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The Cripple Creek output of ore in September was the largest in the history of that camp, showing that development is still going on. The total shipments to mills and smelters are given by our correspondent at 9,430 tons smelting ore, valued at $653,800, and 7,100 tons milling ore, valued at $163,800, a total of $817,600, which is certainly a notable output. The production has grown very rapidly since June, when a close estimate put the totals at 5,400 tons smelting ore and 6,000 tons milling ore; the rate of increase in the former being about 75, and in the latter 18 per cent. An effort was made in December last to put the total up to $1,000,000 a month; but that was undoubtedly an exaggeration, and the September output, as given above, has never been surpassed.

While it has been usually understood that the Lake Superior iron-ore business has been somewhat disappointing to the mine operators this year, owing to the general depression in the iron trade and the decreased activity of the furnaces, it appears that shipments have been actually larger this year than last. The report of the Sault Ste. Marie Canal traffic shows that the quantity of iron passing through the canal for the season up to September 30th was 6,811,765 short tons, showing an increase as compared with last year of 227,270 tons. This is not a great increase, it is true, but it is still a gain. As this covers all the shipments except those from some of the Marquette and Menominee Range mines, which are made from Escanaba, it is a very fair indication of the trade. The result is probably due to the heavy shipments made at the opening of the season, when the trade was expected to be much larger than the result has shown.

The first of the series of by-product coke-oven plants which it is proposed to build on the seaboard will shortly be in operation at Halifax, N. S., where the company is organized under the name of the People's Heat and Light Company. The ovens are of the Otto-Hoffman type, and the company has arranged to furnish both fuel and illuminating gas to the city of Halifax, in addition to manufacturing coke and saving the ammonia sulphate and other by-products. At this plant, of course, Cape Breton coal will be used. It is announced also that plans are being prepared for the larger plant which the same parties, under the organization of the Massachusetts Pipe Line Company, purpose building near Boston; but work will not be begun until some experience is had at Halifax. At Boston it is the intention to use also Cape Breton coal, from the Dominion Coal Company's mines.

The people who are managing this enterprise are also interested in the United Coke and Gas Company, which is building a large plant of Otto-Hoffman coke ovens near Pittsburg. The projectors are confident that they will be able, in the Eastern plants, to find a good market for their coke, and to reduce largely the cost of supplying gas; especially fuel gas, which they expect to furnish on a large scale to the cities.

The Mount Morgan mine in Queensland, an abstract of whose report is given on another page, though its production has fallen considerably below that of some of its earlier years, still remains a valuable mine and a great producer. Its output last year amounted to 139,471 ounces of gold, and its profits were sufficient to pay $1,500,000 in dividends—30 per cent. on the nominal or 34·4 per cent. on the paid-up capital. The maximum point of production was reached in 1889-90, when the total reported was 258,950 ounces of gold; since then it has gradually declined, though last year it showed a considerable improvement over the lowest level, 118,631 ounces, reached in 1893-94. There is every prospect also that the mine will continue a producer for a number of years to come. The grade of the ore has shown a gradual and almost regular decrease from 5·8 ounces per ton in 1887 to 1·5 ounces last year; but the latter may still be considered very good. The highest value was in the mundic or pyritic ore, which yielded last year 3·72 ounces per ton, while the ordinary milling ore gave 1·12 ounces. The sulphurets are treated by chlorination.

As to costs we find from the report that, taking the ore worked as a basis, the total yield was $30.29 per ton, while the expenses, mine and general, amounted to $12.53, leaving a profit of $17.76 per ton. Taking the gold product as a basis, the total receipts per ounce of gold reported were $19.92; the expenses were $8.26, and the profit $11.66 per ounce reported. The heaviest items in the expenses were for labor and fuel; but the total expenses in the case of the Mount Morgan were only 41·5 per cent. of the returns.

The production of steel in Great Britain in the first half of 1896 shows a very considerable increase over the corresponding half of last year. The total quantity of ingots made, as reported by the British Iron Trade Association, was this year 1,969,320 tons, against 1,689,660 tons in 1895, the increase being 279,660 tons, or 16·5 per cent. The gain in open-hearth steel was the most pronounced, having been 175,948 tons, or 19·8 per cent., while that in Bessemer ingots was 103,662 tons, or 12·9 per cent., showing the increasing ground which the open-hearth process is taking up. The basic process makes little headway, however, as is shown by the fol-

lowing table, which gives the quantity of steel ingots made in the half-year by the different processes, and the proportion of the total for each:

	Acid		Basic		Total	
	Tons.	Per cent.	Tons.	Per cent.	Tons.	Per cent.
Bessemer.....	688,163	34·9	217,359	11·0	905,522	45 9
Open-hearth	966,014	49·1	97,784	5·0	1,063,798	54·1
Totals.....	1,654,177	84·0	315,143	16·0	1,969,320	100·0

The basic Bessemer process is more extensively carried on than the basic open-hearth. This is further shown by the fact that on June 30th the total number of open-hearth furnaces reported was 379, of which 348 were acid and only 31 basic furnaces. It is notable, as showing the present active condition of the trade, that of the 379 furnaces 278 were in active operation on June 30th. The steel-rail production for the half-year was 449,924 tons, and there was also an active demand for plates and for beams, angles and other finished shapes.

Proposals for Supplying Mining Machinery and Metallurgical Equipment.

We have already had occasion to advert to the scheme of getting designs by competition for mining and metallurgical plants and the conclusion reached was that this method would hardly be practicable, except in a very limited number of cases, but that exceptional conditions might occur in which there would be an advantage in having a number of minds working upon the same problem under the spur of professional rivalry and the stimulus of substantial reward.

The question whether or not to offer contracts to all responsible competing bidders, and if so, how closely the specifications should be drawn, is not so easily settled. It may be that the intending purchaser and his consulting engineer have a decided preference for one or a very limited number of manufacturers, with a corresponding doubt as to the quality of the work of all the others. If so, they will most likely be content with one or a very few bids, and through this distrust perhaps lose the opportunity for lower prices or better machinery.

Supposing that the plans have been made in detail by a competent mechanical engineer, with clear and full specifications and drawings of all new castings and parts not standard stock, so that there could be no possibility of mistake or misunderstanding, we do not see why on large orders public bids might not be invited with advantage both to the intending purchaser and to the machinery trade. A great many of the machines and appliances are regular stock goods which can be supplied by many shops, and the patented machinery can be picked up in the market by the successful bidder, and some of it is made on royalty by more than one shop.

There are many considerations to be taken into account. It is seldom possible to order an absolutely complete plant in bulk, because everything cannot be foreseen at the outset, particularly if the installation is on a large scale or of a novel kind; and so the original specifications on which bids were tendered must be enlarged or altered as the work goes on, and there must be a certain flexibility in the arrangement between buyer and contractor. For this reason it might be argued that the competitive bidding system would be bad policy.

Like a good many other things, the cases of this sort vary, and each question must be decided on its own merits. It would be absurd to lay down a general rule. Perhaps it is about as far as one can go safely to say that in every instance where there is no actual reason against it, it would be well to advertise for bids. Certainly, as there would be no compulsion to accept the lowest, and the reservation not to accept any, bid, no harm would be done. The custom, sometimes followed in the Navy Department, of inviting contractors' own designs, modifications or substitutions in the specifications would bring out offers and ideas not previously thought of by the advertiser. Calling for bids on a part only of the proposed order, as well as lump bids, would often be wise. Most bidders, on their side, would stipulate that their figures be held confidential, and this reasonable demand should be acceded to and strictly observed.

For the machinery trade as a whole the opportunity to bid on advertised contracts, to a greater extent than has yet been done, would be a good thing. The total number of orders placed would be increased, and many of the establishments which have not had their fair share of the mining business would get it.

Western Australian Mining Companies.

Our contemporary, the Coolgardie *Golden Age*, in an issue which has just reached us, takes exception to some remarks on the Western Australian mines, published in the *Engineering and Mining Journal*, and intimates that criticisms therein made were based on misconceptions of fact. The *Golden Age* thinks that big strikes and extraordinary yields are still to be expected in the gold fields, and also that ores carrying from $12 to $20 per ton in gold, which is the estimate given by Schmeisser and others as to the probable yield, can be mined and worked at a profit. As to this, however, no figures of cost are given, and it seems probable that conditions will have to change before this can be realized.

As to the general question of the future of the mines of Western Australia, we have never said and never believed that there was not gold in the country, nor have we denied the existence of small deposits of extremely rich ores. There is no doubt, however, that these deposits are there, as similar ones have been proved to be all over the world, limited in size and irregular in occurrence. For this reason they will never furnish such a substantial and permanent basis for a mining industry as is found in the extensive low-grade deposits of the Witwatersrand, for instance, or of many mines in Alaska, California and Utah. The existence of any such deposits in Western Australia is yet to be proved; and if they are found, the conditions of mining must be materially changed before they can be worked. Even with the advantages—which the Coolgardie District has now secured—of railroad transportation, the cost of fuel, supplies and labor remains high, and the scarce and irregular water supply is a disadvantage which apparently can only be overcome at such an enormous cost that the government of the colony alone can venture to consider plans.

The main point of our criticism, however, was that as a rule the West Australian mines have been over-capitalized, and the amount of money invested in them—for the most part in purchase rather than development—has been so great that any adequate return upon it is not merely doubtful, but actually impossible. The value set upon the mines seems as a rule to have been based, not upon the possibilities of regular and legitimate working, but upon the phenomenal returns obtained from a few rich pockets found by the earlier prospectors in Coolgardie and the neighboring districts. It is from this point of view that the returns from the mines of Western Australia have been, and we fear will continue to be, disappointing. For this opinion we think that abundant support is found in the facts.

In the London *Statist* for October 3d we find a table giving a list of 51 West Australian mining companies whose stocks have been placed in England and which have advanced far enough to make some sort of returns. The *Statist*, we may observe, is a journal which is always careful and accurate in its figures, and is, moreover, especially friendly to British Colonial enterprises, so that it cannot be accused of any unfavorable bias. From this list we have selected 16 companies, taking those which have mills of their own in operation, and may, therefore, be presumed to have gone some distance in the development of their properties; and omitting also those which have reported only trial crushings or operations for a single month. Our object has been, not to choose exceptional cases or mere prospects, but mines which are regularly worked and where the exploitation has gone far enough to give some basis for judgment as to the future. In the following table we give for each of these companies the capital stock actually issued, the number of stamps at work and the returns obtained for the latest month for which reports have been made—usually July or August, but in a few cases September:

Company.	Capital.	Stamps.	Tons worked.	Ounces gold.	Oz. per ton.
Bayley's Reward Claim.....	$2,400,000	20	291	589	2 02
Bayley's Reward No. 2 South.	530,000	10	198	700	3·50
Burbank's Birthday Gift....	600,350	10	140	600	4·29
Con. Murchison.....	1,127,665	20	940	406	0·43
Coolgardie Mint & Iron King.	725,000	5	30	115	3·83
Cue No. 1.....	500,000	15	270	309	1·15
Golconda.....	425,000	10	415	974	2·35
Great Boulder Proprietary...	800,000	30	1,408	4,656	3·31
Ivanhoe	250,000	10	187	1,335	7·14
Kinsella.....	382,760	10	850	260	0·31
Lake View Consols.....	1,250,000	10	630	1,905	3·02
Mainland Consols.....	750,000	10	359	1,407	3·92
Mt. Jackson.....	312,500	10	135	150	1·11
Ninety-nine Proprietary.....	900,000	20	130	122	0·94
Stray Shot & Excelsior.....	375,000	5	140	261	1·86
White Feather Reward.....	375,000	10	237	425	1·79

We admit that many of the returns show what we should call high-grade ore, which with a large output and moderate expenses would promise large profits. In most cases where the returns extend over several months, however, there is a considerable variation shown in the grade, and in nearly all the total quantity is small.

No statements of expenses are given in the table, so that it is necessary to depend on the gross returns; but these afford some basis for judgment. In the list we find but one company whose production seems to be sufficient to warrant the expectation of any adequate returns upon the capital stock: that company is the Great Boulder, and it is only fair to say that the large output and high grade of the ore have been kept up over a period of several months, showing it to be an extraordinary mine. Of the others, perhaps one or two report an amount upon which some surplus may be realized, if a moderate one; but in the great majority the production is greatly—in some cases we might say absurdly—out of proportion to the investment. Setting aside the extreme case of the Bayley's Reward claim—which was capitalized on the first boom estimate, and has since fallen hopelessly behind—we might take several instances from the table. In the White Feather Reward, not at all an extreme case, a return of 425 crude ounces, or about 350 fine ounces, monthly would certainly not begin to pay on a capital stock of $375,000; and the same would hold true of almost every company, were there space to go through the list.

If all the companies given by the *Statist* were included, the disproportion between investment and return would be far more marked. In order to be as fair as possible, however, we have not considered the case of those companies which have prospects only or which have just begun regular work.

On the comparatively favorable basis shown, we believe that our criticisms are fully justified. We entertain no prejudice against Western Australia, and will certainly be pleased should the more favorable anticipations of our contemporary be realized in the future. We believe, however, that booms and extravagant estimates have, as they usually do everywhere, injured the real interests of the West Australian mines far more than they have helped them. In the reaction which has already begun the colony will be condemned as extravagantly as it has been praised, and it may be years before it can recover and the mining industry be placed on such a solid basis as the facts really warrant.

NEW PUBLICATIONS.

DOLLARS OR WHAT? By W. B. Mitchell, Chattanooga, Tenn.; H. C. Adler. Pamphlet, pages, 96. Price, 25 cents.

This is one of the many books which have been called out by the present discussion of the money question. The author is a banker whose business has brought him into pretty close relations with the manufacturers and merchants of the Southwest, and who takes a very clear and practical view of the situation as it affects his own interests and those of his clients. With very little that is abstract or scientific about it, he treats directly of the present situation and does not hesitate to give his views in a very plain and decided way, and to state his reasons for those views. These methods make his book an excellent contribution to the discussion, for whether we agree with his conclusions or not, we must admit that he has set them forth in a way which can be readily understood. Moreover, he has treated his opponents with a spirit of fairness, which too many of the current publications on this subject lack altogether. The currency question is a most important one, but there may be more than one solution to the problem, and differences of opinion do not necessarily imply dishonesty, as too many writers think, or at least say.

THE CHICAGO MAIN DRAINAGE CANAL. By Charles Shattuck Hill. New York: The *Engineering News* Publishing Company. Pages, 136; with 100 illustrations and index. Price. $1.50.

This book is a reprint of the series of articles which have appeared in *Engineering News*, to which the author has made many additions and revisions, so as to bring the work as closely up to date as practicable. It is a description of the machinery used and methods of work adopted in excavating the 28-mile drainage canal from Chicago to Lockport, Ill. Probably few persons outside of those who have closely followed the subject realize that this canal ranks as one of the greatest works of constructive engineering in the world and the greatest at present in progress. To civil, mechanical and mining engineers it is particularly interesting as offering a unique exhibit of novel and different machines for excavating and removing earth and rock, all working together in so small a territory. Mr. Hill is to be congratulated on the very able and thorough manner in which he has handled his subject. His descriptions of machines and methods are very complete and detailed, and he has been remarkably successful in getting reliable figures of efficiency and cost—a difficult matter, as contractors are usually reluctant to make public the details of their private business.

There is a great deal in the book to interest mining men who are engaged in working soft surface deposits, such as dry placers, placers out of grade, some deposits of iron and manganese ores, etc. In this direction valuable information is given as to steam shovels, dredges, boom derricks, cantilever elevators, aerial cableways, tramways, etc., as employed for doing work on a large scale and in fast time.

LES MINES D'OR DU TRANSVAAL. Par L. de Launay. Paris, France; Baudry & Cie. Pages, 540; illustrated. Price (in New York), $5.25.

The literature of the Transvaal gold deposits is already extensive, as might have been expected with regard to a district which has attracted such universal attention throughout the civilized world. A great deal that has been published is of slight value; some of it by authors whose only object was to meet a current popular demand, and whose books have been simply compilations made by men whose knowledge of the subject was limited and superficial. M. de Launay's book is of quite another class; his reputation as a geologist is well established, and he has in the present case qualified himself by personal examination of the district and careful study of its geologic and economic history. His work is a very valuable monograph, and in scientific thoroughness is superior to the volume of Messrs. Hatch and Chalmers, which is probably the best work yet published on the Transvaal gold mines in the English language. Writing in French M. de Launay commands also a large circle of readers, since a large proportion of the Witwatersrand mines are owned in France.

The book is divided into four parts, the first of which treats of the geography, the history and the finances of the country. In the first place there is a general outline of the Transvaal, an account of its geographical features, the soil, the products, the population and the present condition of the various towns which have grown up. The early history, so far as it is known from record and tradition, is sketched, and the story of its settlement by Europeans and the struggles of the Boers and the English is very fully told. The organization and development of the mining industry is described in the concluding chapter of this part, which includes a study of the different races which have taken part therein—the Boers, the first settlers and the political rulers: the *Uitlanders* who discovered and have developed the mines, and the Kaffirs and Zulus who form the bulk of their working force. The organization and methods of the mining companies are also considered.

The second part treats of the geology, and includes a general review of the geological formations of South Africa, with a more detailed and special description of the Transvaal. A very careful study is given of the gold-bearing formations, and those of the Witwatersrand are examined with a view to determining as far as possible their true limits and the possibilities of their future development. As to these, the author has evidently been very cautious, and his conclusions will perhaps command more attention than those of some more sanguine writers. The theories which have been advanced as to the formation of the gold deposits are also carefully considered.

The third part treats of the exploitation of the mines and the metallurgical treatment of the ores. Especial attention is given to the variations in value of the Witwatersrand reefs and to the possibilities of the deep-level mines. In addition to the generally adopted methods of milling and cyanide treatment of tailings, much space is given to the newer processes, such as direct cyanide treatment, the recovery of gold from the slimes, and others either tried or proposed. A number of tables give the results obtained, the costs of working at different mines and mills. These statistics are studied and compared with reference to possible improvements and economies in working.

The fourth and concluding part treats of the present and future of the Transvaal, giving the results already attained, with a summary of the history of the chief mines of the Witwatersrand up to the present time, and a discussion of their probable future.

The greater part of the book is devoted to the Witwatersrand as by far the most important and best developed section of the Transvaal. An appendix describes more briefly the smaller districts of De Kaap, Lydenburg, Letaba and Heidelberg, the explorations in Zululand and Griqualand, and finally those in the Chartered Company's territories of Mashonaland, Matabeleland and the Zambesi country.

Upon the whole, M. de Launay's book is worthy of the author's reputation and the importance of the subject. It is thoroughly studied and carefully written. While every one may not accept his conclusions, it must be admitted that they are logically drawn; and his collection and presentation of the facts shows the methods of the trained scientific observer.

