies, which are running over 100 head of stamps, the cost of coal on the ton of rock crushed, including hoisting, pumping and milling, varies from 36c. to about 72c., while for milling alone with the larger mills the cost of coal on the ton crushed varies from 12c. to about 25c. The total cost of milling in large mills may be said to range from 60 to 84c. per ton, and on rare occasions is as low as 50c. It can therefore be seen that, should coal be brought down to half its present price, a considerable saving would be effected in the cost of working.

Explosives.—So far as can be ascertained the cost of explosives on the Witwatersrand amounts to $3,000,000 per annum, the explosives used consisting of various compounds of nitro-glycerine, that is, dynamite proper and gelatine. At the present time on the Rand, in blasting very hard rock, such as is frequently encountered at great depths, and especially in shaft sinking, gelatine is preferred to dynamite. There cannot be the least doubt to the most casual observer of the underground mining work on the Rand that there is room for great improvement as regards the manner in which explosives are used. The face of the stope instead of being as the name implies, broken into step-like ledges, which admits of drill holes being placed to economic advantage, is an inclined flat surface, presenting the worst possible conditions for placing drill holes in positions admitting of their being exploded with the greatest economic effect. This condition of things naturally causes great extravagance in the use of explosives, a far greater number of drill holes being put down than is at all necessary to break any given piece of ground. To a large extent, as has been already pointed out, this uneconomical condition of affairs is due to the employment of unskilled Kaffirs. As an inspector of mines, the author has seen quite an army of natives drilling in a straight line a series of holes, set straight down on a perfectly flat face, without any miner-like supervision being displayed. If as much attention had been directed toward the prevention of waste in explosives as has been devoted to the question of reduction in first cost, a great economy in working would already have been effected.

According to the government returns, which give the tonnage of rock actually raised from the mines and also the amount of sinking and driving carried out, in the Witwatersrand mines some 6,000,000 tons of rock were broken in one year, about half of which was actually milled. In order to break this amount of rock, the returns also show that about 2,500,000 lbs. of dynamite were consumed and 6,000,000 lbs. of gelatine. This would indicate that the actual cost of rock broken, for explosives alone, is about equal to 50c. per ton. This more or less agrees with the cost which is actually obtained in practice by various companies.

In order to show what a large proportion of the total cost of working is consumed by explosives, it may be stated that from the returns of various companies the author finds that explosives vary on the cost per ton of working from 50c to 75c. per ton, the total cost of mining in such cases being from $3 to $4 per ton.

Timber.—The total cost of timber and sawn lumber for the Witwatersrand mines, as will be seen by the annual cost bill, amounts to $1,500,000, a great portion of which may be put down to shaft timbering. The amount of timber used underground, especially at the greater depths which have now been attained in most mines, is remarkably small, in fact the only economy which could be suggested in the case of some mines would be the more general use of stone packs in place of props.

The total cost of timber, so far as relates to the stoping work, seems only to vary between 6c. and 12c. per ton. No very great amount of saving in the working cost may, therefore, be looked for in this direction. Most of the principal prop timber has now to be brought in by ox wagons from districts situated from 50 to 100 miles and more from the gold-fields. The best sawn lumber for shaft purposes is now being brought from Australia and Oregon, or, in other words, from localities situated from 8,000 to 12,000 miles distant from the gold-fields.

Cyanide.—The next largest factor in the bill of costs of the Witwatersrand mining is that of cyanide, which, so far as can be ascertained, amounts to a total of $1,200,000 per annum. From various companies' returns the actual cost of treating a ton of tailings, exclusive of royalty, by the cyanide process, varies from 60c. up to about $1.50, the lower cost being principally due to the extensive scale of operations upon which the process is conducted. With the larger plants the actual cost of the cyanide consumed, per ton of tailings treated, varies between 35 and 50c. a ton, while the labor employed in charging and discharging the vats amounts to about 25c. per ton. Some reduction in this cost may be expected when the price of labor is reduced. It should also be possible in the course of time to procure the cyanide itself at a somewhat lower figure; reduced railway rates would also affect its cost of transport. It is very doubtful, however, if cyanide itself can be manufactured within the country more economically than it can be in Europe. From these figures it will be seen that the cost of cyaniding and milling are about equal.

Food Supplies.—It will be seen from the general statement of costs that an amount of $1,250,000 is expended on food supplies for the natives. As a rule Kaffirs are given from 2½ to 3 lbs. of mealie meal daily and about 1 lb. of meat a week. The proposal which has been made for the natives to pay for their own food is worthy of consideration, though with most companies, as matters now are, there is very little actual waste. At the present time a great portion of these food supplies are imported into the State. The principal reason why a sufficient corn supply is not grown in the country is the excessive cost of Kaffir labor, since the Kaffirs will naturally not take a lower wage than they can get at the mines, and, as the farmer cannot possibly afford to pay such a high rate, very little land is brought under cultivation at the present time.

Candles and Paraffin.—An amount of $475,000 is apparently expended, mostly in underground illumination. Great waste and extravagance in candles which is frequently found to exist in many mines. Here, again, the natives are the principal offenders, as they often steal candles, and even use them as an article of diet or to grease their bodies with. Again, in the deeper mines, where strong ventilation is frequently necessary in order to remove the dynamite fumes quickly, there is a great waste in candles, as they burn and gut down very quickly in a strong draught. A good remedy would be the introduction of electric light wherever it is possible, and it is hoped that the time is not far distant when an underground, portable electric storage lamp will be manufactured so cheaply and so light in construction as to render its general use economical and possible. The cost of candles on the ton of rock mined amounts to between 6c. and 8c., which, as compared to the cost of lighting in European coal mines, is enormous.

Steel, Iron and Tools.—Of late years some of the larger mines have paid far more attention to the importance of laying down rails in the mines of sufficient weight and in such manner as to enable the tramming of the underground trucks to be carried on expeditiously and economically. It pays to put down a fairly heavy section of rail, that is, in the neighborhood of 25 lbs. per yard, and to lay these rails upon wooden sleepers, in place of the old iron sleepers; in fact, in a small way underground to do what is done with a railway on the surface, particular attention being paid to obtaining a good level and well-ballasted roadbed. At the present time, at most mines, far too many natives are employed in tramming, due to this improper laying of tramlines and to the too great weight of the tramcars. To remedy these evils, besides the one already suggested, is recommended a more liberal employment of ponies or mules underground, which, of course, would necessitate in most cases greater lengths of levels on which the tramming could be carried on. It is such points as these which are capable of showing such great reductions in the cost of working when several small gold mines are amalgamated into one large concern.

The large cost of iron and steel is also partly due to excessive wear and tear in drills, picks, shovels, etc., through their unskillful handling by unskilled labor; that is, again, Kaffir labor.

General Conclusions.—In the foregoing remarks on costs of working, the writer has endeavored to suggest, in each instance, some means by which the cost of working on the Witwatersrand gold-fields may in the future be reduced. As time goes on, it will probably become practicable to make many of these suggested improvements. Under present conditions a yield of $4 to $5 per ton would barely cover working expenses, and then only when worked on a very large scale and under the most favorable circumstances. It is, however, only a question of time when such beds should be most profitable to work, leaving a margin of profit equal to from $1.25 to $1.80 a ton. If this be the case it follows that there are large areas of ground on the Witwatersrand which are well worth paying claim licenses upon, even though such expenditure should extend over the next few years. It is, therefore, of importance for the European public to understand that in order to profitably work such low grade deposits, a very large working capital is required, and also that it takes considerable time to develop sufficient ore reserves to supply mills ranging from 100 to 200 head of stamps. Generally speaking, the companies formed to work such deposits must possess in the first place a large area of claims; secondly, a working cash capital ranging from $500,000 to $1,000,000, and must further understand that fully two years of steady development would have to elapse before any mill could start working. On the other hand, it must be conceded that when once it has been ascertained, either by the erection of a small mill or through careful and systematic sampling, that any bed of auriferous conglomerate does carry a small but evenly distributed quantity of gold, that the working of such deposits presents good prospects of final success.

THE BLOCK COAL REGION OF INDIANA.

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

Block coal is found in a strip of country of which Brazil, Ind., is the center. Clay County contains the greatest part of the block coal area, although it extends into southeastern Park County and western Owens County. The total area in which this fuel is found is about 350 square miles, but the veins are not continuous, the coal being found in patches varying from three or four acres to several hundred. A mine may be worked out in one year or it may find coal enough to last it 10 or 12 years.

In appearance the coal is dark, without luster, and is characterized by the manner in which it breaks into blocks or cubes. This coal has little volatile matter, does not cake in burning, and gives a white, strong heat, without much flame.

By reason of its low proportion of sulphur and its non-caking qualities, it can be used in blast-furnaces without any preparation. The cubical structure of the blocks easily permits the passage of the blast, while at the same time the coal gives an incandescent fuel. An average of 10 analyses of Indiana block coal, taken from the Twentieth Annual Report of the Indiana Department of Geology and Natural Resources, gives: Fixed carbon, 56·83%; ash, 1·66%; total solid or coke-producing matter, 58·49%; gas, 36·50%; water, 5%; total volatile matter, 41·50%. The same 10 samples gave: Specific gravity, 1·234; weight of 1 cubic foot, 77·16 lbs.; units of heat, 7,983; steam value, 1,481.

Block coal is used in cities for steam making, where boiler power is limited, and a quick, strong heat is required; in the country it is used for

domestic purposes. At the present time block coal is not used in metallurgical work to any extent.

There are three veins of block coal, and these three gradually merge into bituminous coal upon passing from the Clay County line.

Of these three veins the "Rider," or top vein, varies from a few inches to 5 ft. in thickness, but is worked in a few places only, as it is not continuous. The two lower veins, the top one being found at an average depth of 25 ft. and having an average thickness of 4 ft., and the bottom one at an average depth of 85 ft., and varying from 2½ to 3½ ft., are worked in nearly every mine. It would seem that this coal could be worked very successfully by long-wall, but the roof is said to break prematurely, thus cutting off the working face. Where the roof is not strong and breaks easily, block coal could doubtless be worked successfully by long-wall.

Block coal derives its name from the peculiar blocks into which it breaks upon being properly worked. It has a very well-defined cleat, running northeast and southwest, and at right angles to this cleat are butt-cleats, from 1 to 2 ft. in length. This well-defined face can be distinctly traced across the face of a 40-ft. room.

In this field the coal is all worked by room and pillar, and the rooms, or wide-work, are driven directly across the face of the cleat. As a consequence the miner or loader drives his pick directly into the butt-cleat, and the coal rolls out in great cubes, often of several hundred pounds weight.

In places where the main or cross entries have been driven diagonally across the cleat face the rib presents a peculiar notched appearance. Progress is very slow when working diagonally across the cleat. The butt-cleats or faces are sometimes closed tightly, and at others are spread half an inch apart.

Block coal is mined by solid shooting and undercutting by hand machine. In the region immediately around Brazil there are two mines using electric coal-cutting machines. The machines are of the Morgan Gardner, Independent and Enoch Gardner manufacture.

These machines undercut the coal to a depth of 6 ft. and a width of 3½ ft. at each placing. In height the cutting is 4 in. Very little powder is necessary to blow the coal down, as it generally breaks of its own weight. As mined here the coal does not roll over after blasting, as does coal undermined by percussive or pick machines, but settles upon the mining. However, this is no detriment, as the coal, by reason of its laminated structure, is quite easily loaded. The machines undercut about 600 sq. ft. per shift. As the bottom coal is hard and contains iron pyrites the cutting is made above it and the bottom coal is afterward drilled and blasted.

Necks of rooms are driven from 7 to 9 ft. wide, the room widened out to 18 or 20 ft., and then the pillar between the two rooms is taken out, leaving a stub 9 or 10 ft. square upon the entry. Where the roof is very tender, this practice is not followed. About 25% of the coal in the bed is left as pillars. These mines are very wet.

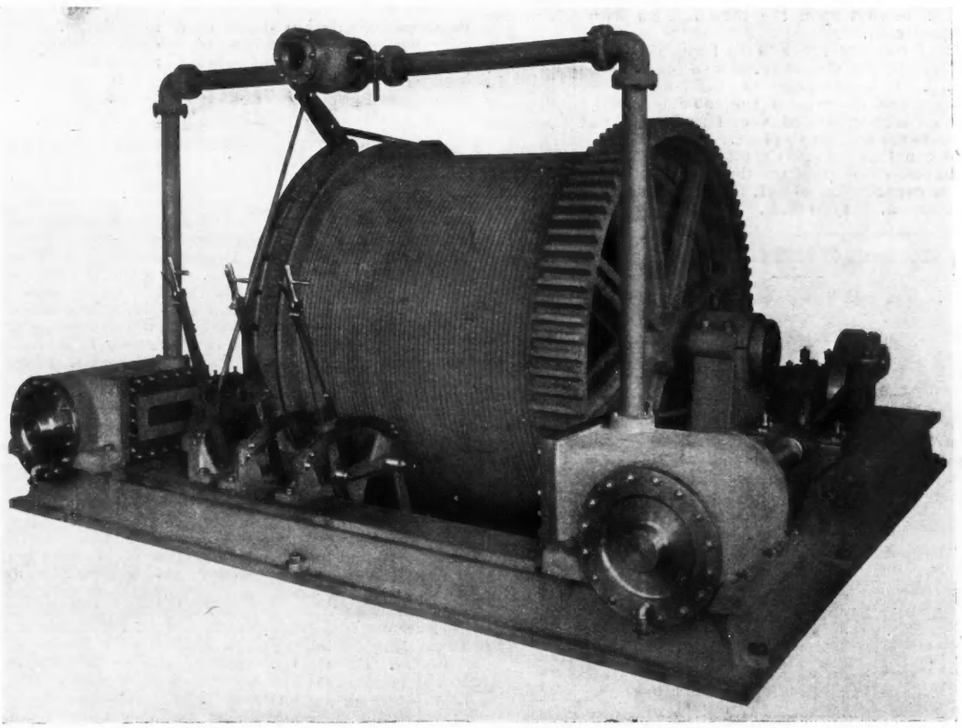
Each mine has a number of "division bosses" who have charge of different parts of the mine. The number varies from 5 in the smaller mines to 10 or 12 in the larger mines. These are in addition to the superintendent and his assistants.

Where mined by hand or machinery this coal yields about 20% of small coal. Instead of buying coal, or coal and land outright, the companies in this field usually pay a royalty varying from 10 to 12½c. per ton of coal mined.

HOISTING ENGINE FOR THE WHARTON IRON MINES, NEW JERSEY.

The accompanying illustration shows a large and heavy hoisting engine recently built by the Morris County Machine and Iron Company, of Dover, N. J., for Joseph Wharton, of Philadelphia, and now doing duty at the Wharton Iron Mine, near Hibernia, N. J. It is exceeded in size and power by only one other hoisting engine now in the State, that being the large engine at the zinc mines at Franklin. The engine illustrated is also of a very simple and compact design, and is so built as to ensure durability and strength.

The engine is a double-cylinder, single drum, second-motion hoist, and is rated at 450 H. P. The two cylinders are each 18 in. in diameter and 24 in. stroke. The whole machine is carried on a massive bed of the box pattern. The engines are placed one on each side of the drum, and are connected by heavy cast-iron tie-pieces at right angles to the beds and bolted to them. The pillow-blocks of the drum are bolted to extensions on the engine beds, thus virtually making the whole bed of the hoister one continuous piece, insuring great stiffness and durability. The power from the engines is transmitted to the drum by means of a steel clutch and pinion on the crank shaft, working into a cast-iron gear attached to the drum. The large gear wheel is 8 ft. in diameter, and has a face of 11 in. The drum is cast in one piece, has a diameter of 7½ ft., and a grooved face of 6 ft. It will hold 1,200 ft. of 1¼-in. steel rope in one lap. The drum shaft is 9 in. in diameter and 11 ft. long, and the crank shaft is 7½ in. in diameter and 12 ft. long. The hoist is provided with a beam brake and the engines have reversing gear. This machine was built to hoist 10,000 lbs. at a speed of 600 ft. per minute; in actual use it has hoisted at the rate of 800 ft. per minute. The total weight of the hoister is 60,000 lbs.



HOISTING ENGINE FOR THE WHARTON IRON MINE, NEW JERSEY.

A large amount of money has recently been expended at the Wharton mine, where many improvements have been made, and the property has been put in position to make a large output of iron ore. There has been a growing impression that the old iron region of Morris County was becoming exhausted and that its mines would before long be abandoned. The extensions of the Wharton mine and recent discoveries at the Hurd mine seem to contradict this, and it is quite possible that there is still a long life before the iron mines of New Jersey. The business may also be helped materially by the success of the various experiments in concentration now being carried on. The introduction of new machinery such as that we illustrate certainly does not look like abandoning the mines.

A Note on the Cyanide Process.—Mr. William Skey, analyst to the Home Department of New Zealand, writes to the editor of the *Chemical News* as follows: "Kindly publish for me the singular and unexpected fact that aqueous solutions of cyanogen do not exert the least solvent action on gold or silver. Of course as the gas decomposes there is a slight solvent action, but even this is far too slow and destructive of the gas to make extraction of gold a commercial success. This must prove to be interesting to cyanide men. I found this fact while engaged as an expert in the case of the Government vs. McDolnin & Company, and published it here September 17th last in a paper to our Philosophical Society."

THE WATER POWER PLANT AT GAYLORD, MONTANA.

This new plant was described by President Herron at the recent annual meeting of the Montana Society of Civil Engineers. The Parrot Silver and Copper Company of Butte has had under construction a canal 18 miles long leading from a point on the east side of the Jefferson River, nearly opposite the old town of Iron Rod, to the new town of Gaylord in Madison County. The canal has a cross section of about 125 sq. ft. The ordinary section on table lands is 20 ft. wide at the bottom, 30 ft. wide at the top, depth 5 ft., with the lower level raised 2 ft. above water level The slope in the cutting is 1 to 1; on the levees, 1½ to 1. The cross section in rock on steep side hills is 10 ft. in width carrying 8 ft. of water, with a slight excess of grade, to compensate for the diminished area.

The grade has been 2½ ft. per mile. This is rather excessive for so large a canal, but was adopted with a view of being able to work it hard, should occasion require, by protecting the lighter soils with some kind of rip-rap.

The qualities of the classified material moved have been: Solid rock, 12,000 cu. yds.: loose rock, 37,000 cu. yds.; earth, 288,000 cu. yds. About 35,000 ft. of lumber have been used in the flumes, bridges, head gates and overflows and something over $15,000 has been paid out on force account, in moving material which has been impossible to classify.

The capacity of this canal will range from 15,000 to 18,000 miners' inches, dependent somewhat upon the thoroughness with which the weaker points are protected.

The prime object of this enterprise is to furnish power to the new smelting plant of the Parrot Company, now being erected at Gaylord, and about 1,000 H. P. will be developed at this point. A secondary object, however, has been the covering of the table land for agricultural purposes, the land having been owned very largely by friendly interests east of and adjacent to the company's plant.

The waters of the canal are led into the fore-bay, 90 ft. above the water in the tail race, and under this pressure three Victor turbines are being placed, each with a capacity of 500 H. P., thus having one in reserve while developing a normal of 1,000 H. P.

ABSTRACTS OF OFFICIAL REPORTS.

Isabella Gold Mining Company, Colorado.

The report of this company for the year ending December 31st, 1896, shows that the net profits, as per the statement given below, were $232,646, to which is to be added $815 for transfer fees, etc., making a total of $233,461. Office and general expenses were $13,347, leaving a balance of $220,114. From this dividends amounting to $180,000 were paid, leaving a balance of $40,114 as surplus. Adding $157,116 surplus on January 1st, leaves a total balance on hand December 31st of $197,230.

The total shipments of ore for the year included 8,256 tons of company's ore and 1,328 tons of lease ore, the gross value of the former being $500,309 and of the latter $67,732. The consolidated statement is as follows:

	Dry tons.	Gold oz.	Silver oz.	Gross value.
Smelting ore	5,190	24,363	10,610	$494,043
Chlorination and cyanide ore	3,122	3,276	.....	63 012
Stamp mill ore and bullion	1,187	332	.....	6,093
Concentrates	85	257	232	4,893
Total	9,584	28,208	10,872	$568 041
Treatment, transportation and sampling				110,741
Net cash returns				$457,300
Mining, royalties and payments to lessees				224,654
Net profit at mine				$232,646

The average net value to the mine of ore mined in 1896, after deducting treatment, transportation and sampling charges, was $47.72 per ton, which compares with $41.56 in 1895 and $32.63 in 1894.

The total development work in 1896 included 711 ft. shafts, 6,048 ft. levels and 1,801 fathoms stoping.

During the year the company hoisted 16,428 mine-cars of first-class smelter ore, 7,038 cars of second-class chlorination ore, 3,017 cars of third-class cyanide and stamp-mill ore, 1,571 cars of fourth-class waste screening and 15,516 cars of waste; total 43,570 cars, and 4,079 cars of water; grand total, 47,649 cars. In the sorting houses, 9,142 cars of waste were hand-picked out of first-class ore, 3,496 cars from second-class, and 1,670 cars from third-class; total, 14,308 cars of sorted waste. In 1895 there were hoisted 32,956 cars of ore and 7,940 cars of waste were sorted out of the ore. The total mine expense, including all construction, plant and dead-work, amounted to $4.36 per mine car of rock hoisted for the year. The following table shows the expense per ton in 1896:

Per ton, 8,630 gross tons.	Labor.	Supplies.	Total.
Improvements	$0 75	$1.85	$2.60
Surface expense	2.54	0.84	3 38
Mining ore	7.94	0.93	8.87
Development	4.58	0.54	5.12
General expenses	1.82	0.36	2.18
Total	$17.63	$4.52	$22.15

All construction, improvements, additions to plant, machinery, tools and supplies in store, shaft-sinking, dead-work, and development, including the heavy work at the Lee shaft, have been charged to mine expense.

Prospecting leases have been let for short periods upon some of the outlying territory, and on certain portions of known veins near the Victor and Emma claims which could not yet be conveniently reached from the main shafts of the company. Of lease ore there was sold 1,328 dry tons, netting $52,716, or an average of $39.70 per ton, of which the company received as royalty $19,267, or $14.51 per ton, and the lessees $33,449, or $25.19 per ton. Royalty paid to co-owners in the Comet claim amounted to $85.

The report of President J. J. Hagerman says: "During the year 1896 the operations of the company's property were carried on without interruption, and the showing made is a good one. The gross value of the ore shipped was $568,041, as against $362,220 for the year 1895, an increase of $205,821. The net profit for the year, after deducting all expenses of every nature, was $220,114, an increase of $72,076 over the previous year. Dividends to the amount of $180,000 were distributed and $40,114 added to the surplus. A larger amount of development work has been accomplished and more important surface improvements made than in any previous year. The Buena Vista inclined shaft was not fitted for economical working at great depths, and a large vertical shaft, more centrally located, with a surface plant planned to insure more economical working, became essential to the future of the company. This has been secured during the past year in the Lee shaft, which is situated practically in the center of the most valuable property owned by the company. Eventually the deep levels will be worked exclusively through the shaft. The average cost of mining per ton of ore shipped increased from $16.21 to $22.15. In explanation of this it may be said that all the cost of developments, improvements and additions to plant have been charged against the output. In all of these lines the expenses in 1896 were unusually heavy. The Lee shaft-house has been erected and fully equipped with the best machinery and the shaft sunk 175 ft. Other extensive surface improvements have been made. Underground, 6,048 ft. of levels were run, while in 1895 there were only 3,895 ft. run. Beginning with February, eight monthly dividends of $22,500 each were paid. After the September dividend it was thought prudent to discontinue dividends, on account of the extra expense and temporary falling off in receipts. It is expected that dividends can be safely resumed in the near future. The policy of the company has been to maintain a safe reserve both in the treasury and in the mine, and this is the only safe policy to follow. If development work is kept well ahead of production and a safe cash balance reserved to meet contingencies the mine ought to continue to pay well."

ANCIENT AND MODERN SUPPLIES OF GOLD AND SILVER.

In commenting upon a recent work by M. Babelon on "The Origin of Money," M. De Foville says in *l'Economiste Français* that the author has given entirely too much credence to those ancient writers who describe the treasures of their time in hyperbolical terms, and according to whom Rome, Greece and Persia must have held far greater stocks of gold than are now in existence. In all ages writers have spoken freely and largely of treasures of gold and silver; it costs nothing and sounds well. But when we read that the Ethiopians made chains of gold to secure their slaves because the metal was more abundant than iron or brass, or that Harpalos was sent to Athens by Alexander the Great with 5,000 talents, or 150,000 kgs. of gold, we cannot accept these statements otherwise than as wild hyperbole.

Undoubtedly some great treasures of gold and silver were accumulated in the ancient palaces and temples; but it is not at all probable that the entire stock of the ancient world was equal to the amount now stored in the vaults of the Bank of France, for instance. The distribution and uses of the metals are very different now, but the stock is enormously greater.

It is curious to enquire whence the gold of the ancient world came. At the present time the chief supplies are from North America, Australia, Siberia and South Africa, all countries unknown to the ancients—unless, indeed, we find in the ancient mines of Mashonaland the Tharsis from which the Tyrian ships brought gold to King Solomon; and the Jewish writers evidently exaggerated the quantity of their gold quite as much as their heathen authors did their treasures. The classical writers speak of gold as brought from Nubia, Arabia, India, the Caucasus, Asia Minor, Thrace, Macedonia, Dalmatia, the Alps, the Pyrenees, Britain, Spain and Numidia. But all these countries to-day produce very small amounts. It may be said that the mines were exhausted by the old workings; but nowhere do we find evidences of very extensive mining, and it is certain that metallurgical knowledge was very much less in those days than now.

It is only necessary to refer to a few of the ancient histories. Thus the Terbelli, the Gascons of antiquity, claimed that in the basin of Arcachon and in the valleys of the Rhone and the Ariège it was only necessary to use the plow to turn out nuggets of gold from the soil. The Taurisci Novici, at the head of the Adriatic, one day found a placer so rich that gold in Italy lost one-third of its value. In the country of the Dardæ, Megasthenes, who accompanied there the engineer Gorgas on a mission from Alexander the Great, gravely tells us that people did not dig for gold, but simply caught the foxes and shook out from their tails the grains of gold which stuck to them as they trailed through the sand. Diodorus the Sicilian, a serious historian, says that Philip of Macedon obtained from Mt. Bermion yearly 1,000 talents—30,000 kg.—of gold. But what has become of this mine which then furnished 100,000,000 fr. a year?

These and many other authors are quoted to show how great were the quantities of gold and silver in use in various forms; but the citations only show that no reliance is to be placed on such statements as expressing actual facts.

One might almost believe that he was reading a West Australian company's prospectus.

The truth is that exact statistics are of modern and very recent growth. The ancient authors spoke of 1,000 talents when they meant a large quantity of gold, of 100,000 men when they meant simply a large number, without definitely indicating the actual figures, of the magnitude of which they had only a vague conception, and to use these figures as definite to-day is absurd.

British Coal Exports.—Exports of coal from Great Britain, for the year ending December 31st, 1896, were 34,262,077 tons, showing an increase of 1,160,625 tons over 1895, and of 1,188,379 tons as compared with 1894. The average value of the coal exported in 1896 is given at $2.13 per ton, against $2.10 in 1895. In addition to these exports the quantity of coal shipped for the use of British steamers in foreign trade in 1896 was 9,937,305 tons, an increase of 529,516 tons over 1895, and of 642,844 tons over 1894.

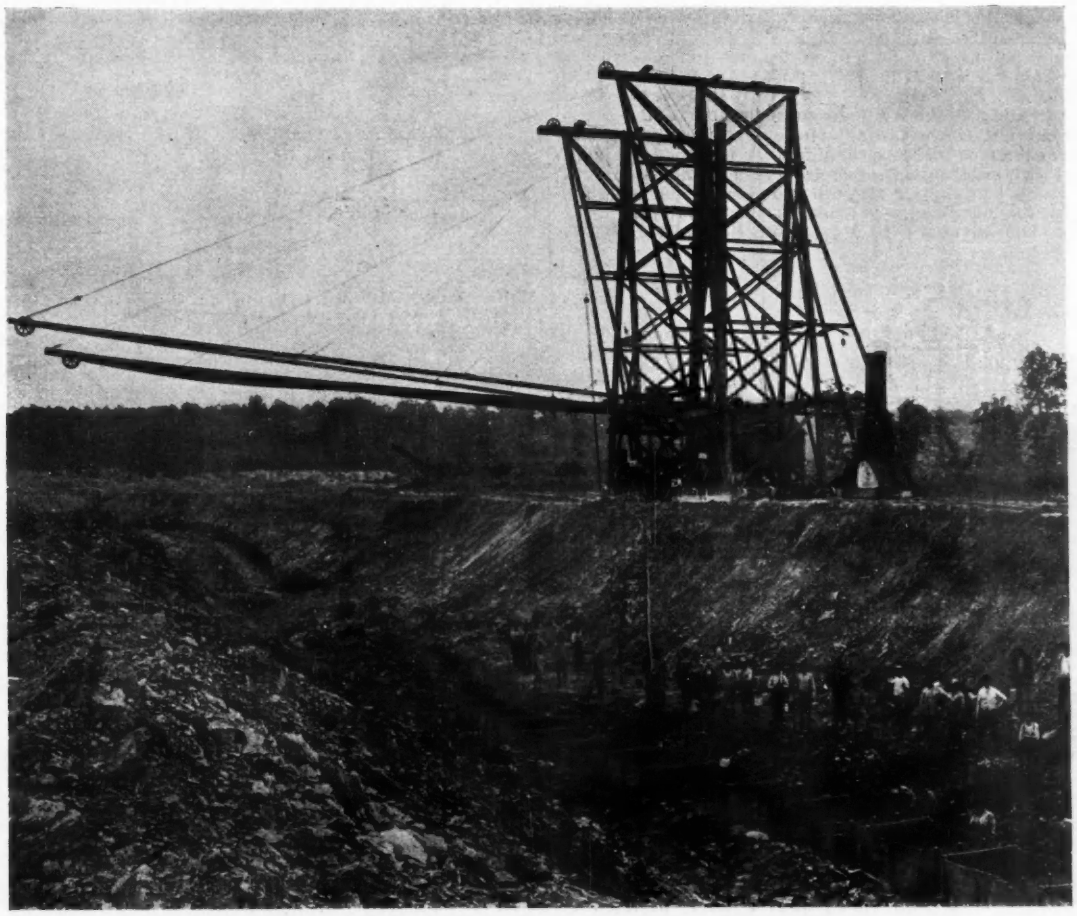
AN ILLINOIS OPEN-PIT COAL MINE.

The accompanying illustration shows work in progress at the only open-pit coal mine operated on a large scale in the United States. These workings were described in detail in the *Engineering and Mining Journal* for December 5th, 1896, page 537. The mine is known as the Mission Fields, and is in Vermilion County, eight miles west of Danville, Ill. The area worked is an immense natural depression or basin, 80 ft. below the surrounding country, and comprises a total of about 1,000 acres. All of this basin is underlaid by a seam of coal 6 ft. in thickness. About one-half of the total area has been worked and the coal taken out. The coal is found at depths varying from 9 to 30 ft , and is overlaid by clay and gravel, and in some places by soapstone. The overburden is stripped and removed by a steam shovel worked from a tower and boom.

When the dirt has been removed from over the coal, holes are bored straight downward into the seam, and a very small amount of dynamite exploded at the bottom of the hole. This cavity is filled with powder and the coal is blasted off its bed. In places the soapstone overlying the coal attains a thickness of 6 ft., and must be blasted, as the shovels cannot cut it. For this work ordinary coal mining-drills are mounted on trestles 6 ft. in heigth. A drill 16 ft. long is mounted on this trestle and horizontal holes 16 ft. in depth bored in the soapstone. Twelve sticks of dynamite are placed in each hole, and after the explosion the soapstone is easily handled by the shovels.

Spur tracks run into each cutting and the empty cars are brought in and loaded ones taken out by small locomotives. The trips vary from 10 to 15 cars each. These locomotives haul the coal to the foot of an incline leading to the railroad tracks, and ordinary first-motion engines hoist the coal to the tipple, from which it is loaded into the railroad cars.