BOOKS RECEIVED.

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

The Free Coinage of Silver. By Carman F. Randolph. Morristown, N. J.; Published by the author; pamphlet. Pages, 32.

Western Australian Year-Book for 1894-95. By Malcolm A. C. Fraser, Registrar General. Perth, W. A.; Government Printer. Pages, 393; with map.

Electricity and Water Power and Their Inter-Relations. By Mark A. Replogle. New York: *Electrical Review* Publishing Company. Pages, 161. Illustrated.

Financial Philosophy, or the Principles of the Science of Money. By George Wilson. Chicago, Ill.; Donahue, Henneberry & Company. Pages, 266. Price, 50 cents.

New South Wales: "The Mother Colony of the Australias," 1896. Edited by Frank Hutchinson. Sydney, N. S. W.; Government Printer. Pages, 369; with diagrams and illustrations.

Geological Survey of Canada Annual Report (New Series) Volume VII., 1894. By G. M. Dawson, Director. Ottawa; H. M. Printer. Pages, 1,223; with maps, diagrams and illustrations.

Notes on the Ore Deposits of the Malaga Serpentines, Spain. By Fritz Gillman. London, England; Institution of Mining and Metallurgy. Pamphlet. Pages, 7; with geological sketch map.

The Elements of Physics, Vol. II.—Electricity and Magnetism. By Edward L. Nichols and William S. Franklin. New York and London: The Macmillan Company. Pages, 272. Illustrated. Price, in New York, $1.50.

Alternating Currents and Alternating-Current Machinery. Being Volume II. of the Text Book on Electro-Magnetism and the Construction of Dynamos. By Dugald C. Jackson and John Price Jackson. New York and London; The Macmillan Company. Pages, 729. Illustrated. Price, in New York, $3.50.

Geological Survey of Canada; Report on a Portion of the Province of Quebec comprised in the Southwest sheet of the "Eastern Townships" Map (Montreal sheet). By R. W. Ellis. *With a Chapter on the Laurentian, North of the St. Lawrence River.* By Frank D. Adams. Ottawa; H. M. Printer. Pages, 155; with map. Price, 15 cents.

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.

The Demand for Wolfram Ore.

Sir: In answer to inquiries published in the *Engineering and Mining Journal* we may say that the demand for Wolfram ore in this country is not now very large, and to the best of our knowledge does not exceed 60 tons per year. If low enough figures can be given, it is probable that from 400 to 500 tons yearly could be sold in Europe, where the consumption is now about 600 tons a year, and is increasing. The value varies with the grade, ranging from about $1.60 per unit to $1.40: for export it would have to be 10c. per unit less, probably. The merchantable ore runs from 50% to 75%. The ore should be practically free from sulphur, with only traces of phosphorus, but may contain 1 to 1·5% carbon and 3 to 5% silicious matter, the rest iron.

The demand for wolfram ore is lasting, and is steadily on the increase. If prices could be lowered, the consumption could undoubtedly be enlarged.

ASH & DENINGER.

PHŒNIXVILLE, PA., Sept. 25, 1896.

Rare Earth Metals.

Sir: I have noticed in your issue of August 29th, page 194, the request of a correspondent for information regarding the rare earth metals. During the past three years I have had the opportunity of carefully examining and studying the monazite deposits of North and South Carolina, on which subject I have recently prepared bulletins for the United States and the North Carolina State geological surveys. It will give me pleasure to send your correspondent copies of these papers and to enter into correspondence with him. H. B. C. NITZE.

SOUTH BETHLEHEM, Pa., September 25, 1896.

The Broken Hill Proprietary Company's Report.

Sir: In perusing the last paragraph but one of the *Engineering and Mining Journal*, at the end of page 245 of the issue of September 12th, commencing with the sentence: "In the smelting department, etc., etc.," it might be inferred by readers that the extract from the annual report of the Broken Hill Proprietary Company had reference to the whole of the smelting operations of the company. If, however, you will kindly turn to the report under review, you will see that the 238,182 tons referred to was the tonnage smelted at the works at Broken Hill only, and does not include the quantity smelted at our Port Pirie works (95,739 tons), which was especially alluded to on pages 27 to 30 of our report.

LONDON, Eng., Sept. 23, 1896. JOHN J. WESTON,
Secretary Broken Hill Proprietary Company.

Silver Mining in Colorado.

Sir: You know that, being a man of peace, I do not wish to enter into a controversy in your paper. But I think you, as the "Master of Statistics" should not permit certain statements by your able correspondent in this State to go unchallenged. On page 268, of your *Journal* of September 19th, Mr. T. A. Rickard speaks of the market for silver having "collapsed," and farther down in the fifth line of the third paragraph he asserts that the silver-mining industry was "paralyzed." I admit that when, in the summer of 1893 silver dropped 20c. an ounce, we expected that the production for the year would be much less than usual, and I, for one, was not a little astonished that the output was really a trifle greater than the year before, as shown by your own reports in *The Mineral Industry*. Careless assertions of this kind are much like those remarks of our newspaper writers, according to which Colorado adapts itself to new requirements just as animals change their fur and nature as they are taken to a different climate. They probably think it according to the "law of the variation of species." In 1894 these wise guides showed how Leadville, formerly a "silver camp" had, now that silver was of no account, become a "gold camp": as if an ever-watchful Providence arranged the rocks to meet the changes in the market. As the production of silver in that year was six times as great in coinage value as the gold, and over three times as great in actual value, this sentimental talk is very silly. N. A. Y.

DENVER, Colo., Oct. 1, 1896.

Determination of Zinc in Ores Containing Copper and Manganese.

Sir: Treat 1 g. of the finely pulverized ore with 10 c. c. NO_3H, 10 c. c. HCl, and 10 c. c. SO_4H_2, evaporate to dryness, without calcining, and dissolve the residue in about 50 c. c. of distilled water. Precipitate silver, if present, with a NaCl solution, boil and filter so as to obtain a clear solution free from silver and lead. Add to this solution a slight excess of strong NH_3, boil and filter, washing the filter with ammoniacal water. The filtered solution will contain all the copper, practically all the zinc and part of the manganese contained in the ore.

If the ore has plenty of arsenic and little iron a few drops of an Fe_2Cl_3 concentrated solution must be added before treating with ammonia, so as to avoid both arsenic and iron passing in some proportion to solution. Add to the blue liquor, containing zinc, copper and manganese such quantity of a potassium cyanide solution, as will discolor it, disregarding brown reddish precipitate of copper and manganese double cyanide that will be formed, and then put NH_4S, which will entirely precipitate ZnS, quite pure, dissolving copper and manganese. This precipitate is collected in a filter, ignited and weighed as ZnO, or redissolved to be titrated.

If copper is to be determined in the same operation, acidify with HCl solution filtered from ZnS precipitate, till white fumes of NH_4Cl had disappeared and the liquor be acid. Copper is entirely precipitated as sulphide, which can be ignited after it is collected in a filter, weighing the CuO; or it can be dissolved in NO_3H to be afterward titrated.

CASAPALCA, Peru, Sept. 1896. A. R. P.

Some Phases of Gold Mining in Virginia.

Sir: In answer to M. F. concerning Southern Gold Mines, I can only speak for Virginia. There is gold in Virginia in paying quantities, but no bonanzas. The placer grounds in Floyd and Charlotte counties carry free gold pretty regularly. In Floyd County, the valley I visited had gold almost anywhere at a depth of 5 ft. One little gulch had in one-quarter of a mile yielded over $30,000 in free gold, with rude panning and without any systematic work.

There is a stamp mill (10 stamps) on one property. The one ledge was mined and country rock and mineral carted to the mill. This was not cobbed, but broken with sledges, to be shoveled into the mortar. The plates were set at about 20°, so that the slimes could hasten with crushed rock over them to a riffle hollowed from a log. This was about 10 ft. long, with mercury bathtubs at right angles to its length. In case there was any pitch to this riffle the mercury followed the tailings; in case there was no pitch nothing but slimes left it.

The screen was made at the nearest blacksmith shop of sheet iron. It was slotted, with slots 3 in. between centers, and one ton of slimes might ooze out of it in a week, if it did not run over the top. It was indestructible armor plate.

The stamp shoes were cupped, and had chipped the dies so they would stick in the shoes; when this took place the dies answered the purpose of shoes and the bottom of the mortar for dies. Some shoes were worn, others not nearly as much. The millman was drafted from a near-by sawmill.

The owner frankly stated that they were green at mill work, and he was too old and rheumatic to learn, but his experience was worth $12,000, and he would sell mill and experience cheap for cash.

There was an old California miner with two blanket ledges to disclose for a consideration—no show, no pay; and I believed him, and told him he was right.

There were two divining-rod fiends prospecting, with a $3,000 option on one property. It was "Dig there, my man, and uncover untold riches."

While there is money to be made in this field, the prices asked for land are exorbitant. One party with 4½ acres wants $10,000, and will not show up anything. I told him "sight unseen" was years back, but it only brought forth the reply, that "I ask $10,000 for the privilege of putting a shovel in that ground." The gold craze may equal the silver craze, but the perversity of humanity with a gold property passeth judgment.

SALEM, Va., Sept. 23, 1896. E. B. WILSON.

The Darien Gold Mining Company's Power Plant.

Sir: In your issue of August 8th there is a most interesting account of the North Star Company's power plant. I must, however, take exception to one statement therein: "The construction of the wheel . . . is altogether novel and without precedent." We have here a somewhat similar plant erected by the Darien Gold Mining Company last year. This plant consists of an impulse wheel of the alternating bucket type, 15 ft. in diameter, mounted direct on the shaft of a Schram duplex compressor, with cylinders 14 in. in diameter by 24 in. stroke. The wheel is built up entirely of angle iron and plates, has eight pairs of radial spokes of 3 in. × ½ in. angles, riveted to gusset plates on the rim and to the sectional hub of boiler plate, which is bolted to a cast steel sectional boss. The driving force is transferred from rim to hub by two pairs of tangential spokes of 3 in. × ⅝ in. bar iron. The wheel weighs about 6,000 lbs. and runs at 60 revolutions per minute under a head of 200 ft.

A novelty in this wheel is the arrangement of the nozzles, of which there are two, placed side by side, one a little in advance of the other to suit the alternating buckets. This arrangement, which appears to be most satisfactory, requires an unusual width of the rim. The water supply is brought to the wheel through a riveted pipe, tapering from 19 in. to 13 in. and 1,360 ft. long. The air receivers consist of two tubes, each 75 ft. long and 20 in. diameter, constructed in sections of 3-ft. lengths of electric-welded 10 B. W. G. steel with special arrangements for riveting and caulking the sections at the mine. One receiver is placed near the compressor and the other at the shaft mouth, distant 900 ft. The bedplates are of steel girders, with cast-iron distance pieces; the cylinders are each cast in three sections. The whole plant with exception of main shaft was brought over an almost impassable South American road on mule back. The foundations are of dressed andesite set in Portland cement. The wheel was designed and constructed by Messrs. Heenan & Froude, of Manchester, England.

Water was turned on to the wheel on July 23d 1895, and the motor is now doing the whole of our pumping and winding at practically no cost, water being a free commodity in this unexploited country.

We have never yet had occasion to work the motor up to its full capacity, so have not troubled with the question of cooling and reheating the air, though these matters are now under consideration, as power drills will shortly be used.

Situated as we are in one of the out-of-the-way corners of the earth, it is quite comprehensible that your correspondent should have never heard of this mine or its plant; therefore, I hope I may be excused for calling his attention to it.

CANA, Colombia, Sept. 6, 1896. ERNEST R. WOAKES.

Comparative Intensity of Light.—According to *Engineering*, some recent researches by Captain Abney show that the light of the starry sky is to that of the full moon about as 1:44,000. The latter is usually considered to be about as 1:600,000 to that of the sun at noon, so that we receive over 13,000,000 million times as much light as from the stars, taking both hemispheres into consideration.

Trade with Costa Rica.—Mr. Gustavo Niederlein, Consul for Costa Rica at Philadelphia, informs us that he is especially charged with the duty of increasing the commercial relations between that country and the United States. He, therefore, requests that manufacturers send to his office, No. 233 South Fourth street, Philadelphia, two copies of their catalogues which include articles suitable for the South American market. Illustrated catalogues are especially desirable. He also desires information about prices, terms of credit and discount, freight rates to shipping port and other commercial matters. On his part he is ready to give all possible information as to the resources of the country, the kind of goods suitable there, duties, etc.; also to forward inquiries and to put manufacturers and importers in direct communication with producers and consumers in Costa Rica. The mineral resources of the country are considerable, though but partially developed, and it is quite possible that a market for mining machinery might be found there.

Railroads in Mexico.—The annual message of President Diaz, of the Mexican Republic, contains much information of interest concerning the Mexican Railway systems. During the year ended June 30th, the additions to the railroad system of the country amounted to 208 km. completed and accepted and 96 km. about to be accepted. The addition is made up of new construction on several lines, but the chief progress has been on the International, the Mexican Central and the Mexico, Cuernavaca & Pacific. As to the improvements on the existing lines, the most important have been those on the Mexican Railway, in the construction of a permanent bridge over the Grand Canal; on the Mexican Central, in the substitution of many permanent structures on its lines and branches, and on the Mexican National in the location of the permanent line from Patzcuaro to Uruapam. The Executive exercised his powers to the extent of making a lease of the Tehuantepec National Railway and providing for the construction of harbor works at its terminals. The railway system of the republic now aggregates 11,469 km.

ABSTRACTS OF OFFICIAL REPORTS.

Dolcoath Mine, Limited, Cornwall, England.

The report of this company is of interest from the fact that it is the first of the Cornish tin-mining companies to abandon the old cost-book system in use in Cornwall for centuries, to reorganize as a limited liability company and to adopt modern methods. Capital was provided in the reorganization with which a California stamp mill of 60 stamps has been put up, and work has been begun on a new shaft, which it is intended to carry down to a depth of 500 fathoms.

The new company has been at work somewhat over a year. The present report covers the half-year ending June 30th, 1896. The capital stock authorized is £350,000 in £1 shares. The amount issued has been 188 000 full paid shares for purchase of property, and 100,000 shares on which the amount of 7s. 6d. per share has been called in, making a total paid up of £225,500.

The profit and loss account for the half-year shows receipts as follows: Sales of 1,030 tons black tin, £38,384; increase in stocks of tin, £35; sales of arsenical pyrites, £27; interest, transfer fees and miscellaneous, £374; total, £38.820. The mine and other costs were £35,889, leaving a profit of £2,931 for the half-year. The costs in detail were as follows:

Wages	£19,837	Stannaries dues	£40
Tribute	1,992	Carriage and freight	349
Fuel	4,841	Repairs and renewals	1,490
Timber	1,267	Salaries	1,003
Steel and iron	279	Rents and taxes	554
Stamp castings	434	General charges	425
Explosives	147	Interest	182
Oil and grease	268		
Stores	1,198	Total	£35,889
Lord's dues on tin	1,278		

The directors' report says that the works in connection with the Eastern shaft are completed and available to deal with 100 tons of stuff a day. At the new Sump shaft the steel head-gear and the winding engines are completed, a great saving being effected in the time required to take the men up and down the shaft, and to raise ore. The Stray Park shaft has been cleared out to the 294-fathom level, and is being sunk deeper by contract, to open out the western part of the mine.

The results of the working of the new frames were so satisfactory that 140 additional flat frames, and 8 revolving frames have been constructed and are now at work, increasing the quantity of tin saved and reducing the cost of dressing. Arsenical mundic is now being raised from the South Entral Lode, and the stone is being sold at a profit. Driving and sinking has been effected to the amount of over 286 fathoms, and 30,015 tons of stuff have been mined, against 243 fathoms and 28.717 tons in the previous period of over half a year. Much valuable ground has been opened up, and particular attention is called to the fact that the crosscut to the north, at the 375-fathom level in the eastern part of the mine, has intersected a good lode, on which driving has commenced. Recently an improvement has taken place in the 294-fathom level east of Stray Park shaft, where the lode is worth £20 per fathom.

In the six months under report 1,030 tons of black tin have been sold, realizing £38,311, giving an average price of £37 3s. 10d. per ton. Though this was £2 per ton less than in the previous half-year, the increased quantity sold realized a larger sum, after deducting 70 tons included in the sales of the previous six months, which were taken over from the old company. The profit for the half-year was £2,931. Adding to this £3,230 brought forward from the previous period makes £6,161 surplus. From this a dividend has been paid on the fully paid shares of 6d. per share, and in respect of the partly paid shares, at an equivalent rate. 2½% on the amount paid up on June 30th. This required £5,577, leaving £584 to be carried forward.

Mount Morgan Gold Mining Company, Queensland.

The report of this company covers the year ending May 31st, 1896. The nominal capital stock is £1,000,000 in £1 shares. The amount paid in has been 17s. 6d. per share, making the actual paid capital £875,000.

The profit and loss account for the year shows receipts as follows: Balance from previous year, £16,639; gold account, £578,678; sundries, £114; total, £595,431. The payments were: Mine and general expenses, £239,290; dividend duty and royalty, £21,154; dividends, £300.000 (6s. per share); bullion reserve, £11,735; total, £572,179, leaving a balance of £23,252 to carry forward to current year's accounts.

The new work in the mine included 1,416 ft. sinking and raising; 4,547 ft. driving; 3,401 sets of timbers fixed in stopes. The developments in the mine were generally favorable and there was an increase in the ore in sight.

The ore treated and the gold recovery for the year were as follows:

	Ore treated, tons.	Gold recovered, ounces.	Av. per ton, ounces.
Ordinary ore	76,290	85,376	1·12
Mundic ore	13,430	50,099	3·72
Slimes	1,877	3.996	2·13
Total	91,597	139,471	1·52

The total amount of ore treated during the year was 9,149 tons more than the previous year's output, and the quantity of mundic, or pyritic, ore which has been treated was about twice as much as the total amount of this ore previously treated. The extraction of gold has been as high as previously.

The expenses in detail are given below for the year:

Wages	£116,504	Wharfage and harbor dues	£172
Contract work	1.804	Carriage and cartage	8,761
Contract sinking and driving	3,090	Electric-light station	734
Machinery and buildings	14,782	New electric station	7,290
Stores and material	25.376	New works	27.498
Fuel	25.586	Leases and miners' rights	190
Escort	1.223	Office and general expenses	2,572
Horse feed	694	Directors' and auditors' fees	1,705
Accident insurance	491		
Rents and taxes	515	Total	£239,290

The first section of the new reduction plant, the report says, was not ready to start working until after the close of the year. Owing to the drought and floods prevailing during the year, the construction of this plant was delayed, and the cost of it increased. In addition to the first section, a large amount of work has been done toward the additional sections; this consists in doubling the capacity of the boiler, steam engines, condensers and auxiliary portions of the chlorination plant, also making the necessary excavations for the next section of the reduction plant. Some of the machinery, which must necessarily be procured in Europe, has also been ordered. The mundic, or pyritic, ore has hitherto been treated in the present works, but these in many respects are not suitable for dealing with it economically. Researches have been made for some considerable time, especially of late, with the object of treating this ore to the best advantage, with the result that at the present moment the only question to be decided is that of calcining the ore most cheaply. In order to settle this, a mechanically rabbled furnace is being erected, which from all the investigations it has been possible to make previous to actual trial, is the best yet introduced for this particular class of ore. The question of water supply was at one time a grave one, but later in the year heavy rains filled up the reservoirs and an abundant supply was secured.

THE MINERAL RESOURCES OF NEWFOUNDLAND.

Some interesting reports have been issued by the British Colonial Office on the recent investigations made into the minerals of Newfoundland, with a view to interesting capital in their future development. The iron-ore deposits on Bell Island in Conception Bay have so far attracted most notice, owing to the energetic operations of a Canadian company which has leased a part of the mineral area in the eastern portion of the island. The iron ore is found close to the surface, and as the deposits are found in close proximity to deep water, it is probable that the ease with which the mineral can be raised and shipped would, at least partially, compensate for the cost of freight across the Atlantic, and so enable it to compete with Spanish and other ores in European markets. Bell Island covers an area of about 12 square miles, and is situated from three to five miles off the southern shore of Conception Bay. Although the existence of iron ore in the island has been known for many years, it is only within the past few years that the Nova Scotia Steel Company has proved the commercial value of the deposits. It is stated that there are four well-defined beds of ore, extending over about 6¼ miles, and probably averaging between 3 and 4 ft. of good mineral throughout. The ore appears to average 50 to 60% iron, which ought to give it a fair value, considering its abundance and the unusual facilities for cheap raising and transport. The chief value of the ore to the Canadian company consists in its ready fusibility and the fact that it is well adapted to mix with the Nova Scotia ores in the blast furnace. The company pays a royalty of 5c. per ton on all the ore raised to the original holders of the grants, which are four in number, comprising an area of one square mile each. The remainder of Bell Island is held under licenses to search for minerals by several different parties.

There seems to be an abundance of coal in Newfoundland, but the cost of transportation is at present too high to make it profitable to build blast furnaces at or near the iron-ore beds. With the extension of the railroad system and a reduction in the cost of carriage, however, it may be possible to make iron on the spot at a profit.

Copper mines have been worked successfully in Newfoundland for years, notably that at Tilt Cove, which is owned by the Cape Copper Company.

There are two distinct coal areas, one on St. George's Bay, and the other in the Grand Lake District, on both sides of the railroad which, from local tests, are reported to produce better coal than the Cape Breton mines, with which it will have to compete. But, as the latter coal is run straight from the mine into the ship, the former will be handicapped by the cost of railroad transport, unless mining labor can be found more cheaply in Newfoundland than in Cape Breton. It, therefore, remains a question whether Newfoundland coal—plentiful as it may be—can compete with the Nova Scotia coal. Among the other deposits in Newfoundland may be mentioned an extensive formation of fine molding sand, and one of clay well adapted for the manufacture of terra-cotta, tiles and similar work. Chrome ore is also found, and some has been shipped to the United States.

Sir Archibald Geikie, the Director-General of the Geological Survey, to whom the various reports from Newfoundland have been submitted, points out that before any money is expended in opening up the mineral fields of the island, there should be a thorough exploration of the coal areas, for upon their development all the other mineral industries will largely depend, and it is to be hoped that the Newfoundland government will see the wisdom of adopting the policy recommended.

Sault Ste. Marie Canal Traffic.—The traffic to and from Lake Superior through the Sault Ste. Marie Canal has kept up unexpectedly well this year, and the September statement continues to show an increase over last year. For the season up to September 30th the total tonnage of freight passing through the canal was 12,793.441 net tons, which compares with 10,990,826 tons last year, 9,097,452 tons in 1894, and 8,097,471 tons in 1893. Of the tonnage this year east-bound freight furnished 10,117,340 tons and west-bound 2,676,101 tons. The chief items of west-bound freight were 2,045.740 tons bituminous and 297,582 tons anthracite coal; of east-bound, 6,811,765 tons iron ore and 93,271 tons copper.

Mineral Imports and Exports of Spain.—According to the *Revista Minera* the imports into Spain for the eight months ending August 31st included 892,274 tons coal and 385.505 tons coke; a large decrease from last year in coal and about a corresponding increase in coke. Imports of metals included 7.530 tons pig iron, 8 286 tons wrought iron, 12,656 tons steel and 1,085 tons tin-plates. The exports of minerals for the eight months were, in metric tons:

	1895.	1896.
Iron ore	3,351,555	4,510,378
Copper ore	360,685	483.720
Zinc ore	20,365	25,312
Lead ore	6,297	4,562
Salt	139,388	190,733

Exports of metals were 13,143 tons pig iron, 18,533 tons of copper and 50,102 tons lead. There was a decrease of 1,692 tons copper, and an increase of 11,399 tons lead.

COST OF EUROPEAN GEOLOGICAL SURVEYS.

Written for the Engineering and Mining Journal by E. A. Schneider.

(*Continued from page 342.*)

DENMARK.

The geological survey of Denmark is of quite recent origin. In 1888 the Danish Parliament granted 8,000 kronen (about $2,100) for geological purposes, and later the sum of 22,000 kronen (about $5,240) per annum. The first director of the survey was Professor Johnstrup. After the death of Professor Johnstrup, in 1894, the survey was placed under the direction of a commission which has the official title: "Commission for the geological exploration of Denmark." This commission consists of E. Le Maire, Dr. V. Pingel and Dr. H. Topsoe. The total force of the survey consists of three geologists, among whom we mention Dr. K. T. V. Steenstrup, and of three assistants.

The geologists receive a salary of 2,400 kronen (about $630) a year. The assistants 100 kronen (about $26) a month.

Geologists and assistants receive besides 6 kronen ($1 56/100) a day for expenses in the field.

It is evident that the geological survey of Denmark is conducted with the greatest economy. Of course the comparative cheapness of living in this country should be taken into account.

Up to date two sheets of the geological map of Denmark have been completed, embracing the northeastern part of Seeland. The scale which has been adopted for the map is 1:100,000. Besides a few geological papers have already been published.

Denmark occupies an area of 38,340 square kilometers and has a population of 2,172,380 souls. In the budget for 1892-93 the receipts were placed at 55,973,549 kronen ($14,523,000).

NORWAY.

According to Professors Hans Reusch *Zeitschrift fur Praktische Geologie* April, 1894), the Norwegian Geological Survey (Norges Geologiske Undersogelse), was started 1858, under the direction of Professor Th. Kjerulf and Dr. Th. Dahll. These gentlemen engaged this and the subsequent years a few young men as assistants for the summer months. Their main object was to furnish a general geological map of the whole country. Such a map was published at last, 1879, in two parts, both to the scale of 1:1,000,000.

In 1875 the geological survey began to make use of the map of the general staff of the army. This map was executed to the scale of 1:100,000. Up to date 24 sheets drawn to this scale have appeared in the book trade (price per sheet, 27 cents).

In 1875 two permanent assistants, Brögger, late professor at the University of Kristiania, and Hans Reusch, were appointed. The latter became director of the survey after the death of Professor Kjerulf in 1888.

The "Royal Bureau of Public Works" has appointed in 1892 a committee to consider the future organization of the geological survey. The opinion of the committee was submitted in 1894 to the Storthing (Parliament), but no action yet has been taken by this body on the subject.

It was found while the survey was pushed into more difficult metamorphic districts, that it is not feasible to execute the map to the scale of 1:100,000, even if only a moderate speed of progress is desired. For this reason the committee decided that the chief object of the geological survey shall be in the future the completion within a period of 20-25 years of a new general map of the whole country drawn to the scale of 1:400,000. For this purpose an appropriation of $7,264 per annum has been recommended by the committee.

The memoirs of the Norwegian geological survey, which have been published since 1891, contain abstracts of their contents in German and in English, so as to make them accessible to foreigners. In order to insure the widest possible circulation, the price of these memoirs is very low. Only one of these memoirs is of a purely theoretical character (Broegger: Lagfoelgen paa Hardangervidden, 1893); all the others, contain communications of practical geological interest.

Prof. Hans Reusch, the director of the Norwegian geological survey, was kind enough to furnish the compiler of this article with the following information pertaining to the organization of this institution. The geological survey of Norway forms, according to this authority, a part of the "Bureau of Public Works." The director of the survey is appointed by the King, the assistants by the Secretary of Public Works on the recommendation of the director. The salaries depend on the annual appropriation of the Storthing (Parliament). In case the resignation of an official of the survey or of similar institutions is requested a warning is given three months before.

The objects of the Norwegian geological survey are: 1. The publication of a geological map of the country, and of the results of scientific investigations. 2. Investigations of a practical geological character. Investigations of rocks, arable soils, peat deposits are chiefly considered, not, however, of metalliferous veins and deposits, as there exists since ancient times a government supervision of mines.

The means at the disposal of the Norwegian geological survey amount at present to $4,335 annually for the ordinary work; $161 are appropriated for putting up water-level-marks on the coast of Southern Norway and $940 for sinking wells and carrying out investigations in parts of the country which are threatened by landslides. Thus the total annual appropriation of the Norwegian geological survey amounts to $5,436. This amount has been gradually reached from small beginnings.

The sheets of the maps (scale 1: 100,000) are published at the expense of the topographic bureau of the government (Norges Geografiske Opmaaling) and are also sold by this institution. The other publications of the survey are printed at its own expense and can be bought in the general book trade.

The geological survey has published a book written by Professor Helland, which treats on the soils of this country. The author calls it, himself, an attempt at a Norwegian "agricultural geology." According to Helland the arable soil forms only 3% of the total area of Norway; 21% are forests; 3·8% fresh water lakes; 1·6% eternal snow and icefields. The remainder consists of pastures, naked rocks and peat bogs. Norway covers an area of 322,304 square kilometers and, numbered according to the census of January 1, 1891, 1,988,674 inhabitants. The income of the government amounted, for the fiscal year 1892-93, to 52,544,000 kronen ($14,251,943); the expenditure to 51,755,100 kronen ($14,048,050).

PORTUGAL.

The history of the geological survey of Portugal reminds one of the desultory efforts which characterize the earlier and partly the later geological enterprises by the United States Government. For this reason a rapid enumeration of the most important data may be of interest even to American readers.

As far back as 1852 the establishment of a geological commission was decided by the Portuguese Government. This decision, however, was carried out only in 1857. This commission consisted of two directors, a mining engineer and later of a chemist. As the means at the disposal of this commission were quite abundant, numerous collections were purchased at home and abroad, as well as a good library; but in 1868, owing to a discrepancy between the two directors, the commission came to an end. In 1869 a new establishment was founded which was called this time "Section des travaux géologiques" (department of geology), forming part of the geodetic survey. In 1886 this establishment became a part of the department of mines and changed again its name to a "Commission des travaux géologiques du royaume." In 1892 this title was lengthened to "Direction des travaux géologiques et des études archeologiques et préhistoriques du pays," showing that even archæological and prehistorical studies were made part of the business of the geological survey. The present force of the Portuguese geological survey consists of a director, three chiefs of divisions (mineralogy, paleontology, archæology), a chief clerk, a librarian, a photographer and a number of laborers. In 1895 the salaries of this force amounted to 9,162,000 reis ($7,966). For field work, publications, etc., 2,700,000 reis ($2,347) were expended; total, $10,313.

The geological survey of Portugal has published altogether about 20 volumes in quarto on the geology, paleontology and anthropology of the country in the Portuguese and French languages. That on the Fossil Flora has been written by Oswald Heer and the Marquis de Saporta; others by Gomes and Lima. The Paleozoic geology has been treated exclusively by P. F. N. Delgado. Numerous papers on the Jurassic and Cretaceous formations have been written by Paul Choffat. The quaternary formation of the Tage and Sado has been described by Carlos Ribeiro.

The geological map of Portugal is yet in its infancy. In 1876 a geological map of Portugal, scale 1:500.000, was published by Ribeiro and Delgado. A map, drawn to the same scale by Messrs. Delgado and Choffat, has been exhibited at the International Geological Congress, which was held at Zurich in 1894, but it has not yet been printed. The detailed surveys for this map have been carried out to the scale 1:100.000, and even to a larger scale whenever it appeared necessary, but a publication of these sheets is not intended.

The publications of the Portuguese geological survey are to be had at the "Comptoir Geologique de Paris," Rue Monsieur le Prince, and at the bookstore of Messrs. Friedlander & Sons, Berlin.

ITALY.*

A geological survey has been conducted in Italy since 1865. The official name of the survey is "Ufficio Geologico." The headquarters are in Rome, Museo della Vittoria, Via Santa Susanna.

The main object of the Italian survey is the completion of a geological map of the country. The scale 1: 100,000 has been adopted, but whenever necessary scales 1: 50,000 and 1: 25,000 are used, as in the case of the island Elba, the surroundings of the Massa Maritima, the mining regions of Iglesiente and Sarrabus in Sardinia. To the marble quarries of Carrara a sheet scale 1: 2,000 has been devoted.

The task of the Italian geological survey is facilitated by the fact that there exists already an excellent topographical map of the country (1: 50,000 and 1: 25,000) which has been executed by the royal war department.

A general geological map of the country, scale 1: 1,000,000 was published in 1889 (price 10 francs, $2) and as soon as the detailed survey of the whole country shall be completed another map, scale 1: 500,000, is going to be issued.

The geological survey of Italy issues the following publications: (1) The "Memorie Descrittive" (Descriptive Memoirs), geological descriptions of the regions which are mapped on each sheet. As particularly interesting and important, may be mentioned the description of the Sicilian sulphur deposits, the geology of the Gotthard tunnel and the mines of Elba. (2) The "Memorie del Comitato Geologico"—Monographs of a paleontological, petrographic and geological character. (3) The "Bolletino" (Bulletin) appears since 1870, and contains original papers as well as reviews and abstracts of the Italian geological literature.

In 1893 more than two-thirds of Italy had been surveyed and it is expected that the work will be completed within a short time, provided the necessary means are granted by the parliament.

The scientific work of the survey is wholly directed and controlled by the "Comitato Geologico," which is composed of a number of the most eminent Italian geologists. They meet several times every year in Rome and discuss the affairs of the survey. The members of the Comitato are appointed by the Secretary of Agriculture and Commerce and perform their important duties gratuitously.

In 1891 the total force of the survey consisted of the director, Mr. Pietro Zezi, five specialists in chemistry, petrography, paleontology, eleven field geologists, one clerk, two draughtsmen and three servants.

An interesting table, containing the figures of the appropriations, which have been granted by the parliament for geological purposes, may be found in a pamphlet by the director, Mr. Zezi (published 1892 in connection with the national exhibition in Palermo). It appears that the total expenditures for geology from 1865 until 1895, inclusive, has been 1,809 800 francs ($361,360). The maximum for one year has been reached—1887, with 160,800 francs ($32,160). In 1865, the appropriation was $750; in 1895, $9,000; the average for 30 years $12.045 per annum. The total area of the kingdom of Italy is equal to 286,5·9 square kilometers. The population counted according to the last census 30,535,848 souls.

In the budget for the fiscal year ending June 30th, 1894, the expenditure figures were 1,753,058,303 francs ($350,611,661).

(*To be continued.*)

*The necessary data were obtained from a pamphlet published by Mr. Zezi, Director of the Survey (Rome, 1892); from a paper by Augusto Stella in Rome (*Zeitschrift fur Praktische Geologie*) and from personal communications.

MINING IN CHILE.

The report of Consul-General Sadler, recently published by the British Foreign Office, says that the conversion, and the consequent increase in the value of the dollar, has been the cause of the shutting down of those smaller mines which could only be worked on account of the low exchange making the prices paid for the metals in paper dollars so much higher in proportion to the dollar; wages paid to the workmen being the same as when exchange was much higher. However, the men thus thrown out of work were at once absorbed by the larger mines, labor always being scarce, owing to the great temptations offered in the districts where wages are very high and the work much lighter. Gold mining, which received a great impetus under the low exchange rule, has been found so profitable that the working has gone on, the output for the year being more than double that for 1893. The Inca mines have largely contributed to this result. Ores giving 50% copper, and 400 oz. per cajon (3 tons) for gold have been taken out. The principal mine is now giving ores of 45% copper and 200 oz. gold. Should the proposed extension of the railroad to this district be carried out, an immense quantity of 2 to 4-oz. ores, which at present cannot be worked, on account of the want of facilities, and of the great expense in handling, can then be treated. Under present circumstances it does not pay to work anything under 10 oz.

The production of silver fell off considerably the first six months of the year, but made up for it in the latter six. The celebrated mine of Buena Esperanza, supposed by its owners to be worked out, has been handed over to the house of Edwards for four years, and is now producing 500 kg. of fine silver monthly. The Bordos mines have also very much improved, their output having doubled itself in the last few months.

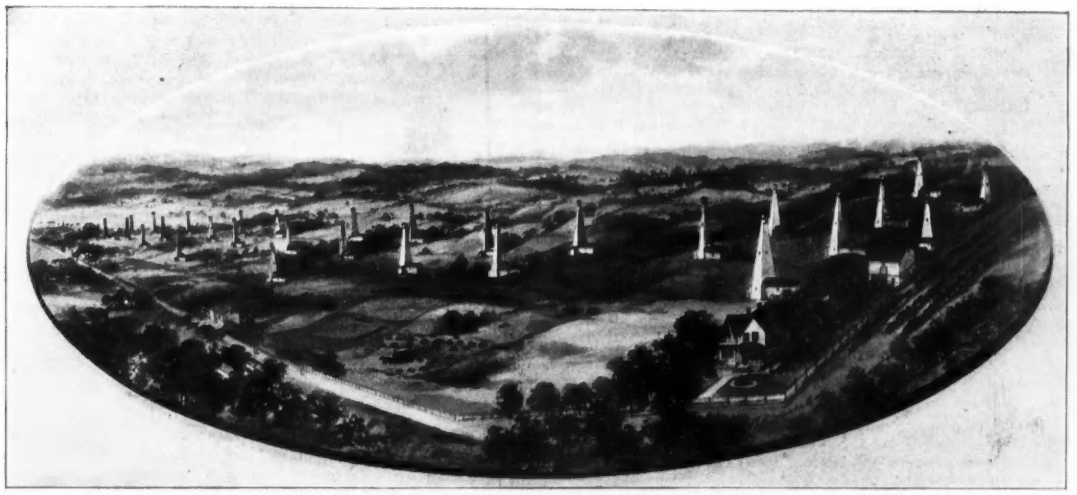
The copper production has increased, the Dulcinea mine being better than ever. When the new shaft is completed the output will be very much increased. The government has at last given the funds for the building of a road from Caldera to the mines of Algaroba and of Morada, the former being 21 miles and the latter 51 miles from Caldera. Both these mines are very rich, but the cost of transport is so great that only 20% ores can profitably be worked. The state of the intervening country can be imagined when it takes the animals two days to cover the 21 miles.