The engraving shows a train of cars standing in the cut ready to load, with the elevator on the bank. The shovel is worked from the long boom seen in the photograph stretching across the cutting.



OPEN COAL MINE AT MISSION FIELDS, ILLINOIS.

Iron in Chile.—The Chilean Chamber of Deputies has passed a bill providing for a guarantee of $125,000, to any company which will establish an iron foundry on a large scale in the country. Iron ore is exceedingly abundant in many parts of Chili, and the mines are easy of access. It is reported that a company has been formed in Europe, with a capital of $5,000,000 to extract iron from the ore in Chilean mines by means of an electric separator invented by M. Henri Moissan.

Indian Coal.—The recent discovery of coal at Singareni, India, is having an important effect on the Bombay coal trade. The coal field is 630 miles from Bombay, and it can be brought down in two days, at a comparatively small cost. The coal is of excellent quality, being equal to that from Cardiff, and it has found favor with the factory owners of Bombay. In all probability the British government will use it, in stocking the coaling stations for the Navy, in Indian waters.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

MINING PARTNERSHIPS.—Where one of two partners in a mining lease surrenders it before its expiration, and takes another for himself alone, the new lease as to the other partner will be held to be a continuation of the old. And the fact that one partner in such lease failed for 90 days to pay his proportion of the expense of working the property does not work a forfeiture of his interest in the property or the partnership, in the absence of any legal proceeding to that end.—Continental Divide Mining Investment Company vs. Bliley (46 Pacific Reporter, 633); Supreme Court of Colorado.

LIEN FOR LABOR ON MINE IN CALIFORNIA.—The law of California giving any person doing work on a mining claim, at the instance of the owner or his agent, a lien thereon for his work, and further providing that any "person having charge of any mine . . . shall be held to be the agent of the owner" does not entitle a laborer to a lien for work done for a person whom he knew not to be the owner, and not to be working the mine as the representative of such owner. Also, the Law of Building Liens does not apply to work done in removing ore from a mine, where it is not done in improvement of the property.—Jurgenson vs. Diller (46 Pacific Reporter, 610); Supreme Court of California.

UNITED STATES COURTS AND MINING CLAIMS.—A complaint seeking to quiet title to mining claims, alleging that certain parties claim under relocations made by them, on the pretense that the original locators did not do the proper assessment work for one year, and did not resume work before such relocations, and that certain persons made a location of certain claims so as to include 160 acres of land solely in the interest of the parties complained against, presents issues of fact merely, and does not involve the construction of the section of the laws of the United States requiring a certain amount of work to be done on mining claims, so as to give jurisdiction to a federal court.—Wise vs. Nixon (76 Federal Reporter, 3); United States Circuit Court.

WHEN COURT WILL NOT ORDER SPECIFIC PERFORMANCE OF MINING CONTRACT.—One having received possession of a mining claim agreed to operate the mine and pay the net proceeds to the owner, to be credited on purchase price on consummation of purchase, and before the expiration of the option the owner wrongfully took possession of the mine. The first party asked the court to decree specific performance and put the purchaser in possession of the property. The court refused to do this, on the ground that it would comprehend an order continuous in its nature requiring protracted supervision, with the exercise of special knowledge to determine whether the mine was being operated according to contract.—Clarne vs. Grayson (46 Pacific Reporter, 427); Supreme Court of Oregon.

THE WILFLEY CONCENTRATING TABLE.

The accompanying illustration shows a new form of concentrator known as the Wilfley concentrating table, which is made by the Mine and Smelter Supply Company, of Denver, Colo. The engraving shows the table flat, without supports, Fig. 1 representing the table and Fig. 2 the movement. It may, of course, be set on a frame at any height desired. The concentrator is a flat table 7 × 16 ft., resting on rollers, and is operated by an eccentric. This gives a jerking motion, which carries heavy material to the bottom of the bed, then forward to the head end of the table. The pulp is supplied through a feed-box, which extends the whole length of the table, and is divided in such a way as to feed pulp at one end and clear water at the other end, where the concentrators pass off. It is claimed that by this arrangement there is a clean heading, so that the operator can always see what the table is doing, and that all the material is kept constantly under water and never exposed to the air. It is claimed for this table that the loss of material in the slimes, which often occurs, is prevented.

The silica passes across the table (it being slightly inclined) and off at the side, in doing which it passes over tapered cleats, the result being that coarse silica, passes off first, then as material is jerked forward and toward the upper end the fine silica rises to the surface and is carried off next. In this way the table acts as a sizer to a certain extent. If ore is put on a table or into any receptacle and thoroughly shaken, the coarse and fine concentrates and fine silica will go to the bottom, and the difficulty usually experienced in concentrating is to remove fine silica without large losses. A description of the cleats will further illustrate the point. The table is covered with linoleum on which are nailed from two to seven cleats, which are about ¼ in. high at the tail end of table and taper to a feather edge toward the head-end. The first cleat is put onthe lower edge of the table and runs up to within 2 ft. of the head-end; the other

FIG. 2.

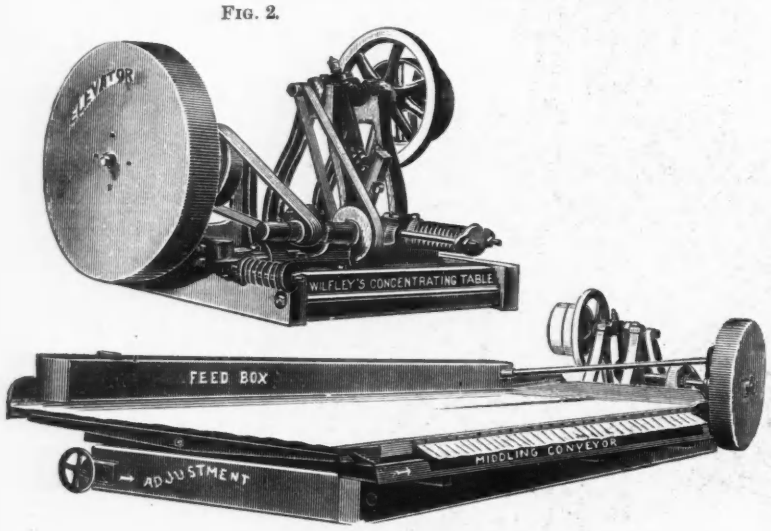


FIG. 1.

THE WILFLEY CONCENTRATING TABLE.

cleats are shorter and shorter as they cross the table toward the feed-box making the last cleat about 4 ft. long. The pulp is fed on the table as near the tail end as possible, and the jerking motion sends the concentrates to the bottom, and at the same time moves them toward the head-end. When concentration commences the coarse silica passes over the high end of the cleats, and as the ore moves forward finer silica rises as the height of the cleats decreases and passes off. This is done without materially disturbing the bed of concentrates which moves forward and around the end of the cleats until a sufficient quantity collects to go straight forward and off the head-end. The space left between the end of the first strip and the head of the table allows middlings to pass into a long trough on the side and pass to the wheel conveyor at the extreme tail end, where it is elevated and passed over the table into the feed-box to be retreated.

The adjustment is done by turning a hand wheel shown on the cut connected with a rod running the entire length. This rod operates wedges which raise or lower the side of the table evenly from end to end. It is claimed that all the concentrates made by these tables have shown a high value with little silica, by repeated tests, the machine giving the best results when handling about its full capacity. The capacity is from 20 to 25 tons per day of 24 hours per table of the size shown, and with this load it will take the finest kind of material forward. The shipping weight of table, complete, is about 2,000 lbs. It is not intended to put this table after other tables and take their tailings, but to put it on the original pulp, as most of the harm is usually done by losses from the machines first handling, usually in floating matter which cannot be submerged again and goes into the tailing piles. It is further claimed that this table can separate galena or iron from zinc with good results.

Roumanian Oil Operations.—At the annual meeting of the Roumanian Petroleum Company, which now controls practically the total Roumanian oil production, it was resolved to increase the capital stock from 2,400,000 fr. to 10,000,000 fr., and to push drilling operations in the different oil fields more actively. It was further resolved to build a case factory and a petroleum dock at Constanza, on the Black Sea, and also several docks at different points along the Danube River. Ten iron tank steamers of 300 to 1,200 tons capacity will be available at the opening of navigation for the export trade to Germany on both water routes.

New Process for the Manufacture of White Lead.—Mr. William Tatham, in the *Journal* of the Franklin Institute, gives a brief review of the well-known methods of preparing white lead, showing the disadvantages of each. He considers Bradley's patented process to be the most successful of the precipitation methods. In this a basic lead acetate solution, containing 11% of basic salt, is treated with carbonic acid at a temperature of 120° F., while flowing in thin layers over a series of shelves. But the essential point is that the process must be stopped when one-half of the basic lead salt has been converted to white lead. The product contains from 30 to 37% of hydrated lead oxide, and is amorphous. Mr. Tatham proposes to stir finely powdered litharge into a solution of normal lead acetate until the mixture crystallizes. By exposing the crystals to carbonic acid gas a basic carbonate is formed, while neutral lead acetate remains in solution. A solution containing 14% of normal acetate is treated with 14 lbs. of litharge to each cubic foot of the solution. Coarsely powdered litharge is used at first, but the final additions are made with litharge that has been passed through bolting cloth of 200 meshes to the square inch. The process is carried out in a steam-jacketed copper vessel provided with a stirring apparatus. After 5 or 10 minutes the mass becomes curdy, and then a stream of carbonic acid gas is passed into the vessel. The crystals melt and are in part converted into white lead, which is separated from the lead acetate solution by the use of a filter press.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

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

WEEK ENDING JANUARY 26TH, 1897.

575,765. MANUFACTURE OF GUNPOWDER. George G. André, Glenlean Sandbank by Greenock, Scotland. Assignor to Charles Herbert Curtis, London, England. Patented in England November 4th, 1891, No. 19,068; in Norway, September 27th, 1892, No. 3,201, and in Canada, January 11th, 1893, No. 41,524. The process consists in granulating a compound of trinitro and dinitrocellulose, subjecting the granules or pellets to the action of a solvent capable of dissolving the dinitrocellulose without affecting the trinitrocellulose, whereby the particles of trinitrocellulose become coated with and are cemented together by the dissolved dinitrocellulose, then hardening the granules or pellets by removal of the solvent.

575,778. PROCESS OF AND APPARATUS FOR PURIFYING AND FILTERING LIQUIDS. Samuel Gelston, New York, N. Y. The apparatus consists of a supply pipe, a series of inclined runways provided with riffles, a series of filters in the bed of each of the runways, each filter consisting of a box divided by a partition, and a reservoir in communication with the last of the runways for finally storing the water.

575,788. ELECTRIC SMELTING. Thomas L. Willson, New York, N. Y. The process consists in subjecting the material to be treated in pulverulent condition to the continued action of an electric arc formed between separated electrodes.

575,790. FORGING-MACHINE. Charles de Los Rice, Hartford, Conn. The combination of a sliding die-holder, a rocking frame supported upon an axis in line with the die-holder, and having an eccentric bearing point, with the necessary levers and connections.

575,826. ELECTRIC FURNACE. James A. Deuther, Boston, Mass. The combination of a suspended electrode, mechanism for vibrating the electrode, and a feed mechanism for feeding the material to be treated within the path of the electric arc.

575,944. PROCESS OF PRODUCING WHITE-LEAD PIGMENT, ETC. Alice Macdonald, London, England. The process for producing white-lead pigment and separating metallic lead from lead sulphide by fusing the sulphide and directing air and steam currents on the surface of the fluid.

575,861. AMALGAMATOR. James J. Tinker, Portland, Ore. The combination of a series of amalgamated plates arranged zigzag one above the other troughs containing mercury interposed between zigzag plates, pipe for drawing off the heavier liquid at the bottom, and means for feeding ore to the amalgamator and for supplying chemicals to the supply pipes.

575,884 and 575,885. APPARATUS FOR PRODUCING ACETYLENE GAS. Maurice C. A. Fourchotte, Paris, France. The combination of a water reservoir, a bell entering the water in the reservoir, a basket for the reception of carbide in the interior of the bell, a gas exit tube debouching within the bell, valves and connections.

575,903. MINER'S SAFETY LAMP. William Patterson, Scranton, Pa. The combination of a bonnet having attached at its lower end a case-top with an inwardly-extending flange forming a shoulder, a gauze having a ring with an outwardly-extending flange adapted to abut against the shoulder and the case top.

575,955. APPARATUS FOR MANUFACTURING GAS. John L. Janeway, Oaks, Pa.; Price W. Janeway and Thomas L. Hodge, administrators of said John L. Janeway, deceased. Assignors to the Phœnix Gas and Improvement Company, Philadelphia, Pa. The combination of combustion-chamber, a second or fixing chamber filled with checker-work fire-brick and in direct communication with the combustion-chamber, air-blast and connections.

575,970. ROCK-DRILL. James McCulloch, Wolverhampton, England. The combination with the casing, and the drill spindle of a twist-bar and gearing.

575,974. BLAST APPARATUS FOR FURNACES. John W. Nesmith, Denver, Colo. Assignor to the Colorado Iron Works Company, same place. In combination, the blast furnace, a stove comprising a heating chamber and a burner therein, an air blast conduit extending beyond the burner outlet and arranged to carry the air blast beyond the flame in the chamber, a connection between the stove and furnace and means for applying to the burner a greater pressure than to the air blast.

576,003. MINING CAISSON. James M. Thorp, College Park, Cal. Assignor of two-thirds to Frank D. Wolfe and Mitchell Phillips, San Jose, Cal. A caisson having a working chamber consisting of a fixed section and a vertically movable section, a platform on which the casing is supported, a frame on which the platform is movably mounted, and floats upon which the frame is movably mounted at right angles to the movement of the platform.

576,005. APPARATUS FOR TREATING BLAST-FURNACE GASES. Benjamin H. Thwaite, London, England, Assignor of one-half to Frank Lacroix Gardner, same place. The combination of a dust-collecting apparatus, a washing and cooling apparatus, a scrubber, a filter, a gas holder for collecting the gas as it leaves the filter, a gas engine and a duct leading from the gas holder to the engine.

Great Britain.

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

WEEK ENDING JANUARY 9TH, 1897.

3,515 of 1896. F. J. H. Lascelles, Pickering. Improvements in mechanical appliances for transmitting power from motors to rock drills.

3,635 of 1896. D. Embleton, Leeds. In stamp mills using air as a separating medium instead of water, apparatus for keeping up the circulation of the air.

3,793 of 1896. C. W. Atkinson, London. Electrically driven machines for cutting coal.

PERSONAL.

MR. GEORGE T. WICKES has been appointed receiver of the Helena Mining and Reduction Company.

MR. FREDERICK A. WILLIAMS, city attorney of Denver, has been in Cripple Creek looking after his mining interests.

MR. W. J. PUCKETH, assayer, in charge of the Denver Mint, has been taking in Cripple Creek for a few days, and has been at most of the outside camps.

MR. WILLIAM H. COOKE of Salem, O., has been appointed receiver for the Garfield Mining and Manufacturing Company, to succeed MR. I. P. HOLE, resigned.

MR. J. J. MACTEAGUE, metallurgist, who has just returned from the West Coast of Mexico, via San Francisco, left New York, on February 12th, for the City of Mexico.

Mr. S. J. DENNIS, representing Ricketts & Banks, the mining experts, of New York, has gone to Buckingham County, Va., to take charge of the gold-mining operations there.

MR. T. E. SCHWARZ, mining engineer of Denver, Colo., was recently appointed consulting mining engineer for the Orphan Boy Hill Consolidated Gold Mining Company, which owns property in Mosquito Gulch, near Alma, Colo.

MR. F. C. BROWN, of the assaying firm of Milner & Brown, of Colorado Springs, Colo., has gone on a trip to Red River City, N. Mex. Mr. Brown is interested in the Sylvia and the Occidental lodes, located in the Red River mineral belt.

MR. FRED. DAVIDSON, of Beaver, Pa., has succeeded the late Hon. J. J. DAVIDSON, as superintendent of the Union Drawn Steel Company's works, at Beaver Falls. Mr. Davidson was also elected vice-president of the company.

MR. FRED. B. WHITMORE, who has for several years been identified with the mining interests of Aspen, Colo., has gone to the Kootenay country, in British Columbia, to examine the mining camps there, and perhaps to locate there permanently.

MR. R. I. KIRKWOOD, of R. I. Kirkwood & Company, prospectors, miners and mine owners, of New Denver, B. C., is visiting Chicago, in the interest of the mines of the district of West Kootenay. He will return to British Columbia in a couple of weeks.

MR. T. A. RICKARD, mining engineer, of Denver, Colo., has just returned from England, where he has been for several weeks. He passed through New York this week on his way to North Carolina on a professional trip, and expects to be in Denver by February 19th.

MR. VOLNEY D. WILLIAMSON, formerly of the Crown Point Mine, B. C., but now of the new War Eagle Consolidated Mining Company, is in Toronto in the interests of the Gooderham Syndicate. Mr. Williamson will probably before returning go to London, England, in the interests of his company.

MR. SHUNTARO YAMAGUCHI, of Tokio, Japan, a graduate in civil engineering of Lehigh University, class of '88, and also a graduate of the Imperial University of Tokio, is in the United States in the interest of Japanese railroads. He is visiting various iron industries, and will place a large order with one or more of them for steel rails.

MR. J. W. MOFFATT, civil and mining engineer of Salt Lake City, Utah, whose office was in the Scott-Auerbach building that was destroyed by fire on February 2d, had a narrow escape with his life. In his office were plans, maps and a large amount of data relative to the Bingham Tunnel Company's enterprise which will be very difficult to replace, if it can be done at all; besides which his other losses were considerable.

SOCIETIES AND TECHNICAL SCHOOLS.

NEW YORK ACADEMY OF SCIENCES.—The Section of Geology and Mineralogy will meet in Hamilton Hall, Columbia University, at 8 p. m. on February 15th. The programme is as follows: H. Reis, "Mineralogical Notes"; F. C. Nicholas, "Explorations in the Gold Fields of Western Columbia"; R. E. Dodge, "Recent Work in Physiography"; A. A. Julien, "The Sculpture and Sorting of Sands." On February 26th a public lecture will be delivered by Prof. J. J. Stevenson, entitled "A Talk on Coal."

CANADIAN SOCIETY OF CIVIL ENGINEERS.—A meeting was held at 112 Mansfield street, Montreal, on Thursday, February 11th, 1897. Abstracts of the following articles were read by members of the committee: Relative Tests of Cast Iron and Strength of Cast Iron; The New Water Scoop of the Pennsylvania Railway; A Water-Power and Compressed Air Transmission Plant for the North Star Mining Company, Grass Valley, Cal.; Foundations of Tall Buildings; Solar Work in Surveying; Through the Barren Lands.

CIVIL ENGINEERS' CLUB OF CLEVELAND, O.—A meeting was held in the Case Library Building on February 9th, 1897. Prof. Charles H. Benjamin, M. E., of the Case School of Applied Science, presented a paper upon "Applications of the Electric Motor in Machine Shops." The subject was treated from the standpoint of the manufacturer and mechanical engineer. The relative economy of electric and of shafting transmission was considered under the following heads: First cost of plant, economy and efficiency of operation, quantity and quality of output per man and per machine as affected by the change.

CIVIL ENGINEERS' SOCIETY OF ST. PAUL, MINN.—A regular meeting was held February 1st, 1897. The committee on licensing land measurers reported a bill and was instructed to refer the same to the Ramsey County delegation. The society declared itself favorably inclined to such a bill.

The matter of improved road laws was introduced by Professor Hayes, of the State Agricultural Experimental Station, and Mr. Choate, a Minneapolis attorney. Mr. Choate advocated immediate steps toward an amendment to the State constitution which should provide for a good road fund and formulate the system of road improvement. The only available fund at present is the Internal Improvement Fund, raised from the sale of land donated to the State by the United States, and which, though at a maximum, does not realize more than $25,000 per year. Mr. Choate's amendment proposes a fund which shall be pro-rated similarly to the State School Fund, and he assumes that it may be supplied by an inheritance tax and by collecting the taxes upon telephone, express, sleeping-car and other companies. Two years must pass before such an amendment, if now introduced, could be approved by the people. In the meantime he advises the appointment of a temporary Highway Commission, whose duty it shall be to study the existing systems in other States, to examine road material in various parts of the State, to inquire into methods of construction, to consider the matter of convict labor in connection with road building, and, in fact, to educate themselves thoroughly with a view to offering practical suggestions for the disposal of the fund when it shall become available.

County Surveyor Forbes submitted a list of photographs, showing the contrast between road improvements in Dakota County made by statutory labor, and those performed under contract for the same cost. The difference was striking and much in favor of the contract system.

INDUSTRIAL NOTES.

Port Oram Furnace, at Port Oram, N. J., is in blast and is making about 140 tons of pig iron a day.

The Blue Ridge Manganese and Iron Company, of Staunton, Va., will, it is said, erect a charcoal blast furnace.

The Cumberland Steel and Tinplate Company, of Cumberland, Md., is said to be adding a new 24-in. tinning mill to its plant.

The Mannesmann Tube Works, at North Adams, Mass., will begin active operations on February 22d. About 600 men will be employed.

The Rich Patch Iron Company, of Buena Vista, Va., contemplates erecting a modern blast furnace near Covington, Va., at an early date.

The Homestead Steel Works, Edgar Thomson Blast Furnaces and Steel Works and Duquesne Steel Works, resumed in full in all departments, on February 7th.

The Pittsburg Locomotive Works has received an order for five locomotives, which are now being constructed, for the Cape Fear & Yoddin Valley Railroad of Japan.

The American Tin-Plate Company has about completed the repairs at the Montpelier (Ind.) plant, recently purchased, and will put it in operation with four mills and 200 men about February 18th.

The Vulcan Iron Works, at Tamaqua, Pa., have notified the foundrymen to work 10 hours per day, instead of 8, as heretofore. Orders for three large engines for coal companies in Luzerne County have been received.

The Falcon Iron and Nail Company, of Niles, O., which is controlled by Youngstown capital, has purchased a controlling interest in a Sharon (Pa.) steel furnace, which, in all probability, will be able to furnish the Niles mill with the steel it requires.

The Pacific Rolling Mill Company, of San Francisco, Cal., has elected the following officers for 1897: Edward Coleman, president; Charles S. Neal, vice-president; William P. Sullivan, Jr., secretary; Charles M. Keeney, general manager, and Patrick Noble, superintendent.

Messrs. E. L. Smith and F. W. Thompson, who have had large experience in the manufacturing of assay balances, have formed a partnership and started a factory for the manufacture of these articles at 2,219 Stout street, Denver, Colo., under the firm name of Smith & Thompson.

The Burton Electric Smelting Company has been organized at Portland, Me., for the purpose of manufacturing and dealing in electrical smelting apparatus and operating the same. Capital stock $1,000,000, of which $60 is paid in. President, George D. Burton, of Boston; treasurer, Henry D. Tudor, of Boston.

The American and Tube Iron Company, of Pittsburg, Pa., has received an order for pipe from a South African firm. The order is for twenty miles of material and will keep the company's plant at Middletown active for some time. The order was received in competition with English and other foreign manufacturers.

The New York, New Haven & Hartford Railroad Company has let the contract for the new power station to be erected at Berlin, Conn., to the Berlin Iron Bridge Company, of East Berlin, Conn. This building is 110 ft. in width and nearly 200 ft. in length, divided into two equal portions, one side to be used for a boiler-room and the other for an engine and dynamo-room. The engine and dynamo-room is provided with a runway and 35-ton traveling crane. The whole framework is to be of steel, the side columns being enclosed by brick walls, and when it is finished will be one of the most complete, expensive and best central stations in the world.

Henry R. Worthington has just been awarded a contract by the city of Chicago, covering six vertical triple-expansion direct-acting high-duty pumping engines, each of 20,000,000 gals. daily capacity. This contract amounts to $437,600, and is the largest contract for water-works pumping machinery ever placed in this country. The above six engines each have a daily pumping capacity of 20,000,000 gals. against a head of 150 ft., and will be supplied with steam at a pressure of 140 lbs. to the square inch. The engines will each be of 530 H. P. This company is also building three vertical triple-expansion direct-acting high-duty pumping engines for the city of Brooklyn, N. Y., under a contract amounting to $385,000. These engines each have a daily capacity of 20,000,00 gals. to be delivered against a head of 168 feet, and the steam will be supplied at a pressure of 135 lbs. to the square inch, each engine being of 600 H. P.

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.

ALABAMA.

MINING ON GOVERNMENT LANDS.—In Birmingham, February 8th, the United States filed suit in the Federal Court to recover $155,968 damages from the Debardeleben Coal and Iron Company, and $108,675 from J. W. Worthington & Company, on the ground that they trespassed on 80 acres of government land at Compton mines, Blount County, and dug iron ore and limestone worth the above amounts. A similar suit for $46,000 was filed against the Tennessee Coal, Iron and Railroad Company. It appears that the Alabama & Chattanooga Railroad, afterward the Alabama Great Southern, entered the lands in question in 1857, but was not granted final deed by the government until April, 1896. Meanwhile defendants, holding title under one Higgenbotham, mined about 250,000 tons of iron ore on them. The Alabama & Chattanooga Railroad and its successors will probably be the beneficiaries.

ARIZONA.

COCHISE COUNTY.

COMMONWEALTH COMPANY.—This company has been negotiating for a 40-stamp mill for its property at Pearce, and is taking steps to solve the water question by having a well dug.

GILA COUNTY.

LOST GULCH MINING COMPANY.—Recent developments in the Lost Gulch mine have opened an important ore body. The tunnel has been driven upward of 290 ft., and at about 120 ft. the main ledge was cut, showing 2½ to 3 ft. of free milling ore. The ore tunnel was pushed on beyond the ledge a distance of about 170 ft.

GRAHAM COUNTY.

ARIZONA COPPER COMPANY.—The statement of this company, as published from the London office, shows that for the year 1896 dividends amounting to 4s. or $1 per share were paid and £17,645 were added to the sinking fund. The sum of £18,809 was then carried forward to the current year's account.

CALIFORNIA.

CALIFORNIA DEBRIS COMMISSION.—The following new applications have recently been made to the commission for permission to mine by the hydraulic process: J. B. Leonardini, in the Frazer placer mine, near San Andreas, Calaveras County, to deposit tailings in Old Gulch; from J. W. Zugar in the Zugar & Lewis placer mine, near San Andreas, Calaveras County, to deposit tailings in Old Gulch; from Charles Weiss in the Kentucky Hill mine, near Camptonville, Yuba County, to deposit tailings in Mosquito ravine; from Thomas Mullin in

the High Point mine, near Camptonville, Yuba County, to deposit tailings in China ravine; from A. F. Roberts in Roberts & Company's mine, near Crownsville, Yuba County, to deposit tailings behind Steel & Company's dam in New York Creek; from Gray & Taylor in the Sugar Loaf mine, near Colfax, Placer County, to deposit tailings in Dry ravine.

DEL NORTE COUNTY.

(From Our Special Correspondent.)

BIG FLAT.—This hydraulic mine, located on the ridge between Hurdy Gurdy and Janes creeks, 25 miles southeast of Crescent City, containing 240 acres, was idle for several years. The new owners took possession in 1895, put the ditch in order and have been piping day and night with good results.

EL DORADO COUNTY.

(From Our Special Correspondent.)

ZENTGRAF —At this mine, located near the north fork of the American River at Wild Goose Flat, 8 miles south of New Castle, a 50-H. P. electric plant has been put in. Eighty men are employed. The mine is being worked through a double compartment shaft, which is now down about 600 ft. The mine is lighted by electricity.

KERN COUNTY.

(From Our Special Correspondent.)

A 20-ton cyanide plant is to be erected at Cow Wells, 12 miles from Randsburg.

EUREKA.—At this mine, at Randsburg, a rich strike has been reported. A rich 4-ft. ledge was cut by a cross-tunnel at a depth of 200 ft.

LAKE COUNTY.

(From Our Special Correspondent.)

HELEN.—This valuable quicksilver mine, better known as the American mine, lies 7 miles west of Middletown, and north of the Great Western mine. Some years ago the furnace was destroyed by fire, and the mine has been idle ever since. It was worked by Capt. Thomas Wright, with the assistance of Mexicans, in the early seventies. This mine has now been bonded by R. B. Harper and Geo. F. Davidson, who will place the property before Boston capitalists. The recent demand for quicksilver and its advance in price are inducing capitalists to take hold of such properties.

SULPHUR BANK QUICKSILVER MINING COMPANY.—This company has re-elected the old directors and the following officers for 1897: Louis B. Parrott, president; T. Wintringham, secretary.

MARIPOSA COUNTY.

(From Our Special Correspondent.)

HOLIDAY GOLD MINING COMPANY.—This company is opening up an old property known as the Roma, which was worked in the early fifties by the Mexicans, who called it the Piedra de Gozo. It is a tunnel proposition, situated between the Mariposa grant and the Yosemite National Park, some 12 miles from the town of Mariposa. The ledge is between greenstone and slate walls 3 ft. to 5 ft. in width, rich, with an east and west strike and a steep dip to the west. Water is free, and the ore can be very cheaply handled with modern methods.

The directors of the company are T. J. Parsons, G. W. Baker, J. Jacobs, S. K. Thornton, J. A. Stephens, R. B. Harper and G. F. Davidson. This company is a close corporation with no stock for sale.

PLUMAS COUNTY.

(From Our Special Correspondent.)

JAMISON.—This mine, two miles south of Johnsville, is being operated under the management of S. W. Cheyney. The 10-stamp mill is crushing about 30 tons per day. Thirty men are employed. The company owns one of the finest water rights in the State, with a ditch 1½ miles long which delivers water under 500-ft. pressure.

RIVERSIDE COUNTY.

(From Our Special Correspondent.)

VIRGINIA DALE.—At this mine, near Virginia Dale, 55 miles northeast of Walters, it is reported that a rich vein has been opened up on the 500-ft. level. Other mines in the vicinity are doing well.

SISKIYOU COUNTY.

(From Our Special Correspondent.)

TUTTLE.—This mine, on Scott River, near the Oro Fino mine, is being developed by three tunnels and the owners have taken out about 50 tons of high-grade ore. It is their intention to build a mill in the spring, as they will have enough ore on the dump to justify it.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

EXCELSIOR AND GREEN.—These mines, about 13 miles northeast of Sonora, are reported to have been sold to A. P. Minear, who will reopen them in the spring. The Excelsior was worked in the sixties, and is said to have produced about $500,000 when a fault was encountered which caused the owner to close down the mine, and nothing has been done since.

MOTHER LODE POWER COMPANY.—This company has filed articles of incorporation. Directors are: L. E. Barker, J. W. Woodside, L. L. Dennett, C. A. Case and J. W. Tullock, with offices at Oakdale. The company intends to build dams and canals for the purpose of generating power for the mines located on the Mother Lode in this county.

COLORADO.

BOULDER COUNTY.

ANTIETAM.—Balenger & Company, leasers of this mine, have a shaft 70 ft. deep, and are taking out ore which, it is said, runs $40 and over per ton in gold. The company will place a plant of machinery soon.

WHITE PINE.—On this claim a tunnel is being driven by contract, which shows a vein of good ore running from $18 to $40 to the ton.

CHAFFEE COUNTY.

CLIMAX.—At this mine, in Bear Creek district, 50 ft. of development work have just been completed, in which a body of gray copper 12 in. wide was encountered. A contract for 50 ft. more has been let. Assays of the ore give good values.

CLEAR CREEK COUNTY.

(From Our Special Correspondent.)

DORIC MINES, LIMITED.—A new vein has been opened up in this English tunnel at Georgetown, and a test of the mineral is being made at one of the mills. It is a low-grade ore and carries gold values although coming from a silver section of the county.

GENERAL THOMAS.—This property, on Chicago Mountain, and owned in the East, has recently produced a very heavy tonnage of high-grade ore, which was found by crosscutting to the opposite wall in the lower level.