The proposal of the government to purchase the line has taken shape in the preliminary valuation survey by their engineers. The engineers in their report call attention to the desirability of extending the line both to the Inca District, as well as toward the Argentine frontier, passing through, at the same time, the borax deposits of Maricunga.

The Copiapo Railway Company also proposes to extend the line from the Puquios terminus to the Inca mineral district, a distance of about 50 miles, and at a cost of not more than $1,000,000. The district is situated on a plain 450 m. above the level of the Puquios terminus. On this same plain are also the mines of Dulcinea, Chimbero, Cachijuyo, Tres Puntas, and many others, besides several establishments for the beneficiating of the metals. There are two passes in the plain, Chulo and Puquios, but the former is impracticable on account of the great difficulties offered in the construction, besides the inconvenience of the head of the pass coming out 100 m. above the level of the plain, and too much toward the center. The Puquios pass is right in front of the station, is 7 miles long, with a 10% grade, and very narrow and crooked. This difficulty can be overcome by using the Abt system, and once on the plain it is a very simple matter. A commission has been named to approach the President and ascertain from him if the government will give a guarantee of 4½% on the capital invested. It is thought that this will be acceded to. It is also a fact that the Fisco has sent engineers to survey the ground between the proposed Inca terminus and the mines of Pueblo Hundido, which are situated in front of Chanaral. It is also within the bounds of possibility that the Chanaral line will be joined to this and handed over to the Copiapo Company by the government for a nominal sum, as it has always left a loss to the treasury. A most important mineral district will thus be opened out. The Inca mineral district is situated about 9 leagues to the north of the Puquios terminus, and has an extension of 5 leagues south to north and 1 league wide. It was worked before the year 1848 on a small scale for copper, and afterward for both copper and gold. There are two or three old workings of about 200 m. deep. In the year 1894 more work was started, the most important mine now being the Edelmira, at the south end of the distance, depth 70 m., average yield copper 50% and gold 25 oz. to the cajon (3 tons). At the present moment the mine is giving 50% copper and 80 to 100 oz. for gold. The vein is 6 in. wide, and opened out 100 m. The highest given was 55% copper and 400 oz. gold. There are also the mines of Copiapina giving 35% copper and 150 oz. gold, the Cuatro Amigos, with a lode of a meter, giving 60 oz. gold, and the San Jorge, with a 2-ft. lode giving 5 oz., the latter being only 10 m. down. There are also several smaller workings, all in want of capital. A small maquina has been recently started alongside of the Edelmira mine, with a capacity of 9 tons a day.

THE SOLVAY PROCESS AND THE CHEMICAL INDUSTRY IN THE UNITED STATES.

The growth of the chemical industry in the United States, which is now assuming large proportions, may be said to have begun in earnest with the establishment of the Solvay Process Company at Syracuse, N. Y., in 1884. Previous to that time, it is true, efforts had been made to manufacture soda at several places, but none of them had proved commercially successful. The Solvay Company has built up a great industry so successfully that its works have grown to very large dimensions and it has recently established a new plant near Detroit, which adds very largely to its productive capacity. The original location near Syracuse was made largely on account of the proximity of abundant supplies of salt, the raw material of the industry. The company owns a number of walls, the brine from which is piped to the works. The first of the illustrations given herewith shows a group of these wells at Tully, N. Y. Other raw material is supplied from the company's own limestone quarries at Split Rock.



THE SOLVAY PROCESS COMPANY'S BRINE WELLS AT TULLY, N. Y.

At the commencement the company acquired the title to the American patents of Ernest and Alfred Solvay, the originators and founders of the business. In the broad-minded policy of the founders, they provided for independent organizations, one for each of the great countries whose consumption of alkali warranted a home supply. These national organizations are entirely separate and independent, and each is under exclusive home control, but the privilege of each one is to share in the improvements of all the others, both by constant interchange of technical and factory reports, and by personal visits of their staff experts. The business world can hardly offer a parallel to this fraternity, and 30 years' experience has shown it to be as practicable as it is desirable. It has brought to its service the special talent of every nation. The result is that the selling prices of the Solvay products have been reduced to less than half of what they were 15 years ago, and the combined output of the Solvay works for all countries equals one ton of soda ash per minute for every hour of every day in the year. Another result is that the United States will soon have the capacity to supply all the alkali used in the country from home factories.

The original patents having now expired, companies have been formed, both in Europe and in this country, which use such portions of the Solvay process as they can readily follow. Such followers are a tribute to the excellence of the process. So far as this country is concerned, no works, it is claimed, have yet successfully produced soda ash, except by the use of apparatus originally designed and invented by the Solvay Brothers.

The LeBlanc process of making soda ash, in universal use until the introduction of Solvay ammonia soda, may be described as follows: Salt is decomposed with sulphuric acid, making salt cake, which is sulphate of soda containing more or less undecomposed salt and some impurities. This salt cake is then mixed with coal and limestone and roasted in large revolving furnaces. The salt cake is decomposed, and the soda is carbonated, making soda ash, but mixed with a considerable amount of undecomposed salt, salt cake, caustic soda and carbon, together with iron from the roasting furnaces. This process was discovered by a French chemist, Nicholas LeBlanc, about 1790. Upon it a great industry was founded, and until the middle of the present century it furnished the world with soda. In 1863, Ernest Solvay perfected his apparatus, and made a commercial success of the ammonia soda process. From that date, it became apparent that the LeBlanc process was too complicated, imperfect and expensive to compete with the new method. The Solvay ammonia soda is made from a purified

solution of salt, charged with ammonia, and treated with purified carbonic acid. The precipitate, after filtering and drying, is ready for the market, as an exceedingly pure carbonate of soda. This method avoids those sources of impurity inherent in the LeBlanc method. This radical difference in manufacture is of importance to the glassmaker, whose product commands a higher price in proportion as it approaches the water-white color of crystal.

The ammonia used by the company is obtained as a by-product in the manufacture of coke. The company has for a considerable time had coke ovens of the Semet-Solvay* type in operation at its works, and more recently established a large block of these ovens at Dunbar, in the Western Pennsylvania coal region. These ovens and the ammonia plant are shown in the second engraving.

An interesting product furnished by the company, the demand for which has been caused by the great progress made in substituting cooling by machinery for the use of natural ice, is chloride of calcium in a liquid form, suitable for use in refrigerating machines, as a circulating medium. Various substances have from time to time been used in the circulating pipes of refrigerating machines, but most of them have certain disadvantages, which it is difficult to overcome. Of all the substances employed, calcium chloride seems to give the most satisfactory results. In order to be suitable for this purpose, however, the calcium chloride must be very free from salt, as the presence of this impurity causes the pipes to rust badly, and reduces the efficiency of the circulating medium, since the presence of salt raises the freezing point of the solution. Calcium chloride as prepared at Solvay contains no salt whatever, and has a strength of about 40° Beaumé, containing about 39% actual calcium chloride. The impurities present consist of a very small amount of calcium sulphate, and a small amount of magnesium chloride. The specific gravity of this solution is about 1·384, and the freezing point is about 6·7° Cent. According to Professor Pickering's tables upon this subject, calcium chloride, at about 32° Beaumé, containing, say, 30% of calcium chloride, with a specific gravity of 1·283, shows a freezing point of 48° Cent., which is the lowest point; either a weaker or a stronger solution has a somewhat higher freezing point.

It would be difficult, however, to enumerate all the uses of alkalis and other products, especially as new applications and new products are continually being brought forward.

The range of the company's products as at present made is shown by the following list: 1. Soda ash, including 58% for easy dissolving; dense 58% for melting purposes; 48% for general commercial use; special 48%, for glassmakers; 36% for special chemical operation. 2. Caustic soda, including high test 76%, nearly chemically pure NaOH; 74%, 70% and 60%, the three customary commercial grades; special 70% and 60%, made softer than the ordinary grades. 3. Soda crystals, including mono-hydrate crystals containing 49·8% actual alkali, and snow-flake crystals, with 40·9% actual alkali. 4. Bicarbonate of soda, including pure bicarbonate, 99% $NaCO_3$, for baking soda, and anchor dust, an inferior grade for making carbonic acid. 5. Crown filler, a pure hydrated sulphate of lime for surfacing papers. 6. Chloride of calcium for use in refrigerating machines. 7. Muriatic acid.

The growth and extent of the business is shown by the accompanying table, which gives the raw materials consumed and the products of the works from 1884 up to the close of 1895. This table is here reproduced from *The Mineral Industry*, Volume IV. We may add that the original capital of the company was $300,000, and the output 30 tons of soda ash a day; the capital is now $4,000,000, and the capacity of the works 600 tons a day.

MATERIALS CONSUMED BY AND PRODUCTS OF THE SOLVAY PROCESS WORKS, SYRACUSE, N. Y.
(In metric tons.)

	1884.		1885.		1886.		1887.		1888.		1889.	
	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price
Materials used:												
Salt as brine	20,000	$1.25	28,000	$1.25	45,000	$1.25	58,000	$1.25	90,000	$1.12	99,000	$1.00
Limestone	21,000	1.25	29,000	1.25	47,000	1.25	60,000	1.25	100,000	1.25	124,350	1.00
Coal consumed	22,000	2.00	30,000	2.00	48,000	2.00	62,000	2.15	90,000	2.15	101,395	2.25
Coke	.....	.....	.....	.....	.....	.....	8,000	3.75	11,000	3.75	12,000	.....
Ammonia as sulphate	440	69.00	520	70.00	615	68.00	680	66.00	920	66.00	990	66.00
Sulphuric acid	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bauxite	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Products:												
Ammonia sulphate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tar produced	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Soda ash, 58%	11,000	40.00	15,000	35.00	21,000	32.00	34,700	28.50	50,700	26.25	54,500	26.35
Caustic	.....	.....	.....	.....	.....	.....	.....	.....	4,120	55.00	9,100	53.25
Bicarbonate	.....	.....	.....	.....	.....	.....	.....	.....	3,145	42.00	3,400	40.00
Crystals	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sulphate of soda	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crown filler ($CaSO_4$)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oxide of alumina hydrate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

	1890.		1891.		1892.		1893.		1894.		1895.	
	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price	Tons.	Price
Materials used:												
Salt as brine	115,000	$1.00	125,000	$1.00	150,000	$1.00	160,000	$1.00	197,000	$1.00	215,000	$1.00
Limestone	153,110	1.00	189,800	1.00	209,840	1.00	139,070	1.00	240,000	1.00	270,000	1.00
Coal consumed	122,690	2.25	142,910	2.25	173,180	2.25	162,485	2.25	170,000	2.25	200,000	2.25
Coke	14,680	3.50	17,340	3.50	18,785	3.50	17,220	3.50	20,000	3.50	25,000	3.50
Ammonia as sulphate	1,260	66.00	1,400	70.00	1,670	70 00	1,600	65.00	1,790	64.00	1,800	65.00
Sulphuric acid	.....	.....	.....	.....	.....	.....	.....	.....	700	.....	700	7.00
Bauxite	.....	.....	.....	.....	.....	.....	545	.....	160	.....	.....	.....
Products:												
Ammonia sulphate	.....	.....	.....	.....	75	65.00	130	65.00	135	65.00	135	65.00
Tar produced	.....	.....	.....	.....	276	8.00	420	8.00	415	8.00	420	8.00
Soda ash, 58%	65,870	27.54	70,990	30.50	82,000	33.60	85,000	32.00	104,600	23.50	120,000	23.00
Caustic	11,120	60.00	14,960	69.00	23,800	69.00	22,700	66.00	30,000	53.00	36,000	41.00
Bicarbonate	4,090	40.00	6,520	39.00	8,400	39.00	8,940	37.00	9,900	36.00	9,900	36.00
Crystals	.....	.....	.....	.....	.....	.....	.....	.....	430	40.00	430	40.00
Sulphate of soda	.....	.....	.....	.....	.....	.....	100	.....	330	11.00	350	11.00
Crown filler ($CaSO_4$)	.....	.....	.....	.....	.....	.....	.....	.....	700	25.00	700	25.00
Oxide of alumina hydrate	.....	.....	.....	.....	.....	.....	70	66.00	100	66.00	.....	.....

* The Semet-Solvay by-product coke oven is described and illustrated in *The Mineral Industry*, Volume IV., pages 231-234.

PROFESSOR JAMES HALL AND THE GEOLOGICAL SURVEY OF THE STATE OF NEW YORK.

Reported for the Engineering and Mining Journal by Dr. E. O. Hovey.

Sixty years ago Prof. James Hall entered the employ of the State of New York as an assistant on its Geological Survey, and he was able to be present in good health of body and mind at the session which the geological section of the American Association for the Advancement of Science devoted to commemorating the event and honoring the man at the recent convention in Buffalo. He came on, indeed, from the Pacific Coast for the express purpose of acknowledging the compliment in person. The occasion was unique as marking the longest continuous active service to the science of any geologist or paleontologist. Prof. B. K. Emerson, of Amherst College, the vice-president of Section E, was the chairman of the meeting, and introduced as the first speaker Prof. Joseph Le Conte, of the State University of California, and president of the Geological Society of America. He said that Professor Hall, more than any other man, was the founder of American geology, and that his address as retiring president of the American Association for the Advancement of Science at Montreal, in 1857, made an epoch in American geologic science. In that address Professor Hall showed that, contrary to the general belief, the Appalachian system of mountains had been formed by a regular process of sedimentation and subsidence. After relating several incidents of a personal nature, Professor Le Conte said that after all one of the greatest elements of the influence of the honored geologist over young men was through his example of unremitting work, unswerving purpose and the elevating influence of the pursuit of truth.

The next speaker was Mr. W. J. McGee, who said that when the Geological Survey of the Empire State began the science of geology was in its infancy, the age and structure of the American continent were practically unknown, and the principles for identifying and classifying formations were not yet developed; moreover, there were no maps, and much of the State was unsettled; so that in every sense the work of the survey was of a pioneer character. The four State geologists, Mather, Emmons, Vanuxem and Hall, and the paleontologist, Conrad, addressed themselves to their task with remarkable acumen and energy; the rocks were examined and compared; fossils were collected, described and classified, and in a notably brief period the formations were defined and grouped in such manner as clearly to indicate their relations and resources and to set forth the geologic history of a part of the continent. The wisdom and foresight of this group of students laid a foundation for American stratigraphic geology.

The New York classification and nomenclature have been extended throughout the continent. When that nomenclature was found inadequate, it was not supplanted, but simply extended along the same lines to meet new conditions. Of Professor Hall's individual contributions in conference, correspondence and editorial work it might be said that it is the classification of the Fourth District of New York which has best met the demands of time and of the younger geologists. Hall survived his old associates and assumed charge of the entire Survey, and this connection he has maintained for an unprecedented period. He first detected that instability of the terrestrial crust which is now known as isostasy, and thus made a contribution of the highest importance to physical geology. His monographs on the paleontology of New York are classics. He perfected the stratigraphic paleontology founded by William Smith, in England, which affords the key to structural relation. He has contributed constantly to the knowledge of the resources of the State. During the intervals of his services to New York, he surveyed Iowa and part of Wisconsin, and visited many localities in other States, thus interpreting the geology of much of the continent. Primarily he was an investigator rather than a teacher in the ordinary sense, and as an investigator he stands in the front rank.

Prof. John M. Clarke, assistant State geologist of New York, followed with a brief discussion of Professor Hall's connection with the Geological Survey of the Fourth District of New York (1837–'43). When the survey was organized in 1836 Professor Hall was made an assistant to Dr. Ebenezer Emmons, and he spent that season in work under him in the Adirondack region. The following year the original four districts were remodeled, one change being the separation of the Fourth and Third districts by a north and south line passing through Lake Cayuga, putting all west of that boundary into the Fourth District, of which Professor Hall was given charge. He was then a young man for so responsible a position, but between him and the new conditions by which he was surrounded there was a happy adjustment that led to the production in 1843 of the exhaustive report on the Fourth Geological District of New York, a work which in treatment, contents and influence on geological science has no equal among works of this character.

In 1837 Western New York was only a sparsely settled country, though Buffalo and Rochester were rapidly growing towns and there were various thrifty villages dotting the valley lands, especially along the Erie Canal; but away from the lowlands, over the high intervales of the central area and the broad plateau covering the southern half of the district, the region was largely a wilderness. It was in the more accessible lowlands that the greatest number of distinct geological formations were present, such as the Medina, Clinton, Niagara, Salina, Waterlime, Marcellus and Hamilton, while the highlands, where exploration was very difficult, proved to belong almost wholly to two divisions, Portage and Chemung. The great value of the results obtained in the Fourth District lies in the stable, indestructible foundation upon which a large portion of the Paleozoic succession was placed.

The study of this great series of fossil-bearing rocks during his six seasons in the field aroused in Professor Hall a conviction of the pre-eminent importance of a knowledge of extinct organisms as a means of substantiating strictly geological evidence. It was for the purpose of proving the validity of the New York series that, upon the close of the Fourth District survey, he sought and obtained encouragement to carry forward paleontological studies, with most valuable results.

It is fitting also to observe the influences inspiring these official investigations which emanated from the Rensselaer Polytechnic Institute at Troy. Stephen Van Rensselaer personally aided the first extended geological survey of the State. Eaton, who had delivered by request lectures on geology to the Legislature of New York, and had even set Governor Dewitt Clinton to collecting fossils, not only promoted the work in all ways, but made it possible by furnishing the right sort of men to do it. Emmons and Hall, Horsford, Boyd and Carr of the Fourth District, and Briggs, of the First District, were all pupils of Eaton's.

The geological survey of the Fourth District has never been completed. To its determinations there is a constantly growing increment of facts and from them problems of great interest are ever rising. No one, however, can realize as well as Professor Hall, with his 60 years of service to the geology of New York behind him, the vast amount of work yet remaining to be done.

Following Professor Clarke several of the audience added their tribute of praise for the work done by Professor Hall and under his direction. Prof. J. F. Whiteaves tendered the greetings and congratulations of the Geological Survey Department of Canada. Mr. T. Guilford Smith, one of the regents of the University of the State of New York and chairman of the State Museum Committee, called attention to the geological map of the State, the first edition of which has recently been issued under Professor Hall's direction. Prof. J. J. Stevenson, of New York University, said that the fact ought not to be overlooked that much of the work had been carried on at great personal cost to Professor Hall. For 26 years he furnished the building in which were the laboratories and storerooms of the survey; for 44 years he paid all the expenses of collecting the fossils; and from 1850 to 1855 the whole work was carried forward at his charges. To meet these heavy drains on his resources Professor Hall was obliged to sacrifice valuable property which he had bought. The laboratory at Albany has trained and sent out many men celebrated in American paleontology and geology, among whom have been Dr. F.V. Hayden and F. B. Meek (deceased), R. P. Whitfield, curator of geology in the American Museum of Natural History; C. D. Walcott, Dr. C. A. White, of the U. S. National Museum, and C. E. Beecher, Professor of Paleontology, Yale University.

Reminiscences of a more personal nature were related by Dr. W. H. Hale, of Brooklyn; Prof. W. H. Niles, of Boston; Rev. Dr. H. C. Hovey, of Newburyport; Prof. H. L. Fairchild, of Rochester, and Prof. B. K. Emerson, of Amherst.

To all this praise the venerable geologist and paleontologist responded in a modest and deprecatory manner, saying that for the early work much credit was due Stephen Van Rensselaer for his liberality and his public-spirited encouragement, while in it all he had had the assistance of many co-laborers throughout the country.

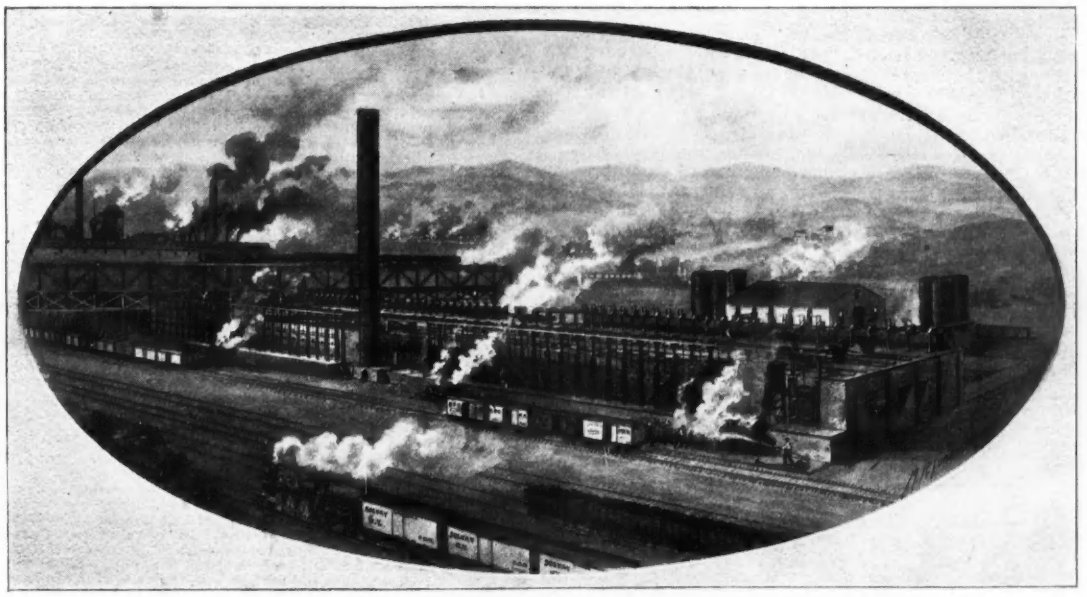
THE CARBONIFEROUS FORMATIONS OF THE TRANSVAAL.

Mr. Lapierre, the French geologist, furnishes some information respecting the coal deposits of the Transvaal. The formations are superposed as follows: 1. Primary formations (granite, gneiss, siliceous schists), generally analogous with the Silurian system. 2. Devonian formations (quartzose sandstone, hard clay, auriferous conglomerates). These formations, owing to numerous eruptions of igneous rocks, have been subjected to frequent metamorphisms, and the strata have sometimes assumed a vertical position. 3. The formations of the Karoo (very gray, black and gray-blue schists, coal, white sandstone). Very few fossils have been found in these deposits. They do not present the same aspect as the coal formations met with in other parts of South Africa. Some geologists have connected them with the Trias or with the Permian formations. This opinion, based upon the study of 11 imperfectly defined fossils, may be open to question. These formations are obviously horizontal, the stratification being opposed to that of the Devonian system.

The coal is impure and contains from 20 to 25% of ash. The owners of the mines adopt the system of working known as the abandoned pillars method. The seams are thick, the roof is very solid, and the exploiting is effected without timbering. The average depth of the deposit is 50 m. (164 ft). The coal is extracted by means of rectangular shafts, which are divided into four compartments, one for the ladders, one for the steam and compressed-air pipes and for the electric cables, and two for winding. The coal is sorted by day. The small is thrown away, the large, the cobbles and the nuts are utilized. An installation comprises a hauling engine, of from 40 to 50 H. P., a coal-sizing machine, a special engine for the dynamo, and the semi-tubular boilers. The working of these coals is very remunerative, the net cost being only from $1.20 to $1.50 per ton, while the sale price is $2 to $2.25. To give one example of the flourishing condition of the collieries, the mine of Brackpan, with a capital of $400,000, opened about six years ago, has at present an output of 1,200 tons per day, and according to the last balance sheet (1894-5) paid a dividend of $320,000.

Iron-Ore Mining in Germany.—The total production of iron ore in Germany during 1895 amounted to 12,349,595 tons.

The Turkish Coal Trade.—In future only native coal obtained from the mines at Heraklea is to be used at all the charitable institutions in Turkey, and the Ministry of Public Works of that country is now inviting tenders from the native concerns for the supply of the quantity of coal required.



THE SOLVAY PROCESS COMPANY'S COKE OVENS AND AMMONIA PLANT, DUNBAR, PA.

Coal in French Africa.—A discovery of coal is noted by *La Politique Coloniale* of Paris in Western Africa, in the French territory. Outcrops of coal abound between Boke and Timbo, in the Fouta-Djalon. Some of the coal tested is said to be of very good quality.

Electrical Engineering in Sweden.—An important electrical power transmission plant has recently been installed at the Bongbro Iron Works, Sweden. Water power is utilized, the generating plant comprising two 50-H. P. turbines, and three three-phase dynamos. The electrical energy generated is used to drive a plate-rolling mill and a billet mill, to each of which a large electro-motor is connected.

Amber.—The production of amber in Germany last year was about 440 tons, or nearly 100 tons more than in the previous year. By far the larger portion of the above quantity is put out by the two mines of Palmnicken and Kraxtepellen, belonging to the firm of Stantien & Becker, while the smaller portion is obtained by dredging and searching the shore of the Baltic Sea. The two mines named above, with the home industry, employ about 1,200 persons.

By-Products in Coke Manufacture.—A calculation was recently made by Herr E. Hagenstock, of Dahlhausen, which should be of interest to coke-makers. He told the members of a German technical society that in the Rhenish-Westphalian district alone about 6,000,000 tons of coke are now produced and consumed, for which 8,000,000 tons of coking-coal are required. If only 1% of ammonia sulphate be regarded as recoverable on an average, it will be seen that a quantity of 80,000 tons of this substance can thus be recovered yearly; and, at the low price of 1 mark per kilogram of nitrogen, amounting, with a 20% nitrogen content in the ammonia sulphate, to 200 marks per ton of this salt, the total saving would be 16,000,000 marks, or about $4,000,000.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

Liability for Negligence of Manager.—The employer is none the less liable for the negligence of a foreman and manager to whom he had intrusted the construction of an excavation, in setting up and putting to work a steam shovel in an unsafe condition, because the employer did not own the shovel and did not know that the manager had hired it and put it to work.—Higgins vs. Williams (45 Pacific Reporter, 1041), Supreme Court of California.

Damages for Laying Pipe Line.—The mere construction of a ditch across barren, rocky, uncultivated and comparatively valueless land, is not, of itself, an irreparable injury, and when no appreciable damage will be done by acts threatened to be continued, and it appears the company laying the pipe is solvent, and able to respond in damages, a restraining order will not be granted.—McGregor vs. Silver King Mining Company (45 Pacific Reporter, 1091), Supreme Court of Utah.

Character of the Location—Under the Revised Statutes of the United States, Sec. 2,332, providing that, when a person holds and works a mining claim for the time prescribed by the statute of limitations for mining claims of the State in which it is situated, he may obtain a patent, "in the absence of any adverse claim," such possession and working for the statutory period, before the adverse right exists, is equivalent to a location under the acts of Congress.—Altoona Quicksilver Mining Company vs. Integral Quicksilver Mining Company (45 Pacific Reporter, 1,048), Supreme Court of California.

Delivery of Deed in Escrow.—A party listed mining property with an agent, who negotiated a sale to a corporation to be formed, of which such agent was to be a member. One of the proposed incorporators paid to the owner half of the purchase price, the balance to be secured by mortgage due in one year. A deed was executed and sent to the agent, with instructions to deliver when the mortgage was given. After several months, the mortgage not having been given, the owner rescinded the sale. The court held that the delivery to the agent was merely in escrow; but on rescission the purchase money should be repaid, and that the improvements should also be paid for.—Tyler vs. Cate (45 Pacific Reporter, 800), Supreme Court of Oregon.

Labor on Mining Claim.—While the mere placing of a watchman on a naked mining claim to warn prospectors, and thus prevent a relocation, is not labor on the mine such as is required to hold it, still the services of a watchman looking after buildings erected to work a mine, constitutes such labor, though the mine is idle at the time. The fact that the claims did not actually touch each other, and there was a narrow strip of land between them, would not prevent such labor applying to both. Mines, said the court, may be conceived of as so situated that the same work may be, and appear to be, expended in opening or developing both mines, although they are not actually contiguous. On the other hand, not all expenditures made with a view to working a mine would be considered work expended upon a mine under this rule; for instance, work done at a distance from the mine in the construction of a mill.—Altoona Quicksilver Mining Company vs. Integral Quicksilver Mining Company (45 Pacific Reporter, 1,047), Supreme Court of California.

Pig Iron Production in Belgium.—The output of the Belgian blast furnaces for the eight months ending August 31st was: Foundry iron, 53,145 metric tons; forge iron, 230,862 tons; Bessemer and Thomas pig, 331,889 tons; total, 615,896 tons, a decrease of 1,464 tons, or 0.2%, as compared with last year.

The Centenary of a German Blast Furnace.—An interesting celebration took place at the Gleiwitz Iron Works at Gleiwitz, Silesia, August 22d, it being just 100 years since these works, which belong to the State, were started, the lighting of the first blast furnace having taken place September 21st, 1796. The furnace is said to have been the first in which coke fuel was employed on the Continent.

Coal Mining in Belgium.—The Belgian Inspector-General of Mines for the province of Liege has just issued his report for last year on the coal mining and allied industries in that district. The number of active collieries fell from 44 in 1894 to 43 in 1895, with 69 pits at work, as against 70 in the preceding year. Notwithstanding this diminution in the number of pits at work, the total production of coal shows an increase, having amounted to 5,048,248 tons as compared with 5,012,371 tons in 1894, or an increase of 35,913 tons. For some years past the average price obtained for the coal mined has been declining, but last year this decrease gave place to an increase of 3·6c., the average rate obtained in 1895 having amounted to $1.96 as against only $1.93 in 1894, the net profit per ton amounting to 7c. The total number of persons employed in or about the mines last year was 28,454, or but slightly more than that reported in 1894, when the number was 28,295. As regards wages, M. L. Timmerhans, the inspector-general, finds the daily average wage to have amounted to 68c., an increase of 2c. over 1894. As to coke, 928 coking ovens were in operation in the Liege district last year, leaving 903 standing idle. The production amounted to 440,629 tons, a decrease of 11,759 tons, as compared with 1894. The number of workmen employed was 501 and the average price obtained $2.83 per metric ton, as against $2.73 in 1894. As regards the patent fuel industry, there are nine works in the district. The total production amounted to only 166,785 tons, or a decrease of nearly 20,000 tons as compared with 1894. On the other hand, the average price obtained—$2.47 per ton—showed a slight advance. As regards accidents at the collieries the report shows a satisfactory decrease. In 1894 there were 39 such accidents, causing the death of 30 persons and injuries to 14 others, while last year there were only 36 accidents, 27 persons killed and 9 injured. The number of persons killed is at the low rate of 0·94 per 1,000 of the total employed, and the injured at 0·32 per 1,000.

Civil Service Examination for Draftsmen.—An examination will be held by the United States Civil Service Commission on October 28th, 29th, 30th and 31st for the positions of junior architectural draftsman, architectural draftsman, structural iron draftsman, heating and ventilating draftsman, computer and senior architectural draftsman in the office of the Supervising Architect of the Treasury. These examinations will be given on the dates mentioned at Washington, D. C., and at other points where the commission has competent boards of examiners. Persons desiring to be examined should write to the United States Civil Service Commission, Washington, D. C., for application blanks and file them with the commission at the earliest possible date.

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 OCTOBER 6TH, 1896.

568,741. Process of Extracting Gold from Substances Containing It. Henry R. Cassel, New York, N. Y. The process consists in electrolyzing a bromide salt of an alkaline base in solution to separate the bromine from the alkali, maintaining the bromine compounds set free at the anode separate from the alkali during electrolysis, treating the ore with the bromine products to dissolve the gold, adding the alkali to recombine the compounds of bromine and gold, precipitating the gold, and reconveying the resulting bromide salt to be re-electrolyzed in a continuous process.

568,864. Air Compressor. Henry C. Sergeant, Westfield, N. J. Assignor to the Ingersoll-Sergeant Drill Company, New York, N. Y. The combination with an inlet-valve upon which when closed the pressure of the air compressed within the compressor-cylinder acts with a tendency to keep it closed, a spring arranged on the stem of the valve, a reciprocating tappet-rod and a tappet on the rod for operation directly on the spring to compress the spring during each stroke of the compressor-piston to a degree sufficient to cause the spring to open the valve against such pressure of the air within the cylinder.

568,843. Process of Treating Metallic Sulphides. Victor Engelhardt and Adolf Nettel, Vienna, Austria-Hungary. The process consists in first converting the compound into a soluble double sulphide by treating it with any suitable reagent, such as the sulphhydrate of calcium, in aqueous solution; then decomposing the resulting solution by electrolysis to produce the metal and sulphuretted-hydrogen gas, then treating the spent solution with carbonic-acid gas to precipitate a carbonate of the base and liberate sulphuretted-hydrogen gas, recovering the oxide of the reagent and the carbonic acid gas from the precipitate by calcination, then combining the sulphuretted-hydrogen gas given off during the process with the oxide to form more reagent, and using the recovered carbonic-acid gas to treat more spent solution.

568,869. Portable Device for Loading Vessels. John McMyler, Cleveland, O. The combination with a movable truck, and a scoop-shaped car pivoted thereto, of a flexible line attached to the truck passing around a pulley in advance of the truck and then to a point behind the truck for forcing the scoop into a mass of coal and means for withdrawing the scoop from the mass.

568,888. Ore-Concentrator.—William E. Wild, Denver, Colo. The combination with a suitable stationary frame, of the oscillatory yoke mounted thereon, the shaft journaled in the yoke, a cam fast on the shaft, a stationary tappet which the cam engages, the concentrating-table movably mounted on the shaft, a spring-held rod connecting the table with the stationary frame, and a suitable bumper lying in the path of the table.

568,913. Apparatus for Separating Gold from Sand, Etc. John Marshall, Fairfield, Cal. Assignor to the Marshall Gold Saver Company, same place. The combination of an amalgamated plate, a blower adapted to blow the material against an amalgamated roof-shaped plate.

568,926. Crushing Apparatus. Edward D. Self, South Orange, N. J. An apparatus having a mortar comprising successive dies and stamps, and having screens over which the crushed material passes, in combination with an apparatus for producing upward currents of a fluid through the screens.

568,933. Electric Mining-Machine. Robert H. Wiles, Freeport, Ill. The combination with a suitable carriage, of devices arranged, upon the carriage, to cut a kerf into which the carriage may advance, means for forcing the carriage into the kerf so cut, and a wheel mounted upon the carriage and arranged to bite into one of the kerf's broader walls as the carriage is forced forward.

568,937. Mining-Machine. Henry H. Bliss, Washington, D. C. The combination with the carriage, of the drill, the chain provided with cutters moving transversely in the plane of the drill, forward from a wheel on the rear of the carriage across the front of the carriage and then to the rear thereof, and the drill support or bracket arranged to move partly in the aperture formed by the drill and partly in the kerf formed by the chain cutters.

568,949. Feed-Table for Rolling-Mills. Sigmund V. Huber, Youngstown, O. The combination of a frame having positively-driven rollers mounted thereon, latterly-movable guides arranged above the feed-rollers and means for raising the table and shifting the guides laterally.

569,002. Artificial Stone. Edward Boehm, Woodbury, N. J. A building block consisting of a molded representation of stone, having a tongue and ledge on one side, a corresponding groove and flange on the opposite side, the ledge having apertures to receive screws, a semi-dovetail groove formed on the inner edge of the third side, and a corresponding semi-dovetail flange formed on the inner edge of the fourth side.

569,064. Gold-Mining Dredge. William E. Seanor and Donald A. McCaskill, Lytton, Canada. Combination of a submergeable tubular caisson-body mounted for adjustment on the barge, a compressed air-pipe connection with the caisson body, and a flexible pump suction-pipe passed into the caisson body near the lower end of the latter, the pump suction-pipe having a sliding connection with the caisson body.

569,068. Oil Well Jack and Pumping Apparatus. Edwin B. Smith and Henry Benard, Fremont, O. The combination with the upright pump-rod, the stationary frame provided with two brackets arranged a suitable distance apart, and a suitably-actuated and horizontally-pivoted bell-crank lever arranged between the brackets and operatively connected with the pump-rod, of the collar suitably supported upon the pump-rod a suitable distance above the connection of the bell-crank lever with the rod, and the lever mechanism comprising the links and lever.

569,069. Quartz Mill.—Frank P. Snow, Baker City, Ore. A pulverizer of the ball type, the crushing-balls revolving in a suitable casing.

569,113. Alluvial Gold Washer. James Miller, Sault Ste. Marie, Canada. The improved gold-washer consists of a metal trough having transverse interior corrugations or ribs, riffle-plates which are of inverted V shape in cross-section and arranged over and upon the ribs, and secured at their ends to the upwardly-extended sides of the trough proper.