GOLCONDA MINING AND TUNNELING COMPANY.—The air compressors have been started up at the tunnel of this property at Idaho Springs, and about 150 ft. will be driven the coming 30 days. It is a crosscut to reach the lode some 1,200 ft. distant, which will be cut at a depth of about 600 ft. The tunnel will then be driven in two directions toward the mines of Albro Hill and toward those of North Spring Gulch. However, the latter direction will be carried through first; the distance is exactly one mile. An entirely new mineral belt will be opened up by this undertaking of Buffalo, N. Y., capitalists.

GOLD GLEN MINING AND TUNNELING COMPANY.—The tunnel which was recently commenced to cut the mines up Chicago Creek, near Idaho Springs, has encountered some blind leads which show mineral bodies and the company is highly gratified with this unexpected showing.

LAMARTINE.—This mine, at Idaho Springs, which has such a good record for the production of high-grade silver ore, is now working much of its older workings by the leasing system. Quite recently some new bodies of ore were opened out by these and the mine is again numbered among the heavy producers. The owner of the property is also doing much development toward the leads on Hanchet Hill, but it is expected that the tunnel must be driven for 1,000 ft. before the best mineral bodies will be reached. The depth from the surface will also be about 1,000 ft.

NEWTON MINING COMPANY.—This company, with headquarters in Milwaukee, has resumed the sinking of the shaft on its property at Idaho Springs.

SEATON.—This mine, at Idaho Springs, which is being operated in the interest of Eastern people, has a force of 50 men at work doing development. The shaft is now down 340 ft. and will be continued another 100 ft., because of the showings in the bottom of the shaft. A quarter of a million dollars worth of mineral is now blocked out.

SENATOR.—Because of the labor difficulties at Leadville, in which they are heavily involved, Estey, Mudd & Bellan have stopped all development in this property at Dumont.

SMUGGLER MINING COMPANY.—The Supreme Court of Colorado has reversed the decision of the lower court in the question touching on the apex of the vein. It was claimed that the owners of the Mendota and Fulton claims, at Georgetown, took out ore from under the surface possessions of the Smuggler ground. The defendants claimed that they were entitled to the vein in its downward course through the territory of the Smuggler claim. The case goes back to the district court for a rehearing in accordance with the ruling of the Supreme Court. Chief Justice Hayt handed down the opinion on the appeal: "In the case at bar no part of the Fulton vein runs parallel with the side lines of that vein, as staked upon the surface. The United States Supreme Court has said that if the locator of a mining claim mistakes the direction of his vein, and locates accordingly, the courts have no power to make a new location for him, but must determine his rights with reference to the location actually made. Developments made subsequent to the location of the Fulton disclose that the claim, as located, contains very little of the apex of the vein, and such as it does contain does not cross either line, and does not run parallel or nearly parallel to the side lines; so that, in no aspect of the law, can the Fulton be allowed extra-lateral rights by reason of the apex of the vein."

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From Our Special Correspondent.)

ANCHORIA-LELAND MINING COMPANY.—This company, whose mines are on Gold Hill, has just declared the seventh monthly consecutive dividend of $6,000. The estimated output for January was close to 500 tons. The water in the shaft does not increase very fast, it being at the rate of 100 gals. a minute, from a depth of 750 ft.

BRODIE CYANIDE MILL.—For the month of December, this mill treated 1,400 tons of ore, of an average grade of $28 per ton, making a total of 1,960 oz., or $39,200.

CHRISTMAS MINING COMPANY.—This company's mine on Bull Hill is a steady shipper, but the minority and local holders of stocks claim the mine is not being worked for their interest, as no dividends are declared and only a limited force of miners (nine) are employed, whereas the mine should be employing at least 60 men. The majority of the stock is held in Norway, Mich., and that place furnished the capital to develop the claim, erect machinery, and to purchase the claim and naturally they selected a Norway mining man as superintendent, who is working the mine very economically, if not energetically. The company employs its own assayer.

GARFIELD-GROUSE.—This property, on Bull Hill, has been shut down pending a suit in the district court. This mine formerly employed 80 men.

GLOBE SMELTING AND REFINING COMPANY.—At the annual meeting of this company, whose works are at Denver, the following were elected director for the ensuing year: Dennis Sheedy, president and general manager; Charles B. Kountze, vice-president; John M. Walker, secretary and treasurer; N. W. Iles, superintendent; Herman Kountze, O. Chanute and George B. Berger.

LUCKY GUSS.—In this property, on Bull Hill, they have encountered another chute of ore in the shaft at a depth of 500 ft. For over 100 ft. in sinking the vein was barren. The mine is being well developed, and the reserves are daily being increased. This is one of the few mines that is intending to put in its own mill to treat the low-grade ores. It is estimated that there are 10,000 tons of ore available for mill, which will leave a profit of $3 per ton after treatment.

MINNIE LEW.—This claim, on Iron-Clad Hill, is being worked under lease and bond by Mr. Shideler, also one of the owners, who has sunk a new shaft 80 ft. deep, and has erected a horse whim, but has not reached the ore as yet. The Puritan Mining Company, of Denver, erected a steam hoist on this property last year, and sank the shaft to a depth of 150 ft., but without encountering mineral. The present lessee has sunk his shaft 120 ft. north of the old shaft.

RAVEN.—This mine, on Raven Hill, is steadily increasing its output. The shaft on the top of the hill has been sunk 300 ft., and a station has been cut at that, the second level, and a crosscut is being driven to intersect the vein. The vein in the first or 193-ft. level yields high-grade ore, shipments having been as high as 16 oz. per ton. The vein to the north is 4 ft. wide, and the pay-streak varies from 12 to 20 in. The Raven vein east of the shaft also yields a good-grade ore. This shaft will reach the tunnel at a depth of 800 ft. The Raven tunnel has a length of 1,820 ft., and is being driven at the rate of 200 ft. a month by single machine.

RIGI.—This claim, on the east slope of Battle Mountain, and owned and promoted by Baron Richthofen and his London friends, has ceased working on company account and is leased in blocks. Considerable development has been done.

PORTLAND GOLD MINING COMPANY.—The annual meeting of stockholders was held on February 1st at Council Bluffs, Ia. The old board of directors was re-elected. They are: James F. Burns, W. S. Stratton, Frank G. Peck, John Hanlan, James Doyle.

SEVEN HILLS MINING COMPANY.—The Kirby Fraction, on Globe Hill, and owned by this company, is being worked under lease. A shaft has been sunk 25 ft. and assays giving $33 have been obtained. The fraction contains .987 acre.

GUNNISON COUNTY.

RED JACKET.—This mine, at Pitkin, owned by J. C. Teller, of Denver, is developed by a shaft 250 ft. deep, which was in a fair grade of oxidized ore carrying galena. At 250 ft. the shaft opened into a body of black sulphurets and galena ore more than 6 ft. wide, which gives high silver and lead values. At this depth water was also encountered and operations had to be suspended. A pump and steam hoist have been placed in position and by February 15th it is hoped shipments can be made.

LAKE COUNTY.

(From Our Special Correspondent.)

OFFICIAL STRIKE INVESTIGATION.—As mentioned in my letter of last week, the past seven days have been spent by the Legislative Committee appointed in join session at Denver, in examining into the causes of the Leadville strike. While a great deal of the old facts, already well known, were again gone over, it must be said that some important developments were made, and, if anything, the mine managers of this camp are placed even on a better basis than before. The testimony of John F. Campion, of the Ibex properties, and of Mr. S. W. Mudd, of the Small Hopes combination, all of which was substantiated by good witnesses, showed conclusively that the mine managers tried to secure arbitration frequently before the Coronado riot, but that the miners wanted nothing but $3 a day. Mr. Campion in his examination stated that he was personally not opposed to lawful bodies of organized labor, and that it was not until after blood had been shed and property destroyed that he refused to deal in any way with the local union.

Mr. H. I. Higgins, who is at the head of the Union Leasing Company's properties and also at

the Coronado, furnished on his examination some carefully prepared statistical information which will prove of interest to those watching the mining world. Mr. Higgins testified under oath as follows: That there were 2,150 men employed by the mine managers of this camp at the time the strike occurred: that 1,130 were called out and struck on June 18th last, and that 305 men were thrown out of work by the closing down of the mines at that time; that the remainder of the 2,150 were either leasing or employed on properties that have not ceased work; that there are now employed in the mines of this district by the mine managers 1,137 men, of which number about 400 came to the camp since the strike; 300 now employed came from Missouri and 100 from Colorado, and the others are local non-union men; about 422 of the 1,137 were union men before the strike; the mine managers now have in their employ all the men they need, and can get more here if they need them; the declaring off of the strike would not materially increase the working force unless the downtown mines start pumping, in which case these properties could give employment to from 500 to 1,000 men. The output in tonnage of the mines prior to the strike was 1,750 tons per day while the present output is about 1,250 tons per day, the decrease being due to the stoppage of the downtown mines, which at the time of the strike were producing 600 tons of ore a day. The Union Leasing Company and the Coronado were both losing propositions. The Union Leasing Company's properties had been running behind for over 1½ years, and for the six months previous to the strike had run behind from $2,000 to $3,000 a month. From $60,000 to $70,000 in development work had been spent on the Coronado property up to the time of the strike, and it had not yet been placed on a paying scale.

The miners and their witnesses in their testimony admitted that the mine managers stated to them that the reason they could not pay them $3 in the downtown mines which were paying $2.50 a day was because these properties were barely paying expenses in some cases and in other cases were losing propositions; Eben Smith and other mine managers offered to show the miners' committee their books and they refused to look at them; the miners also admitted that 70% of the men were getting $3 a day when the strike was called and that these men had been raised from $2.50 to $3 voluntarily by the managers for whom they were working. The committee will make its report to the State Legislature at an early day.

LARIMER COUNTY.

MOONLIGHT.—This mine, at Manhattan, is on the Seven Mile slope and can be traced upon the surface for a distance of 400 ft. A tunnel has been run on the lead to a depth of 60 ft. and a contract will soon be let to extend it 500 ft. further. The vein at a depth of 27 ft. is 28 in. wide. The ore is brown iron and lies in pockets. The mine is owned by Rugh, Moody & Smith and is under bond and lease to Judge H. I. Garbutt.

OURAY COUNTY.

(From Our Special Correspondent.)

BLAINE.—This group of 18 claims, located near the Virginius, on Mt. Sneffels, has been sold to a company of Eastern capitalists by Louis Sherbino, representing the owners. The despatch recounting the sale places the purchase price at a high figure.

CAROLINE MINING COMPANY.—The Revenue and Virginius are again in full operation, employing nearly 500 men. The Revenue mill started up January 25th.

CONGRESS.—This property, at Ironton, is storing its ore for shipment in the spring, having now on hand over 50 carloads.

DANIEL BONANZA. — Another carload of high-grade ore has been shipped from this mine, located on Mt. Hayden, south of Ouray. One car of high-grade and two cars of milling ore are also in the bins awaiting shipment. The vein, however, has pinched, and is now hardly paying expenses.

GRAND VIEW.—A valuable strike has been made on this claim by R. Brookfield and others. The property is located within half a mile of Ouray, and is equipped with a complete mill of large capacity. The lessees have been operating for several months upon a small streak of high-grade ore, which during the week of January 25th opened out into a large body of rich gold-bearing quartz. A large force of men has been put on and a night shift added. The Grand View, although worked for many years upon an extensive basis, has never been made to pay expenses.

KHEDIVE TUNNEL.—This property has closed down indefinitely, owing, it is said, to the low-grade character of its product. Indications, however, predict a resumption with the arrival of spring.

MICKEY BREENE.—Dalerio is working nine men on this ground, east of Ouray, taking out high-grade ore, which is being stored until spring for shipment.

O. & N. TUNNEL.—This property is making a phenomenal record. The stock is divided into 20 shares, which paid a dividend of $1,800 per share for the month of December. Development promises to be even more lucrative during the present month than heretofore. Three carloads of ore running very high in gold have been shipped since January 1st, while a fourth is now upon the dryers. The O. & N. adjoins the American Nettie on the north, and is under the management of Geo. R. Hurlburt.

PARK.—Interest centers this week upon a discovery of rich gold-bearing quartz made in the coal banks owned by J. R. McDonald, a few miles north of Ouray. Many prospectors are already on the ground, and the adjacent territory is being rapidly staked.

PONY EXPRESS.—Mr. G. C. Noble has just equipped this property, near Ouray, with a 10-stamp mill. The power for the mill will be electricity, secured from the American Nettie, about one mile distant. Large quantities of ore have been blocked out, and a rich body of ore was opened up a short time ago in the lower level, a carload of which was shipped January 26th to Denver.

PARK COUNTY.

HALE MINING, MILLING AND REDUCTION COMPANY.—Mr. A. Sattler, manager of this company, which is operating the Hock Hocking mine in Pennsylvania Gulch, says the mine is being steadily worked with a force of 14 men. The vein is a fissure through the contacts, the ore averaging about $23 per ton net. The ore chute in which they are now working has been continuous for about 70 ft., and is now 23 ft. thick in the bottom of the shaft, which is 165 ft. deep. A new pump was put in recently.

ROUTT COUNTY.

BOOMER.—Florman & Deitleff, of Pueblo, who are the principal owners in this mine at Puma City, have delivered to the Pueblo Smelting and Refining Works the first carload of ore shipped from their mine. The shaft is down only 55 ft., but mill-run tests of the ore give excellent results. The lead is 12 ft. wide and the ore is bismuth, tellurium and quartz. The carload, it is said, will average $575 to the ton.

SAN JUAN COUNTY.

BOYCOTTER.—In this mine, in Prospect Gulch, a tunnel 150 ft. long has been driven on the vein, and and a 50-ft. shaft sunk from the floor of the tunnel. All the workings are in ore, and as the vein shows at the surface 75 ft. above the tunnel, a big ore body has been developed. The ore, is is said, averages $2 in gold, 15 oz. in silver and 15% copper.

EMMETT TUNNEL.—In this tunnel, on Cement creek, an ore body has been encountered from a foot to 15 in. in width, which is said to run without sorting 23 oz. silver, 50% lead and $5 gold. About a ton a day is being sacked.

K. P.—A crosscut 100 ft. in depth has been run during this winter. A short time since some stringers of ore apparently leading to the main vein were encountered and assays taken therefrom ran high in gold. The tunnel is being driven at the rate of 2 ft. per day.

SAN MIGUEL COUNTY.

(From Our Special Correspondent.)

MARIPOSA.—J. B. Scott has secured a large force of Ouray miners to develop this property at Saw Pit. A new boiler and pumping plant will be put in at once and the shaft driven to contact.

NANCY HANKS.—A big strike is reported from this Saw Pit property. The ore is said to run high in both gold and silver.

GEORGIA.

CARROLL COUNTY.

(From Our Special Correspondent.)

VILLA RICA GOLD MINES.—The Mecklenburg Iron Works, of Charlotte, N. C., has shipped a 10-stamp mill and outfit to these mines.

IDAHO.

CANYON COUNTY.

NEW SMELTER.—It is reported that arrangements are being made for the erection of a smelter at Nampa for the hardening of ores from the Wood River and Cœur d'Alene countries. It is stated that Chicago capitalists are promoters of the project.

OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—Mr. D. B. Huntley, the manager of these properties at De Lamar, reports as follows for the month ending December 31st, 1896: Crushed (wet) 4,275 tons; crushed (dry), 3,848 tons; assay value of pulp, $18.16, of which $13.95 was gold and $4.21 silver; assay value of tailings, $4.96, of which $3 95 was gold and $1.01 silver; percentage saved, total, 72·69%; Doré bars produced, 15; number ounces fine gold produced, 1,643; number ounces fine silver produced, 19,331; value of gold produced, $32,866; value of silver produced, $12,565; surplus realized from bullion, $666; ore sales (estimated), $2,500; miscellaneous revenue, $450; total receipts, $49,047; expenses, $41,378; estimated profit for the month, $7,669.

MICHIGAN.

COPPER.

FRANKLIN MINING COMPANY.—This company reports an output of 148 tons of copper in January, against 157 tons in December.

OSCEOLA MINING COMPANY.—At the close of last year this company's new No. 6 shaft had attained a depth of 1,802 ft., or within 60 ft. of the 22d level. During the year the shaft was sunk 1,058 ft., the plats cut for level stations and also four large sumps. This a record almost unprecedented in the history of Michigan mining. Work will begin on surface toward equipping this shaft as soon as the weather permits.

QUINCY MINING COMPANY.—The production in January was 855 tons of copper, which compares with 858 tons in December and 851 tons in January, 1896.

TAMARACK MINING COMPANY.—The fire in No. 3 shaft of the North Tamarack mine was extinguished on February 3d, with but little financial loss. The men who were imprisoned by the fire were taken out alive and without having suffered seriously.

IRON—GOGEBIC RANGE.

METROPOLITAN IRON AND LAND COMPANY.—This company, which operates several mines on this range, has reduced wages 10%. About 700 men are now employed.

MINNESOTA.

IRON—MESABI RANGE.

(From Our Special Correspondent.)

BIWABIK ORE COMPANY.—This company's mine will have 150,000 cu. yds. of earth taken off in stripping in the spring by the Drake Stratton Company in completion of its great contract, work on which was begun a year ago.

HIBBING TOWNSITE.—At the fourth hole sunk here ore has been cut and sunk into for 207 ft., and a remarkably high assay is given. There is a very large body in the deposit.

YAWKEY LANDS.—On lands belonging to W. C. Yawkey, of Detroit, Mich., testpitting and drill work has begun. Owing to the location of the lands close to the Alpena and Sauntry, valuable ore bodies are expected.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The weather during the past week was rainy and foggy, and made the roads so impassable that considerable of the ore sold was not delivered, but the work at the mines was as usual, and made a fair output. Nearly all the surplus ore was sold, and there is not over 500 tons of zinc ore unsold in the entire district. The sales of zinc ore was 21 carloads more than last week, and 42 carloads more than the corresponding period last year. Lead sales were 10 cars more than the preceding week, and two cars less than in 1896. The highest price paid for zinc ore was $22 per ton for two carloads of Joplin ore, eight carloads at $21 in Joplin and six carloads in Webb City and Carterville, and the Oronogo and Stott City ores sold the same. There was a general advance of $1 per ton on all Galena, Kan., ores. The top price for the corresponding week last year was $24.50, at which figure only one car was sold. Lead ore started the week at the usual price of $16 per 1,000 lbs. delivered, but a sharp advance Friday to $17.50, at which price most of the Joplin product was sold. Following are the sales and shipments of zinc and lead ores for the week ending February 6th, 1897, from the several camps: Joplin zinc, 1,247,230 lbs.; lead, 298,820 lbs.; value, $18,014. Carterville zinc, 519,240 lbs.; lead, 221,270 lbs., value, $10,498. Webb City zinc, 703,090 lbs.; lead, 98,490 lbs., value, $6,854. Galena, Kan., zinc, 3,250,000 lbs.; lead, 446,970 lbs.; value, $36,625. Aurora zinc, 270,000 lbs.; lead, 10,000 lbs., value, $1,770. Oronogo zinc, 85,810 lbs.; lead, 4,870 lbs.; value, $936. Stott City zinc, 14,290 lbs.; value, $486. Zincite zinc, 46,360 lbs.; value, $115. Totals of the district: Zinc, 6,136,040 lbs.; lead, 1,080,420 lbs.; value, $75,298. District totals for five weeks: Zinc, 23,297,900 lbs.; lead, 4,948,320 lbs.; value, $336,190.

CUCK ROBIN.—This mine has been sold to Messrs. Thayer & Chandler, of Chicago, Ill., for $10,000 cash. The property consists of two lots on the Leonard land in Chittwood Hollow, and has a shaft down 130 ft., in which there is a vein of lead ore at 100 ft., and a 20-ft. face of zinc ore. They have a crusher, rolls, pump and jigs to clean the ore, and in eight months made $12,210.

FREE COINAGE MINING COMPANY.—The company is composed of J. Clark, Captain Earle, Wm. Bolin and Wm. Brasuer, of Webb City. They have a lease of 117 acres of land owned by Judge Robinson and others, which is situated half way between Joplin and Webb City. Gammon & Henderson have a sublease of 20 acres, on which are the Jackscrew, Corkscrew and Screwdriver mines. The dirt from the Jackscrew mine is concentrated on steam plant that is making from 25 to 30 tons per week. The Rich Mining Company has a 10-acre lease and steam plant, and is making over 30 tons of ore per week.

GRAMBY LEAD AND ZINC COMPANY'S LAND.—On Smelter Hill J. W. Peterson, John Walton and Walter Murphy are working a good lead prospect in shallow ground, and are taking more than expenses while opening up the mine. Minor Bathhurst & Company are getting into pay lead dirt cutting toward their west line, where Peterson & Company have good dirt. The Hoc Pocus plant ran steadily all week and made 20 tons of zinc ore.

HEDBURG & MCABEE.—Eric Hedburg and C. W. McCabe have two lots on the Wilkes land that are showing up a body of rich zinc ore at 60 ft. The shaft will be sunk to 100 ft.

LONE STAR MINING COMPANY.—This company has a lot on the Gramby land in Leadville Hollow. Through the Bird's Nest shaft adjoining they, on January 20th, opened up a 14-ft. face of zinc-bearing ore that is very rich. The drift is on the 140-ft. level, the same as the Madeline Pollard, adjoining on the south, one of the largest producing mines in

the Hollow. The ore will be cleaned on the Ben Hur plant.

LAWRENCE COUNTY.

(From our Special Correspondent.)

HAYS CITY MINE.—This is located on the Ozark land, at Aurora. It was owned by N. M. Wheat and D. B. Loy, and has been purchased by S. B. Duggen, a capitalist of Springfield, Mo. The old Hays City mine has produced several thousand tons of zinc ore, and a new strike has been made by shooting through what had always been supposed to be a solid limestone bar, and along which a drift had been cut over 700 ft. The supposed bar proved to be merely a limestone rib, along the opposite side of which one of the richest bodies of zinc ore ever opened up in the camp is being developed.

MONTANA.

BEAVERHEAD COUNTY.

BANNACK GOLD DREDGING COMPANY.—At the annual stockholders' meeting recently held in Chicago, the following officers were chosen: H. J. Reiling, president and manager; F. L. Champlin, vice-president; M. McDonald, secretary; L. C. Bonney, treasurer; Lyman M. Payne, attorney.

DEER LODGE COUNTY.

ELLISTON.—Frank Peck, of Elliston, has opened up a lead of free-milling ore that is said to net him $700 to the ton. The mine is 12 miles southeast of Elliston on the south fork of the Little Blackfoot River.

JEFFERSON COUNTY.

(From Our Special Correspondent.)

HIGH ORE.—Work has been suspended on the tunnel, which is in 1,185 ft. In driving this distance several veins carrying good values in gold, silver and lead have been cut. The objective point of the tunnel is said to be still about 400 feet ahead. It is expected that work will soon be resumed.

HOPE MINING COMPANY.—This company has reopened its shaft (which was destroyed by fire) and has about 8,000 tons of ore broken in the mine waiting for the additions to the concentrator to be completed, when it is expected to treat over 200 tons of ore daily. The company is also working the Deer Lodge mine, located about four miles from Basin, on which it has a working bond. A contract has been let to sink 100 ft. from the tunnel, which at this point is about 200 ft. from the surface. The Boston is also bonded to the company.

SILVER BOW COUNTY.

BUTTE & BOSTON MINING COMPANY.—The foreclosure sale of this company's property has been confirmed by the United States Court at Butte. The property has been transferred to the Reorganization Committee, which has placed Mr. F. Klepetko, manager of the Boston & Montana, temporarily in charge.

NEVADA.

ELKO COUNTY.

DEXTER GOLD MINING COMPANY.—This company succeeds to the title of the Dexter Gold and Silver Mining Company, Limited, and also the Coptis and Napyas Mining Companies. The property, which is located near Tuscarora, was shut down on account of litigation from July, 1893, to January, 1896. The Dexter paid four dividends amounting to $105,000, and the Coptis a number of dividends amounting to $67,000.

STOREY COUNTY—COMSTOCK LODE.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—The official report of the work done in the mine for the week ending January 30th is as follows: 1,000 level—The south drift, started from the west crosscut at a point 124 ft. in from the top of the upraise from west crosscut No. 2 from the north drift from the Consolidated Virginia shaft station, has been extended 22 ft., passing through porphyry, clay and quartz assaying $1 per ton; total length 57 ft. 1,650 level—On the 9th floor in the stope at a point 100 ft. east and 25 ft. north of an east line from the Consolidated Virginia shaft the incline upraise has been carried up 16 ft., passing through quartz and prophyry and narrow streaks of ore assaying in the top of the opening from $2 to $6 per ton; total height 32 ft. above the 1,650 level. Around the foot of the upraise, and upward for 20 ft., we have extracted 18 tons of ore, assaying $41.14 per ton. 1,750 level—From the 26th floor, at a point 118 ft. in from the mouth of the west drift, a north drift has been started and advanced 36 ft., passing through porphyry showing narrow streaks of quartz of low assay value. Opposite the south drift the north drift has been advanced 38 ft., passing through vein porphyry streaked with quartz assaying $2 and $3 per ton. From the 10th and 11th floors on the east side, above the sill floor of this level, at the north end of the stopes in old ground of former workings, we have extracted 20 tons of ore; the average assay value per samples taken from the cars in the mine was $40.49 per ton. From the west drift at a point 190 ft. in from its mouth, the north drift has been advanced 30 ft., passing through porphyry streaked with quartz of low assay value; total length 69 ft. The total extraction of ore for the week amounted to 38 tons, the average assay from samples taken from cars when raised to the surface was $43.46 per ton.

NEW JERSEY.

MORRIS COUNTY.

RICHARD IRON MINE.—The Thomas Iron Company, which owns this mine, is now shipping 25 carloads of iron ore daily. The shipments to the Thomas Company's furnaces in Pennsylvania amounted to 108,000 tons of iron ore last year.

SUSSEX COUNTY.

NEW JERSEY ZINC AND IRON COMPANY.—In Jersey City, February 8th, Vice-Chancellor Pitney heard argument on the application of William T. Meredith for an injunction to prevent the company from purchasing zinc works and mines in Wisconsin, Ohio, New Mexico, Pennsylvania and New York. Mr. Meredith's counsel said the company proposed to increase the capital from $3,000,000 to more than $6,000,000, and to borrow $1,700,000, giving a mortgage at 5%, and this notwithstanding the company is doing a good business and for 10 years has paid 10% dividends. Mr. Meredith and his wife owned 391 shares in the company, but were allowed no voice in the proceedings. They had no objection to an extension of the company's business in New Jersey, but the purchase of the properties contemplated in other States would convert the company into a trust, make it a foreign corporation and liable to attack by the Attorney-General. Council for the company said that all the proceedings in this direction had been strictly legal. Vice-Chancellor Pitney took the papers and said he would give a decision later. The company had previously filed notice at Trenton of an increase in the capital stock from $3,400,000 to $6,333,400; and also of a change in name to the New Jersey Zinc Company.

NEW MEXICO.

GRANT COUNTY.

COPPER FLAT SMELTER.—Work is progressing on the new smelter at Copper Flat, east of Silver City. Since work was commenced large bodies of copper ore have been opened, and now there is a sufficient supply of ore in sight to keep the new smelter at work for more than a year.

SIERRA COUNTY.

CLIFF MINING AND SMELTING COMPANY.—This company is working over 100 men in the Cuchillo Mountains, in the northern part of the county, and will soon have a 125-ton smelter in operation.

TAOS COUNTY.

RED RIVER GOLD MINING COMPANY.—At a depth of 175 ft., in a tunnel 100 ft. in length, this company has opened a body of galena ore over 4 ft. between walls. A rose quartz on the hanging wall is reported to run well in gold.

NEW YORK.

WESTCHESTER COUNTY.

MOHEGAN GRANITE QUARRYING COMPANY.—This company was recently organized to work granite quarries on property which it has acquired, about four miles east of the village of Peekskill. Arrangements are being made to build a railroad from the quarry to the New York Central Railroad and the Hudson River at Peekskill. The incorporators are E. M. Rudiger, Peekskill, N. Y.; E. P. Roberts, Sing Sing, N. Y.; J. M. Rudiger, Floral Park, N. Y.

NORTH CAROLINA.

CLEVELAND COUNTY.

(From Our Special Correspondent.)

KINGS MOUNTAIN.—This old mine is at work in a small way, and a good strike is reported in a new shaft that is going down. The mill is equipped with a 40-stamp Wilkes make stamp mill, and a well-known mining engineer has reported a quantity of $8 per ton gold ore in sight in the mine.

GRANVILLE COUNTY.

(From Our Special Correspondent.)

Col. E. B. C. Hambley, of London, England, a mining engineer of the Exploration Company, Limited, has purchased hoister, pumps, etc., and is engaged in exploring the newly discovered district near Oxford.

MECKLENBURG COUNTY.

(From Our Special Correspondent.)

CAPPS.—It is reported that Captain Tamblyn, who has had charge of several mining properties at Villa Rica, Ga., has bargained for this mine and will put it in operation with English capital.

MONTGOMERY COUNTY.

(From Our Special Correspondent.)

RUSSELL.—Some rich ore has been found on the Walker lead of this gold mine by a prospector. They have large belts of low-grade ore in abundance, but this last is a small deposit of high grade.

ROWAN COUNTY.

(From Our Special Correspondent.)

GOLD KNOB.—A Chilean mill of small capacity has been erected by Frank Williams, and is being operated on the surface ores with satisfactory results. The permanent value of the property is in the sulphuretted ores that abound here.

STANLY COUNTY.

(From Our Special Correspondent.)

LITTLE FRITZ.—This mine, located at Gladstone, is in daily operation on low-grade gold ore.

OHIO.

SANDUSKY COUNTY.

SMITH & BAUMAN.—These parties have drilled in the largest well struck in the Ohio field this year in their No. 3, D. S. Loe farm, in Scott Township. It is near a gusher drilled over a year ago by the Sun Oil Company and is good for 00 bbls., although at first reported to be larger.

OREGON.

BAKER COUNTY.

CONSOLIDATED CALIFORNIA.—This extension of the Virtue is operated by Park City (Utah) men, who have erected a hoisting plant and now are sinking the shaft 500 ft. deep before crosscutting for the Virtue vein. The shaft will be completed the latter part of February.

FLAGSTAFF.—This mine has been bought by a French Company, which is erecting a new hoisting works and putting in a 10-stamp mill. They will commence stamping about March 1st.

VIRTUE.—This mine is seven miles east of Baker City. At a depth of 600 ft. they are taking out rich ore and shipping it to the mint in San Francisco. They have in the past few weeks found a parallel vein in crosscutting. The new find is said to be 10 ft. wide and carries a good value of milling ore. The ore is free-milling. The mine is equipped with a hoist to sink to a depth of 1,000 ft. and a 20-stamp mill. They are working 125 men. It is owned by a California man. The monthly output is $45,000.

(From Our Special Correspondent.)

EUREKA & EXCELSIOR.—These mines, located at Bourne, and operated for the last two years by John Longmaid & Company, have reduced their output and also the number of employees. Late developments are rather disappointing.

DOUGLAS COUNTY.

VICTORY.—At this placer mine, near Glendale, a 10-days' run cleaned up $1,400, and one of 13 days $1,600, only one giant being worked owing to the scarcity of water.

PENNSYLVANIA.

COLUMBIAN OIL COMPANY.—This organization once very prominent in the oil regions, has decided to go out of business. At a meeting held recently the following board of directors was elected to wind up the affairs of the company: William A. Robinson, president; John F. Scott, William Roseburg, Fred Gwinner, John Walker, Thomas N. Miller and W. B. Wolf. A dividend of 35c. per share out of the assets of the company was declared, which, with a dividend of 30c. per share from the same source, declared in last September, makes a total of 65c. a share for 1896. This is said to be the only dividend since 1891. The company was organized in 1860, and owned in fee and held under lease a large number of most prolific farms in various parts of the oil-producing districts, but gradually disposed of most of them as business began to fall off. On a capital stock of $500,000 this company paid in dividends from July 8, 1863, to October 10, 1888, $4,015,100, and over $5,000,000 altogether while it was in operation. The dividends for the year 1864 amounted to $943,000; for 1865, $500,000; for 1868, $325,000; for 1869, $425,000; for 1871, $267,500; for 1872, $225,000; for 1876, $125,000; for 1877, $250,000; when the following year they suddenly slumped to $37,500, and a few years after ceased altogether.

ANTHRACITE COAL.

WYOMING & POND CREEK COAL COMPANY.—This newly organized company has secured the lease of a large tract of coal land at Pond Creek, near White Haven, Luzerne County, and the erection of a breaker will soon be begun. The superintendent is A. J. Lathrop, of West Pittston, who has just completed the plans for the new breaker, which will have a capacity of about 800 tons a day. At first there will be no subterranean mining, as "strippings" will furnish enough coal to supply the breaker for a long time. These strippings will be connected with the breaker by a system of conveyors called scrapers, which will carry the unprepared coal to the breaker rolls to be crushed. Besides Mr. Lathrop, A. W. Dietrick, of West Pittston; A. D. Searfass & Son and D. O. McCollum, of Wilkes-Barre, are interested in the enterprise.

BITUMINOUS COAL.

A territory of 12,000 acres of coal land, lying up the Allegheny River in Allegheny and Westmoreland counties, was leased some time ago by James W. Dravo, A. B. Copeland and others of Pittsburg. New York capitalists have been negotiating for the purchase of the land for some months, and the deal will probably be consummated.

The land lies east of the Allegheny River mainly between Plum Creek on the south and Pucketos Creek on the north. It thus includes most of the land in Plum and Penn townships, Allegheny County, and where it extends beyond Pucketos Creek into Westmoreland County takes in the coal deposits of Lower and Upper Burrell townships. A river frontage of 5 miles allows of shipment by that route, which is particularly valuable in view of the proposed improvement of the Allegheny river. The coal land also allows shipment by the main line of the Allegheny Valley Railway and the Plum Creek branch of that road, and will be traversed by the new Pittsburg, Bessemer & Lake Erie Railroad. The vein is 9 ft. in thickness, and well adapted for coke making, for which most of it will be used.

LYNN COLLIERY.—Dr. J. H. Davidson and Isaac Piersol, of Perryopolis, have purchased the Lynn works, near that place. The sale includes 75 acres of coal and the Bessie plant, with the tipple and 10 blocks of company residences. The consideration is said to be about $30,000.

NEW COAL DISCOVERY.—It is reported that a fine vein of bituminous coal 52 in. thick has been discovered on Barclay Mountain, in Leroy Township, Bradford County. The new find is about six miles from the old Barclay mine, from which 1,000,000 tons a year were taken. It is said this find will insure the building of the Bradford Central Railroad from Towanda to Canton, and may influence the Goodyears of Rochester to construct their proposed extension of the Buffalo & Susquehanna from Ansonia to Franklinville to connect with the Bradford Central, and thence to the Lehigh Valley.

NORTHAMPTON COUNTY.

NORTHAMPTON HARD VEIN SLATE COMPANY.—This company, whose quarry is located near Belfast, recently held its annual meeting at Easton, when the following directors were elected: James M. Young, William M. Smith, Chester M. Smith, George W. Geiser and Theodore Whitesell. The directors organized by electing James Young president, William M. Smith vice-president, George W. Geiser secretary, Theodore Whitesell treasurer and general business manager and A. E. Stettler superintendent.

PENNSYLVANIA HARD VEIN SLATE COMPANY.—At the annual meeting held recently in Easton, the following were elected directors; George W. Geiser, Chester Synder, William M. Smith, Birge Pearson and M. H Schall The board organized by electing Mr. Geiser, president; Mr. Schall, vice-president; Mr. Snyder, secretary and treasurer, and Mr. Smith, superintendent.

ROYAL SLATE COMPANY.—This company, of Wind Gap, recently held its annual meeting. The following directors and officers were elected: President, G. A. Blessing; secretary and treasurer, Louis Blessing; general manager, H. Hess; superintendent, William Morgan; directors, G. A. Blessing. E. Werkheiser, J. F. Hess, Harlem Hess and S. Flory.

SOUTH DAKOTA.

PENNINGTON COUNTY.

GOLDEN SLIPPER.—A clean-up of about 40 tons from this mine, at Hill City, gave returns of $1,000 from the plates and $1,100 in concentrates, or about $50 to the ton.

HAZEL GROUP.—The owners of this group, adjoining the Golden Slipper, have sold an interest to Eastern men, who will spend $10,000 in developing the property.

UTAH.

IRON COUNTY.

BORRO.—This silver property, in State Line District, has been incorporated with a capital stock of $75,000. At present only one shift is working, and the machinery is light, but this is to be replaced with heavy machinery and development work pushed. Ore is being constantly shipped to Bullionville.

JUAB COUNTY.

CENTENNIAL-EUREKA MINING COMPANY.—At the eleventh annual meeting of the company on February 2d, the old board of directors was re-elected as follows: J. F. Woodman, president; J. E. Bamberger, vice-president; W. W. Chisholm, treasurer; J. R. Alexander, secretary; W. M. Bradley and W. C. Staines. The treasurer's report for 1896 showed cash on hand, January 1st, $172,152; ore sales during the year, $450,740; cash from other sources, $10,472; total, $633,364. Disbursements were $138,072 for running expenses and $450,000 in dividends, leaving $45,292 cash in hand.

MAMMOTH MINING COMPANY.—The stockholders' meeting was held February 2d, at which the following board of directors was elected: William McIntire, president; J. A. Cunningham, vice-president; H. S. Young, treasurer; J. F. Corker, secretary; Samuel McIntire, James T. Little and W. W. Riter. At the election of the board of directors the minority stockholders voted for Dr. David Kennedy, of New York, and W. M. Bradley, of this city, for positions on the board. The report of the treasurer exhibited the fact that the gross output of the mine and the mill for the year had been $474,000, and that the net receipts had been $185,000, of which $100,000 had been expended in the payment of dividends, while the balance had been paid out in the purchase of a new hoist for the mine, in sinking the shaft to the 300-ft. level, in the addition of 20 stamps to the mill, in improving the water system and in other improvements, leaving a balance in the treasury besides.

YANKEE GIRL.—Eastern capitalists have secured a bond on this property, at Silver City, which has been developed to a considerable depth. It is said that in the upper workings ore of the value of over $60,000 has been taken out.

SALT LAKE COUNTY.

HIGHLAND BOY MINING COMPANY.—A mill of 250 tons' capacity is to be erected at this company's property at Bingham, the contract having just been given to the Mine and Smelter Supply Company of Denver. It is expected to have it in operation early next summer.

PENNSYLVANIA SMELTING COMPANY.—Application was made on February 11th for the appointment of a receiver of this company. The application will be made by Jackson Ellis, who is attorney for George S. Griscom and E. E. Anderson, assignees of the Pennsylvania Lead Company of Pittsburg, who are suing the local company for $199,872. The notice of application sets out that the Pennsylvania Smelting Company's property is worth $320,000 and that the aggregate amount of indebtedness exceeds $270,000.

SIXTEEN TO ONE.—This claim is located in Pine Canyon, and adjoins the Congor mine. At a depth of 65 ft. a 5-ft. vein was cut recently, in which there is a 3-in. pay streak running high in copper. The owners, who are G. G. Hall & Company, will let a contract for the driving of a 150-ft. tunnel to cut the ledge.

SUMMIT COUNTY.

CONSTELLATION.—A new shaft is being sunk about 450 ft. southeast of the 300 ft. shaft. This shaft is sunk to tap the apex, and also as an air chamber for the main shaft, which is down 300 ft. and well timbered. Henry Sutton is foreman.

TOOELE COUNTY.

GEYSER-MARION GOLD MINING COMPANY.—An agreement has been reached by which the Geyser and Marion companies are to be consolidated under the above name. At a meeting of the officers of the two companies, the following board of directors was proposed: Theodore Bruback, S. T. Pearson, Glen R. Bothwell, S. B. Milner, Joseph Smith, Matthew T. Gisborn and E. H. Airis. For president, Mr. Bruback has been named; for vice-president, Colonel Pearson; for secretary, Mr. Bothwell, and for treasurer, Mr. Milner. In the allotment of stock the respective companies will hold the shares in trust for their shareholders, to whom will be issued holdings in the Geyser-Marion equal to those they now enjoy in the individual companies. The consolidation gives the new company the following claims: Geyser, Florence No. 3, Front No. 3, West Geyser, North Geyser, Marion, Sparrow Hawk, Last Chance, Madonna, Dump, Dump No. 2, Jim Blaine, Coleman, Maid Marion, Black Shale, Fraction, Pendens and Theodore. In addition to these are the two mills, the Marion spring, which has ample water with which to handle 200 tons a day.

VERMONT.

ADDISON COUNTY.

CROWN POINT MINERAL PAINT COMPANY.—This company has leased its mine at Leicester to M. J. Leonard, of Brandon, who is putting the plant in order and expects to begin shipping early in May.

WASHINGTON.

OKANOGAN COUNTY.

IVANHOE MINING COMPANY.—The Ivanhoe, in Okanogan District, owned by this company, is being opened up by 20 men. There is a 10-stamp mill on the property and about 1,000 tons of good ore on the dumps.

PALMER MOUNTAIN MINING COMPANY.—A large force is engaged in running the Palmer Mountain tunnel, to cut 15 well defined ledges in this mountain. Its length will be about 3,500 ft. Among the ledges is the once famous Black Bear.

SNOHOMISH COUNTY.

P. & I. MINING COMPANY.—This company held its first meeting at Snohomish, and elected the following officers: President, George T. Hendrie; vice-president, D. C. Johnson, of Everett; secretary and treasurer, A. M. Farrah. It was decided to place 800,000 shares of its capital stock in the treasury, part of which is to be sold to build a tramway, and for further development. The company's mine, on the O. B. lode, 1,350 ft. from the railroad track, in Monte Cristo, is already partly developed by a tunnel 135 ft. long, which taps an ore chute.

RYAN SYNDICATE.—In Silverton District this syndicate made extensive purchases recently, including the Bonanza group of copper mines. The Monte Cristo Railway will extend switches from the main line to the leading properties where ore is now being piled on the dumps ready for transportation. It is estimated that more than 500 miners will be employed in this camp this spring.

STEVENS COUNTY.

BROAD GAUGE MINING COMPANY.—At a recent meeting of this company held in Spokane the following officers were elected: W. T. Penrose, president; David Wall, vice-president; F. J. Whaley, secretary; C. Parker, treasurer; A. J. Charon, general manager. Superintendent John Roberts says he has six or eight tons of shipping ore on the dump. The present tunnel is in 25 ft. The force of men has run through stringers 18 in. wide, and it is from these stringers that the ore has been obtained. The mine is situated on Mingo Mountain, near Kettle Falls, and the present company has been developing it for a year. There is another tunnel on the property in 156 ft.

WYOMING.

CONVERSE COUNTY.

DOUGLAS MINING AND MILLING COMPANY.—This company, composed of business men of Douglas, is continuing work throughout the winter in its copper mine at the head of La Prele Creek, 35 miles south of Douglas. At the present time ore is being taken out which is said to be worth $122 a ton in copper and $2.50 in gold. The vein is being worked from a tunnel which has been driven into the mountain during the past year for a distance of 400 ft. The product of the mine is shipped to the smelters at Deadwood.

CROOK COUNTY.

Report comes from Bear Lake, 15 miles east of Sundance, of a gold ore lead, which assays high values in gold. Over 100 claims have been taken up.

SWEETWATER COUNTY.

(From an Occasional Correspondent.)

Mr. J. W. Dana, of Chicago, has been examining the carbonate of soda wells at Green River in the interests of Chicago capital. He returns with a flattering report and tells the people concerned that the company will commence work at once and put in a $50,000 plant to manufacture soda. Water from the Green River wells analyzed at the University contained 24% of sal soda that was over 98% pure.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

KAMLOOPS DISTRICT.

(From Our Special Correspondent.)

COAL HILL.—An American mining man, as a result of a recent visit, has bonded the following claims on Coal Hill close to Kamloops on the line of the Canadian Pacific Railroad: The Lucky Strike, Blue Bird, Neighbor, Golden Tip and Phœnix. The amount of the bond is $25,000.

LILLOOET DISTRICT.

(From Our Special Correspondent.)

GOLDEN CACHE.—Satisfactory reports continue to come in from this rich free-milling property. From the surface to a depth of 67 ft., where the hanging wall was struck, the ore averaged 20 oz. to the ton. At 67 ft. a crosscut was made, and at a depth of 3 ft. richer ore than ever was struck. A tunnel was then started 100 ft. from the first tunnel, and at 5 ft. rich free-milling ore was again struck.

GOLDEN CACHE EXTENSION.—On the other side of the mountain from the Golden Cache group and higher up three claims have been capitalized by a different company. The Golden Cache Company objects to the similarity of names and is applying for an injunction. They allege the Extension Company is trading on their name.

SLOCAN DISTRICT.

(From Our Special Correspondent.)

TWO FRIENDS.—A company was recently incorporated under the laws of British Columbia to operate this mine. The property is on the divide between the Springer and Lamon creeks, about eight miles from Slocan City at the foot of Slocan Lake. The claim is a full-sized one and is one of the well-known shippers of Slocan, with a large quantity of rich ore in sight. The entire property was purchased in August, 1896, for $215,000, of which $59,000 was cash and the balance $156,000 in 520,000 paid-up shares. The extent of tunnelling, including drifting, is fully 400 ft. The shipments of ore, so far, have reached 80,662 lbs., with a net return of $6,586.

The provisional trustees of this company are: J. C. Innes, president: Percy W. Evans, vice-president; C. T. Dunbar and C. C. Bennett, directors; C. C. Bennett, secretary.

TRAIL CREEK DISTRICT.

(From Our Special Correspondent.)

COLONNA GOLD MINING COMPANY.—A rich ore body was uncovered recently, which is one of the few genuine strikes made in this camp during the present winter. The Colonna property was formerly the Buckeye No. 2. Its situation is on the west slope of Monte Cristo Mountain in the center of the group comprising the Monte Cristo, Evening Star, Silverine and Eddie. Three separate and distinct veins ran through the property. The north vein is 6 ft. wide, the center vein is 18 to 25 ft. wide, and the south vein is 14 ft. wide. Development heretofore has been confined to the Colonna, or south vein. The ore is an auriferous copper in the form of sulphide and oxide. It is a massive chalcopyrite, often in a quartz and calcspar gangue. Another ore encountered on the property is black oxide of copper carrying gold, which has assayed $40. The president of the company is Charles Schmidt, Butte, Mont., vice-president, A. Klockman, Rossland, B. C.; treasurer, Louis Lienemann, Butte, Mont.; secretary, Mr. Harold Kingsmill, Rossland, B. C.

LE ROI MINING COMPANY.—This company declared another dividend of $25,000 on January 28th, making the second one of that amount for the month, and a total of $300,000 up to date. The first dividend was declared in October, 1895. The adjourned meeting of the stockholders was held on the evening of January 28th. The following trustees were elected: Col. W. W. D. Turner, president; D. W. Henley, vice-president; William Redpath, treasurer; J. M. Armstrong, secretary; George Turner, I. N. Peyton, W. J. Harris, W. J. C. Wakefield and L. F. Williams.

The company has completed arrangements to ship eight carloads a day of their ore by the Spokane & Northern Railway, making 48 cars a week. This is in addition to the regular shipments made by the Trail Creek smelter. The shipments now made by the Le Roi are greater than at any period in the history of the camp.

SOPHIE MOUNTAIN.—Interest in this section of Trail Creek has been increasing of late, and with the advance of spring more than ordinary activity is expected. Sophie Mountain is about 8 miles southwest of Rossland, just north of the international boundary. One of the first properties in

this neighborhood on which development work was begun is the Victory-Triumph. A company was organized a few months ago to work these properties, which consist of two claims. On the Victory there is a tunnel extending 100 ft. on the vein which is a mixed ore all the way in, sometimes with a good showing of first-class concentrating ore from which very satisfactory assays have been attained, the highest being $55. The ore runs high in copper, yielding 12 %. The ore in the breast of the tunnel has assayed 44 oz. in silver, 7 4% in copper and $2 in gold. On the Triumph there is a crosscut ledge with outcroppings of rich copper ore. A shaft has been sunk 30 ft. and good assays have been obtained from the surface to that depth. A crosscut is being run from the foot wall of the ledge to the hanging wall. On the surface the ledge is about 85 ft. wide, copper pyrites being found across the entire width. Seven men are now at work on the properties.

ECUADOR.

PLAYA DE ORO MINING COMPANY.—The following is a corrected list of officers, chosen at the recent annual meeting of this company: J. S. Elliott, president; William H. Young, vice-president; James Hyde Young, secretary and treasurer. The list of directors is as follows: Sir Charles R Hunter, P. C. Stapleton, London, England; C. W. Barron, Boston, Mass.; James G. Janeway, C. E. Dougherty, J. S. Elliott, Wm. H. Young, Peter Marie, J. W. Clendenin, Stuart A. Coats, T. J. James, New York.

MEXICO.

COAHUILA.

SIERRA MOJADA.—The jefe politico of this flourishing carbonate mining camp, northeast of Chihuahua, has made a report to the Governor of Coahuila, showing that the production of silver of 24 mines in that district from October 1st, 1893, to December 30th, 1896, amounted to $12,587,221.

(From an Occasional Correspondent.)

CARMEN.—These mines are situated 1,500 ft. above the Rio Grande River, directly opposite the unorganized County of Foley in Texas. The road to the mines from the cable crossing at the river has a grade of 5% maximum and is a fraction over 12 miles long. The mines have been explored and prospected by the Consolidated Kansas City Smelting and Refining Company for two years, and in the spring they will commence shipping ore. The distance by this new wagon road, from where the ore will be piled on the Texas side to Marathon, the shipping point on the Southern Pacific Railway, is 103 miles. It will be hauled in wagons, and the contract for hauling has been let to Caples & Company of El Paso, Tex. The road is nearly finished to Marathon and work has commenced on the cable bridge for conveying the ore across the river. When this is ready everything will be ready for a rush of business. Only one other company has found anything worth mining, although several have tried. There is only one prospector on the Texas side, who is prospecting 5 miles north of the Consolidated Kansas City Smelting and Refining Company's land. There is a good chance for prospecting on the Texas side and the indications are favorable. This is a high-grade ore and will make a stir when the value becomes known.

OAXACA.

RESCATE.—These gold mines, in the Etla District, have been sold by Gen. Ignacio Alfaro to a syndicate of Colorado mining men. The mines are said to be among the richest gold properties in Mexico A modern reduction plant will be put up on the properties.

SONORA.

BAVICANORA.—A new 20-stamp mill is being erected on this gold mine in the Arizpe District.

ZACATECAS.

JULIO.—A despatch from Durango states that the owners of this mine at Sombrerete have just suffered a loss of about $30,000 by the robbery of a pack train of burros loaded with silver bullion. The pack train was on its way from Sombrerete to San Felipe, from which place the bullion was to be shipped by the railroad to market. A mounted guard of armed men accompanied the train, and while passing through the mountains 20 miles from Sombrerete, a band of robbers attacked the conductor. Several members of the guard assisted in the capture of their companions and the robbery. The burros were driven into the mountains with the bullion and have not yet been found.

NEW SOUTH WALES.

BROKEN HILL PROPRIETARY COMPANY.—A preliminary statement for the half-year ending November 30th shows net profit for the six months of $764,700. Bullion and stocks on hand at the close of the period amounted to $1,800,000. There were 203,300 tons of ore treated, averaging 6% lead and 19 oz. silver per ton. The average value of the ore was $15.54 and the cost of treatment $12.00, leaving net returns of $3.54 per ton.

ONTARIO.

RAT PORTAGE DISTRICT.

(From Our Special Correspondent.)

NORWAY.—A gang of men has left to start work in this mine, owned by Messrs. Ross, of Rat Portage, and Graham, of Fort William. Its location is between the Bad and Sweden mines.

PRINCESS.—This mine, owned by Toronto people, will soon be opened out. The location is said to carry a continuation of the Scramble vein.

RAT PORTAGE MINING COMPANY.—The Master Jack, owned and operated by this company, is soon to have a hoisting apparatus. The shaft is now down about 85 ft., and about 125 ft. of drifting is done. A steam hoisting outfit has, therefore, become necessary to the proper working of the mine.

ROYAL.—This property, situated in the Black Sturgeon Lake District, is shortly to be opened up by an English company.

SCRAMBLE.—This mine is controlled in Rat Portage and Duluth. A complete outfit of machinery is now en route for the Scramble and carpenters are erecting camps, buildings, etc.

TASMANIA.

MOUNT LYELL MINING COMPANY.—During the four weeks ending January 14th, the report says that one furnace was stopped for repairs. There were 3,877 tons of ore treated, producing 322 tons matte, the contents of which were 682 oz. gold, 9,991 oz. silver and 172 tons copper. This is an average result of 0·18 oz. gold, 2·55 oz. silver and 4·44% copper ton of ore; the assay value being 0·20 oz. gold, 2 74 oz. silver and 5·17% copper.

LATE NEWS.

DR. A. R. LEDOUX is about to visit Arizona, where he will examine new copper deposits or mines for English clients.

TUNNEL.—This claim, on Kendal Mountain, San Juan County, Colo., is now being worked by two men and a tunnel has been driven in 100 ft. The vein is a very large one, and is mostly quartz, from which samples have run as high as $18 a ton.

QUEEN OF CEMENT.—This property, on Lost Mountain, San Juan County, Colo., has a crosscut tunnel 400 ft. long, which has cut the lead at the depth of 200 ft. Rich gray copper has been taken from the lode, but the greater portion of the vein is low grade.

ADVANCE MINING COMPANY.—This company owns the Yellow Bird claim in Cottontail Gulch, directly south of Cripple Creek. The property was recently equipped with steam hoist and substantial shaft-house. A shaft has been sunk 100 ft. and a lode has been encountered. The average silver per ton is between 20 oz. and 30 oz.

HOME FRACTION.—This is a new shipper directly south of the Cripple Creek town limits, which made an initial shipment of 30 tons last week, and has since made a second shipment of the same amount. The shaft is only about 4 ft. deep, and a large and well-built sorting-house, and bins together with ore bins are erected. The shaft, it is reported, is being sunk on the junction of two claims.

GREEN RUBIN.—This mine, on Kendal Mountain, San Juan County, Colo., owned by John Lonergan, is developed by a 200-ft. tunnel on a 3-ft. vein. Though it was formerly a heavy shipper it has not been worked this season on account of deficient timbering. The ore from the property ran 30 oz. in silver and ½ oz. of gold. It is believed that it will have to be entirely retimbered before shipments can be resumed.

CASINO.—These properties, in the Beaverhead District, of Lewis & Clarke County, Mont., have been closed down temporarily, owing to the low price of silver. During the past year the properties known as the Big and Little Casino have been developed to a depth of 200 ft. and between 800 and 900 ft. of levels have been run. The mines show up a strong body of low-grade ore not profitable to work with silver at its present price. They are 8 miles northeast of the Diamond Hill gold properties.

GUYANDOTTE OIL AND LAND ASSOCIATION.—United States Marshall Charles E. Wells, Col. W. A. Ohley, Z. T. Vinson, and B. E Priddie have taken oil and gas leases on the entire tract of this company, of Philadelphia. The territory comprised in the leases covers 247,000 acres of land in Logan, Mingo, Cabell, Wayne, and Lincoln counties, W. Va. It extends from the Warfield development in Kentucky, and fronts on the Marrowbone development in West Virginia. It is expected they will develop the territory.

SULTANA.—This Summit County, Colo., mine, operated under lease by A. H. Boyd, formerly of Leadville, is loading several cars per day with iron ore. Some of the rich streaks in the ore run as high as 15 oz. in gold, though the average ore is comparatively low grade. A recent test run of 51 tons was made at the Puzzle mill upon sulphides, showing an average value from 22 assays of $10.85 per ton. The resulting concentrates amounted to a little over eight tons. Of this class of ore over a thousand tons is in sight.

BANKERS' MINING AND MILLING COMPANY.—Grouse mine st Cripple Creek has sunk its shaft 240 ft., and preparations are being made to cut a station and to extend the levels at that point. The lessees ran the property in debt to the extent of $7,000 for labor, the number of men employed being 75. A receiver was appointed, who in four months paid off most of the indebtedness, and has since erected a good shaft-house, substantial bins, ore-house, and retimbered the shaft the whole distance. The number of men now employed is 26.

ACACIA MINING COMPANY.—This Cripple Creek company, formerly the Calumet Company, now owns two claims, the Burns, on Bull Hill, which sidelines with the Pharmacist, and the Morning Star, which endlines with the Buena Vista of the Isabella Company. The company is taking out ore from two places on the Burns. At a depth of 150 ft. there is 18 in. of ore, which averages close to 2 oz., or $40 per ton. At the north shaft, 65 ft. deep, there is a small seam of high-grade mud, whereas the south shaft, 80 ft. deep, yields low-grade milling ore.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Feb. 12.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending February 6th, 1897, compared with the corresponding period last year:

	1897. Week.	1897. Year.	1896. Year.
Pennsylvania Railroad	77,5.6	463,637	383,757

PRODUCTION OF BITUMINOUS COAL in tons of 2,000 lbs. for week ending February 6th, and for years from January 1st, 1897 and 1896:

Shipped East and North:	1897. Week.	1897. Year.	1896. Year.
Allegheny, Pa.	43,361	210,650	233,103
Barclay, Pa.	833	4,023	4,887
Beech Creek, Pa.	83,108	36?,846	384,511
Broad Top, Pa.	6,145	39,359	45,063
Clearfield, Pa.	78,341	57?,362	519,023
Cumberland, Md.	56,096	281,9?9	281,902
Kanawha, W. Va	‡101,650	340,347	.....
Phila. & Erie	517	13,560	5,963
Pocahontas Flat Top	.....	.....	266,452
Totals	370,054	1,834,076	1,743,904

‡ For 10 days ending January 31st.

Shipped West:	1897. Week.	1897. Year.	1896. Year.
Monongahela, Pa.	36,105	142,994	87.367
Pittsburg, Pa.	35,034	212,830	190,014
Westmoreland, Pa.	41,719	190,150	1?7,163
Totals	112,858	545,974	474,544
Grand totals	482,912	2,380,050	2,218,448

Production of coke on line of Pennsylvania Railroad for the week ending February 6th, 1897, and year from January 1st, 1897, in tons of 2,000 lbs.: Week, 84,392 tons; year, 448,675; to corresponding date in 1896, 553,195 tons.

Anthracite.

The anthracite coal trade has settled down into a condition of quietude that is at least remarkable in so far that it is general. On every side our inquiry receives the same answer—that business is fair in volume but absolutely without snap or feature. Considering the season, the weather and trade conditions in general, this is rather to be expected, and it would not be remarkable if this condition continued for some time. While matters are quiet beyond doubt, it is equally certain that the market has a much firmer tone than at any time during the last six months. Good prices are being obtained, so far as we can learn, on all sizes of coal, and the average price realized on all grades is said to be entirely satisfactory to the producer. Restriction continues and stocks grow less and the outlook for the year begins to get brighter than was thought possible six weeks ago. Prices now asked are those of the July circular, and are as follows: $3.75 for broken, $4 for egg and chestnut, and $4.25 for stove.

NOTES OF THE WEEK.

The statement of the business of the Philadelphia & Reading Coal and Iron Company for the month of December, 1896, compared with the same month of 1895, is as follows: Gross receipts, $1,770,-698; operating expenses, $1,735,385; profit in operating, $35,313.

We give below the record of shipments of the various coal carrying roads for 1896, to which further reference is made in our editorial columns:

	Shipments.	Per cent.	Allotment.
Philadelphia & Reading	9,019,533	20·89	20·50
Lehigh Valley	6,749,128	15·63	15·65
New Jersey Central	4,999,003	11·58	11·70
Del., Lack. & Western	5,627,533	13·03	13·35
Delaware & Hudson	4,152,273	9·52	9·60
Pennsylvania Railroad	4,752,120	11·06	11·40
Pennsylvania Coal Co.	1,728,972	4·05	4·00
Erie Railroad	1,718,262	3·98	4·00
N. Y., Ontario & Western; N. Y., Susquehanna & Western; Del., Susquehanna & Schuylkill	4,430,659	10.26	9·80
Totals	43,177,483	100·00	100·00

The total shipments show a decrease of 3,368,277 tons, or 7·2% from those reported for the preceding year.

Bituminous.

The Atlantic seaboard soft coal market for present delivery is dull and orders are not plentiful in shippers' hands; as an accompanying fact consumers seem to be using up their winter supplies instead of asking for much new coal. Some of the ports are showing heavier shipments of coal than others, but it seems to be going forward in the larger sized tonnage and may be the first orders on some of the larger contracts lately taken. The prevailing dullness is somewhat usual at this season of the year when everybody expects more or less interruption from ice and snow and the weather, and generally provides ahead to offset it. Season contracts seem to hold the trades' atten-

tion more fully at this time than anything else and a great deal of quiet closing up of contracts has taken place during the last week, and is taking place at the present time. The market seems to have settled slightly from the extremely demoralized condition that it was in, and it is reported even that some of the main line roads have taken a hand in this to a slight extent. At the present figure there is no money in soft coal for the transportation company, coal producer, vessel owner or commission merchant, and it would seem that the sooner this year's business was over, and a new arrangement effected in some way whereby a reasonable profit can be made out of the trade for all parties, the better.

The vessel owner has practically been forced into the present non-paying business by the coming into the trade of barge lines; and even some of the latter are being affected seriously by the entering into the trade of barges owned by the coal companies themselves.

Trade to the far East for present consumption is very dull. The Sound ports are a little better, but New York harbor business is dull. All-rail trade is also slightly reduced. Transportation from mines to tide has been much affected by the snow, and cars are several days behind hand in making destination. Car supply is plentiful. The coastwise vessel market is dead, and practically all shipments from the lower ports are in vessels chartered for a period of time. There are very few vessels open for charter to be had for single trips. Freights are quoted from Philadelphia to Boston and Portland, 85@90c.; Providence, New Bedford and other Sound ports, 70c.; Portsmouth, 90c. Five and ten cents above these rates is charged from the lower shipping ports.

NOTES OF THE WEEK.

Coal receipts at San Francisco, by water, in January were 127,583 tons, an increase of 7,372 tons over January of last year. The sources of these receipts this year were as follows: Eastern, Anthracite and Cumberland, 3,425 tons; Oregon and Washington, 49,470; British Columbia, 50,477; Australia, 11,532; Great Britain, 12,679 tons.

Buffalo. Feb. 9.

(From Our Special Correspondent.)

There is no change in the anthracite coal trade, either in supply, demand or prices. Business is fairly active. Bituminous coal is in moderate request by manufacturers at unvaried quotations. Weather has moderated in severity, but conditions are good for fuel burning. Supply of bituminous coal is fully adequate for trade requirements, excepting the smaller sizes. Coal dealers find but few topics for conversation now-a-days, apparently; at any rate, they are very reticent.

The Grand Trunk Railway contract for bituminous coal for the coming season is reported to have been given to the Rochester & Pittsburg Coal Company at a very low figure, which, as usual, is kept strictly private.

The receipts of coal in net tons at the head of Lake Superior were as follows in the years specified:

	Anthracite.	Bituminous.	Total.
1892	490,367	1,193,244	1,683,381
1893	640 910	1,638,432	2,279,372
1894	632,234	1,142,905	2,275,139
1895	543,645	1,293,407	1,837,052
1896	594,859	1,463,950	2,058,809

The E. L. Hedstrom Coal Company intends building another large coal dock, etc., at Chicago, to be completed by May 1st.

Pittsburg. Feb. 10.

(From Our Special Correspondent.)

Coal.--The rivers are in good coal-boat condition and as soon as the ice disappears a coal fleet bound south will depart. They made such preparations that the damage by the break-up was very trifling. The amount of coal in the pools and in the harbor will reach about 12,000,000 bush.; fully one half of this is ready to leave as soon as the ice will permit. Most of the present shipments are coal-boats destined for the Southern markets, notwithstanding the fact that coal is being sold there at extremely low prices.