569,121. Apparatus for Boring Earth, Minerals, Etc., for Prospecting Purposes. Farquhar M. McLarty, Penang, Straits Settlements. Patented in England August 31st, 1894, No. 16,604; in France August 28th, 1895, No. 249,946; in Transvaal October 1st, 1895, No. 980; in Western Australia October 15th, 1895, No. 753, and in Spain December 26th, 1895, No. 18,031. A boring-machine having a perforated and hollow boring head or tool and tubing carrying the same, and means for rotating it, the hollow head being provided at its lower end with blades curved from the circumference of the hollow head to the central axis, and leaving openings between them, the blades being adapted to cut the material being bored and deliver the borings into the interior of the head between the blades.

PERSONAL.

MR. W.C. BRACE, recently of Leavenworth, Kan., has removed to Denver, Colo.

MR. THOMAS J. BURKE, a prominent mining operator of Denver, Colo., has been visiting Rossland, B. C.

MR J. W. YOUNG, vice-president of the Bingham Placer Company, has gone to his old home in Ireland.

MR. GEORGE DE WOLF, for some time past at Field, B. C., has removed to Vancouver in the same Province.

MR. N. W. WILSON, a mining engineer of Monterey, Mex., was in St. Louis, Mo., last week, on mining business.

MR. P. J. DONOHUE, superintendent of the Mammoth mill, at Mammoth, Utah, has returned from a visit to Montana.

MR. W. E. YOULE, of the Pacific Asphalt Company, of Los Angeles, Cal., has been making an examination of the deposits of asphaltum in Utah.

MR. H. EHRHARDT, of Denver, Colo., has gone to Bailey in Park County, where he intends to work some promising mining claims on Grouse Mountain.

PROFESSOR DR. RICHTER, director of the Mining Academy at Freiberg, Saxony, retired on October 1st and was succeeded by PROFESSOR DR. CLEMENS WINKLER.

BARON DE BATZ, a well-known mining engineer, who has been spending some months in this country, sailed from New York, October 10th, on his return to Russia.

DR. JAMES P. KIMBALL, of New York, mining engineer and ex-director of the U. S. mint, has been making a personal inspection of the Trail Creek mines in British Columbia.

MR. ANDREW CARNEGIE was a passenger on the American line steamship *St. Louis*, which arrived in New York on October 10th. He has been traveling in England and Scotland for several months past.

MR. W. W. J. CROZE, of the firm of Croze & Dengler, mining engineers, at Denver, Colo., is at present in Amizett, New Mexico, looking over an oxide of copper property in the interest of Lake Superior parties.

MR. E. W. WINTER, President of the Northern Pacific Railroad; MR. EDWARD D. ADAMS, and other officials of the road recently visited Rossland, B. C., and made an inspection of the principal mines of the Trail Creek District.

MR. DAVID KEITH, of the Silver King mine, Summit County, Utah, has returned from Oregon, where he has been directing work on the Virginius, which was recently purchased by him. The property adjoins the Virtue near Baker City.

The firm of CHANDLER & SHAPLEIGH, consulting chemists of New York, has recently been dissolved by mutual consent. MR WILLIAM HENRY CHANDLER, senior partner of the firm, continues the business, retaining the offices heretofore occupied.

MR. PAUL JORDAN, of the Polytechnic School of Paris, is in Utah to make a study of the mines of that State. He has already been through the Ontario and Mercur and will probably look into the Centennial-Eureka and others at Tintic, after which he will go to Bingham.

MR. R. N. STRAUS, superintendent of La Fortuna mine, near Yuma, Ariz., has recently been inspecting mining properties at various points on the Colorado River in the interests of Charles D. Lane, superintendent of the Utica mine. He reports favorably on several properties.

MR. J. PARKE CHANNING, mining engineer, has just completed the examination of a copper deposit in southern Utah and is now on his way to examine some new copper discoveries in the Flathead country of northwestern Montana. His address for the present will be Great Falls, Mont.

MR. WILLIAM ORR, of Salt Lake City, Utah, who represents the Gold and Silver Extracting Company, of Denver, Colo., has visited Boise County, Idaho, for the purpose of getting samples of ore which will be taken to Denver and tested in order to determine the best method of extracting metal from the rock.

MR. THOMAS WEIR has accepted the management of the Highland Boy and other properties at Bingham, Utah, which were recently acquired by Mr. Samuel Newhouse. Mr. Weir developed the A. Y. & Minnie mines at Leadville, Colo., and later directed operations at the Granite Mountain mine in Montana.

MR. MAX OSTERBERG, for a number of years employed in Mr. Edison's electrical laboratory, has opened an office as consulting engineer and electrical expert at No. 27 Thames street, New York. Besides general consulting work, specifications, etc., he will make a specialty of gas-engine installations for isolated electrical plants.

MR. CHARLES R. KELSEY has adjusted the difficulties that existed between himself and the Sweetwater Coal Mining Company, at Hopkins, Wyo., for which he formerly was manager. Mr. Kelsey has disposed to the company his stock interest that he held in it, also his interest in the Wyoming Mercantile Company, and his lease upon the Blair property.

MR. JOHN SIMPSON, who has been superintending the mines of the J. W. Ellsworth Company, opposite Suterville, Pa., has been promoted to the position of general superintendent of all the company's interests, with headquarters in Ohio. MR. ROBERT WATSON, mine boss of the Yough River Coal Company until recently, will be Mr. Simpson's successor.

MR. BASSETT LEYSON, who was for many years foreman at the Alice and Moulton mills in Montana, recently returned from Washington, where he had charge of a mining property. He has now been engaged as the superintendent of the Mayflower mine in Madison County, to succeed MR. DONALD GILLIS, who will resume his old position as mining engineer for W. A. Clark's properties.

MR. W. WESTON, mining engineer of Cripple Creek, Colo., is general manager in charge of the work undertaken by the Goodwill Tunnel and Mining Company, which purposes running a tunnel into Gold Hill, at Cripple Creek, starting from a point in Cottontail Gulch. The plan was originated by Mr. Weston, who has obtained the co-operation of a number of gentlemen in the enterprise. Mr. Weston has been for some time past connected with the Metallic Extraction Company, at Florence, Colo.

MESSRS. J. E. SPURR, H. B. GOODRICH and F. C. SCHRADER, of the United States Geological Survey, arrived in San Francisco this week. They were sent by the department to Alaska last spring to report on the prospects of quartz mining in that region. They crossed the Chilkat Pass and reached the Upper Yukon about the middle of June. Going down the Yukon River, and pursuing their investigations at the various mining settlements on their way, they reached Fort St. Michaels, at the mouth of the Yukon, three months ago. They believe that the prospects for profitable quartz mining are very good, and they will make a report to that effect.

MR. W. H. WILEY, mining engineer of Idaho Springs, Colo., has gone on a six months' trip to the gold fields of Northern Corea, lying on the south side of the Yalu River. He goes in behalf of capitalists who have secured mining concessions from the King of Corea on that land lying near the Siberian borders. The immense placers and quartz leads have been crudely worked by the natives, and the output of gold for last year is reported to have been several million dollars. Accompanying Mr. Wiley are Mr. L. L. BAILEY, as assistant engineer, and MR. W. T. CARLEY, a railroad engineer, who has had considerable experience in railroad building in the South.

MR. D. B. HUNTLEY has been appointed manager of the De Lamar Mining Company, at De Lamar, Idaho, succeeding the late Capt. John W. Plummer. Mr. Huntley is a mining manager of long experience, and had previously passed considerable time in Idaho. He was for some time manager of the Morning mine, in the Cœur d'Alene, and while there made an attempt to run that mine on a co-operative plan, which for a time promised to be very successful, although it finally failed on account of the opposition of the Miners' Union. Mr. Huntley has been for some time past in California, but now returns to his old field with, we hope, every prospect of a successful career at the De Lamar.

OBITUARY.

JONATHAN W. HARRISON, aged about 55 years, inventor of the Harrison coal-mining machine, died October 7th, at Ypsilanti, Mich.

ED. MAHAN, foreman of the Baisley-Elkhorn mine, at Baker City, Ore., was killed recently by the accidental discharge of his gun while out hunting.

ALBERT S. NOYES died suddenly at Boston, Mass., on October 12th, aged 45 years. He was city engineer of Newton for many years. He resigned the office of city engineer in July, 1893, to accept an appointment to the State Board of Health, and in 1895 was appointed a member of the Metropolitan Sewerage Commission. He had been president of the New England Society of Civil Engineers, and also of the New England Water-Works Association.

WILLIAM HARRISON GRANT, died at Sing Sing, N. Y., October 9th. He was a civil engineer and worked on the enlargement of the Erie Canal. He held the position for nine years. He was then appointed an assistant engineer on the Hudson River Railroad, and later was appointed superintending engineer in the laying out and improving of Central Park, New York. He designed many portions of the Park. He was next appointed civil engineer for the Board of Public Works for the Annexed District of New York. Later he became construction engineer for the Board. His last public work was as superintendent of the United States Naval Station.

SOCIETIES AND TECHNICAL SCHOOLS.

CIVIL ENGINEERS' SOCIETY OF ST. PAUL.—A regular meeting of this society was held October 5th, with President Stevens in the chair. A discussion of "Continuous Rails on Concrete Foundation in Connection with Asphalt Pavements," was opened by Mr. Wilson, and continued by Mr. Curtin, both well prepared to present results of practice and observation.

WESTERN SOCIETY OF ENGINEERS.—Mr. H. F. J. Porter, general Western sales-agent of the Bethlehem Iron Company, read a paper on "Steel Forgings" before this society at the regular monthly meeting on October 7th, in the auditorium of Armour Institute, Chicago. This paper was illustrated by lantern slides descriptive of modern methods of making miscellaneous forgings, armor plate, guns, etc., and explained the merits of fluid compressed steel, and of hollow forged shafts and similar forgings.

ENGINEERS CLUB OF ST. LOUIS.—The 440th meeting of this club was held at 1600 Lucas place on October 7th. The executive committee submitted a set of rules and regulations to govern the care, maintenance and disbursement of the engineers' entertainment fund, which rules were adopted.

Mr. Albert Siebert read the paper of the evening, on "Refrigeration," as applied to dwellings, hotels, hospitals, business houses and public institutions. He explained the different methods of refrigeration which have heretofore been used, and the advantages and the disadvantages of each, calling particular attention to the merits of modern refrigerating machines. The different use to which such machines may be put are: The cooling of rooms, ice making, freezing of carafes, making ice cream, and cooling air in living rooms. The cooling may be done either by the direct or indirect system, each having its advantages under certain conditions. The cooling of rooms may readily be combined with the indirect heating system.

Mr. Carl Barth gave the club an interesting discussion of a geometrical method of determining the best points of cut-off and compression.

INDUSTRIAL NOTES.

The Sheldon Axle Works directors held their annual meeting recently at which it was decided to add a rolling mill to the plant at Wilkes-Barre, Pa.

The Brooke Iron Company's nail works, puddle and rolling mill at Birdsboro, Pa., which have been idle since September, started up on October 12th, giving employment to 250 men.

The Carnegie Steel Company's Homestead and Duquesne plants were put in operation October 12th after an idleness of several weeks. Several thousand men were given employment.

The Southwest Connellsville Coke Company's 400 ovens, which have been idle since August, will be fired at once. Of these, 250 will be started at Morewood and the balance at Alverton.

The Penobscot Chemical Fibre Company's plant, at Great Works, Me., will be closed down at once for extensive repairs, which will occupy several weeks. A new set of boilers will be one of the improvements.

The Carnegie Steel Company, at Duquesne, Pa., blew in its second furnace on October 7th. The two Carnegie furnaces at Duquesne, which are now in course of erection, it is expected, will be ready for operation by the first of the new year.

The Lackawanna Iron and Steel Company's works at Scranton, Pa., which have been idle for nearly three months, resumed operations in all departments on October 12th, on orders that will keep the works on double turn for some time, giving employment to over 1,200 men.

The Braddock Wire Works of the Consolidated Steel and Wire Company, which have been closed for four months, except for several weeks when special orders were filled in the galvanizing department, will resume in all departments the latter part of the week, employing 1,000 men.

The Indiana Oil Company has bought 10 acres of land near Ora, Starke County, Ind., which will be made the location of a large oil refinery. Ora is near the supposed Wanatah oil field, and the location of the refinery there strengthens the belief that a new oil field is about to be developed.

Secretary Herbert this week awarded contracts for the gun forgings, the bids for which were opened in August. The Bethlehem Iron Company gets 50 sets of 6-in. at 23·7c. per lb., 20 sets of 4 in. at 26½c. per lb., and 2 sets of 8-in. at 23⅞c. per lb. The Midvale Company receives the contract for 35 sets of 5-in. at 26c. per lb. In each case the work was given to the lowest bidder.

The New York Belting and Packing Company, Limited, has for some time past been working night and day in manufacturing interlocking rubber tiling. Notwithstanding the dull times they have within the past two weeks taken orders for three prominent hotels in New York City, a well-known club in Cincinnati, 32 dining and sleeping cars, one steamship and one United States battleship. The first lot of tiling laid was in the Broad Street Depot of the Pennsylvania Railroad in Philadelphia. After a wear of two and one-half years, with an average of 50,000 people passing over it each day, a careful test with a straightedge showed the tiling to have worn only $\frac{1}{16}$-in., and that

only in spots where nine-tenths of the passing is concentrated. Not a cent has been spent for repairs since it was laid.

In the Coxe Brothers and Inter-State Commerce-Lehigh Valley Railroad suit a formal decree has been entered before Judge Acheson in the United States Circuit Court at Philadelphia. Coxe Brothers complained that the Lehigh Valley Railroad had discriminated against them in freight charges for carrying coal in favor of the Lehigh Valley Coal Company. An order was made by the Inter-State Commerce Commission, which was sought to be enforced, and after considerable litigation the proceedings were dismissed, the finding being in favor of the Lehigh Valley Railroad. It is said that the case is to be appealed to the United States Circuit Court of Appeals.

The Berlin Iron Bridge Company, of East Berlin Conn., notwithstanding the general distress among manufacturing concerns, report that their plant is fairly well employed. At no time during the year have they run on short hours, and are now employing 400 men, running 10 hours six days a week. They have contracts on hand to keep their plant employed on full time for the next two months. They have no very large contracts on hand at the present time but a great deal of small work. Some of these may be mentioned as follows: For the L. D. Brown & Son Company, Middletown, Conn., fireproof power plant, and also a new dye-house; steel frame work for the Fire-Department Brilding, at Worcester, Mass.; power station for the electrical equipment of the N. Y., N. H. & H. R. R., at Stamford, Conn; machine shop for the Baush & Harris Machine Tool Company, of Holyoke, Mass.; new building for the Woonsocket Electric Machine & Power Company, of Woonsocket, R. I.; new steel bridge for the town of Green, Me., including a second bridge for the Cabot Manufacturing Company, at Brunswick, Me., and smaller bridges at Auburn, Pembroke, Turner, Buckfield and Bridgeton, Me.; a new iron roof for Randolph & Clowes, Waterbury, Conn.; steel bridge for Somerset County, N. J., located at Finderne, besides other smaller contracts.

TRADE CATALOGUES.

The Walker Company, of Cleveland, O., manufacturers of electric machinery, devotes circular No. 1,014 to the subject of generators. It contains numerous testimonials from those who are pleased with their efficiency, and also gives a list of companies who are using these generators. Circular No. 1,015 is given up to the subject of street-car equipments, and its contents are of the same kind as those of No. 1,014.

The Bristol Company, Waterbury, Conn., which manufactures the well-known Bristol recording-pressure gauges, has given to the trade a catalogue in which these now almost indispensable appliances are clearly shown and explained. The gauges make a continuous record, day and night, of steam, water, gas, oil, or air pressure, and are adapted to all ranges of pressure. For electrical measurements of alternating or direct currents they manufacture recording volt-meters, ampere-meters and watt-meters. To measure atmospheric ranges of temperature they make the Bristol recording thermometer, which can be located within the building to record outside temperatures, it being practically independent of changes of temperature at the recorder. In a somewhat modified form these same recorders are made to register the temperature in dry kilns, ovens, heaters, closed spaces, hot blasts, chimney gases, liquids, air, and gases in pipes, feed-water for steam boilers, etc.

The A. Liez Company, of San Francisco, Cal., manufacturers of surveying, engineering and mining instruments, have placed in the market a cyclotomic transit for surveyor's use. The evolution of this instrument is due to a constant tendency to create a transit with one spindle, *i. e.*, having but one central cone turning within the leveling head, that shall, at the same time, sacrifice none of the advantages that the so-called compound center possesses. The principal advantage of the double spindle is that, no matter in what direction the telescope may be pointed, the operator is enabled to make any azimuth of his graduated plate agree therewith. The lower plate here carries the graduated azimuth circle, which, as part of a rigid substructure—of the leveling head and base plate—cannot be controlled with reference to known azimuths. In the cyclotomic transit a floating exterior ring is placed around the periphery of the lower plate, the ring having engraved upon it the figures from 0 to 330. This ring enables the figure-series to be shifted at will, so that any one of the graduation lines can be made the zero.

MACHINERY AND SUPPLIES WANTED.

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

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

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

GENERAL MINING NEWS.

Oil Exports.—The Bureau of Statistics, Treasury Department, reports the exports of mineral oils from the United States in September, 1896, at 86,942,500 gals. For the nine months ending September 30th the exports were: Crude, 86,389,156 gals; naphthas, 7,731,540 gals.; illuminating, 550,439,938 gals; lubricating and paraffin, 37,156,945 gals.; residuum, 164,682 gals.; total, 681,882,251 gals. This is an increase of 68,335,467 gals. as compared with 1895.

ALASKA.

A large gold property on Admiralty Island, discovered this season, has been bonded to an English syndicate for $250,000. The property is composed of 12 claims, on which a large amount of work has been done. The ledges carry free-milling and sulphuret ores.

Alaska Treadwell Gold Mining Company.—This company reports its clean up for the month of September as follows: Period since last return, 31 days; bullion shipment, $59,334; ore milled, 22,250 tons; sulphurets treated, 378 tons; of bullion there came from sulphurets, $19,235; unable to state gross expenses for period. The average yield was $2.67 per ton of ore milled.

Eagle Creek.—The country is staked all along this creek, in the Yukon district, for 30 miles and offers of $12 per day are made to miners to go there and work by the day. It is asserted that this district is the richest yet discovered on the Yukon. The freight charges from Circle City to Eagle Creek are 50c. a pound and living is correspondingly high. The circulating medium is gold dust, which is abundant.

Willoughby.—This mine, at Funter Bay, is said to have been sold to a Chicago syndicate for $200,000. The property embraced 11 claims and a 10-stamp mill which will be enlarged to 30 stamps.

ARIZONA.

GILA COUNTY.