The miners' officials of the Pittsburg District by suggesting a series of citizens' meetings have hit upon a happy plan to expose both the unfortunate and suffering condition of the miners and the names of the operators who are primarily responsible for the distress. It is time the miners placed themselves in the attitude of supplicants for public sympathy and support. Their wretched condition has become a matter of public moment and every moral force of public criticism should be brought to bear upon those who has brought them to this pass.

River miners are happy, as fully 4,000 who have been idle at the various mines in the pools went to work on Monday. W. H. Brown Son's men on the Youghiogheny went to work on Tuesday.

Statements recently published here, giving the tonnage of the coal shipped to the lake ports from the mines in the Pittsburg District, make the round figures almost 6,000,000 tons, or almost one-half the total tonnage of the Pittsburg District, the annual tonnage of which is approximately one fourth of the total tonnage of Pennsylvania. The Pittsburg District shipped to the lakes last year about 65% of the total amount sent forward; West Virginia, 8½%, and Ohio, 26½%. It is these figures which have caused so much dissatisfaction among the producers of Ohio, who maintain that in spite of the alleged advantages they possess over their Pittsburg competitors, the latter manage to increase their tonnage every year, and besides they have the newer competition from West Virginia, which affects them more than it does their Pennsylvania rivals.

Connellsville Coke.--The continued bad weather has operated as a check on the coke trade; there was an improvement, but it fell far short of expectations. About 125 more ovens were put in blast; the shipment reached 110,574 tons. The outlook is decidedly more promising on account of better weather conditions, and the improved outlook as regards the iron market; still the condition of the market in February is far from what was expected. The week's summary for the region shows 10,028 ovens in blast with 8,323 idle. There were several changes in the region since our last, which resulted in several ovens being fired up. The H. C. Frick Company fired 108 ovens; the Bessemer Coke Company fired the remaining ovens. In the running order of the 10,028 ovens in blast, 3,257 ovens made six days, 3,574 ovens five days, 1,182 ovens four days, and 25 ovens seven days, an average of 5·21 days, as against 5·22 days the preceding week. The shipment amounted to 6,143 cars, against 5,942 cars for the week previous. The shipments were distributed as follows: To Pittsburg, 2,415 cars; to points west, 2,673 cars; east, 1,055 cars; total, 6,143 cars.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Feb. 12. 1897

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Feb. 14, 1896. F'ces.	Tons.	Week ending Feb. 12, 1897. F'ces.	Tons.	From Jan., '96. Tons.	From Jan., '97. Tons.
Anthracite.	59	38,030	20	19,150	244,479	117,636
Coke.....	162	184,150	117	135,600	1,183,817	839,114
Charcoal...	23	5,450	20	5,850	35,037	35,936
Totals...	244	227,630	157	161,600	1,463,333	992,686

The absorbing event of the week in the iron market has been the disruption of the Steel Rail Association, which has been regarded as the most stable, as it is about the oldest of all the pools in the iron trade. Some signs of discontent have been manifested since the meeting at which prices for 1897 were fixed. This arose partly, it is reported, from dissatisfaction with the allotment and partly also from the strong feeling of some of the managers that continued high prices would result in serious injury to the trade. The ill-feeling is said to have first found expression when verbal protests had been exhausted in sales made below the combination price by the Illinois Steel Company in Chicago, and this was followed up by the placing of some heavy contracts at low prices by the Lackawanna Company in Scranton. The news spread quickly, and within the week all pretense of maintaining prices was dropped. The agreed rate for 1897 was $25 per ton at mill. The ruling rate so for as made public is just now $18@$20 with a very strong probability that contracts have been placed at lower rates for considerable amounts. Chicago dispatches have even asserted that rails were being offered there down as low as $14 per ton, but this cannot be substantiated, and even if such offers had been made for the purpose of terrorizing the Illinois Steel Company it is not at all probable that any contracts have been placed at that price. An $18 rate for steel rails would not be out of the way, however, at current prices of raw materials, and in fact would pay the mills better than $15 billets.

It is almost impossible to gather up the total of the contracts so far placed under the lower rate, since the time has been very short and the excitement considerable. The large New Haven contract for 100-lb. sections which has been on the market is understood to have been closed this week at prices not made public, and with other purchases make up a total of probably 200,000 tons, the Lackawanna and the Pennsylvania steel companies getting most of the Eastern work. The West has not been heard from yet, but the Illinois Steel Company is known to have taken some 60,000 tons.

Two or three weeks more will probably bring in many small contracts besides those of the big companies which have so far this year been held back. In addition to the New Haven contract the New York Central, the Boston & Albany, the Fitchburg and the New Jersey Central are named as buyers, while the Chicago & Northwestern, the Erie and the Seaboard Air Line are reported to be in the market.

The steel rail combination has stood for about ten years, having been first organized in very nearly the present shape in 1887. At that time there were 15 different mills making rails, but the number represented in the pool has since been reduced chiefly by consolidation. Under the original form it stood until 1893, when there was a reorganization, including seven companies. The Colorado Fuel and Iron Company's mill at Pueblo was left out at the time, but its production is not sufficiently large to affect the general trade. About the close of 1894 there was another reorganization, which this time did not include the Illinois Steel Company, for reasons well understood, although that company continued towork in harmony with the association under a general understanding. The plants of the Johnson Company at Lorain and of the Ohio Steel Company were arranged with, not by taking them into the pool directly, but by arranging with one to make street rails only, and with the other by direct subsidy. For 1895 the business was not encouraging, the total make of rails amounting to 1,066,700 tons, while for 1896 it was still worse, the combined effect of the high price maintained and of business depression bringing the total a little below 800,000 tons. The arrangements made for 1897 included the following allotment of the business: Carnegie Steel Company, 53·50%; Lackawanna, 19%; Cambria, Bethlehem and Pennsylvania, 8·25% each; Maryland, 2·75% It is understood that the Maryland Company was also to receive a subsidy in money, and that nearly $1,000,000 would be required to meet this and the payments to the outside mills. This sum was supplied by a tax of a certain amount on each ton of rails shipped by the producing mills.

While it is not altogether unlikely that the pool may be reorganized in the future, some time must necessarily pass, since a very short period of cut prices is sufficient for the making of a large number of contracts which must be worked off before a new agreement can be effected. The break-up of the pool will probably in the end be a very considerable advantage to the general trade, and will stimulate business as perhaps nothing else could. The railroads have been very moderate and reluctant buyers for the past three years, and many of them must now be in need of a large amount of material for repairs.

The only other movement of any importance to be noted this week is a considerable demand for basic pig. Sales are reported of some from Pennsylvania, and some also from New York and New Jersey. It may be mentioned by the way that basic steel rails will very likely be on the market before long, as the Troy Company will soon be in a position to supply them.

NOTES OF THE WEEK.

The Washington despatches report that the Ways and Means Committee of the House is now engaged on the metal schedules in the proposed tariff. The committee has decided to recommend no change in the present duty on steel rails. Cotton ties, now free, are to be taxed from 0·9c. to 1·2c. per lb., according to quality. The tariff on tin-plate is to be increased from 1·4 to 1·5c. per pound. The Alabama pig-iron makers have intimated that they desired no change in the present rates of duty.

Despatches from Birmingham, Ala., report that the Birmingham Rolling Mill Company has decided to put in a steel plant, the necessary capital having been subscribed. Presumably it is to be a basic open-hearth plant, though the despatches do not give the details, but it is stated that Alabama pig iron is to be used. A meeting of the stockholders was to be held February 12th, to vote an issue of $75,000 preferred stock for the money subscribed to make the necessary changes in the mill.

The annual meeting of the Illinois Steel Company was held in Chicago, Feburary 10th. Two changes were made in the board of directors, Isaac L. Elwood, of DeKalb, Ill., and Cornelius C. Cuyler, of New York, succeeding H. H. Porter and J. C. Morse. The finance committee is composed of William L. Brown, Nathaniel Thayer, A. J. Forbes-Leith and John W. Gates. The officers are: President, John W. Gates; First vice-president, Charles H. Foote; Second vice-president, W. P. Palmer; secretary, William A. Green; treasurer, William H. Thompson. The balance sheet shows a deficit for the year of $349,499. The cash on hand January 1st was $654,461; bills receivable amounted to $306,992, and accounts receivable $3,606,633. The bills payable amount to $4,120,972, and the accounts payable to $1,404,185. The statement further shows that pig iron and spiegeleisen made amounted to 946,207 tons; tonnage raw material received, 3,571,984 tons; finished product shipped, 773,673 tons; number cars of material handled, 127,550 tons; average number of men employed daily, 9,608; wages and salaries paid, $6,729,031; freight paid, $5,118,479.

New York. Feb. 12.

The collapse of the steel rail pool, which has stirred up the market generally, is referred to elsewhere.

The demand for pig iron is exceedingly small at this time, and it is said that even if prices were shaded, buyers would not increase materially. A waiting policy is being practiced by the regular consumers in anticipation of the long-looked-for revival in business. We understand that a shaded quotation for a large quantity of Northern No. 2 foundry iron has been refused this week. In Southern iron the export movement continues, and we are informed that an order for 700 tons has been taken here this week. Some 400 tons of iron have also been placed in New England within the last few days.

In cast-iron pipe some orders have been taken here, while it is said others have been closed at cost in order to keep the makers' works in operation. A contract for a few hundred tons of cast-iron pipe for Fitchburg has been awarded to the Warren Foundry and Machine Company. Several small contracts for cast-iron pipe and other necessaries for water-works are now being bid on by local concerns.

Plans for a new viaduct in the Washington Heights section of New York, to extend from Fort

George to Dyckman Meadow, have been prepared, and a bill is to be introduced in the legislature. This viaduct will be of steel and masonry, and its cost is estimated at $1,400,000. There will be two steel arches, one of 515 ft. span, over Sherman Creek Basin, and one 200 ft. long over the new Speedway. Trusses supported on steel columns will make up the remaining portion of the 2,040 ft. of bridge which will be required.

We understand that some shipments of mining machinery and supplies, and of railroad material, are being made to South America.

Pig Iron.—While some orders have been taken, the business in general with brokers here is very small; consequently somewhat lower prices rule this week. For Northern brands we quote: No. 1 foundry, $12@$12.50; No. 2 foundry, $11.50@$11.75; No. 2 plain, $10.75@$11; gray forge, $10.50@$11. For Southern iron we quote: No. 1 foundry, $11.50@$12; No. 2 foundry, $10.75@$11; No. 3 foundry, $10.25@$10.75; No. 1 soft, $10 75@$11; No. 2 soft, $10.50@$10.75; forge, $10,25@$10.50; basic pig, $11@$11.25. All prices are for tidewater delivery.

Cast Iron Pipe.—There has been a small quantity of pipe sold this week, and the quotation for open market is given at $20, which can be shaded.

Spiegeleisen and Ferro-Manganese.—Lack of demand at the present time and the absence of inquiries for future orders have caused importers and dealers to quote lower prices, $47@$47 50 per ton for imported 80% ferro-manganese, and $19@$19.50 for 20% spiegeleisen being considered fair figures in New York.

Steel Billets.—Business is slight and in view of competition we understand $15@$16 at mill are fair prices.

Merchant Iron and Steel.—Trade continues quiet with chiefly small sales. For bars we quote: Common, 1·05@1·10c.; refined, 1·10@1·25c.; soft steel bars, 1·15@1·25c. Other quotations are: Steel hoops, 1·52½@1 55c.; steel axles, 1 60@1·75c.; links and pins, 1·60@1 70c.; tire steel, 1·70c.; spring steel, 1·95@2·15c. All prices are for delivery on dock New York.

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

Structural Iron and Steel.—Business is light and we quote for angles, 1·20@1·30c.; tees, 1·60@1·70c.; channels, 1·70@1·80c. The price of beams, New York delivery, is 1·70c. for ordinary sizes, 1·85c. for 20-in., and 1·95c. for 24.-in., large lots. For less quantities 0·10@0·25c. higher are asked.

Steel Rails and Rail Fastenings.—Quotations in view of the collapse of the steel rail pool are from $20 to $21, with a possibility of a further drop.

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

Wrought Iron Pipe.—Quiet reigns in this market. 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, 1½ in. and over, 55, 10, 10, 10, 10 and 10%; 1¼ in. and under, 50, 10, 10, 10, 10 and 10%. Boiler tubes, 1 in. to 2¼ in., 70, 10 and 5%; 2½ in. up, 75 and 5%. Cold-drawn seamless steel tubes, 60%.

Nails.—The wire nail market shows a fair volume of business doing, and quotations are $1 35 Pittsburg and $1.60 New York, for large lots. In the cut nail trade competition makes it difficult to fix a price, but $1.20@$1.25 Pittsburg, and $1.40@$1.45 New York are considered fair quotations for large lots.

Old Materials.—The dissolution of the Steel Rail Trust and the consequent cut in prices makes it difficult at this time to quote on old steel or iron rails. Old wrought-iron pipe is quoted $7.50@$8 per ton.

Cast Scrap.—Business has been small this week and we quote for good machinery scrap $10@$12 per ton; ordinary cast scrap, $8@$9.50; stove-plate and mixed, $6.50@$8. Old car wheels are $9.50@$10 per ton, New York delivery.

Buffalo. Feb. 10.

(Special Report of Rogers, Brown & Co.)

The past week has shown a little improvement in the volume of pig-iron business, but not enough to raise it out of the category of a quiet market. Business may still be said to drag and prices are only firm because there is no room for further reductions. Outside of two transactions, which were each for over 1,000 tons, we have heard of no business through the week larger than 100 and 200 ton lots in this district. Our quotations below are on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $12; No. 2 strong foundry coke iron, Lake Superior ore, $11.50; Ohio strong softener No. 1, $12.25; Ohio strong softener No. 2, $11.75; Jackson County silvery No. 1, $14.25; Southern soft No. 1, $12; Southern soft No. 2, $11.50; Lake Superior charcoal, $14.

Cleveland. Feb. 9.

(From Our Special Correspondent.)

Iron Ore.—The present indications are that the market will remain quiet until the members of the Western Ore Men's Association hold their annual meeting and fix prices for the coming season. A preliminary meeting of such a nature was held at the office of Hanna & Company last week, and arrangements were made for the annual meeting, to be held about March 1st. Neither buyer nor seller seems ready to do business at present, and as a consequence only a few tons of ore were sold last week. The movement of ore forward to the furnaces continues fairly strong, the volume being about the same as last week. Following are the quotations: Standard hard speculars, Bessemer quality, $4.50@$5; standard hematites, Bessemer quality, $4@$4.50; standard hard hematites, non-Bessemer quality, $3.50@$4; standard soft hematites, non-Bessemer quality, $2.50@$3.25.

Pig Iron.—The gradual increase in the consumption of pig iron is the most encouraging feature of the market this week. Although the prices still hover in the vicinity of low-water mark, sellers are hopeful that a reaction will soon set in in their favor. The following are the quotations: Lake Superior charcoal, $13.50; Bessemer, $10.65@$10.90; No. 1 strong foundry, $11.25; No 2, $10.75; No. 1 Ohio Scotch, $11.65; No. 2, $10,90; Mahoning and Shenango Valley red short mills, $9.50@$9.75; Mahoning and Shenango Valley neutral mill irons, $9.50@$9.75.

Philadelphia. Feb. 11.

(From Our Special Correspondent.)

Pig Iron.—Less than usual interest has been manifested this week in the iron market and fewer transactions are to be recorded in the usual channels. Two or three very large transactions occurred, however, which made quite a stir. The amounts involved were two lots of 10,000 tons each; one from a home furnace and the other from a Western Pennsylvania furnace. This started fresh figuring and fresh inquiries all around. Eastern makers declare they cannot protect themselves justly against such competition. It is rumored this morning more big sales are on the way and that a big Bessemer transaction is soon to be closed. There are also inquiries for two or three large lots of forge iron, but these inquiries have been quite frequent of late. Consumers are evidently getting ready, but they will not buy in advance of some assurances that the product will be wanted. Usual quotations for ordinary sales are given: $12.75@$13 for No. 1; $11.75@$12.25 for No. 2; and $11@11.25 for forge iron.

Billets.—The change in steel rail quotations so unexpectedly announced has not yet made any change in billets or slabs which can be traced to Eastern Pennsylvania markets. The users of billets believe this means firm quotations for billets and agents say it means a slight advance. Quoted price, $17.50.

Merchant Bar.—There is not a single item of interest in the entire branch of finished iron. The same dolorous views are repeated of short work, close Western competition and narrow margins. The bar iron makers have need of much patience, and live in hopes that the spring trade will bring them more business than it has for the past two or three years. Bars range from 1·15 to 1·30.

Nails.—There is an improving demand for nails, and the nail agents and jobbers feel encouraged at building prospects.

Skelp.—Some little business has been received and more is promised.

Sheet Iron.—Our people say to-day that the retail distribution is more satisfactory than since last fall, though this is probably due to the very favorable rates made on ordinary sales.

Pipes and Tubes.—Mill-owners are now negotiating for some big work. A large order for South African delivery has been secured and the possibilities of South Africa are being looked up.

Plate and Tank.—The week's new business has been of small dimensions, though we believe we are within reaching distance of two or three very large orders. The plate mill people say they will not complain if the new schemes are pushed through. Plates 1·20@1·30.

Structural Material.—The agents say the conditions are working around all right and that next month's developments will be surprising. Current orders are light, angles, 1·25@1·30; beams and channels, 1·70 upward.

Steel Rails.—The tumble in prices, while a surprise just at the time, was for a long time looked forward to as a probability and as a measure of justice and good policy toward consuming interests. There have been no developments yet.

Old Rails.—Negotiations are said to be pending for large lots, but it may only be one of those rumors which come and go and are never traced to any source.

Scrap.—The scrap dealers are quite active in picking up desirable lots of stuff for their March customers, but there have not been many large sales yet.

Pittsburg. Feb. 10.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business continues to move along steadily, showing but little change in any department; the market, however, is firm and the local demand is increasing. The second week in February was but a slight improvement on the preceding one and fails to show the activity in leading products we have been expecting, although it is apparent from the numerous inquiries from consumers that they are beginning to share the general conviction that the low level of prices has been reached. While this may be true, buyers will not enter the market heavily until signs of reviving activity are more pronounced than current conditions at present indicate; it has been too often the experience of consumers recently that the waiting policy, purchasing as immediate requirements made necessary, has been the wisest and even now those who freely bought of steel billets when the combination went to pieces find that they could do fully $1.50 a ton better if they had waited until the present time. The trade will, therefore, go slow in providing for future requirements until there is a more pronounced movement of the market upward. Producers confidently expect higher prices in the spring, although consumers point to the developments in the ore trade as arguing a moderate range of prices during the year. In the local pig-iron market there is some irregularity, owing to the limited number of buyers and the relatively large number of sellers. While many of the furnaces with an established line of customers are holding firmly to recent quotations, there is too free a supply of good iron to prevent concessions on the part of some makers to effect prompt sales in a general way.

The iron market continues firm, with an increasing demand. Prices, however, show no change. Unless all signs fail, an advance in prices is close at hand. The sales reported show a wide range of values.

COKE, SMELTED, LAKE AND NATIVE ORE.

Tons.		Cash.
5,000	Bessemer, next 3 mos., Valley	$10.00
3,000	Bessemer, spot, Valley	10.05
3,000	Bessemer, Mar., April, May, Valley	10.00
2,500	Bessemer, Feb., March, Pitts	10.40
1,200	Mill Iron, prompt, Pitts	9.75
1,000	Bessemer, April, May, Valley	9.90
500	Bessemer, Mar., Valley	10.05
500	Bessemer, Feb., Valley	10.05
500	Mill Iron, Feb., Pitts	9.50
500	Mill Iron, Mar., Valley	8.85
500	Bessemer, Feb., Mar, Valley	10.20
500	Mill Iron, Mar., Pitts	9.65
400	Mill Iron, spot, Pitts	9.65
100	Mottled, prompt, Pitts	9.25
75	Mottled, Feb., Pitts	9.20
75	No. 2 Foundry, Pitts	10.50
56	No. 2 Foundry, Pitts	11.00

CHARCOAL.

50	Cold Blast, Pitts.	$22.75
25	No. 2 Foundry, Pitts	15.75
25	No. 3 Foundry, Pitts	15 80
25	Cold Blast, Pitts.	23.00

SKELP IRON.

500	Sheared, Pitts	$1.25 4 m.

Tons.		Cash.
350	Wide grooved, Pitts	$1.10 4 m.
250	Narrow grooved, Pitts	1.10 4 m.

SKELP STEEL.

550	Sheared, Pitts.	$1.10 4 m.
400	Wide grooved, Pitts	95 4 m.
300	Narrow grooved, Pitts	95 4 m.

OLD RAILS AND SCRAP.

200	Cast scrap, gross, Pitts	9.00
100	Wro't scrap, gross, Pitts	12.00
100	Steel Rails, Pitts.	10.50
100	Iron Rails, Pitts.	13.50
50	Wro't Turnings, net, Pitts	7.00
50	Cast borings, gross, Pitts	6.50

BLOOMS, BILLETS, SLABS.

1,500	Billets, March, April, Pitts	$15.75
1,000	Billets, Feb., March, Pitts	15.60
500	Billets, prompt, Pitts	15.50
500	Billets, Feb., Pitts	15 75

BLOOMS, BILLETS, BAR ENDS.

500	Billet ends, Pitts.	$12.00

MUCK BAR.

1,000	Neutral, delivered, Pitts	$19.00

STEEL WIRE RODS.

500	Delivered, Pitts.	$21.00

FERRO-MANGANESE.

150	80 per cent., Pitts	$46.00

SHEET BARS.

1,200	Delivered, Pitts.,	$18.75
500	Delivered, Pitts.,	18.25

METAL MARKET.

NEW YORK, Friday Evening, Febuary 12, 1897.

Gold and Silver.

Prices of Silver per Ounce Troy.

February.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	February.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
6	4.86¼	29¾	64¾	.501	10	4.86½	29 11/16	64⅝	.500
8	4.86½	29¾	64¾	.501	11	4.86½	29 11/16	64⅝	.500
9	4.86½	29¾	64¾	.501	12	.....	.....	.....	.....

Silver has been steady at current figures. London has shown no disposition to advance prices. This is probably owing to the fact that the East and the continent are not at present active competitors for bullion. On the other hand smelters are indisposed to press sales, believing that the statistical position of silver is good.

The United States Assay Office in New York reports the total receipts of silver at 47,000 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	61·79	30 69	67·13	27·36	59·69
February	.....	.....	31·01	67·67	27·47	59·90
March	.....	.....	31·34	68·40	28·33	61·98
April	.....	.....	31·10	67·92	30·39	66·61
May	.....	.....	31·08	67·88	30·61	66·75
June	.....	.....	31·46	68·69	30·47	66·64
July	.....	.....	31·45	68·75	30·48	66 75
August	.....	.....	30·93	67·34	30 40	66 61
September	.....	.....	30·19	65 68	30·54	66·90
October	.....	.....	29 68	65·05	30·89	67·64
November	.....	.....	29 46	64 98	30·79	67·42
December	.....	.....	29·70	65·24	30·40	66 47
Year	.....	.....	30·67	67·06	29·53	65·28

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

Gold and Silver Exports and Imports

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

	Doin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
Dec.	$405,856	$2,572,271	$25,979	$227,076	I. $2,367,521
1896	56,742,844	102,766,438	209,621	1,963,124	I. 47,777,097
1895	104,605,023	32,538,736	362,379	1,857,656	E. 70,571,016
SILV.					
Dec.	6,819,145	1,279 801	101,285	1,661,009	E. 3,980,020
1896	63,029,336	12,504,577	994 405	17 730,289	E. 33,777,884
1895	53,833,153	11,286,607	377,933	13,087,340	E. 29,837,739

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 February 11th, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$8,000	$40,150	$532,460	$19,002	E. $481,308
1897	262,611	279 573	4,630,644	271,715	E. 4,341,967
1896	9,199,135	11,380,039	4,889 738	182,730	E. 2,576,104
1895	25,658,593	760,856	4,140,352	188,119	E. 28,889,670
1894	2,692 658	1,639,018	6,933,851	194,587	E. 7,792,904

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

FINANCIAL NOTES OF THE WEEK.

Business continues to be quiet, though gradually signs of coming improvement are multiplying. The volume of trade is increasing slowly, but in all departments business is done on a very narrow margin. The general disposition to hold back and to take no risks seems to be giving way very slowly. The tendency is everywhere to hold back orders and to do only that amount of work which is necessary to fill contracts and to meet current requirements. Some recent events have rather discouraged change in this respect, among which may be included some heavy sales of manufactured goods made at extraordinarily low prices by mills which needed the money. Under all the circumstances it is not remarkable that the accumulation of money in New York should continue, the receipts from out of town banks still exceeding the shipments of currency made.

The situation as regards foreign exchange remains practically unchanged. The purchasing of goods abroad has been on a very small scale, and while grain exports have decreased since the first of the year other exports, such as copper, petroleum and iron, continue large, and there is little probability that the balance in favor of this country will be reduced or that gold exports will be resumed for some time to come. At the same time it is evident that more attention is beginning to be paid abroad to the possibilities of investment in this country. This feeling is beginning to show some practical results although not as yet in a very large way. It is to be noted that the most prominent and largest purchases recently made here by foreigners have been of mines and mining securities.

The Treasury gold reserve continues to increase steadily and stands this week at $145,700,000. No gold is being taken for shipment, and it may be said that nearly all the current gold production of the country is going into the Treasury. As this production is at the rate of nearly $5,600,000 a month, this is an item of some importance. For the first week in February the current receipts show an improvement.

The statement of the United States Treasury on Thursday, February 10th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Feb. 4.	Feb. 10.	Changes.
Gold	$145,144,933	$145,723,226	I. $578,293
Silver	18,726,190	19 883,761	I. 1 157,571
Legal tenders	12.290,330	10,641,026	D. 1,649,304
Treasury notes, etc.	34 233,209	40,137,190	I. 5,903,981
Totals	$210,394,662	$216,385,203	D. $5,990,541

Treasury deposits with national banks amounted to $16,575,678, an increase of $66,138 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $117,906 280. Against these are held in the Treasury 9,518,164 coined standard silver dollars and silver bullion purchased at a cost of $108,388,116, making a total of $117,906,280.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending February 6th, gives the following totals, comparisons being made with the corresponding weeks in 1896 and 1895:

	1895.	1896.	1897.
Loans and discounts	$481,586,600	$448,431,800	$497,513,600
Deposits	534,754,700	492.771,900	568.961,800
Circulation	11,505,000	13,445,800	16,787,500
Reserve:			
Specie	82.263,900	77,500 900	79,559,500
Legal tenders	85,191,000	85,874,500	117,221,000
Total reserve	$167.454.900	$163,375,400	$196,780,500
Legal requirement	133,688,675	123,192,975	142,210,450
Surplus reserve	$33,766,225	$40,182,425	$54,540,050

Changes for the week this year were increases of $5,630,000 in deposits, and $8,747,900 in loans and discounts; decreases of $1,324,000 in circulation, $125,100 in specie, $3,075,600 in legal tenders, and $4,608,200 in surplus reserve.

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

	Gold.	Silver.	Total.
Asso. Banks of New York	.....	.....	$79,559,500
1896	.....	.....	77,500 900
Bank of England	$188.518,965	.....	188,518,965
1896	240,552,025	.....	240,552,025
Bank of France	386.012,000	$246,354,400	632,366,400
1896	388,085,765	248,339,988	636,425,753
Imp. Bank of Germany	.....	.....	219,520,000
1896	.....	.....	233,420,000
Austro-Hungarian Bank	151,660,000	63,220,000	214,880,000
1896	124,250,000	63,476,000	187,726,000
Netherlands Bank	13,167,000	34,289,000	47,456,000
1896	15,529,000	34,244,000	49,773,000
Belgian National Bank	.....	.....	20,433,000
1896	.....	.....	19,995,000
Bank of Spain	42,642,000	51,899,000	94,511,000
1896	40,022,000	51,010,000	91,332,000
Bank of Italy	59 780,000	11,985,000	71,765,000
1895	59,860,000	9,950,000	69,810,000
Imp. Bank of Russia	518.355,000	.....	518,355,000
1895	395,035,000	.....	395,635,000

The return for the Associated Banks of New York is of date February 6th; all the others are of February 11th, except the Bank of Italy, December 10th, and the Bank of Russia, December 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 January 28th are reported by Messrs. Pixley & Abell's circular as below:

	1896.	1897.	Changes.
India	£245,498	£401.100	I. £155,602
China	12,400	14,550	I. 2,150
The Straits	55.200	14.400	D. 40,800
Totals	£313,098	£430,050	I. £116,952

Arrivals for the week this year were £204.000 in bar silver from New York, and £12,000 from the West Indies, a total of £216,000. Shipments for the week were £80,900 in bar silver to India, and £11,800 in Mexican dollars to the Straits Settlement; a total of £92,700.

Indian Exchange shows a sudden increase in demand, owing to large remittances on famine subscription and relief funds, and to a demand from China for bills to buy rice. The Council bills offered were all sold at an average of 15.6d. per rupee, against 15d. the preceding week.

Prices of Foreign Coins.

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

	Bid.	Asked.
Mexican dollars	$0.50¾	$0.51⅛
Peruvian sole and Chilean pesos	.45¾	.47
Victoria sovereigns	4.85	4 90
Twenty francs	3.85	3.90
Twenty marks	4.73	4.80
Spanish 25 pesetas	4.78	4.85

Other Metals.

Copper.—The market continues to rule steady; but is otherwise very quiet. Manufacturers are fairly busy, but have not entered the market recently, being well supplied for some little time to come. On the other hand, producers are sold well ahead, and there being therefore no pressure to market any metal, values, though not fully maintained, are but slightly lower than they were when last reported. We quote Lake at 11⅞c.; electrolytic copper in cakes, wirebars and ingots at 11⅝c., cathodes, at 11½c., and casting copper at 11⅜c.

The English market opened firm at the beginning of the week at £51 10s. for spot, but has since weakened, g. m. b.'s having declined to £50 17s. 6d. @£51 spot and £51 2s. 6d @£5 15s. for three months. Refined and manufactured sorts continue to be in good demand, and we quote these as follows: English tough, £53 10s.@£54; best selected, £54@£54 10s.; strong sheets, £61@61 10s.; India sheets, £58@£58 10s.; yellow metal, 5 1/16d.

Tin.—The higher values established recently have not been maintained. The speculative element which was instrumental in advancing prices has withdrawn its support, and consumers who had no faith in the advance continue their policy of supplying themselves from hand to mouth. As a result we have now to quote spot and February at 13·45c.; futures at 13·50c.

The London market opened early in the week at £61 10s.@£61 12s. 6d. for spot, but closed to-day at £60 15s.@£60 17s. 6d. for spot and £61 7s. 6d.@£61 10s. for three months.

Lead.—The scarcity of supplies continues, and as a result values have improved still further. There has been an extraordinarily large demand for the metal during the week, of which prices have benefited quite materially. We close with buyers at 3·27½c.

The foreign market is again easier, Spanish being quoted at £11 13s. 9d. and English £11 16s. 3d.

The Ways and Means Committee of the House of Representatives has decided to recommend that the duties on lead be increased from 0·75c. to 1c. per lb. on lead contained in ores and bullion, and from 1c. to 1·5c. per lb. on pig, bar and other forms of lead.

Spelter.—The market has been very quiet and business has been more or less of a retail character. Prices remain unchanged at about 3·75@3·80 St. Louis and 4c. in New York. The foreign market is easy at £17 15s. for good ordinaries and 5s. higher for special brands.

Antimony is without change at 7½ for Cookson's, 7c. for Hallett's, and 7c. for U. S. French Star.

Nickel.—Business is fair and prices show an upward tendency, but without quotable change as yet. We quote for ton lots 33@36c. per lb., with 37@39c. for smaller orders. London prices are steady at 14@15d. for large orders and 15@16½d. for small lots. The New York price is about on a parity with London, allowance being made for the duty of 6c. per lb. here. The Paris quotation is 4 fr. per kilo, equivalent to about 36c. per. lb.

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

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams, for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes, 52c., 54c. and 56c. per gram. Wire and foil are 49c., 50c. and 51c. per gram. The current retail price for crucibles is 60c. per gram.

Quicksilver.—The New York quotation continues at $37 75 per flask. The London price is £6 17s. 6d., with £6 16s. 3d. named from second hands.

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

Aluminum:	
No. 1, 98% pure ingots for re-melting, per lb	37@42c.
No. 2, 94% pure, " " "	31@34c.
Ingots from scrap, per lb	30c.
Rolled sheets, per lb	46c up.
Aluminum-nickel casting metal, per lb	25@40c.
Bismuth, per lb	$1.80@$1.80
Phosphorus, per lb	5 @55c.
Platinum, per oz	$14.50@$15 50
Tungsten, pure powder, per lb	70c.
Tungstic acid, per lb	45c.
Ferro-tungsten, 60% in ton lots, per lb	60c.

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.....	.....	10·61	.....	13 44	.....	3·19	.....	4·03
March ..	.....	11·03	.....	13·30	.....	3·14	.....	4·20
April....	.....	10·98	.....	13·34	.....	3·07	.....	4 07
May.....	.....	11·15	.....	13·51	.....	3·03	.....	3·98
June	.....	11 67	.....	13·59	.....	3·03	.....	4 10
July.....	.....	11·40	.....	13·63	.....	2 96	.....	3·97
August .	.....	10 98	.....	13 49	....	2·73	.....	3 76
Sept.	....	10·66	.....	13·15	.....	2·77	.....	3·60
October .	.....	10 66	.....	12·91	.....	2·89	.....	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

Variations in prices are chiefly on size of order.

Baltimore.**	Week, Feb. 4.		Year, 1897.	
	Exp.	Imp.	Exp.	Imp.
Bismuth metal, cases.....	.....	.....	.....	.....
Chrome ore..... long tons	.....	.....	.....	.....
Copper, fine..... " "	30	.....	3,223	.....
" matte..... " "	.....	.....	.....	.....
" sulphate.. " "	.....	.....	606	.....
Iron ore ..... " "	.....	.....	.....	14,472
" pigs, bars,	.....	.....	.....	.....
ingots, blooms. " "	.....	.....	80	820
Iron oxide.....bags	.....	.....	.....	.....
" pyrites.....long tons	.....	.....	.....	.....
Ferro-manganese " "	36	.....	528	.....
Ferro-silicon..... " "	.....	.....	.....	.....
Lead..... " "	.....	.....	.....	.....
Limestone.....short "	.....	.....	.....	1,610
Manganese metal,long "	.....	.....	.....	260
Spiegeleisen ..... " "	.....	.....	.....	197
Steel..... " "	.....	.....	.....	1,413
Steel wire, bundles.....	.....	.....	11	158
Tin, long tons.....	.....	.....	.....	4,101
Tin and black plates, boxes	.....	.....	.....	.....
Zinc (spelter) long tons....	2	.....	2	.....

**From our special correspondent.

Imports and Exports of Metals.

New York.*	Week, Feb. 4.		Year, 1897.	
	Expts.	Impts.	Expts.	Impts.
Aluminum..... ... lbs.	.....	.....	.....	.....
Antimony ore....short tons	.....	.....	.....	53
" regulus. . casks	.....	.....	.....	95
Brass, old.....short tons	.....	.....	17	.....
Copper, fine .....long tons	926	106	7,269	444
" matte ... " "	60	.....	1,702	.....
" ore..... " "	.....	.....	.....	.....
" sulphate.. " "	776	.....	1,038	.....
Iron ore..... " "	.....	.....	.....	.....
" pigs, bars, rods..... " "	450	346	1,639	561
Iron pyrites..... " "	.....	.....	.....	2,670
" sulphate..... " "	.....	.....	.....	.....
Ferro-mangan'se " "	73	.....	344	52
Ferro-silicon..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	60
Spiegeleisen..... " "	.....	.....	.....	188
Lead bullion..... " "	.....	.....	2,537	4,081
" pigs and bars " "	.....	.....	.....	.....
Magnolia metal... " "	.....	.....	57	.....
Nickel..... " "	.....	.....	18	5
Steel, billets, rods. " "	1,050	635	2,114	3 134
Tin..... " "	65	.....	247	1,072
Tin dross..... " "	.....	.....	4	.....
Tin and black plates, boxes.	.....	19,385	.....	93,775
Zinc dross..... long tons	.....	.....	22	.....
Zinc (spelter).....long tons	293	.....	349	720

*Metal Exchange Reports.

Philadelphia.††	Imports.	
	Week, Feb. 5.	Year, 1897.
Antimony, casks.....	.....	.....
Copper ore, long tons.....	.....	2,700
Ferro-manganese, long tons.....	.....	.....
Ferro-silicon.....	.....	.....
Iron ore, long tons	.....	16,490
" pig " "	.....	.....
" pyrites, long tons.....	.....	.....
" and steel scrap, long tons....	.....	.....
Manganese ore, long tons.....	.....	.....
Spiegeleisen " "	.....	.....
Tin ..... " "	75	100
Tin and black plates, boxes.....	.....	1,768

†† From New York Metal Exchange Reports.

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Feb. 12.

Heavy Chemicals.—Business is reported unusually dull during the past week, not only in this city, but everywhere. The policy of trade is to arrange only for the wants of the immediate future, which limits the volume of business a great deal. There seems to be considerable opposition to the proposed duty on bleaching powder. The reason is given that no bleaching powder is manufactured in this country and no protection is required. Should it be needed in the future, the necessary protection can be given to it by legislation at that time. We quote: Caustic soda, 60%, $2.22½@$2.42½; 76·74@76%, $2.12½@$2.22½ per 100 lbs. Alkali, 58%, 70@75c. for 50-ton lots and over, and 80@90c. for smaller quantities; 48%, $1@$1.20 for jobbing lots. Caustic soda ash, 48°, $1.50@$1.70. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.62½@$1.75 per 100 lbs. Bicarb. soda, English, 1·75@2c. per lb.; American, bulk, $1.50@$3.50 per 100 lbs., according to make. Sal-soda, English, 62½@67½c.; American, 65c. (in barrels), 80c. (in kegs) per 100 lbs. Hyposulphite of soda, 1·65@1·85c. in casks; 1·75@2c. in kegs.

Acids.—A little better demand is noticeable in general for current consumption, but there is no real snap to the trade. One manufacturer reports an unusual number of orders received this week and a considerable improvement in his trade. Prices remain unchanged. Quotations per 100 lbs. in New York and vicinity in lots of 50 carboys or over are as follows: Acetic acid, commercial No. 8 (in barrels), $1.40@$1.50; in carboys, $1.50@$1 65; redistilled, 28%, in bbls., $1.70@$1.80; in carboys, $1.90@$2.05: muriatic acid, 18°, 75@85c.; 20°, 85@95c.; 22°; $1.15@$1.25, according to make and quantity. Nitric acid, 36°, $3.50@$4; 40°, $4@$4.50; 42°, $4.50@$5.50. Oxalic acid, $7.25 ex-dock and $7.50 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 85c.@$1 in carload lots, 10@15c. higher for small quantities. Chamber acid, $6@$6.50 per ton at factory. Blue vitriol, $3.75@$4 according to grade and order.

Brimstone.—There is no brimstone in the market for spot sales, all that is on hand having been contracted for before its arrival. The quotation furnished us for best unmixed seconds to arrive is $20½, and $19½ for thirds. However, we also learn that an arrival expected next week will not be offered for less than $22 per ton.

Fertilizing Chemicals.—There has been a little improvement in general business during the week, quite a number of small lots having been sold in the North. There is also more inquiry. The market holds very firm. We quote:

Sulphate of ammonia, gas liquor, $2.20 for shipment, and $2.25 for spot; bone, $2.05@$2.10 per 100 lbs. Dried blood, high grade Western, $1.80@$1.85 per unit New York; f. o. b. Chicago, $1.50@$1.55 per unit; low grade, fine ground, Western, $1.45@$1.50 f. o. b. Chicago. Azotine, $1.70@$1.75 basis New York. Concentrated phosphate (30% available phosphoric acid), 57½c. per unit. Acid phosphate, 13%@15%, av. P_2O_5, 54@65c. per unit at sellers' works in bulk. Dissolved bone black, 17%@18% P_2O_5, 85c. per unit. Acidulated fish scrap, $10, and dried scrap $19.50@$20, f. o. b. fish factory. Tankage, high grade, $14@$14.25 per ton; concentrated, $1.35 per unit, f. o. b. Chicago; New York, $19@$20; low grade, $18@$19. Bone tankage $19@$20; ground bone, $21@$23. Bonemeal, $20@$22.50.

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

Double Manure Salts: 1·03@1·05½c., basis of 48% chlorate high grade (basis 90%), 1·99½@2·03c., in bulk, 24@36% per unit O. P., 36½@38c.

Muriate of Potash: We quote: 1·78c. at New York and Boston, 1·79½c. Philadelphia, Baltimore and Norfolk, and 1·81½c. Charleston, Savannah, Wilmington and New Orleans, for 80@85% basis of 80%, in lots of 50 tons and upward.

Chlorate of Potash.—Conditions remain firm; the price is maintained as previously quoted, which is 8@8½c. according to quantity.

Kainit.—Quotations per ton of 2,000 lbs. are $8.80@9.25 per ton for shipments; the same for bulk, ex-ship

Nitrate of Soda.—This article has become very strong, and is now quoted 1·90c. for spot and 1·87½c. to arrive. The *Condor* has disposed of its cargo of 26,000 bags, and as was stated in these columns last week, the price has advanced as was expected.

Liverpool. Feb. 2.

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

The market for heavy chemicals continues dull and featureless. Soda ash outside of running contracts there is little moving. Quotations vary considerably according to export market and nominal range for tierces may be called about as follows: Leblanc ash, 48%, £4@£4 5s. per ton; 58%, £4 5s.@£4 10s. per ton, net cash. Ammonia ash, 48%, £3@£3 10s. per ton; 58%, £3 5s.@£3 15s. per ton, net cash. Bags 5s. per ton under price for tierces. For American business, special terms are quoted.

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

Caustic soda is in light request, but without quotable change. We quote spot range, as to market, about as follows: 60%, £6 3s. 9d.@£6 5s. per ton; 70%, £7 3s. 9d.@£7 5s. per ton, net cash; 74%, £8 2s. 6d.@£8 5s. per ton; 76%, £8 15s.@£9 per ton, net cash.

Bleaching powder is quoted at from £6 15s.@£7 per ton, net cash, for hardwood packages, and there is some little export inquiry, although little actual business reported.

Chlorate of potash is not wanted and 4¼@4¼d. is quoted, but these figures are quite nominal.

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

Sulphate of ammonia inactive, and a shade easier at £8@£8 2s. 6d. per ton, less 2½% for good gray, 24% and 25% in double bags f. o. b. here, according to quality.

Nitrate of soda is in moderate compass on spot, and held for £8 7s. 6d.@£8 10s. per ton, less 2½% for double bags f. o. b. here, as to quality.

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

MINING STOCKS.

Complete quotations will be found on pages 178 and 179 of mining stocks listed and dealt in at:

New York.	Colorado Springs.	Paris, France.
Boston.	Duluth, Minn.	Mexico.
Philadelphia.	Helena, Mont.	Shanghai, China.
Baltimore.	Salt Lake, Utah.	Valparaiso, Chile.
Pittsburg.	San Francisco.	London, England.
Cleveland, page 178.	Denver, Colo.	British Columbia.

NEW YORK, Friday Evening, Feb. 12.

The market has been almost undisturbed by outside inquiries for mining stocks, but the brokers on the inside have shown a bullish feeling. At the Consolidated Stock and Petroleum Exchange business in mining stocks was very quiet. Attention was drawn principally to the Leadville stocks this week, inquiries being made for purchases of Little Chief and Chrysolite. On the other hand there was a pressure to sell Small Hopes, which has receded to 56c. this week; in June last it sold as high as $1.75.

The Comstocks, with the exception of Consolidated California & Virginia, were without feature. This stock is selling for $2·20@$2·35, which are the best prices received for many months past. The highest quotation reached in 1896 was $2.80 in January.

The Californias were rather quiet and Standard Consolidated was sold at $1.65@$1.75. Several months previous to its consolidation with the Bodies, Standard was selling up to $2.25, and in February, 1896, it sold at $1.90@$2.20. Of Brunswick Consolidated, a Grass Valley stock, a few hundred shares sold at 18c.

The Colorado stocks ruled higher on the new Mining Exchange than they did at the Consolidated. The Cripple Creek group has been the most active, with prices higher than last week. There was called this week on the New York Mining Exchange the Golden San Juan Mining Company, of Ouray County, Colorado. The capital stock of the company is placed at $1,000,000, and the par value at $1. The officers are: President, H. P. Daly: secretary, Fred. Bickman; treasurer, John M. Nixon; general manager, W. L. Boyd, and superintendent, Jacob Alexander. The stock sold for 7½@10½c., with transactions of 7,200 shares.

The Victor Gold Mining Company, of Cripple Creek, Colo., has removed its New York office from 66 Broadway to more commodious quarters in the Johnston Building, 30 Broad street.

Boston. Feb. 10.

(From Our Special Correspondent).

As suggested last week we have a lower market and all the talk of a "boom" cannot resist the declining tendency, with constant realizing of profits. And this is not singular in view of the dullness of the general market, with the very considerable profit in coppers to those who bought only a few months ago. The product of the Calumet & Hecla in 1896 was, in round numbers, 90,000,000 lbs., and it is already given out that this will be increased by fully one-third in 1897.

The volume of business has not been large this week, because of the difficulty in effecting sales without breaking prices. Arnold declined to $2⅞ and closes $3, but this price is nominal. Atlantic is off $1⅛ to $22½. Calumet & Hecla declined from $360 to $355; Centennial $6¼ to $5⅝. Franklin was one point off at $11⅛ with a single sale. Kearsage holds around $18, with one lot at $17¾. Osceola has been a weak spot of the market, declining from $33½ to $31. Quincy hangs around $117 and the scrip $105, with the prospect of another extra of $4 per share before April 16th, when the scrip becomes stock. Tamarack is off $2¼ at $117½ with later sales at $118, while Tamarack, Jr., has advanced from $16½ to $18⅛ with a good buying demand. Tecumseh hangs at 3 and the rich developments some time since reported do not seem to pan out. Wolverine is steady at $10, but dull.

Boston & Montana has been prominent, but less so than previously. The sales are moderate and the price has run down from $111¼ to $107½ with a recovery to $108¾. Butte & Boston off from $12⅜ to $11, where it seems inclined to make a stand. The next $2.50 installment on the $10 assessment will be due Monday, February 15th. Old Dominion advanced to $18⅛ last Saturday, but has not sold since until to-day at $18 and same asked.

Gold stocks are flat and so little doing as to scarcely make a market. Gold Coin hangs at $3⅜, with limited transactions. Merced is without a sale since Saturday at $9, and is now nominal at that. Pioneer showed a single sale to-day at $5½ and asked. Santa Ysabel off to $13 for a small lot, and same bid.

At the close to-night the same general tone of dullness prevails, and transactions are limited to almost a retail business. Where thousands of shares are sold in fairly active times the rule is now 100 or even less.

Cleveland. Feb. 8.

(From Our Special Correspondent.)

Notwithstanding the fact that fewer sales were made during the past week than the brokers anticipated, there has been considerable of a shift in the quotations. Jackson and Chandler stocks have risen in value slightly, while Lake Superior, Republic and Pittsburg & Lake Angeline have fallen proportionately. A few sales of stock have been recorded during the past week.

Salt Lake City. Feb. 6.

(Special Report of James A. Pollock.)

The tone of the mining stock market this week was somewhat improved, the improvement being due largely to the general inclination of the speculative element to trade, rather than to any material changes or betterment at the properties. The high-grade stocks maintained their usual strength on investment buying, but the lower-priced securities gave evidence of manipulation, and in a market so sensitive as this, the effort on the part of the manipulators is usually attended with success. Ajax sold slightly lower during the week, but closed with a firmer tone. The properties are looking very well indeed, and some very high-grade shipments are coming out. Alliance was featureless and Anchor also remained inactive. There was some inquiry for the latter, but only light business resulted. Bogan did nothing. It is expected that Bullion-Beck will make a heavy dividend payment this month, and on this expectation the stock was higher. Buckeye fluctuated somewhat and was not in heavy demand. At the annual meeting of the Centennial-Eureka the old officers were re-elected. The reports showed receipts of $461,212 for 1896, dividend payments of $450 000 and a cash reserve of $45,292, with ore in transit. The expenditure outside of dividends amounted to $138,072. The mines were reported to be in splendid condition. Daly was about unchanged, with considerable demand for the stock. Daly-West remained in good demand at the old figures. Dalton & Lark did nothing of interest, and Dalton but little, although the business done in the stock was fairly heavy. Dexter, whose properties are in Nevada, showed considerable activity. Four Aces went still lower, but closed in fair demand at the governing price. Galena sold materially higher. Geyser has settled all its legal difficulties by combining with the Marion. The stock showed the good effect and sold 50% higher. Both mills will be operated as before, but the Geyser plant will probably be enlarged. Horn Silver was in greater demand, with very little stock offered. Little Pittsburg was very active and sold higher. Mercur was not active and will not be until after the option date expires. Mammoth sold off quite heavily, for no good reason, but at the close had recovered its strength. The annual meeting has just been held and the old officers re-elected. The report showed the net earnings of the company for 1896 to have been $185,000, of which $100,000 was paid in dividends. Northern Light is nearly ready for mill operation. The stock was somewhat weaker. Ontario was only lightly offered. Rover was a little lower. Work is being pushed at the properties. Sunbeam fluctuated somewhat, and was not in active demand. Silver King will pay its February dividend of 25c. per share February 8th. The passing of the Swansea's dividend sent the stock lower, and the inquiry was not active even at the depressed price. South Swansea was also lower, selling at practically the same price as its neighbor. Sacramento has declared its February dividend of ½c. per share. Utah was very much stronger. This change was due to dividend expectations, coupled with a much better showing at the properties.

San Francisco. Feb. 6.

(From Our Special Correspondent.)

The market opened very quietly and was rather dull on Monday, though there was no perceptible drop in prices. On Tuesday and Wednesday some weakness was developed and there was a general fall in quotations. Business was very quiet and sales were small.

Towards the close of the week favorable reports from Consolidated California & Virginia stirred up a good deal of excitement and sent that stock up to $2 25, and finally to $2.45, and some large buying orders were received. In other stocks there was not much change, Hale & Norcross selling at $1.20, Ophir at $1.05, and Standard Consolidated at $1.60 @$1.65.

According to the sworn statements filed this week, the following companies report cash on hand, February 1st, 1897: Alta, $3,189; Andes, $1,478; Alpha Consolidated, $3,005; Best & Belcher, $544 (with $2,500 due the bank); Bullion, $298; Caledonia, $3,046; Chollar, $1,731 (with $7,000 due the bank on a note); Challenge Consolidated, $2,051; Consolidated Imperial, $620; Confidence, $2,027; Consolidated New York, $451; Consolidated California & Virginia, $16,980; Crown Point, $4,729; Exchequer, $2,674; Gould & Curry, $9,468; Hale & Norcross, $2,265; Mexican, $6,286; Occidental Consolidated, 1,067; Overman, $6,148; Ophir, $1,483; Potosi, $6,630; Savage, $12,324; Sierra Nevada, $5,909; Segregated Belcher, $516; Silver Hill, $49; Syndicate, $870; Union Consolidated, $8,090; Utah Consolidated, $463.

The Belcher Mining Company reports an indebtedness of $801, and the Lady Washington owes $1,040. The Silver King Mining Company, of Arizona, has an indebtedness of $2,445, and is collecting an assessment of 25c. per share.

The annual meeting of the Standard Consolidated Mining Company has been called for February 15th.

The Marguerite Gold Mining and Milling Company, of Placer County, has levied its fifth assessment at the rate of 10c. per share, delinquent February 25th.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, Feb. 4.

One of the effects of the War Eagle sale has been the circulation of a report that negotiations are pending for the sale of the Le Roi mine to English capitalists, the figures given being between four and five millions of dollars. It is the season of reports and rumors, and this one has gained strength from the recent sale of the War Eagle.

The preparations for the regular mining season, which will begin in a few weeks, are just now best indicated by the work in progress by the Red Mountain Railway. This is the new outlet for the Le Roi ore, and it is there where the various sidings and switches have been placed to accommodate all the shippers. The impetus which this has given to the various mines which have reached the exploration stage is very noticeable, for shipments are now being made by the Cliff, Red Mountain, Jumbo, Kootenay, Columbia and Iron Mask. The War Eagle management has undergone a complete change in the personnel since the sale, and it is again making shipments.

The total shipments of ore from Trail Creek mines for the month of January amounted to 4,876 tons, valued at $125,000. The shipments of matte, over the Red Mountain Railway, by the Trail Creek smelter, amounted to 311,946 lbs. The ore shipments for January were made by the Le Roi, War Eagle, Josie, Cliff, Iron Mask, Kootenay, Red Mountain, O. K. and Jumbo

Paris. Jan. 31.

(From Our Special Correspondent.)

Business on the Bourse is active as the year grows, and it promises to be a good time for speculation. The stress in the money market which marked the close of 1896 is over, and loans are again easily made, so that matters all favor the speculators.

The metallurgical shares are still among the most active, but there has been a slight reaction caused chiefly by sales of stock from operators, who think it is about time to take their profits. It is quite probable that they are right, and that these shares have nearly reached their limit.

The Russian group has been especially strong and these stocks continue to command high prices. The Compagnie de Briansk has acquired control of some important iron ore deposits near Kertsch, and is preparing to extend its work on a large scale.

Copper continues in demand at an increasing price, and the copper shares are strong and at a high level. All of them have continued to rise, Rio Tintos leading as usual. Boleo has been in demand, but there is very little stock offered.

The zinc and lead companies have also shown gains, and there are many demands for them. One hears nothing this year of a convention of the zinc companies; orders are abundant and there is no need to limit production. The only disquieting point is in the probability that we may receive large shipments of the metal from America.

Huanchaca (silver) has recovered a little, as it is now announced that the water in the lower levels is under control, and that better returns may be expected.

Le Nickel, after its recent tremendous jump from 195 fr. to 310 fr., has suffered the inevitable reaction and has gone down to 215 fr. It appears that there really will be a strong demand for some time to come, since large orders for new guns, to be of nickel-steel, are certainly to be given by France and probably by Germany. These guns will require a large amount of the metal, by which the company will doubtless be benefited.

It is stated that the Berlin Mint has concluded a contract to furnish a large number of coins— pieces of 12½ and 5 centimos—for Venezuela, to be made of copper-nickel alloy. This will also require a considerable quantity of the metal.

The South African gold shares continue heavy, and there is more talk than business heard. More French investors are becoming disgusted with the methods of the Witwatersrand mine managers. There is a great deal of talk and many plans are suggested to secure a reform. It is a difficult matter, but it should have been taken up at least a year ago.

The movement to reorganize the Bourse and to give the *coulissiers*—outside or free brokers—official standing as the *agents de change* have, does not meet with much approval. The *coulisse* is the most important part of the market now, in reality, and official regulation would probably reduce its activity without conferring any new advantages; and most people interested would prefer to have matters remain as they are. The Chamber has other important business on hand, and it has hardly the time to consider the proposed changes.

The movements of gold and silver in France for the full year are reported by the Ministry of Commerce as below:

	Imports.	Exports.		Excess.
GOLD:				
1895, Fr.	253.875,195	244.381,198	Imp.	9,493,997
1896 "	298,339,299	310,900,667	Exp.	12,061,368
SILVER:				
1895, Fr.	141.152,976	78,459,257	Imp.	62.693.719
1896 "	155,750,771	97.260,425	Imp.	58,490,346

The exports of gold to the United States were 101,068,480 fr. in 1896, against 36,334.400 fr. in 1895.

Political matters are so quiet just now that one is really disquieted because there is no trouble. The question is when the next outbreak is to be. There are plenty of opportunities for it, we know, but every one seems disposed to deprive them of their chance to make trouble. The health of the Czar is the latest source of rumors, but they are very contradictory. Perhaps we are to have the time of the great Katharine repeated and another widowed Czarina reign in Russia.

Who knows? Perhaps it would be well for all of us should this happen. AZOTE.

MEETINGS.

Detroit Copper Mining Company, of Arizona, annual meeting at 13 Cliff street, New York, on March 4th, at 12 m.

Marion Gold Mining Company, special meeting at 201 McCornick Block, Salt Lake City, Utah, on February 23d, at 11 a. m.

Tennessee Coal, Iron and Railroad Company, annual meeting at Tracy City, Grundy County, Tenn., on March 9th, at 12 m.

Curtis Creek Mining, Furnace and Manufacturing Company, at room 35, 12 St. Paul street, Baltimore, Md., on February 25th, at 1 p. m.

MISCELLANEOUS DIVIDENDS.

St. Mary's Canal Mineral Land Company, dividend of $1 a share, payable February 10th at Boston office. Books closed February 6th and will reopen February 18th.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.		Sale.		Amt
*Andes Silver	Nev.	43	Mar.	8	Mar.	31	.10
Beaver Creek	Mont.	....	Jan.	17	Feb.	23	.02
Best & Belcher	Nev.	61	Mar.	2	Mar.	23	.25
Bogan Silver	Utah	4	Feb.	18	"	8	.05
Bullion	Nev.	49	"	18	"	11	.10
Central Eureka	Cal.	4	Jan.	30	Feb.	23	.03
Confidence	"	1	Feb.	27	Mar.	20	.10
Eureka Con.	"	7	"	26	"	20	.05
Eureka Con.*	Nev.	14	"	23	"	15	.25
Gray Eagle	Cal.	....	Jan.	30	Feb.	23	.05
Horseshoe Bar Con.	"	6	Feb.	6	"	27	.20
Indep'd't-Tes'ra.	Utah	..	....	....	....	....	.02
Jones	"	....	Feb.	16	Mar.	11	.00¼
Julia Con.	Nev.	28	"	26	"	19	.05
Jupiter Gravel	Cal.	1	Mar.	3	"	23	1.00
Larkin	"	....	Feb.	15	"	15	.05
Lucky Bill	Utah	..	"	23	"	13	.01¼
Mountaineer	Cal	19	"	11	Feb.	27	.04
Ridge Copper	Mich.	....	Feb.	16	....	....	1.00
Sevier	Utah	....	"	11	Feb.	27	.05
Silver King	Ariz.	16	Mar.	1	Mar.	29	.25
Teresa	Mex.	17	Feb.	5	Feb.	23	05
Tetro	Utah	4	Jan.	30	"	20	.01
Utah Con.	Nev.	24	Feb.	17	Mar.	8	.05
*Vanderbilt	Idaho	....	Mar.	5	"	21	.05

*New assessment.

DIVIDENDS.

NAME OF COMPANY.	Current Dividends. Date.	Am't.	Paid since Jan. 1, 1897.	Total to date.
*Alaska-Mexican	.....	.....	$18,000	$191,031
*Alaska-Treadwell	.....	.....	75,000	3,100,000
*Anchoria-Leland	Feb. —	$5,000	12.000	42,000
Arizona Copper	.....	18,000	48,000	.....
Atlantic Copper	Feb. 10	40,000	40,000	740,000
Boston & Montana	" 20	450,000	450,000	5,375,000
*Bullion Beck	.....	.....	20,000	1,967,000
Calumet & Hecla	Feb.10	1,500,000	1,500,000	48,350,000
* Centennial Eureka	.....	.....	30 000	1,890,000
*Coronas	.....	.....	3,000	8,000
*Della S.	.....	.....	10,000	60,000
*Elkton Con.	.....	.....	25,000	191,960
*Florence	.....	.....	3,506	118,096
*Galena	.....	.....	5,000	71,000
Gold Coin	Feb. 1	20,000	15,000	120,000
*Hecla Con.	.....	.....	15,000	2,160,000
*Homestake	.....	.....	31,250	6,118,750
Hope	Feb. 1	10,000	10,000	662,252
*Last Chance	.....	.....	20,000	40,000
*Le Roi	.....	.....	50,000	300,000
*Mercur	.....	.....	25,000	600,000
*Mont. Ore Pur. Co	.....	.....	40,000	520,000
*Morning Star	Feb. —	9,600	24,000	474,000
*Napa Con.	.....	.....	10,000	840,000
*N. Y. & Honduras Rosario	Feb. 15	15,000	30,000	705,000
*Ontario	.....	.....	15,000	13,370,000
Osceola	Feb. 1	50,000	50,000	2,122,500
*Portland	.....	.....	30,000	893,000
Quincy	Feb. 15	400,000	400,000	9,070,000
*Sacramento	.....	.....	5,000	12,000
*Silver King	Feb. —	37,500	75,000	937,500
*South Swansea	.....	.....	7,500	15,000
*Swansea	.....	.....	5,000	26,500
Totals	.....	$2,586,100	$3,102,356	$101,070,589

* January dividend paid.

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

STOCK QUOTATIONS.