Black Warrior Copper Company.—James A. Fleming, J. M. Ford and others have incorporated this company with a capital stock of $1,000,000 in $10 shares. The mines are located in the Globe District and have lately been placed with Eastern capitalists. The claims are said to be among the richest in Arizona.

CALIFORNIA.

AMADOR COUNTY.

(From Our Special Correspondent.)

Genevieve.—At this mine, two miles northeast of Oleta, the shaft is down over 30 ft. on a 4-ft. vein. Assays from this ledge average $21.70 per ton. A tunnel 225 ft. in length, run into the hill toward the vein, has struck good ore.

Oneida.—At this mine, two miles north of Jackson, a large hoist is in course of construction, and a handsome residence is being built for the Superintendent.

CALAVERAS COUNTY.

(From Our Special Correspondent.)

At a meeting of a branch of the California Miners' Association, which was organized, at the Gwin mine on September 17th, with 22 charter members, F. F. Thomas was elected president and M. B. Kerr, secretary and treasurer.

Boston.—At this mine, 2½ miles northeast of Mokelumne Hill, on Indian Creek, the milling capacity has been increased to 20 stamps. A new hoist has also been erected.

MARIPOSA COUNTY.

(From Our Special Correspondent.)

Merced Gold Mining Company.—J. A. Coram, of Lowell, Mass., and C. N. Palmer, manager of the Butte & Boston Company, of Butte, Mont., have returned to San Francisco from a visit to the Merced Gold Mining Company's property at Coulterville, in which they are interested. Mr. Coram says, "It is the intention of the company to put in an electric plant in the near future, bringing the water for power, by a pipe line from the Toulumne River, a distance of 11 miles." This would give them more power all the year around than would be required.

SAN DIEGO COUNTY.

(From Our Special Correspondent.)

Golden Cross Mining Company.—A rich ledge of quartz has been struck in one of the mines of this company at Hedges, in the Cargo Muchacho District. This company is still in the hands of a receiver, but report says the mines will soon produce enough to pay the indebtedness.

SHASTA COUNTY.

(From Our Special Correspondent.)

Mad Mule.—This pocket mine, 5 miles northwest of Whiskeytown, comprises 4,500 ft. × 600 ft. It is worked by a tunnel starting from Mad Mule Gulch on different levels along the contact of the dike following the general course of the porphyry. As high as $10,000 has been taken out of one of the contact points. The gold is coarse and sells for $17.25 per ounce. A syndicate of San Francisco capitalists purchased this property recently from Elleigh & Rea, who have been working it on a large scale for several years.

TOULUMNE COUNTY.

(From Our Special Correspondent.)

Black Oak.—The shaft at this mine, about a mile southwest of Soulsbyville, is down 900 ft. A large amount of high-grade shipping ore is being hoisted, besides a quantity of lower grade which is being milled at the mine.

Shawmut & Eagle.—Taess' mines, near Jacksonville, employ 75 men. The shaft in the former is down 125 ft. and a shaft has been started in the Eagle.

TRINITY COUNTY.

(From Our Special Correspondent.)

It is reported that a silver ledge 25 ft. in width has been discovered by John H. Smith, on Stuart's Fork. The ore is said to be high grade.

COLORADO.

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From Our Special Correspondent.)

September Output.—The output of ores in September was the largest ever actually made from Cripple Creek. The following statement gives the totals:

	Tons.	Value.	Av. per ton.
Smelting ore	9,430	$653,800	$70
Milling ore	7,100	163,800	27
Total	16,530	$817,600	$49

The milling ore was distributed as follows, 1,200 tons, valued at $39,600, or $33 per ton, to Brodie Cyanide Mill; 1,500 tons, $45,000, or $30 per ton, to Gillette Mill; 4,400 tons low grade, valued at $79,200, or $18 per ton, to Florence Mill.

Alliance Mining Company.—The City View, on Gold Hill, owned by this company, has suspended work temporarily since October 5th. The leasees did several hundred feet of development on this property and shipped considerable ore, but apparently not enough. The De Witt lease on this property never yielded as much, or so rich ore, as this week. During the past 30 days the lease has produced 200 tons of ore, which averaged $75 per ton.

Anaconda.—The output is fast increasing; from one drift in a shallow upper tunnel, only some 30 ft. deep, 4 cars are being taken out daily. The vein is fully 6 ft. feet wide, and samples over $30 per ton. Early in 1892 several hundred tons were taken out at surface from near this place. Several leases are being worked near this place.

Anchoria-Leland.—The shaft has been sunk below 700 ft. and a little water has been encountered, about 100 gals. per hour. It is proposed to carry on the sinking until such time as the water in the shaft increases to such an extent as to be ample for surface and steam purposes, when the sinking will be abandoned for the winter. Already there are reserves opened out to last for two years, as no stoping has been done below the first or 278-ft. level. The output for September was about $40,000, all the returns not being received. The number of men employed is 46. The average grade of ore is a little over $100 per ton. About 100 tons of low-grade ore ($25) was sent to the Brodie cyanide mill.

Brodie Cyanide Mill.—For the month of September this mill treated 1,200 tons which averaged $53 per ton. The improvements at the mill still continue; tanks are being built for the storage of oil, which will supply the motive power instead of coal; the new Pearce Turret furnace is doing good work, and the storage bins were never so well supplied with ore as at this time, showing that the mill under the present manager, Mr. Hunt, has grown steadily in favor with the mines.

Doctor.—This mine, on Raven Hill, shipped for September 600 tons, which sampled from 6 oz to 19 oz. per ton; a low estimate would put the average at 10 oz. The mine employs about 60 men. A recent strike was made on the North Star vein on this claim which assays $50 per ton. When the Raven tunnel penetrated this ground a small pocket of ore was found, which was soon exhausted, and this has been the first pocket for two months on that vein. The mine is doing well.

Elkton.—This mine, on Raven Hill, ships 12 carloads per week. The production this month will be kept to the $40,000 mark, which costs from $10,000 to $11,000 to mine. The mine employs 88 men.

Galena.—This mine, on Red Mountain, about 2½ miles northwest of Cripple Creek, is again to the front with a strike, after being idle nearly two years. A specimen said to come from the claim was exhibited around the camp, which assayed $200 in gold and over 100 oz. in silver. The vein was first found in the latter part of 1892 and caused quite a flutter; in 1894 two or three small shipments were made to the smelter with profitable results. The shaft was sunk on the vein, which was galena in a syenite formation, hence the name. The mountain was named from the red color of the felspar, which is conspicuous at a distance. The claim is under lease and bond to some local parties. The shaft is now 120 ft. deep and drifts are being extended north and south.

Gold & Globe Mining Company.—The Gold King, on Gold Hill, owned by this company, has come to the front with another strike. The east 500 of this claim was sold to a Mr. E. Porter, of Joliet, Ill., for $35,000. The west 700 ft. was sold to the Alliance Mining Company for $15,000, and 300 ft. near to the center of the claim was recently leased and bonded for $55,000. The lessee in sinking a shaft 7 ft. deep struck some splended specimens of telluride ore, and developments are now being pushed.

Lincoln.—This property, on Gold Hill, is being worked by several sets of lessees. Lind & Ander-

son extended a tunnel into the hill 150 ft. and intersected a vein which has yielded ore sampling nearly $1,000 per ton. The depth of the vein in the breast of the tunnel is now 50 ft. The lessees on the dump ship 4 oz. ore.

LITTLE FAUNTLEROY.—At this claim, on Gold Hill, close to the town and mine of Anaconda, a vein has been uncovered which carries some rich-looking quartz.

LITTLE MAY.—This mine, on Beacon Hill, is shipping 12 tons of ore per day, and neither wall of the veins has yet been found. The ore is low grade—from 1 to 1½ oz.—but manages to leave a good margin of profit. Twelve men are constantly employed.

LUCKY GUSS.—This mine, on Bull Hill, owned by a London syndicate, for the month of September, managed to meet all the ordinary expenses, and the extraordinary expenses, such as the building of a new ore house and ore bins, and the providing of three months' supplies, such as coal, fuse, powder and candles. But little stoping is being carried on, although the mine is being vigorously developed. The number of men employed now is 27.

MOOSE.—This mine, on Raven Hill, shows steady improvement. The pumps are being fixed and will throw the water to the 330-ft. level, where the tunnel from Arcoue made connection with the shaft. The steam and water column are now being erected. A few tons of good ore has recently been hoisted. The number of men employed is now 37.

RAVEN.—This mine, on Raven Hill, last month produced 400 tons of its usual grade of ore varying from 1½ to 4 oz. gold per ton, nearly all of which was treated at Gillette mill. The tunnel has pierced the hill from the north 1,160 ft., and satisfactory progress is being made with rock drills.

GILPIN COUNTY.

(From Our Special Correspondent.)

GILPIN COUNTY TRAMWAY.—Considerable reductions are being made in the rates charged for haulage, which it is hoped will result in a much larger business. An extension is now being laid to the Phœnix-Burroughs Mine, a large producer on Quartz Hill, and grading has been commenced to the Hidden Treasure shafthouse.

LOTUS.—A new hoist is being placed on this property of sufficient capacity for working to a depth of 1,000 ft.

NOTTOWAY.—Chicago parties have taken a lease and bond on part of this vein, which has for many years provided a living for a party of leasers, who have worked in a hand-to-mouth manner. The intention is to put a plant of machinery on the property and work it in a systematic way. The Nottoway is a masterly vein and is well worthy of development.

STATE ORE SAMPLING WORKS.—An addition has been built to the works, so as to afford more bin-room. Most of the large producers in the county ship to the smelters direct, and the ore handled at the sampling works consists mainly of small lots.

WASHINGTON—ST. LOUIS JUSTICE.—The litigation between these two mines has resulted in each obtaining an injunction to prevent the other from working, pending the hearing of the case next January. It would seem that the veins worked by these two companies have come together in depth, and the question at issue is, to which party should the united vein belong. A curious feature of the case is that while the St. Louis has the earlier patent, both locations were made on the same day.

PARK COUNTY.

GROUSE MOUNTAIN DISTRICT.—A number of claims have been located in this new district, which has only recently been prospected. The veins at the surface, so far as ascertained, are said to assay from $4 to $12 per ton, while the ore is free-milling in its nature. Active work will soon begin on some of these claims.

GEORGIA.

WHITE COUNTY.

SALL MOUNTAIN ASBESTOS COMPANY.—The company is now putting in a large amount of new machinery, roller crushers, fiberizing machines, etc., for preparing the asbestos for market. The short-fiber asbestos has been the chief product so far, but a longer-fiber article is now being prepared, and this product will be increased in quantity. Considerable sales of Sall Mountain asbestos for export have lately been made. The company is now turning out about 100 tons a month.

IDAHO.

OWYHEE COUNTY.

TRADE DOLLAR.—During September, the output of this mine was two carloads of concentrates and 15 bars of bullion. Besides this, a carload of rich smelting ore, which has been accumulating, was shipped, of an estimated value of $50,000 or $60,000. The combined output of September is estimated to be about $115,000. A complete electric light and power plant will be put in at once.

MICHIGAN.

COPPER.

TECUMSEH.—Last May this mine began sinking a shaft with the hope of striking the Calumet lode. This lode has now been struck about 80 ft. down, and is about 4 ft. wide at the point of contact, widening with depth.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The output of ore last week was about the same as the week before, and the sales of ore were less. The top price paid for zinc ore last week was $20.50 per ton, with an average of $19.50 per ton. There is about 800 tons of surplus zinc ore left over from last week. During the last month there has been a gradual increase in the price of the lower grades of zinc ore, and from the present outlook it seems as if it will increase. The price of lead ore until Thursday was $14.50 per 1,000 lbs. delivered, when it dropped to $14 per 1,000 lbs. A large number of the lead mines are not being worked on account of the low price of ore. The following was turned in from the different camps for the week ending Saturday, October 10th, 1896: Joplin zinc, 1,436,110 lbs.; lead, 178,720 lbs.; value, $16,722. Webb City zinc, 522,000 lbs.; lead, 48,440 lbs.; value, $5,642. Carterville zinc, 624,460 lbs.; lead, 228 640 lbs.; value, $9,133. Galena, Kan., zinc, 2,710, 00 lbs.; lead, 478,000 lbs; value, $29,727. Oronogo zinc, 86,080 lbs.; lead, 11,910 lbs.; value, $968. Aurora zinc, 505.000 lbs.; lead, 41,000 lbs.; value, $3,595. Stott City zinc, 41,340 lbs.; value, $414. Totals for the district: Zinc, 5,923,890 lbs.; lead, 968,210 lbs.; value, $66,351.

CHICAGO CONSOLIDATED COMPANY.—This company's plant on the Leonard land ran steadily all last week on rich dirt, and produced 65,600 lbs. of zinc ore and 10,000 lbs. of lead. They are drifting at 120 ft. on a large face of zinc and lead ores in open ground with about enough water to run the plant. They have ten lots.

DAMFINO.—At this mine Gordon Allen is drifting at 135 ft. on a large face of zinc ore in hard ground. With crusher rolls and three hand jigs 50 tons of high-grade zinc ore were produced last week.

HILL & COMPANY.—They have purchased the Smith Bros.' steam plant that was on the Eleventh Hour lease and are having it removed to their shaft on the McKinley lease. They have a large face of zinc ore at 130 ft. in flint ground and also a rich run of lead at 102 ft. in limestone ground.

JOPLIN CONSOLIDATED COMPANY.—This company started up its new steam concentrating plant the first of last week on rich dirt from the Madeline Pollard and Lone Star shaft. For 111,770 lbs. of high grade zinc ore they received $20 per ton, declaring a good dividend for each of the six stockholders.

MCKINLEY LEASE.—The output from this lease was light last week. All the operators who have zinc ore shut down to put in machinery, as the disseminated ore has to be run through crushers and rolls to get the ore out. The McKinley Company has purchased the 16 to 1 plant that was on the Elliott & Company land, and is having it removed to its shaft. This will give two boilers, one 50 and the other 60 H. P. They have developed a 15-ft. face of zinc ore in flint ground. They easily drain the ground with a 10-in. steam end lift pump.

MURPHY, KINMOUNTH & MURPHY.—They have a lease on the Murphy land west of the South Joplin Lead and Zinc Company's land and have a 10-ft. face of lead and zinc ore developed at 60 ft. in open ground. On account of the illness of the contractors who are sinking the shaft, work has been suspended for three weeks, but will be commenced this week.

RAYMOND, SMITH & FREEMAN.—They made a big strike of lead on the Keller ground at a depth of 40 ft. in soft ground. The face is 30 in. thick and 10 ft. wide.

R. H. NIXON.—A capitalist of Newport, Ind., has been here for several days looking after his interests in some valuable mining properties, among which are the Birth Day and the Nixon plants and mines. The plant of the Nixon Mining Company was started up on half time last week, and produced 19,350 lbs. of high-grade zinc ore, which brought the highest price, viz., $20.50 per ton. This will be a large producer as soon as they open up the drifts, so that they can put a few more men at work in the ground.

SADTLER COMPANY.—The company, on its land near Dunweg, has struck another big prospect in a drill-hole. They drilled into the body of ore at 82 ft. and went through it at 114 ft. in open ground, giving them about a 32-ft. face of zinc ore to work. In this same drill-hole they struck lead at 30 ft. and went through it at 40 ft. This is the fourth hole drilled within a radius of 150 ft., all of which showed up the same body of ore at the same depth. The company is putting a new pumping plant at the shaft near the center of these drill-holes and has started to drift toward ore.

SPOT CASH COMPANY.—This company is putting in a crusher and set of rolls and will drift at 130 ft. on a large face of zinc ore in flint ground.

THOMBS & COMPANY.—Captain Thombs and Fred Bremerman have secured the Noonday mine on the Eleventh Hour lease, and are sinking to catch a run of ore developed in the pump-shaft at 220 ft.

MONTANA.

BEAVERHEAD COUNTY.

OLD FAITHFUL.—Through the efforts of ex-Governor B. F. White an amicable adjustment of the troubles at the Old Faithful mine and mill, at Bannack, has been arrived at, says the Butte *Daily Inter-Mountain*. The trouble came up on the failure of the lessees to make a payment on the bond then due. The men employed at the mill and mine, upon learning of the default of payment, became interested in the matter of their wages, and learning that the owners of the property were contemplating instituting legal proceedings to recover possession of the mine and mill, took possession of the property themselves, and also seized Manager Thurston, declaring that he would be held until their wages were paid, and announced that they would run the mill and mine until sufficient bullion was treated to satisfy their claims, the output of the mill being about $200 per day.

Manager Thurston succeeded in making his escape and reached Dillon. A rumor reached him shortly after arriving there that the men were destroying the property and were making away with the product of the mill without keeping any account of the same. He caused complaints to be filed, charging them with grand larceny, and the sheriff of Beaverhead County arrested about two thirds of the men and lodged them in the Dillon jail. The other men remained at Bannack and continued work at the mine and mill. When the cases came up for hearing the men were discharged. Mr. Thurston was unable to arrive at any satisfactory settlement with the men until ex-Governor White, who is interested in the property, adjusted matters by making an agreement with the men that all the gold mined and milled while the men were in possession of the property should be deposited in a bank and held as security for their payment. The property was turned over to the lessees and the men returned to work perfectly satisfied.

FERGUS COUNTY.

SPOTTED HORSE.—The report comes that this famous old mine of Maiden has been sold to J. L. Bright, of Columbus, O., and that he will operate the property at an early date. With the deal, he acquires possession not only of the Spotted Horse and its milling plant, but the Kentucky Favorite and other mines belonging to the late Double Eagle Mining Company.

GRANITE COUNTY.

NEW YORK EXPLORATION COMPANY.—Mitchell & Mussigbrod announce that they have sold the First Chance mine and 23 other claims to this company for $150,000. The claims are near the placer diggings of old Beartown and have been extensively developed. The ore is gold-bearing quartz.

JEFFERSON COUNTY.

ALTA.—This mine, at Corbin, has closed down probably for all time. It covers an immense mountain into which a tunnel nearly 2,000 ft. in length has been run. The whole mountain has been honeycombed and all the ore taken out. A winze was sunk to a depth of about 1,000 ft. in the hope of uncovering ore, but it is said none was found. A new plant built to treat several million tons of tailings will soon be in operation.

BADGER.—Messrs. Grobe, Hinton, and others, who have been steadily at work on the Badger, a silver lead proposition which they hold under bond from A. L. Brown, recently shipped their first carload of ore since the resumption of operations, some 8 or 10 weeks since.

GEM.—H. L. Frank and E. L. Whitmore have secured this claim and a fraction known as the Stuart, north of the High Ore, on a bond of $45,000, and are now putting machinery in position to work the ground. The Gem is owned by James A. Murray and J. C. Carroll and is developed by a shaft 300 ft. in depth. The work of the lessees will consist in driving a drift east and south at the 300-ft. level.