NEW YORK.*

Name of Company.	Location.	Par val.	Feb. 5 H.	Feb. 5 L.	Feb. 6 H.	Feb. 6 L.	Feb. 8 H.	Feb. 8 L.	Feb. 9 H.	Feb. 9 L.	Feb. 10 H.	Feb. 10 L.	Feb. 11 H.	Feb. 11 L.	Sales
Alamo	Colo	1	...	...	...	...	.05½	...	.05	...	...	...	.05	...	1,600
Anaconda	"	1	.72	...	...	...	.72½	.70	.75	.73	.75½	.75	.73	...	3,300
Anchoria-Lel'd.	"	1	...	...	...	...	1.35	...	1.53	1.35	1.53	1.50	...	...	1,900
Annetta	...	...	.20	.16¾	...	...	.17⅛	...	.18¾	.17⅛	.18⅜	.17¼	.18¾	.18	12,600
Argentum-Jun..	Mont.	5	.38	...	...	...	.36⅛	...	.37½	.37	.38	.36½	.37	...	1,400
Belcher	Nev...	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Best & Belcher..	"	100	...	...	...	...	...	...	...	...	.75	...	...	...	200
Bodie	Cal..	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Brunswick	"	1	.18	...	...	...	...	...	...	...	...	...	...	...	100
Capital	Colo	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Chrysolite	Colo..	50	...	...	...	...	...	...	.10	...	...	...	...	...	5,600
Comstock T.	Nev..	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Con. Cal. & Va..	"	100	...	...	2.35	...	2.25	...	...	...	2.20	...	...	...	450
Con. Imperial..	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Creede & C. C...	Colo..	1	...	...	...	...	.05	...	.05½	...	.06	...	.06½	...	2,300
Cripple Cr. Con.	"	1	.13	...	.13	...	.11	...	.12	...	.13	...	.13	.12¾	7,700
Crescent	Utah.	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Crœsus	Colo..	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Crown Point	Nev...	100	...	...	.35	...	...	...	...	...	...	...	...	...	100
Dalton & Lark	Utah..	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Deadwood	S. Dak	25	...	...	...	...	...	...	...	...	1.10	...	...	...	70
Eagle	Colo..	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Elkton	"	1	1.35	1.30	...	...	...	...	1.37	...	1.39	1.36	1.39	...	2,400
Fanny B	"	1	.07¼	.06⅛	...	...	.07¼	.06⅛	.07	...	.07	...	.06¾	...	5,900
Favorite	Colo..	1	...	...	...	...	.06	...	.06½	...	.06¾	...	...	...	2,500
Garfield Grouse	"	1	.08	...	...	...	.08	.07¼	.07½	...	.07¾	...	...	...	3,000
Geyser	Utah	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold Cliff	Colo..	1	...	...	...	...	...	...	...	...	.35	...	.36	.35⅝	1,000
Gold Coin	"	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold Explor.	"	1	.11¾	...	...	...	.11½	.11	.10½	...	.10½	...	.10½	...	5,000
Gold & Globe	"	1	...	...	...	...	...	...	.11⅝	...	.12½	...	.12	...	2,000
Golden Fleece	"	1	.82½	...	...	...	.82	.60	...	...	.51	...	...	...	200
Gold San Juan.	"	...	...	...	...	...	.07½	.07	.10½	.08⅛	.10½	...	.10¼	.09½	9,600
Hale & Norcross	Nev...	100	...	...	...	...	...	...	...	...	1.05	...	...	...	300
Homestake	S. Dak	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Horn Silver	Utah..	25	...	...	...	...	1.70	...	1.75	...	...	...	...	...	300
Iron Silver	Colo..	20	...	...	.35	...	...	...	...	...	...	...	...	...	100
Isabella	"	1	.50	...	...	...	.52	.50	.51	.50	.49	...	...	...	700
Jack Pot	"	1	.07½	...	...	...	.07	...	.07½	...	...	...	...	...	2,000
Japan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jefferson	Colo.	1	.14½	...	...	...	.14	...	...	...	.14	...	...	...	2,000
King & Pemb.	Ont..	10	...	...	...	...	...	...	...	...	...	...	...	...	...
Lacrosse	Colo..	10	...	...	...	...	...	...	...	...	...	...	...	...	...
Leadville Con.	"	10	...	...	.10	...	...	...	...	...	...	...	...	...	1,000
Little Chief	"	50	.10	...	...	...	.12	...	...	...	...	...	...	...	200
Mercur	Utah.	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Mexican.	Nev...	100	...	...	.50	...	...	...	...	...	.45	...	...	...	300
Mollie Gibson	Colo	5	.47¾	...	...	...	.46	.45	.46	.44	.45	...	.44	...	1,200
Mono	Cal.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Moulton	Mont.	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Mt. Rosa	"	1	...	...	.12	...	.12	.11	.12	...	.10¾	.10½	.10½	...	3,700
New Haven	...	...	...	...	...	...	...	...	.03½	...	.03	...	.03	...	13,000
Old Dominion	Ariz..	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Ontario	Utah.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophir	Nev	100	1.00	...	...	...	...	...	...	...	...	...	...	...	200
People's	Colo	1	...	...	...	...	...	...	...	...	.06½	.06	.05¼	...	1,100
Pharmacist	"	1	.13	...	...	...	.12¾	.12	.14	.13	.13	...	.13	.12½	4,500
Phœnix Con	Ariz..	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Portland	Colo..	1	...	...	1.20	...	1.26	...	1.25	1.11	...	...	1.09	1.00	2,000
Potosi	Nev...	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Quicksilver	Cal	100	...	...	...	...	...	...	...	...	...	...	...	...	...
" pref.	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Red Bird	Colo..	1	.10½	.10¼	...	...	.11	.09½	.10	.08¼	.10	.09	.15	.09½	23,900
Red Mount	"	5	.27	.25½	...	...	.26	.25¼	.27¼	.26¾	.27	.26	.26¼	.25¾	7,500
Russell	N. C..	1	.22¾	.20	...	...	.22¾	...	.25	.24⅜	.24⅝	.23¼	.24	.23	13,400
Savage	Nev..	100	.50	...	...	...	...	...	...	...	...	...	...	...	200
Sierra Nevada	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Sm. Hopes Con.	Colo..	20	...	...	...	...	...	...	.60	.56	...	...	...	...	,000
Specimen	"	1	...	...	...	...	.07	...	.07	...	.06⅜	...	...	...	2,100
Standard Con.	Cal..	100	...	...	1.75	...	1.65	...	...	...	...	...	...	...	120
Syndicate	"	100	...	...	.04	...	...	...	...	...	...	...	...	...	500
Union	Colo..	...	...	...	...	...	.32	.25	.26¾	...	...	...	.26⅛	...	1,000
Union Con	Nev...	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Utah Con	"	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Victor	Colo..	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Work	"	1	...	...	...	...	.10	.08¼	.09	.08⅛	.09	...	.09	...	6,700
Yellow Jacket	Nev..	100	.25	...	...	...	.33	...	...	...	...	...	...	...	700

*Official quotations Consolidated Exch Stock Exch. and New York Mining Exch. Sales are those made on the three boards Total shares sold, 158,540.

INDUSTRIAL, COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Feb 8. H.	Feb 8. L.	Feb. 9. H.	Feb. 9. L.	Feb. 10. H	Feb. 10. L.	Feb. 11. H.	Feb. 11. L.	Sales
Balt. & Ohio..	100	...	...	...	...	...	...	...	...	15¼	15	15½	...	1,000
Ches. & Ohio.	100	17¼	...	...	...	17⅛	...	17⅜	...	17¼	17⅛	17⅛	17	1,860
Col.C.& I.Dev	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Col. Fuel & I.	100	...	...	...	...	...	...	...	...	25	...	...	...	200
Col.,H.V.&Tol	100	9¾	9¾	9¾	...	10¾	9¾	10¼	9¾	9¾	...	9¾	8¾	3,435
do. pref.	100	...	...	...	...	...	...	35	...	...	...	...	...	10
Col. & H.Coal	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Del. & Hud. C	100	108½	107¼	108⅝	108¾	108¼	107½	108⅛	107½	108¼	107	107	106⅞	9,358
Del., L. & W..	50	153	152	152½	...	152¼	151⅝	152¼	152¼	153	152½	152½	152¼	4,.50
General Elec.	100	35¾	35¼	35⅞	35⅛	35¾	34⅞	35⅛	34½	35¼	35	35	34⅞	10,176
Lake Erie&W	100	16½	...	...	...	...	...	...	...	...	...	...	...	100
do. pref.	100	...	...	67	...	68	...	...	...	...	...	...	...	700
Morris&Essex	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Nat'l Lead	100	22¾	22½	23	...	23¼	...	...	...	22⅝	22½	22¾	22½	1,970
do. pref.	100	...	...	...	...	98¾	98⅝	89¾	88¾	89	88½	...	...	526
N. J. Central..	100	99½	98¼	...	...	98¾	98⅜	99⅛	99	99	98¼	98½	98	867
N. Y.,L.E.&W	100	...	...	...	...	...	...	...	...	...	...	...	...	...
do. pref.	100	...	...	...	...	...	...	...	...	15	14⅞	...	...	717
N.Y.,Ont.&W.	100	...	...	14⅞	...	14¾	...	15⅛	14¾	...	...	14⅞	14¾	100
N.Y.,Susq.&W	100	...	...	...	...	...	...	...	...	...	...	9	...	2,600
do. pref.	100	24⅛	...	...	...	...	...	...	...	25	...	26¼	25	2,600
Norfolk & W.	50	...	...	...	...	...	...	...	...	...	...	...	...	...
do. pref.	50	...	...	...	...	...	...	...	...	...	...	...	...	...
Phila. & Read.	50	26⅛	26⅛	26¼	...	26¼	25⅛	25⅞	25	25⅜	24⅞	25⅛	24⅝	17,344
Tenn. C. & I..	100	29½	29⅛	29½	...	29¼	28¾	29¼	29	29⅜	28¾	29	28⅜	7,755
do. pref.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Wheel. & L. E	100	2½	...	2¼	...	2¾	...	2⅛	...	2¼	...	...	...	1,440
do. pref	100	...	...	...	...	...	...	9⅛	...	...	...	...	...	28

* Official quotations N. Y. Stock Exchange. Total shares sold, 67,036.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Feb. 4.	Feb. 5.	Feb. 6.	Feb. 8.	Feb. 9.	Feb 10.
Alta	Nev.	100	.09	.08	.08	...	.04	...
Belcher		100	.31	.29	.29	.29	.71	.28
Belle Isle	"	100	...	...	...	...	...	...
Best & Belcher	"	100	.71	.67	.65	.69	...	.69
Chollar	"	100	.98	.98	.89	.85	.91	.88
Con. California & Virginia	"	100	2.35	2.25	2.10	2.15	2.10	2.05
Crown Point	"	100	.31	.31	.30	.31	.29	.28
Gould & Curry	"	100	.51	.47	.45	.42	.46	.45
Hale & Norcross	"	100	1.15	1.15	1.10	1.05	1.05	1.05
Mexican	"	100	.45	.45	.40	.40	.41	.41
Ophir	Nev.	100	1.00	.93	.91	.89	.92	.91
Potosi	"	100	.53	.46	.45	.42	.47	.47
Savage	"	100	.49	.46	.45	.43	.46	.45
Sierra Nevada	"	100	.46	.40	.39	.40	.40	.38
Standard	Cal.	100	...	1.65	1.65	1.60	1.60	1.60
Union Con.	Nev.	100	.43	.31	.38	.37	.39	.40
Utah	"	100	.04	.04	.04	...	.03	...
Yellow Jacket	"	100	...	.31	.30	.30	.30	.28

*Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Feb. 5.

Name of Company.	Location.	Par value	Bid.	Ask.	Name of Company.	Location.	Par value	Bid.	Ask.
Balt. M. & S.	N. C..	5	...	...	Howard C.&C	Md.	5	...	...
Conrad Hill	"	10	...	...	Lake Chrome	"	5	...	...
Con. Coal	Md.	100	36	...	Ore Knob	"	10	...	...
G. Cr'k Coal	"	100	105	110	Silver Valley	N. C.	5	...	...

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Feb. 4. H.	Feb. 4. L.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Feb. 8. H.	Feb. 8. L.	Feb. 9 H.	Feb. 9 L.	Feb. 10. H.	Feb. 10. L.	Sales.
Allouez	Mich.	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Arnold	"	25	3.13	...	3.62	3.00	3.13	2.88	3.62	3.00	3.50	...	3.00	...	2,160
Atlantic	"	25	24.00	...	...	...	...	...	22.50	...	22.50	...	...	...	180
Bost. & C. C	Colo..	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Bost. & Mont.	Mont.	25	111¾	109⅝	110¾	107⅛	111¼	109½	110	108⅛	109¼	109	109¼	107⅛	18,953
Butte & Bost.	"	25	12.50	11.63	11.75	11.00	12.38	11.63	12.50	11.00	11.63	11.25	11.38	11.00	22,549
Cal. & Hecla	Mich.	25	360	...	355	...	355	...	357½	...	357½	...	355	...	70
Centennial	"	25	6.75	6.00	6.25	5.88	6.62	5.75	6.62	6.00	6.25	6.00	6.13	5.88	5,303
Dominion Coal.	N. S...	100	9.00	8.88	9.00	8.75	8.75	...	...	...	...	...	9.00	8.75	467
" pref.	"	100	83.00	...	83.50	...	...	...	...	...	...	...	...	...	19
Franklin	Mich.	25	...	...	...	...	...	...	11.50	...	...	...	...	...	100
Gold Coin	Colo..	1	3.63	3.50	3.63	3.50	3.63	...	...	...	...	...	3.63	...	3,200
Illinois Steel	Ill.	100	37.00	...	36.00	...	...	...	34.50	34.00	34.50	32.50	34.75	33.00	972
Kearsarge	Mich.	25	19.25	18.50	18.50	17.75	18.75	18.00	...	...	18.50	18.00	18.00	...	2,395
Lake Sup. Iron.	"	25	...	...	...	...	...	...	...	...	...	...	20.50	...	50
Merced	Cal.	15	9.50	8.50	9.00	8.50	...	...	...	...	8.75	8.50	...	...	850
Minnesota (Ir.)	Minn.	100	...	...	...	...	...	...	...	...	...	...	...	...	...
Napa	Cal	7	...	...	...	...	6.75	...	...	...	...	...	...	...	100
National	Mich.	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Old Dominion	Ariz	2	18.75	17.88	18.00	17.00	18.25	18.13	17.75	17.00	19.00	17.38	18.00	17.75	5,805
Osceola	Mich..	25	33.5	33.25	32.2	32.13	33.00	32.50	32.25	...	32.50	31.75	31.75	31.00	474
Pioneer	Cal..	10	5.50	4.75	5.00	...	...	...	...	...	5.00	...	...	...	1,691
Pontiac	Mich.	25	...	...	...	...	...	...	...	...	...	...	...	...	...
Quincy	"	25	116	...	116	...	116	...	117	...	117	116½	117	...	111
do. scrip	"	...	107	...	...	...	...	...	...	...	106	...	106	105	20
Santa Rosa	Cal.	10	...	...	...	...	...	...	...	...	...	...	...	...	...
San. Ysabel (G.)	"	5	13.13	...	13.25	13.13	13.50	...	13.25	...	...	...	13.00	...	550
Tamarack	Mich	25	119	116	118	...	119¾	...	118	117	119	...	118½	117½	435
Tamarack, Jr.	"	25	17.50	17.00	16.50	...	...	...	17.00	16.25	18.00	16.50	18.50	...	451
Tecumseh	"	25	...	...	3.00	...	3.00	...	...	...	3.00	...	...	...	300
Westingh.E.&M	Pa.	50	...	...	25.00	24.50	...	...	24.50	24.00	...	...	...	...	400
do. pref.	"	50	50.00	...	...	...	...	...	...	...	...	...	50.13	...	102
do. scrip	"	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wolverine	Mich..	25	10.38	10.00	10.25	9.88	10.00	...	10.13	9.88	10.00	...	10.00	...	1,841

*Official quotations Boston Stock Exchange. §Ex-dividend. Total sales, 69,518.

COLORADO SPRINGS, COLO.

Name of Company.	Par val	Feb. 1. H.	Feb. 1. L.	Feb. 2 H.	Feb. 2 L.	Feb. 3 H.	Feb. 3 L.	Feb. 4 H.	Feb. 4 L.	Feb. 5 H.	Feb. 5 L.	Feb. 6. H.	Feb. 6. L.	Sales.
Ajax	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Alamo	1	...	...	...	...	.05½	...	...	...	...	...	.05¼	.05⅛	9,833
Am'ric'n C	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Anaconda.	5	.73	.71½	.74	.71½	.72½	.72	.72½	.72	.73	.72	...	...	21,300
Aola.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Arg'ntumJ	2	.41½	.40¾	...	...	.40	.39	.38	...	.38¾	.38¼	.38¾	.38	8,200
Bangkok	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Bankers	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Banner.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ben Hur	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Blue Bell	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Bob Lee	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Bost. & C.C.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Buckhorn	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Colo.C.&M.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Columbine.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Copper M	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Cr. & C. C.	1	.06¼	.05⅛	...	...	...	...	...	...	.05⅝	...	...	...	35,000
C. C. Con.	1	...	...	.12¼	.12	.12	...	.12	.11¾	.11½	...	.11⅞	.11⅝	6,300
Cr.Cr.Exp.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Crœsus	1	...	...	...	...	.003½	...	...	...	...	...	.008	...	6,500
Dante	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Des Moines	1	...	...	.02⅜	.02¼	...	...	...	...	...	...	...	...	3,000
Enterprise.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Fanny R.	1	...	...	.07¾	...	.08½	.08	...	...	...	...	.08¼	...	5,000
Favorite	1	...	...	.06¾	...	...	...	...	...	...	...	...	...	1,000
Franklin	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Garfield-G.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold. Age	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold. E'g'e	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold Fl'ce.	1	...	...	...	...	...	...	...	...	.65	...	...	...	500
Gold & Gl.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold King.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gold Stand	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gould	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Grotte	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Henrietta	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Humboldt.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ida May	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ingham,C.	⅛	...	...	...	...	...	...	...	...	...	...	...	...	...
Iron Clad	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Isabella.	1	.51½	.49	.50⅛	.49¾	.50⅛	.50	.51	.50½	.52	.51⅛	.51½	.49¾	103,925
do.stamp.	1	.49¾	.49⅛	...	...	.49¼	.49	.49¾	.49⅛	.51	.50	.49⅝	.49	15,900
Jack Pot	1	.11½	...	.07⅜	...	.07⅜	...	.07⅝	.07½	.07¾	...	.07½	...	46,000
Jefferson	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Keystone	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ladessa	1	...	...	...	...	...	...	...	...	...	...	...	...	...
L'nc'ln B'y	1	...	...	...	...	...	...	...	...	...	...	...	...	...
LottieGib.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Marion	1	...	...	.006	...	...	...	...	...	...	...	.006	...	7,000
Matoa	1	...	...	...	...	...	...	.08¾	...	.08½	...	...	...	2,000
Mollie G.	5	.51½	...	.50	...	.49¾	.48½	.48⅛	.48	.48	.47	.45½	.45	8,100
Monarch	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Mt. Rosa	1	.10⅛	...	...	...	.11½	...	...	...	...	...	...	...	2,100
Mutual	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Nugget	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Ophir	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Oriole	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Orphan B.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Pappoose	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Pharmacist	1	.13⅛	.13	.12⅞	...	.12¾	...	.12¾	...	.12⅝	.12½	.12⅛	.12⅜	34,500
Portland	1	1.31½	1.30½	1.26	1.25	1.2[illegible]⅛	...	1.25	...	1.23½	...	1.22	...	10,400
Princess	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Reno	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Sacramento.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Silver St.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Specimen	1	...	...	...	...	...	...	...	...	.07	...	...	...	4,000
Sq'w Mt.T.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Temonj.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Tracnyte	1	.02¾	...	.02⅜	...	...	...	.02⅜	...	...	...	.02⅜	...	6,000
Union	1	.27⅜	.26	.27	.26½	.26⅞	.26¼	.26⅜	.26¼	.26⅜	.26¼	.26½	...	37,700
Virginia M.	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Work	1	.08⅞	.08¾	.09¾	.09	.09¼	.09	.09	...	.08⅞	.08¼	.08½	.08¼	95,000

Official quotations. Total shares sold listed, 469,258; unlisted. 779,441

CLEVELAND.

Name of Company.	Par value.	Feb. 8. Bid.	Feb. 8. Ask.	Name of Company.	Par value.	Feb. 8. Bid.	Feb. 8. Ask.
Aurora	$25	...	$8	Lake Superior	$5	...	$30
Chandler	25	$38	41	Minnesota	100	...	...
Cleveland-Cliffs Iron	100	...	45	Pittsburg & L'ke Angeline	25	$75	...
Jackson	25	...	75	Republic	25	12	15

BRITISH COLUMBIA. Week ending Feb. 6.

Name.	Selling price.	Name	Selling price.	Name.	Selling price.
Bound'y Creek:		**Trail C'k** (con.:)		**Trail C'k** (con.):	
Old Iron Sides	$0.12	California	$0.15	Little Darling	$0.05
C'p McKenney:		Camp Bird	.05	Mabel	.05
Cariboo M.& S.Co.	.47	Commander	.25	Mayflower	.14
Ainsworth & Nel-		Crown Point	.48	Monita	.20
son Dis.:		Deer Park	.22	Monte Cristo	.16
Delia M & M. Co	.12	Dewdney	.06	Morning Star	.10
Colville Res.:		Enterprise	.20	Mug Wump	.15
Briton	.05	Evening Star	.12	Nest Egg	.09
Fidelity G & C.Co	.10	Georgia	.18	Northern Bell	.15
Joe T. Gold M. Co	.10	Good Hope	.04	O. K	.30
Mountain View	.06	Great Western	.15	Orphan Bell	.15
Idaho District:		Hattie Brown	.08	Ottawa	.05
Daisy Group	.10	Helen	.05	Palo Alto	.09
Oro Pinar Placer	.12½	High Ore	.07	Phoenix	.12
Slocan Dis.:		Homestake	.17	Poorman	.09
Idler	.07½	Imperial	.08	Red Eagle	.10
Noble Five Con	.62	Iron Mask	.55	Red Mt View	.12½
Slocan Star	2.35	Iron Coat	.15	Rossland Red Mt	.25
Trail Creek:		Ivanhoe	.10	St. Elmo	.11
Alberta	.10	Josie.	.57	Silver Bell	.08
Big Chief	.07	Jumbo	.60	Silverine	.12
Big Three	.10	Josie Mac	.10	So. Cross & Wolver. C.	.10
Blue Bird	.10	Kootenay Col.	...	St Paul.	.10
Butte Gold-Copper	.07	Kootenay, London	...	War Eagle Con	...
British Col. Gold King	.10	Le Roi	7.50	West Le Roi	.16
Caledonia Con.	.11	Lily May	.15	White Bear	.15

LONDON. Jan. 29.

NAME OF COMPANY.	Country.	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
N'th Americans:				£ s. d.	s.d.		£ s. d.	£ s. d.
‡Alaska-Mexican	Alaska	Gold	£200,000	1 0 0	0 4.8	Jan., 1897	1 2 6	1 7 6
‡Alaska-Treadwell.	"	"	1,000,000	5 0 0	1 6	" "	4 7 6	4 12 6
De Lamar	Idaho	Gold&silver	400,000	1 0 0	1 0	Nov., 1896	6 6	7 6
Hall Mines	British Col	Cop.&Silver	250,000	1 0 0			1 7 6	1 10 0
Montana	Montana	Gold&silver	660,000	1 0 0	0 3	June, 1896	4 0	5 0
Palmarejo	Mexico	" "	800,000	1 0 0			1 0	1 6
Pinos Altos	"	" "	100,000	1 0 0			1 3	3 9
Plumas-Eureka	California	Gold	281,250	2 0 0	0 6	Oct., 1896	2 6	7 6
Richmond	Nevada	G'ld,sil.,le'd	270,000	5 0 0	1 0	Dec., "	12 6	17 6
Sierra Buttes	California	Gold	245,000	2 0 0	0 6	Apr., "	2 6	7 6
Springdale	Colorado	"	260,000	4 0	0 2	Sept.,1894	3	9
S'th Americans:								
Colomb. Hydra'lic	Colombia	Gold	75,000	1 0 0	1 0	July, 1895	7 6	10 0
Frontino & Bolivia	"	"	140,000	1 0 0	1 3	Dec., 1896	1 10 0	1 12 6
St. John del Rey	Brazil	"	562,000	1 0 0	xn	Jan., 1895	13 9	16 3
Copper:								
Anaconda	Montana	Cop. & Sil.	6,000,000	5 0 0	5 1¾	Nov., 1896	6 13 9	6 16 3
Cape Copper	So. Africa	Copper	600,000	2 0 0	3 0	Dec. "	2 10 0	2 15 0
Copiapo	Chile	"	200,000	2 0 0	1 6	" "	2 2 6	2 7 6
Mason & Barry	Portugal	Cop.& sulph	1,050,000	4 0 0	£1 cp	Dec. "	2 7 6	2 10 0
Rio Tinto	Spain	Copper	3,250,000	10 0 0	18 0	Nov., "	27 5 0	27 10 0
Tharsis	"	Sulpr &cop'r	1,250,000	2 0 0	4 0	April, "	6 12 6	6 17 6
Australians:								
Bayley's Reward	W.Au't'lia	Gold	480,000	1 0 0	0 4	Dec., 1894	2 9	3 3
†Broken Hill Prop.	N.S.Wales	Silver	960,000	1 0 0	1 0	" 1896	2 10 0	2 12 6
†Mt. Morgan Gold	Qu'nsland	Gold	1,000,000	1 0 0	0 6	Jan., 1897	3 10 0	3 15 0
South Africans:								
British S.Africa Co	So. Africa	Lands &Ex.	2,500,000	1 0 0	xn	Jan , "	2 11 3	2 13 9
‡City & Suburban	Transvaal	Gold	85,000	4 0 0	2 0	" "	3 18 9	4 2 6
Crown Reef	"	"	120,000	1 0 0	12 0	Oct., 1896	10 5 0	10 10 0
De Beers	CapeCol'y	Diamonds	3,950,000	5 0 0	£1	Jan., 1897	29 11 3	29 13 9
‡Ferreira	Transvaal	Gold	90,000	1 0 0	3 0	" "	17 0 0	17 10 0
Geldenhuis Est.	"	"	200,000	1 0 0	2 6	Oct., 1896	3 1 3	3 3 9
‡Henry Nourse	Witw'sr'd	"	125,000	1 0 0	6 0	Jan., 1897	6 2 6	6 7 6
‡Heriots (New)	"	"	115,000	1 0 0	4 0	" "	7 2 6	7 12 6
Jagersfontein	OrangeF.S	Diamonds	1,000,000	5 0 0	6 0	Sept.,1896	9 10 0	9 15 0
‡Langlaagte Estate	Transvaal	Gold	500,000	1 0 0	3 0	" "	4 7 6	4 10 4
Primrose (New)	"	"	300,000	1 0 0	xrts.	Sept., "	3 10 0	3 15 0
‡Robinson	"	"	2,750,000	5 0 0	5 0	Jan., 1897	8 0 0	8 5 0
Sheba	"	"	850,000	1 0 0	1 0	Dec., 1896	2 2 6	2 3 9
Sim. & Jack (New)	"	"	5,000,000	5 0 0			4 5 0	4 10 0
‡Wemmer	Witw'sr'd	"	55,000	1 0 0	15 0	Jan., 1897	7 5 0	7 10 0

† Dividend pending. ‡ Ex-dividend.

PARIS. Week ending Jan. 29.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.		Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	100.00	1,995.00	1,990.00
" " Firminy	" "	" "	3,000,000	500	85.00	1,830.00	1,820.00
" " Fives-Lille	" "	" "	12,000,000	500	35.00	805.00	810.00
" " la Marine	" "	" "	20,000,000	500	37.50	1,101.00	1,110.00
" " Longwy	" "	" "		500	35.00	900.00	905.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	95.50	92.50
Anzin	France	Coal			170.00	4,910.00	4,900.00
Boleo	Lower Cal	Copper		500	65.00	1,525.00	1,525.00
Briansk	Russia	Coal & Iron				1,360.00	1,360.00
Bruay	France	Coal	3,000,000	400	700.00	26,000.00	26,000.00
Callao	Venezuela	Gold	32,200,000	125		3.75	3.75
Cape Copper	S. Africa	Copper		50	1.50	63.50	64.00
Champ d'Or	"	Gold		25		25.00	25.00
Courrieres	France	Coal	600,000	300	160.00	1,670.00	1,670.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	762.50	765.00
Dombrowa	Russia	Coal		500		565.00	565.00
Dynamite Centrale	France	Explosives		500	25.00	540.00	535.00
Fraser River	Brit. Col'mb	Gold				36.25	36.50
Huanchaca	Bolivia	Silver		125	5.00	70.50	72.50
Huta-Bankowa	Russia	Iron & steel				3,510.00	3,525.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	109.00	110.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	685.00	685.00
Lautaro	Chile	Nitrates		125		153.00	154.00
Malfidano	Italy	Zinc	12,500,000	500	40 00	1,074.00	1,070.00
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,000	500	12.00	690.00	690.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	775.00	775.00
Nickel	N.Caled'nia	Nickel	12,720,000	500	30.00	310.00	215.00
Paccha-Jazpampa	Chile	Nitrates				15.00	15.00
Penarroya	Spain	Coal, etc		500	52.50	1,575.00	1,675.00
Rebecca	Colo'do,U.S.	Gold				7.25	7.50
Rio Tinto	Spain	Copper	81,250,000	250	27.65	670.00	667.00
Robinson	S. Africa	Gold		125	12.50	218.00	218.00
Saint Elie	Fr. Guiana	"	4,000,000	25		18.50	18.00
Salines de l'Est	France	Salt		500	27.00	340.00	340.00
Sels Gem.de la Rus. Mer	Russia	" etc				630.00	640.00
Tharsis	Spain	Copper		50	8.75	170.00	175.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	20.00	535.00	535.00

MEXICO. Week ending Feb. 4.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,600	$0.7		$25	$30
Angustias	Guanajuato	2,400	10.00		500	490
Arevalo y Anexas	Hidalgo		10.00		300	360
Asturiana y Anexas	Zacatecas	2,500	10.00		250	200
Bartolome de Medina	Hidalgo	2,000	3.50		150	100
Carmen	"	1,100	7.75		350	400
Castellana y SanRam	Tepic	2,448	3.00		100	80
Cerro Colorado	Chihuahua	15,000		$1.00	10	10
Cinco Senores y An.	Guanajuato	2,000	25.00		830	980
Concepcion y Anexas	S. Luis Potosi	2,700			180	100
El Oro	Guanajuato	500			60	40
Guadalupe	"	10,000	2.00		200	180
Luz de Maravillas	Hidalgo	1,100			150	160
Pabellon	"	1,000	27.89		200	180
Purisima de los Com.	Zacatecas	2,400			5	10
Real del Monte	Hidalgo	2,554	10.00		1,100	1,080
Rosario y Anexas	Durango	4,800			60	50
San Francisco	Hidalgo	2,000	3.00		275	290
S. Ped. Chalchihuites	"	1,000	2.00		100	80
San Rafael y Anexas	"	1,200	20.00		950	930
do. free stock	"	1,200	14.00		450	400
Sta. Maria de la Paz	S. Luis Potosi	2,400			325	420
Soledad	Hidalgo	960	7.50		450	400
Sorpresa	"	960	5.00		300	250
Trinidad	Guanajuato	2,000			50	60
Tlauzingo	Puebla	2,400			30	40
Union	Hidalgo	2,000	8.00		300	350
Zaragoza	"	1,100			15	15
Zomelahuacan (gold)	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	40	15

NOTE.– In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

VALPARAISO, CHILE.* Dec. 19.

NAME OF COMPANY.	Capital.	Share value. Nominal	Share value. Paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent.	$29	$30	$29¼
Caracoles	315,000	100	100	5 "	20	30	30
Descub. de Huantajaya	1,000,000	100	100	3 "			
Huanchaca de Bolivia	8,000,000	25	25	4 "	43	43¼	43
Oruro	800,000	200	200		320	330	330
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.			
Todos Santos	2,000,000	100	100	1 "	16	17	16
Nitrate Cos:							
Agua Santa	3,000,000	50	50	4 "	150	151	150
Antofagasta	2,000,000	200	200	5 "	150	151	150
Union	3,000,000	200	500		50	52	50

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

SHANGHAI, CHINA.* Jan. 14.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 1.90
Punjom Mg. Co., Ltd.	"	60,000	4	3.75			" 8.76
do. pref	"	30,000	1	1			" 2.85
RaubA'lian G.Mg. Co.	"	200,000	£1	138. 10d.	Dec., 1893	0.21	" 6 57
Sheridan Con.Mg. Co.	Colorado,U.S	20,000	Taels 100	Taels 100			" 4.00

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

DENVER, COLO.*

NAME OF COMPANY.‡	Par val	Feb 1. B.	Feb 1. A.	Feb. 2. B.	Feb. 2. A.	Feb. 3. B.	Feb. 3. A.	Feb. 4. B.	Feb. 4. A.	Feb. 5. B.	Feb. 5. A.	Feb. 6.* B.	Feb. 6.* A.	Sales.
L'd Mines														
Anaconda	$5	.69	.71	.70	.72	.71½	.73	.71	.74	.71½	.75	.73	.75	12,903
Bankers	1	.09	.10	.09		.09¾	.09¾	.09¾	.10½	.10	.10¾	.09¾	.10¼	8,000
Gar.-Grouse	1	.09	.09¾	.08½	.08¾	.07¾	.08	.07¾	.08¼	.07¾	.08	.07	.07¾	7,000
Gold.Fleece	1	.78	.87	.80		.75	.85	.75	.85	.67	.80	.50	.65	200
Iron Clad	1	.07¾	.07¾	.07¾	.07½	.07¼	.07¾	.07¾		.07½	.07¾	.06¾	.07¾	650
Isabella	1	.50¾	.51¾	.49¾	.50	.5 ¾	.50¾	.50¾	.51	.51½	.51¾	.50	.51	21,600
New Zeal'd	1	.04	.05	.05		.03	.05	.04¾	.05¼	.04¾	.05	.04¾	.05¼	3,200
Peoples	1			.03½	.04	.03	.05	.03½	.04¾			.03	.05	2,000
Pharmacist	1	.13¾	.14¼			.12¼	.13¾	.12¾		.12¾	.13¼	.10	.13¾	2,000
List. P'r.														
Addie C	1	.006½	.012	.007	.008	.007		.006		.007	.007		.007¾	8,000
Agate	1	.001	.01½	.001¼	.002				.001¾				.001	10,000
Aola	1	.01¾	.01¾	.01¾		.01¾	.01¾	.01¾		.01¾	.01¾	.01¾	.01¾	1,000
Big Johnny	1	.002½	.002¾	.002	.0 3	.002½	.0 3	.002¼	.003	.002	.003	.002	.002¾	3,000
Blue Jay	1	.001¾	.001¾	.001¾	.0 2	.001½	.002¼	.001¾	.002¼	.001¾	.002	.001¾	.002	24,000
Cannon Ball	1		.005	.004	.005			.004	.001½	.004	.004¼	.003¾	.004¼	30,000
Defender	1	.006¼	.007	.005¾		.006¼	.007¼	.005¾	.006	.005¾	.006	.005¾	.006	6,000
Dictator	1	.002½	.003	.002¼	.003¾	.002¼	.002½	.002	.002¼	.002	.002¾	0 1¾	.002¼	2,000
Dixie	1				.001½	.004	.001¾		.001¾				.001	2,000
Eclipse	1	.002¼	.003¼	.003		.003	.004	.003	.003¼	.002¾	.003	.002¼	.003	4,000
Finance	1	.006		.007½	0 7¾	.007¼	.0 8	.007	.007¼	.006¾	.0 7¼	.006	.007	40,000
Gene Field		.002	.002½	.002	.002¾	.002	.0 2¼	.002	.002¾	.002¾	.003¼	.001¾	.002	8,000
Geo. Wash	1	.01		.01	.02		.02	0 1¼	.01¾	.01¼	.01½	.002½	.003¼	1,000
Gold Field	1	.003	.003¼	.0 3	.003¼	.003	.003¼	.003	.003½	.002¾	.003¼			17,000
Gold. Hope	1													
Gold Queen	1	.0 3¾	.001¾	.001¼	.001½	.001	.001¼	.001	.001¾	.001	.001¾	.001	.001¼	34,000
Gregory	1	.002¾	.003	.002¾	.001	.002¾		.002¾	.0 3	.0 2¾	.003	.002¼	.0 3	3,000
Hecla	1													
Henrietta	1	.006¼	.008	.006¾	.007¾	.006¼	0 7	.006¾	.007	.006¾	.0 8	.006¼	.006¾	15,000
Illinois	1	.007¼	.010½	.0 8¾	.009¾	.0 8¾	.0 9¼	.008¾	.009¾	.008¾	.009¼	.0 9	.009¼	3,000
Linc. Boy	1													
Justine	1													
Kimberly	1													
Millionaire	1	.002		.002		.001¾	.002½	.001¾		.001¾	.002	.001¾	.001¾	4,000
Old Gregory	1					.02				.02		.02¼		30,000
Pilgrim	1	.006	.007	.00 3¾	.006	.0 3¾	.006¼	.0 3¼	.006	.004	.0 8	.003¼	.006	7,000
Puritan	1	.004	.006	.00 3¾	.004¾	.003¾	.005	.004	.004¾	.004	.006	.004¾	.004¾	13,000
Q'n Victoria	1	.004¾	.004¾	.004¾	.004¾	.004	.004½	.004	.004¾	.004	.004¾	.004	.004¾	17,000
Reno	1	.03¾	.04	.03¾	.04	.03¾	.04	.03¼	.04	.03¾	.04	.03¾	.04	1,000
Royal Age	1	.004	.004¾	.004	.004¾	.003½	.004¼	.0 3¾	.004¼	.003½	.004¼	.0 3½	.004	8,000
Senator	1													
Sentinel	1	.002½	.003	.003½	.003¾	.002¾	.003	.002¾	.002¾	.002½	.003	.002	.002¾	7,000
Unl. Act.														
Arcadia	1													
ArcadiaCon	1	.06½	.07¼	.06¼	.06¾	.06¾	.07	.06¾	.07	.06¾		.06	.06¾	4,000
Arg. J	1	.40½	.42			.39¼	40			38	.38¾	.37	.39	1 600
Bob Lee	1													
Buckhorn	1	.03½	.03¾	.03¼	.03¾	.02¾	.03¾	.02¾	.03½			.02¾	.03¼	8,000
Chimb'razo	1													
C. C. & M.	1	.02¾	.03	.02¾	.03½	.02¾		.02¾	.03	.02½	.03	.02¾	.03	34,000
Goldsmith	1	.005¾	.006	.005¾	.006	.005		.005½	.007	.006½	0 7½	.005¾	.007	34,000
C. K. & N.	1													
Cr. & C. C	1													
Elkton	1													
Enterprise	1													
Goldstone	1	.007	.008	.005	.008	.007¾		.007	.010	.006		.007	.01	2,000
Jack Pot	1													
Lit. Dorritt	1													
Mt. Beauty	1													
Old Gold	1	.008	.008¼	.007¾	.007¾	.007¾	.007¾	.007¼	.007½	.007¼	.007½	.007	.007¼	244,000
Santa Fe	1	.001¾	.002	.001¾	.002	.001½		.001		.002				63,000
Tamarack	1	.02¾	.02¾	.02¾	.02½	.02½	.02¾	.02½	.02¾	.02¾	.03	.02¾	.02¾	186,000
Union Gold	1													
Va. M.	1													
Wh. of For.	1	.007	.010	.005		.006½	.008	.006	.009	.007	.007¼			12,000
Work	1	.08	.0 3¾	.08	.09	.08	.09	.08¾	.08¾	.07½	.08	.08	.08¾	9.0

* Official quotations Colorado Mining Stock Exchange.
Shares sold, listed, 355,353; unlisted, 589,200. Total, 945,063.

SALT LAKE CITY, UTAH.* Week ending Feb. 6.

STOCKS.†	Par value.	Bid.	Asked.	Actual selling price.	STOCKS.†	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.85	$0.87½	$0.85	Horn Silver	$25	$1.45	$2.00	
Alliance	1	.15	.35		Little Pittsburg		.02¾	.03	
Anchor	20	1.20	1 50	1.25	Lucky Bill		.18¾	.23½	.20
Annie		.04	.06		Malvern		.21	25	
Bogan	1	.05	.07¾		Mammoth	25	2.25	2.40	2.35
Brick Con		.35	.50		Mercur	25	7.25	7 00	7.35
Bullion Beck & C.	10	7 50	8.25	7.75	Morgan	125	.15	.25	.20
Buckeye		11¾	.12½	‡1.00	Northern Light		.90	.94	92¼
Centen'l Eureka	50	65.00			Ontario	100	9.50	10.00	10.25
Dalton	5	.02	.03	.02½	Overland		.20	.40	
Dalton & Lark		.25	.35	.25	Rover	10	.40	.45	.40
Daly	20	5.00	5.50	5 30	Silver King	20	17.00	19.00	18.00
Daly West	20	7.90	8.10	8.00	Sioux Con	10	.80	1.00	
Dexter		.95	1.05	§5 00	Sunshine	10	.70	1.00	.80
Eagle	10	.05½	.06	.04	Swansea		1.60	1.80	1.70
Four Aces		.14½	.15	.13¾	So. Swansea		1.55	1.60	1 55
Galena	10	1.20	1.30	1.25	Tetro	1	.03½	.07½	
Geyser-Marion		1.30	1.35	1.35	Utah		1.20	1.30	1.30
Herschel		.06	.10		Utah Con	1	50	.75	

* Special Report of James A. Pollock. † All the companies are located in Utah.
‡ 500,000 shares sold. § 200,00 shares sold.

PHILADELPHIA PA.*

NAME OF COMPANY.	L'cation.	Par Val'e	Feb. 4. H.	Feb. 4. L.	Feb. 5. H.	Feb. 5. L.	Feb. 6. H.	Feb. 6. L.	Feb. 8. H.	Feb. 8. L.	Feb. 9. H.	Feb. 9. L.	Feb. 10. H.	Feb. 10. L.	Sales
Cambria Iron	Pa.		44 00						44.00		43.50	42.50			63
Choc.&Glf.Ctfs	I.T.	50	8.25	8.18	8.50	8.50	8.38	8 25	8 38	8 25	8 00				2,395
Hunt & Br.Top	Pa.	50					19 00		19.00		19.00				320
" pref	"	50	48 00				48.00				48 00				140
Lehigh C. & N.	"	50	40 75	40.00	41 00	40.00	41.00	40 00	40 75	40.00	40 00	39 00			257
Lehigh Valley	"	50	29.00	28.50	28 50	28.38	28.25	28 00	28.00	27.75	26.38	26.25			3,879
Li'leSchuylkill	"	50													
Penna. R. R.	"	50	52.50	52 38	52.38	52.25	52.38	52.25	52.38	52.25	52 25	52.00			2,203
Pa.SaltMfg.Co.	"	50													
Penna. Steel	"								29.00		28.00				188
UnitedGas Im.	Can.		74 75				74.25		74 38	74.00	74.00	73.75			127
Welsb.of Can	Pa.		2 13		2.13		2.13		2.00		2 00				410
Welsb.Com'l	"		23 50												3
" Com.pr.	"		66 00		66 00										119
" Light	"		46.25		46 50	46.25	43.50		46 88	46.00	45.50				523
West. Coal	"				49.00										25

* Official quotations Philadelphia Stock Exchange. Total sales, 10,675.

HELENA, MONT.* Week ending Jan. 21.

NAME OF COMPANY.	Location.	Company's office.	Par value.	Bid.	Asked.	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	Butte, Mont.	$1	$0.90	$1.00	4,000	.90-.95
Bald Butte	L. & Cl'ke Co.	Helena "	1		2 25		
Bi-Metallic	Granite "	St. Louis, Mo.	5		1 75		
Combination	" "	" "	10		.35		
Granite Mt	" "	" "					
Helena & Victor	Missoula "	Helena, Mont.	5				
High Ore	Jefferson "	Butte "					
Iron Mountain	Missoula "	Helena "	10	.37½	40	1,600	.40-.41
Judge	Meagher "	" "			.10		
Merrill (Gold)	Jefferson "	Butte "	1				
Ontario	DeerLodge "	Helena "	1				
Yellowstone	Meagher "	" "	5		.12½		

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

PITTSBURG, PA.* Week ending Feb. 9.

NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	Selling price.	NAME OF COMPANY.	Location.	Par val	Bid.	Ask.	Selling price.
COAL:						NAT. GAS:					
Mansfield	Pa.	50				Allegheny	Pa.	100			
N.Y. & C. Gas C.	"	50				Chartiers Val	"	100			
MINING:						Manufacturers	"	100			
Ent'prise	Colo.	5				Peoples' Nat. Gas.	"	50			
Lustre	Mex.	10	8¼	8		Peoples' Pipeage	"	25	13¾	14¼	
Silverton	Colo.	10				Pennsylvania	"	50			
MISCELLANEOUS:						Philadelphia	"	50	16¾	17¼	
Carborundum	Pa.	100				Wheeling	W.V.	50			

* Official quotations Pittsburg Stock Exchange.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c.	Colo..	$1,500,000	150,000	$10	*				$693.500	Oct...	1895	.04
2	Ætna Cons., q.	Cal ..	500,000	100,000	5	*				80,000	Dec..	1896	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					191,031	Jan..	1897	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				3,100,000	Jan..	1897	.37½
5	Anaconda Copper.	Mont.	30,000,000	1,200,000	25					2,250,000	Nov..	1896	1.25
6	Anchoria-Leland, g.	Colo..	600,000	600,000	1	*				36,000	Jan..	1897	.01
7	Argentum Juniata, g.s.l	Colo..	2,600,000	1,300,000	2	*				39,000	July..	1895	.03
8	Aspen Mg. & S., s. l.	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
9	Atlantic, c.	Mich.	1,000,000	40,000	25					740,000	Feb..	1897	1.00
10	Aurora, i.	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
11	Bald Butte.	Mont.	250,000	250,000	1	*				470,000	June.	1896	.03
12	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
13	Bates Hunter, g. s.	Colo.	1,000,000	1,000,000	1	*				67,500	Dec..	1891	.00¾
14	Belden, F. E., m.	N. H.	500,000	100,000	5	*				217,000	Jan..	1896	.04
15	Big Six, g. s.	Colo..	500,000	500,000	1					2,500	May..	1896	.00½
16	Bi-Metallic, g. s.	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
17	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				5,375,000	Feb..	1897	3.00
18	Brotherton, i.	Mich.	2,000,000	80,000	25	*				120.000	Mar..	1893	.50
19	Bullion, Beck & Champ.	Utah.	1,000,000	100,000	10	*				1,967,000	Jan..	1897	.20
20	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					48,350,000	Feb..	1897	15.00
21	Cariboo.	B.C..	800,000	800,000	1					125.410	Dec..	1896	.02
22	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	1,890,000	Jan..	1897	1.00
23	Central, c.	Mich.	500,000	20,000	25	100,000	Oct...	1861	.65	1,970,000	Feb..	1891	1.00
24	Charleston, p. r.	S. C..	1,000,000	10,000	100	*				140,000	Dec..	1893	2.50
25	Clay County, g. s. c.	Colo..	60,000	60,000	1	*				52,000	Nov..	1891	.02
26	C. O. D., g.	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
27	Cœur d'Alene, s. l.	Idaho	5,000,000	500,000	10					340,000	June.	1893	.06
28	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	4,960,130	Jan..	1897	.25	3,898,800	Feb..	1895	.25
29	Cons. New York, g. s.	Nev..	10,000,000	100,000	100	168,000	Jan..	1896	.05	10,000	Feb..	1893	.10
30	Coptis, g. s.	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
31	Cortez, Ltd., s. g.	Nev..	1,500,000	300,000	5					735,000	Feb..	1893	.15
32	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
33	Daly, s. l.	Utah.	3,000,000	150,000	20					2,887.500	Aug..	1896	.25
34	†Deadwood-Terra, g.	S. D..	5,000,000	200,000	25	*				1,240,000	Aug..	1896	.50
35	De Lamar, g. s.	Idaho	2,000,000	400,000	5	*				2,250,000	Oct...	1896	.25
36	Derbec Blue Gravel, g.	Cal ..	10,000,000	100,000	100	110.000	June.	1893	.10	280,000	Aug..	1891	.10
37	Dexter, g. s.	Nev..	1,000,000	100,000	10	8,000	June.	1892	.08	100,000	Aug..	1893	.33
38	Elkhorn, s.	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
39	Elkton Cons., g.	Colo..	1,250,000	1,250,000	1					191,960	Jan..	1897	.02
40	Enterprise, g. s.	Colo..	2,500,000	500,000	5	*				825,000	May .	1893	.25
41	Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	567,500	Feb..	1897	.25	5,112.500	Jan..	1892	.25
42	Evening Star, s. l.	Colo..	500,000	50,000	10	*				1,437,500	Dec..	1889	.25
43	Florence, s.	Mont.	2,500,000	500,000	5	*				118,096	Jan..	1897	.01
44	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan..	1894	2.00
45	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan..	1897	.05
46	Garfield-Grouse, g.	Colo..	1,200,000	1,200,000	1	*				24,000	Dec..	1896	.01
47	Gold Coin, g. s.	Colo..	1,000,000	200,000	5	*				120.000	Feb..	1897	.10
48	Golden Eagle, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
49	Golden Fleece, g. s.	Colo..	600,000	600,000	1	*				563,179	Dec..	1896	.01
50	Gold & Globe, g.	Colo..	750,000	750,000	1					36,000	Aug..	1896	.00 3/10
51	Gold Rock, g. s. c.	Colo..	500,000	500,000	1	*				28,750	Dec..	1891	.01
52	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
53	Granite, s. l.	Idaho	500,000	200,000	2.50	*				83,400	Nov..	1890	.10
54	Gt. West'n Quicksilv., q.	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
55	Harquahala, g.	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
56	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,160,000	Jan..	1897	.50
57	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
58	Holmes, s.	Nev..	10,000,000	100,000	100	345,000	Mar..	1890	.25	75.000	April.	1892	.25
59	Homestake, g.	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	6,118,750	Jan..	1897	.25
60	Hope, s.	Mont.	1,000,000	100,000	10	*				662,252	Feb..	1897	.10
61	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,130,000	Jan..	1896	.12½
62	Iowa.	Colo..	1,000,000	1,000,000	1					60,000	Dec..	1896	.01
63	Iron Mountain, s. l.	Mont.	5,000,000	500,000	10	*				492,500	Nov..	1896	.06
64	Iron Silver, s. l.	Colo..	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
65	Isabella, g.	Colo..	2,250,000	2,250,000	1					202,500	Sept..	1896	.01
66	Jack Rabbit, g.	Cal ..	10,000,000	100,000	100	118,000	April.	1894	.02	260,000	April.	1891	.10
67	Jay Hawk, g.	Mont.	1,425,000	285,000	5					33,375	Dec..	1892	.12
68	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct...	1887	1.00	120,000	Dec..	1895	1.00
69	Kennedy, g.	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
70	Leadville Cons., s. l.	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
71	Little Chief, s. l. i-o.	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
72	Maid of Erin, g. s. c. l.	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
73	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,150,000	Nov..	1896	.05
74	Mayflower Gravel, g.	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
75	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct...	1891	.03¾
76	Mercur, g.	Utah.	5,000,000	200,000	25	*				600,000	Jan..	1897	.12½
77	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
78	Mollie Gibson, s.	Colo..	5,000,000	1,000,000	5	20,000	Jan..	1891	.02	4,080,000	Jan..	1895	.05
79	Monitor, g.	S. D..	2,500,000	250,000	10					45,000	Oct...	1890	.03
80	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,890 637	Oct...	1895	.06¼
81	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				520,000	Jan..	1897	1.00
82	Moon Anchor Gold.	......	600,000	600,000	1	*				24,000	July..	1896	.01
83	Moose, g.	Colo..	600,000	600,000	1					186,000	Jan..	1896	.01
84	Morning Star Cons., s. l.	Colo..	1,000,000	100,000	10	*				1,025,000	Dec..	1891	.25
85	Mt. Diablo, s.	Nev..	5,000,000	50,000	100	145.000	Nov..	1896	.10	225,000	Aug..	1893	.25
86	Mt. McClellan, g. s. l.	Colo..	1,250,000	250,000	5	*				21,936	June.	1891	.03
87	Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1					30,000	Oct...	1896	.00½
88	Napa, q.	Cal ..	700,000	100,000	7	*				820,000	Jan..	1897	.10
89	New Elkhorn.	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
90	New Guston, g. s. c.	Colo..	550,000	110,000	5	*				1,198,120	Oct...	1892	.25
91	New Hoover Hill, g.	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1885	.20
92	N.Y.&Hon.Rosario, s.g.	C. A..	1,500,000	150,000	10	*				690,000	Jan..	1897	.10
93	North Banner, g. s.	Cal ..	1,000,000	100,000	10	21,794	Oct...	1896	.02	20,000	July..	1891	.05
94	North Com'wealth, s.	Nev..	10,000,000	100,000	100	85,000	April.	1890	.25	25,000	June.	1891	.25
95	North Star, g.	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
96	Nugget, g.	Colo..	1,000,000	1,000,000	1	*				10,000	Jan..	1895	.00½
97	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,370,000	Jan..	1897	.10
98	Osceola, c.	Mich.	1,250,000	50,000	25	*				2,122,500	Feb..	1897	1.00
99	Pacific Coast Borax, b.	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
100	Parrot, c.	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
101	Petro, s.	Utah.	1,000,000	10,000	100					17,500	July..	1891	.75
102	Pharmacist, g.	Colo..	1,200,000	1.200,000	1					80,000	Jan..	1893	.01
103	Portland, g.	Colo..	3,000,000	3,000,000	1	*				893,000	Jan..	1897	.01
104	Quicksilver, pref., q.	Cal ..	4,300,000	43,000	100	*				1,823,911	June.	1891	1.25
105	" com., q.	Cal ..	5,700,000	57,000	100	*				643,867	July..	1882	.40
106	Quincy, c.	Mich.	1,250,000	50,000	25	*				9,070,000	Feb..	1897	8.00
107	Reed National, s.	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
108	Robinson Cons., s. l.	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
109	Running Lode, g. s. l.	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
110	St. Joseph, l.	Mo...	2,500,000	250,000	10					2,524,000	Dec..	1895	.25
111	Silent Friend, g. s. l.	Colo..	500,000	500,000	1	*				60,000	Aug..	1891	.25
112	Silver King, s.	Ariz..	10,000,000	100,000	100	272,858	Mar..	1897	.25	1,950,000	July..	1887	.25
113	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan..	1897	.02	900,000	Jan..	1897	.25
114	Silver Mg. of L. V., s.	N. M.	500,000	500,000	1	*				300,137	Dec..	1891	.04
115	Small Hopes, s.	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
116	‖Smuggler Union, g. s.	Colo..	5,000,000	50,000	100					150,000	Oct...	1896	1.00
117	§Standard Cons., g. s.	Cal ..	20,000,000	200,000	100					3,717,868	June.	1895	.10
118	Swansea, g. s. l.	Colo..	600,000	60,000	10	*				39,000	Sept..	1892	.10
119	Tamarack, c.	Mich.	1,250,000	50,000	25					4,770,000	Dec..	1896	3.00
120	Teal & Poe, s. l.	N. M.	150.000	150,000	1	*				9.000	Nov..	1891	.01½
121	Tom Boy, g.	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
122	Trinity River, g.	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
123	United Verde, c.	Ariz..	3,000,000	300,000	10	*				562,500	Dec..	1893	.25
124	Union, g.	Colo..	1,250,000	1.250,000	1					73,000	June.	1896	.01
125	Union Leasing.	Colo..	500,000	500,000	1					340,000	July..	1895	.04
126	Utah.	Utah.	1,000,000	100,000	10	*				175.000	Nov..	1896	.02
127	Victor, g.	Colo..	1,000,000	200,000	5	*				705,000	Dec..	1896	.10
128	War Eagle.	B.C..	500,000	500,000	1	32,500	Dec..	1894		187,000	Oct...	1896	.06
129	Woodside.	Utah.	1,000,000	100,000	10					25,000	Oct...	1889	.25
130	Yankee Girl, s.	Colo..	1,300,000	260,000	5					520,000	July..	1891	.25

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	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	.01⅙
2	Ajax, g	Colo..	1,000,000	1,000,000	1				
3	Alamo, g.	Colo..	1,000,000	1,000,000	1				
4	Alice, g. s. c.	Colo..	5,000,000	5,000.000	1	*			
5	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec..	1895	.10
6	Allouez, c.	Mich.	2,000,000	80,000	25	1,440,937	June.	1894	.20
7	Alpha Cons., g. s.	Nev..	10,500,000	105,000	100	257,500	Sept..	1896	.10
8	Alta, s.	Nev..	10,080,000	108,000	100	3,590,560	Jan..	1897	.05
9	American, c.	Idaho	5,000,000	500,000	10	*			
10	American Belle, g.s.c.	Colo..	2,000,000	400,000	5	*			
11	Anaconda, g.	Colo..	5,000,000	1,000,000	5				
12	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
13	Aola, g.	Colo..	1,000,900	1,000,000	1	*			
14	Argonaut Cons., g. s.	Colo..	1,000,000	1,000,000	1	*			
15	Atlantic Cable Cons.	Colo..	1,500,000	1,500,000	1	*			
16	Bahama, g.	S. D..	1,250.000	250,000	5	3,125	Sept..	1893	.00¼
17	Bankers, g.	Colo..	1,250,000	1,250,000	1	*			
18	Belcher, s. g.	Nev..	10,400,000	104,000	100	3,312,420	Sept..	1896	.25
19	Belle Isle.	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
20	Ben Hur, g.	Colo..	900,000	900,000	1				
21	Blue Bell, g.	Colo..	500,000	500,000	1	*			
22	Blue Jay Cons., s. l.	Utah.	2,000,000	400,000	5	4,750	July..	1893	.004
23	Bob Lee, g.	Colo..	1,200,000	1,200,000	1	*			
24	Bullion, s. g.	Nev..	1,000,000	100,000	100	3,040,000	Feb..	1897	.10
25	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10				
26	Burlington, g. s.	Cal...	10,000,000	100,000	100	3,000	May..	1896	.03
27	Buskhorn, g.	Colo..	900,000	900,000	1				
28	Butte Queen, g.	Cal...	1,000,000	100,000	10	16,000	Feb..	1893	.10
29	Calumet, g.	Colo..	1,400,000	1,400,000	1	*			
30	Central Lead, l.	Mo...	400,000	4,000	100	*			
31	Central North Star, g.	Cal...	1,000,000	100,000	10	10,000	July..	1893	.10
32	Challenge, s, g.	Nev..	5,000,000	50.000	100	300 000	Nov..	1896	.10
33	Chollar, g. s	Nev..	11,200,000	112,000	100	2,021,600	July..	1896	.25
34	Chrysolite, s. l.	Colo..	10,000,000	200,000	50	*			
35	Cleveland Cliffs, l.	Mich.	5,000,000	50,000	100	*			
36	Columbine, g.	Colo..	1,000,000	1,000,000	1	*			
37	Confidence, g. s.	Nev..	2,496,000	24,960	100	1,636,974	Sept..	1896	.30
38	Cons. Imperial, g. s.	Nev..	5,000,000	50,000	100	2,082,000	Aug..	1896	.01
39	Copper Mountain, g.	Colo.	1,000,000	1,000,000	1	*			
40	Creede & C. C., g.	Colo..	800,000	800,000	1				
41	CrippleCreekCons., g.	Colo..	2,000,000	2,000,000	1				
42	Crip.Cr'kGoldExpl'n	Colo..	1,800,000	1,800,000	1				
43	Dante, g.	Colo..	1,250,000	1,250,000	1	*			
44	Denver City, s.	Colo..	5,000,000	500,000	10	*			
45	Denver Gold, g.	Colo..	300,000	60,000	5				
46	Dickens-Custer, g. s.	Colo..	2,100,000	420,000	5				
47	Enterprise, g.	Colo..	800,000	800,000	1				
48	Eureka Con. Drift, g.	Colo..	500,000	500,000	1	90,000	Oct..	1892	.07
49	Exchequer, g. s.	Nev..	10,000,000	100,000	100	725,000	Dec..	1896	.05
50	Favorite, g.	Colo..	1,200,000	1,200,000	1	*			
51	Fortunatus, g. s.	Colo..	100,000	100,000	1	*			
52	Found Treasure, g. s.	Nev..	10,000,000	100,000	100	55,770	Jan..	1892	.50
53	Franklin Gold, g.	Colo..	1,000,000	1,000,000	1	*			
54	Free Coinage. g.	Colo..	1,000,000	1,000,000	1	*			
55	Galena, l. s.	Idaho	500,000	500,000	1				
56	Garden City, g.	S. D..	2,500,000	250,000	10	2,898	Sept..	1891	.001½
57	Gem, g.	Cal...	10,000,000	100,000	100				
58	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July..	1896	.00⅓
59	Golden Age, g.	Colo..	1,000,000	1,000,000	1	*			
60	Golden Dale, g.	Colo..	2,000,000	2,000,000	1	*			
61	Golden Fleece Grav. g	Cal..	130,000	130	1000	56,000	Aug..	1892	2.00
62	Gold Flat, g.	Cal...	1,000,000	100,000	10	13,000	Aug..	1893	.03
63	Gold King, g.	Colo..	1,000,000	1,000,000	1	*			
64	Gold Rock, g.	Colo..	1,000,000	1,000,000	1	*			
65	Gold Standard, g.	Colo..	1,000,000	1,000,000	1	*			
66	Gould & Curry.	Nev..	10,800,000	108,000	100	4,850,400	Jan..	1897	.15
67	Hale & Norcross, g. s.	Nev..	11,200,000	112,000	100	5,786,800	Jan..	1897	.25
68	Hartshorn, g. s.	S. D..	1,250,000	250,000	5	8,750	Sept..	1891	.00½
69	Head Cent. & Tr., g.s.	Ariz..	2,000,000	200,000	10	22,824	Mar..	1892	.03
70	Hidden Treas., g. s.	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
71	Himalaya, s. l.	Utah.	1,800,000	180,000	10	10,000	Oct..	1892	.01
72	Idaho Co., Ltd., g.	Idaho	100,000	1,000	100	*			
73	Idlewild, g.	Cal...	1,000,000	100,000	10	*			
74	Inez, s. l.	Idaho	1,000,000	1,000,000	1	*			
75	Jack Pot, g.	Colo..	1,250,000	1,250,000	1				
76	Jackson, l.	Mich.	300,000	12,000	25	*			
77	Justice, g. s. c.	Colo..	500,000	500,000	1	*			
78	Keystone, g.	Colo..	1,500,000	1.500,000	1	*			
79	Kingman Silver, g. s.	Ariz..	10,000,000	100,000	100	5,000	Sept..	1891	.05
80	Lacrosse, g.	Colo.,	1,000,000	100,000	10	*			
81	Lottie Gibson, g.	Colo..	1,000,000	1,000,000	1				
82	Matoa, g.	Colo..	5,000,000	1,000,000	5				
83	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
84	Mexican, g. s.	Nev..	10,080,000	100,809	100	3,084,080	Nov..	1896	.20
85	Michigan Gold., g. s.	Mich.	2,500,000	100,000	25	40,000	Mar..	1892	.10
86	Milwaukee, s. l.	Idaho	500,000	500,000	1				
87	Modoc Chief, g. s. l.	Idaho	1,000,000	200,000	5	4,375	Jan..	1892	.00½
88	Monarch, g.	Colo..	1,000,000	1,000,000	1				
89	Mutual, g.	Colo..	500,000	500,000	1				
90	Neath, g.	Colo .	1,000,000	100,000	10				
91	New Gold Hill.	N. C..	1,750,000	350,000	5				
92	New Viola, s. l.	Idaho	750,000	150,000	5	*			
93	North Belle Isle, s.	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
94	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	453,652	Dec..	1896	.15
95	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
96	Oro Cache, g. s.	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00½
97	Orphal Bell, g.	Colo..	1,000,000	1,000,000	1				
98	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,188,560	Dec.	1896	.10
99	Pappoose, g.	Colo..	2,000,000	2,000,000	1	*			
100	Peer, s.	Ariz..	10,000,000	100,000	100	215.000	July..	1894	.05
101	Peerless, s.	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
102	Pine Hill, g.	Cal ..	1,000,000	100,000	10	25,000	Jan ..	1897	.05
103	Pioche Con., g. s. l.	Nev..	20,000,000	2,000,000	10	*			
104	Potosi, g. s.	Nev..	11,200,000	112,000	100	2,021,600	Nov..	1896	.05
105	Princess, g.	Colo..	1,000,000	1,000,000	1				
106	Puritan, g, s.	Colo..	1,500,000	150,000	10	*			
107	Quincy, c.	Colo..	3,000,000	300,000	10				
108	Red Mountain, s.	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
109	Ruby & Dun., g. s. l.	Nev..	25,300	506	25	*			
110	St. Mary, c.	Mich.	1,000,000	40,000	25	4.000	July..	1895	.05
111	Savage, g. s.	Nev..	11,200,000	112,000	100	1,051,400	Jan..	1897	.20
112	Seg.Belcher & M., g.s.	Nev..	10,000,000	100,000	100	340.000	Nov..	1896	.10
113	Silver Age, g. s. l.	Colo..	2,000,000	200,000	10	*			
114	Silver Hill, s.	Nev..	10,800,000	108,000	100	1,992,600	July..	1894	.05
115	Silver Queen, c.	Ariz..	5,000,000	200,000	25	*			
116	Silver State, g.	Colo..	700,000	700,000	1	*			
117	Siskiyou Con., s.	Cal ..	2,000.000	200,000	10	44,000	June.	1896	.01
118	Specimen, g.	Colo..	1,200,000	1,200,000	1				
119	Temonj, g.	Colo..	1,000,000	1,000,000	1				
120	Tombstone, g. s. l.	Ariz..	12,500,000	500,000	25	*			
121	Tornado Con., g. s.	Nev..	100.000	100,000	1	*			
122	Union Con., g. s	Nev..	10,000,000	100,000	100	2,545,000	Sept..	1896	.20
123	Utah Cons., s.	Nev..	10,000,000	100,000	100	420,722	Feb..	1897	.05
124	Victory, g. s.	S. D..	1,250,000	250,000	5	2,625	Nov..	1896	.001½
125	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
126	Waterloo, g.	Cal...	2,000,000	200,000	10	30,000	Aug..	1893	.15
127	West Granite Mt., s.	Mont.	500,000	100,000	5				
128	Whale, g. s. l.	Colo..	500,000	500,000	1	*			
129	Work, g.	Colo..	1,250,000	1,250,000	1				
130	World, g.	Colo..	1,500,000	1,500,000	1	*			

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. † The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡ Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends and the Cons. Virginia $42,390,000. ‖ Dividends paid since consolidation.
§ Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897.
NOTE.—Corrections to this table are made monthly. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.