HOPE MINING COMPANY.—This company, under the new management, has commenced work with about 70 men. They have opened the old shaft to the tunnel, and are retimbering the shaft to the 300-ft. level. They are getting in shape to build a new hoist, put new machinery in the mill and sink the old shaft 200 ft.

LEWIS & CLARKE COUNTY.

DRUM LUMMON.—It is reported that this mine at Marysville is in bad shape. Since October 4th 60 men have been laid off, most of them machine men in the mine. It is said some time ago the vein split about the 800 ft. level. One fork was worked until it lost its value and was abandoned and the other fork taken up. The present trouble, so it is said, is that the latter fork is losing value, becoming so low grade that it is impossible to make the mine a paying proposition. Arrangements are being made to develop other leads owned by the company.

PAUPER'S DREAM MINING COMPANY.—This company resumed operations last week at their plant, located six miles above Rimini. The mine is a porphyry proposition and named the Molly Stark. The mill is a 10-stamp plant. The development work on the mine consists in the running of a tunnel to tap the bottom of the shaft, which had already been sunk to the depth of several hundred feet. The entrance of the tunnel, which is over 500 ft. long, is located in Coon Hollow, about a third of the distance between the mine and the mill.

MADISON COUNTY.

Archie Gillis and others have secured a lease and bond on one of Dr. McGarvin's properties, near the Mayflower, and will prosecute work on it during the winter months. An average assay of the lead near the surface is said to give returns of $12 in gold.

BLACKSTONE.—This mine, near Sheridan, is located on a ridge of the Tobacco Root range known as Sky High and was first located about four years ago. Two years ago it was was worked for several

months, yielding several tons of gold ore, some of which assayed as high as $700 to the ton. The water finally compelled the work to be abandoned, and about a year ago the owners began work on a tunnel. They honed to strike the ledge at a distance of about 350 ft., but did not. A few weeks ago at a distance of 450 ft. the ledge was tapped and the ore at that depth was equally as rich as above. The 8-in. ore streak will probably average about $250 to the ton and a large body of a less grade. The work will continue at the mine all winter.

LEITER.—It is reported that a new 4-ft. chute of $40 ore has been exposed in this mine. The Leiter is the most extensively developed property in the district, and has been a steady producer for several years.

SILVER BOW COUNTY.

MINNIE HEALY.—This is a fractional claim in Meadorville, about 700 ft. in length and 350 ft. wide, adjoining the new Leonard and Gambetta on the south. The mine has been worked spasmodically for a number of years. Last spring James Finlen secured a lease and bond in the sum of $90,000 and began work. Now he has been rewarded by striking a fine body of ore at the 350-ft. level. At present the ledge is from 18 to 26 in. in width of good copper glance.

MONTANA ORE PURCHASING COMPANY.—This company on October 15th paid the regular quarterly dividend No. 12, of $1 per share, making $40,000. This is the fourth dividend this year, making $320,000 paid for the year.

OLD GLORY.—The big pocket of ore at this mine, near Soap Gulch, is exhausted. It was rich while it lasted, but the pocket was only 80 ft. long and 18 in. wide. At a depth of 50 ft. it played out, but the owners netted some $60,000 while it lasted. The owners are now making preparations to sink 100 ft., hoping to find a continuation of the ore body or another rich pocket.

NEVADA.

HUMBOLDT COUNTY.

GOLDEN CHARIOT.—It is reported the Hendra Brothers, of Dun Glen, sold this mine recently to San Francisco parties and active preparations are in progress to begin work in earnest. The old 5-stamp mill is being torn down and in its place a 20-stamp mill will be erected. Two carloads of machinery have arrived.

WHITE PINE COUNTY.

NORTH MOUNTAIN MINING COMPANY.—The mill of this company, at Egan Canyon, began crushing ore October 1st, and the company will make shipments to the head office at Salt Lake City. There are at the mill and dumps of the mine some 3,000 tons of high-grade gold ore, which will be treated by the cyanide process; 50 tons will be worked each day.

NEW MEXICO.

GRANT COUNTY.

(From an Occasional Correspondent.)

GOLDEN GIANT.—Seventy men are working in this mine, and the mill is running steadily with satisfactory results. A contract has been let to sink the shaft an additional 100 ft. from its present depth of 350 ft.

MOUNTAIN KEY.—In this mine work is being done on the 300 ft. level, and the shaft, which is 700 ft. deep, is being retimbered and sunk deeper. A Huntington mill is being run at the mine and the high grade ore shipped to the smelter. The mine is partly full of water, which is hoisted and used in the mill.

PACIFIC EXTENSION.—The owners of this mine have been enlarging the No. 1 shaft from the 108-ft. level to the surface. Before the present owners bought the mine this part of the shaft had been sunk by lessees, and the work had not been done well. From the 108-ft. level down to the present depth, 385 ft., the shaft is in good shape. They have put in a new iron tank, have reset the hoist, put in an 800 ft. cable, and will start three shifts at sinking. The vein is a true fissure vein and is worked continuously for more than three miles. A 10 stamp mill is running steadily.

PACIFIC GOLD COMPANY.—Spiler & McLane are working a large force of men on the Pacific No. 1 mine under lease and are running the mill at Silver City full time. The ore, which is rich in iron sulphides, is concentrated about 4 into 1 and shipped to the Silver City smelter.

TREASURY MINING COMPANY.—This company, of Denver, Colo., has made its payments on the Deep Down and Atlantic mines and is running the mill full time on $25 gold ore. The contract has been let to sink a 90-ft. winze. On the second level, a distance of 600 ft. south has been reached and an ore lead struck from 18 in. to 24 in. wide.

SIERRA COUNTY.

HILLSBORO DISTRICT.—The first shipment of 40 tons of high-grade gold ore from two of the leading mines in this district, the Snake and the Opportunity, was made recently to the reduction works at Silver City. These mines are now producing about 100 tons of ore a week, and the other working mines in the district are producing about 250 tons of ore a week, most of which is reduced in the district.

TAOS COUNTY.

MIDNIGHT EXTENSION MINING COMPANY.—This company's claims in La Belle district are being developed and are prospecting well. The Memphis vein, it is said, assays $90 in gold, and 236 oz. in silver, and the Cora Gibson shows stringers of $10 ore. The Criterion shows 11 ft. of vein matter at a depth of 60 ft. La Belle tunnel is in 400 ft. and has cut several small veins. A smelter is being built to treat the ores of the district.

NEW YORK.

DUTCHESS COUNTY.

ATLANTIC MINING AND SMELTING COMPANY.—This company, which was organized in July last, proposes, it is said, to begin mining operations soon on the Murch farm, near Rhinebeck, where a discovery of ore carrying free gold is claimed. Such a report is no new thing, as similar "discoveries" have been made along the Hudson at intervals for the last 50 years. The incorporators of the company are Charles Roblee, of Brooklyn; Charles F. Phillips and D. R. Hendricks, of New York.

OHIO.

MONROE COUNTY.

FISHER OIL COMPANY.—This company has another gusher on the S. L. Woods farm, near Benwood, O., which was drilled last week. Several times the oil was forced over the top of the derrick and a large amount of it was wasted before the necessary tankage could be erected.

PERRY COUNTY.

MINERS' STRIKE.—About 1,500 miners quit work at Corning on October 13th, refusing to accept a reduction from 61c. to 45c.

PORTAGE COUNTY.

A party from Portland, while prospecting in the eastern part of the State, is reported to have come across a bed of kaolin, and a number of claims were immediately staked out. Samples of the kaolin were sent to a Delaware pottery with the request that the clay be worked into chinaware. The pottery manufacturer reports the quality excellent.

PALMYRA MINERS' STRIKE.—The strike inaugurated by the coal miners of the Palmyra District last March was terminated last week and work was resumed. The basis of settlement was 68½c. per ton for mining, a decisive victory for the strikers.

OREGON.

DOUGLAS COUNTY.

ANNA.—Five carloads of machinery for a 20 stamp mill, a cable tramway 3,200 ft. long, and 8 concentrators have just been received for this mine, in the Bohemia district. The mine is now to be worked on a more extensive and thorough plan than ever before. Some 50 men have been employed there all summer, getting out ore, building a sawmill, making lumber, etc.

UNION COUNTY.

UNION COMPANION.—This mine, in the Cornucopia district, employs 70 men, and has until now been operated by electricity. Boilers and engines are now being put in. Twenty stamps are dropping regularly, resulting in a monthly output of 65 tons of concentrates, which are shipped to the Tacoma Smelting Works. A new tunnel is being constructed that will tap the ledge 200 ft. below the present workings. The tunnel that will be opened up on the recently purchased Carey property will be worked with Burleigh drills by means of an air compressor, that is now being erected.

PENNSYLVANIA.

ANTHRACITE COAL.

BUTLER.—Last week this mine was set on fire by a gas explosion, and 400 men were thrown out of work. The mine has been flooded with water.

DRAPER COLLIERY.—A discovery was made at this colliery, operated by the Philadelphia & Reading Coal and Iron Company. The Orchard vein was struck and found to be 8 ft. thick and only has nine inches of refuse.

PATTERSON COAL COMPANY.—In addition to rebuilding the Natalie breaker, which was so badly damaged by the late storms, this company will erect another colliery at the new No. 4 slope, located a short distance above the Richards Colliery. The old Natalie Colliery gave employment to 1,500 men and boys, and the cost of sinking the slope and erecting the structure was $125,000. The breaker to be erected at No. 4 slope will also give work to 1,500 men and boys.

BITUMINOUS COAL.

BLYTHE COAL COMPANY.—The Red Bird mines, owned by this company, are idle on account of a strike of the drivers. Although the maximum rate for driving is $1.55 a day the company has been paying $1.65, or 10c. a day above the price fixed by the organization. The men want more and have struck.

LANCASTER COUNTY.

WRIGHTSVILLE LIME COMPANY.—This company has purchased John Haldeman's farm and limestone quarries, comprising 250 acres, near Bainbridge, at the Susquehanna River, price stated to be $27,600.

SOUTH DAKOTA.

LAWRENCE COUNTY.

WASP NO. 2.—Twenty-two cars of ore from this mine gave a return of $32,504, or an average of $1,482 per 20 tons. All the ore so far taken out has been from a drift 70 ft. long and 10 ft. wide in the ore body. At a point 2,000 ft. south of these main workings the company has opened another ore chute that varies from $50 to $60 in gold.

YANKEE BOY COMPANY.—A large body of silver-lead ore has been found in the Joe Hooker lode of this company. The face of the workings show a solid breast of ore 5 ft. thick and 13 ft. wide, averaging about $16.

TENNESSEE.

MONROE COUNTY.

COOPER GOLD MINING COMPANY.—This company was organized last week for the purpose of developing lands in the Coco Creek gold fields. Capt. H. H. Taylor, Cooper Bros., James Curd and T. E. H. McCroskey are the charter members of the company. Mr. Curd will act in the capacity of general manager of the company.

UTAH.

BEAVER COUNTY.

BLUE BIRD.—Ore of a similar character to that in the Swansea was struck recently in this mine, near Marysvale, which is being worked by Messrs. S. E. Ware, William Hatfield, T. J. and F. W. Blue.

SALT LAKE COUNTY.

LEXINGTON MINING COMPANY.—The miners of the old Telegraph mine, in Bingham Canyon, which is owned by this company, have for many months been working on the leasing system, but recently the fall in price of lead left no profits. Now a number of contracts have been made by the managers on a new basis. Deciding to contract by the foot, agreements to that effect were made with small groups of men, aggregating in all 70 persons, who are now at work. These contracts include the idea of paying by the foot for driving drifts, crosscuts, etc., while the miners are entitled to choose their manner of receiving their pay either by contract, measurement of feet or by a percentage of ore values shown by sampling. Up to a very recent date the miners preferred leasing to that of either day labor or contract work, but now they prefer the contract system. There is a foreman and an assistant to look after the work.

NIAGARA MINING AND SMELTING COMPANY.—The stockholders of this company held their annual meeting recently, at which the following directors were elected: George B. Langley, Millville, N. J.; Dr. G. E. Palen, Samuel Huckel, Jr., C. H. Schermerhorn and J. K. Kynett, Philadelphia. The annual reports denote a large amount of development work during the past year. The tunnel that was undertaken some time ago has penetrated the hill for a distance of nearly 3,000 ft., giving the workings a vertical depth of from 700 to 1,000 ft. and from it the vein is now being prospected. The work has been prosecuted under the direction of Manager W. H. Thomas. Colonel Heffron, who has been operating the ground under lease from the company, has demonstrated through the Spanish mill, which has been converted into a cyanide plant, that ores running as low as $4.50 in gold can be profitably handled, although at present the values average about $7 per ton, which class of ore is being shoveled from the surface. At present, regular shipments of cyanides of gold are being made and the earnings may be increased at any time the capacity of the mill is enlarged. Meanwhile the exploration of the lower levels continues with many assurances that ore will be encountered.

(From Our Special Correspondent.)

BINGHAM GOLD MINES.—Samuel Newhouse, managing director for the United States Exploration Company, of England, has purchased the Highland Boy, Henry M., and other gold-bearing claims, constituting a group of 10 claims in Bingham. According to the record the price is $200,000, of which sum $65,000 has been paid. The ore is blocked out in a vast zone and shows an average value of $10 gold and $1.50 silver. A mill of 200 tons capacity is designed. A tunnel tapping the ore bodies will be made to connect with the plant that is to be ultimately operated with electrical power.

TOOELE COUNTY.

BUCKEYE MINING COMPANY.—The annual stockholders meeting of this company, of Tintic, was held recently during which the following board was elected to serve for the ensuing year: John Beck, president; Richard J. Taylor, vice-president; James Pingree, treasurer; W. J. Beattie, secretary; J. W. Green and A. E. Hyde. The Buckeye is shipping regularly. The company recently completed the laying of half a mile of pipe line, so that now the mine is well supplied with water.

CYCLONE & TIP TOP.—These two old producers, in Ophir District, are being worked by Salt Lake parties under lease. In cleaning out the old drifts, tunnels and shafts, they have taken out a lot of ore which was shipped and gave returns of 43% lead, 13·8 oz. silver and $4.16 in gold to the ton. In the bottom of a 275-ft. incline shaft they found the vein that had been lost. The ledge uncovered is 3½ ft. in width, 1 ft. of which is pay ore.

HUMBUG.—The first shipment from this property, in Tintic District, was a small one, consisting of 16 tons, which netted $112.50 per ton, and turned into the company's treasury $1,890. The silver in the lot reached 180 oz. per ton.

NORTHERN LIGHT MINING COMPANY.—A contract has been let by this company for the erection of plant that is to have a capacity of 200 tons daily. Its machinery installation will comprise one 60-H. P. Corliss engine; two 70-H. P. boilers; one Blake ore crusher; two sets of rolls, one of which is a Wall,

the other a Cornish; besides other appliances necessary for the construction of a first-class cyanide mill. Six cast-iron tanks will be put in at first, with a total capacity of 50 tons of ore daily. The estimated cost of the mill is $22,000. The officers of the company are: E. H. Airis, president; E. E. Crooks, vice-president, and E. D. Woodruff, secretary and treasurer.

SEARCHLIGHT MINING COMPANY.—This company has just purchased a 20 H. P. steam hoist, which will be placed in position at once. The shaft is now down a depth of 190 ft., and it is the intention of the company to continue work until the Sunshine and Overland ore zone is encountered. Two shifts are being employed in the development of this property. The Searchlight is located east of and adjoining the Sunshine and south of the Overland, in Camp Floyd mining district.

(From Our Special Correspondent.)

GOLDEN GATE MILL.—Your correspondent is assured by Hartwig A. Cohen, manager of Capt. J. R. De Lamar's property, at Mercur, that bids have been invited for a cyanide plant with tonnage capacity of 400 tons. The departure in this plant from that now in general use at Mercur is that every ton of ore will be roasted before its commitment to the tanks. This is for the purpose of expelling the refractory properties, whether they appear in the nature of realgar or as an arsenical acid. Upon the Golden Gate are over 10,000 ft. of shafts, inclines and drifts, while the dead walls are estimated at less than 10%. Not a foot of stoping has yet been done, and with an output of 400 tons there is sufficient blocked out upon which to operate the mill for an indefinite period.

WASHINGTON.

PIERCE COUNTY.

TACOMA SMELTING AND REFINING COMPANY.—This company's product for September was 4,000 bars bullion, weighing 411,292 lbs., and copper matte, weighing 195,400 lbs., containing 2,233·72 oz. gold, valued at $46,171; 49,648·41 oz. silver, valued at 65¾c. per oz., or $32,644; 437,825 lbs. lead, valued at 2·60c. per lb., or $11,383; 75,737 lbs. copper, valued at 10⅜c. per lb., or $7,858—a total of $98,056. There were 78 men employed, and the pay roll was $5,064, and for wood-choppers and teams, $672—a total of $5,736.

SNOHOMISH COUNTY.

BALD MOUNTAIN MINING COMPANY.—This company has been incorporated to develop properties in Bald Mountain, on Martin Creek, two miles west of Silverton. There are three mines in the group, known as the Golden Cord, Lake View and Extension No. 1 of the Golden Cord. The incorporators are S. N. Baird, C. D. Fratt, T. W. Foster and C. K. Greene, the capital stock being $1,000,000. The above-named incorporators, together with A. D. Sperry, constitute the first Board of Trustees. It is the intention of the company to put men to work at once to develop the property.

FORTY-FIVE.—This group, in Sultan Basin, is now on the shipping list. The ore is packed over a range 4,000 ft. high to the Monte Cristo Railroad. The cost of packing is $25 per ton, but the ore, it is said, yields over $1,200 net profit per car. There are many tons of concentrating ore on the dumps.

LITTLE CHIEF.—Development work on this group has resulted in an ore exposure estimated at 500,000 tons. The ore is good-grade copper, gold and silver, that will pay to ship. The company has made a survey for a railroad to the Great Northern.

WEST VIRGINIA.

MARSHALL COUNTY.

NORTH PENN OIL COMPANY.—This company has sold a portion of its territory in this county to good advantage, and declared a cash dividend of 55% on its stock. It is understood that the amount of territory disposed of comprises about 50 acres of the 500 or more which is under lease by the North Penn, and that the consideration was $50,000.

MONONGALIA COUNTY.

SOUTH PENN OIL COMPANY.—Ex-Gov. A. B. Fleming, W. W. Arnett and C. E. Wells, of Fairmont, and Prof. I. C. White, of Morgantown, have sold to this company a large tract of oil-producing territory which will be worked by that company.

WYOMING.

CARBON COUNTY.

GRAND ENCAMPMENT CREEK.—There is every reason to believe that the new gold camp on this creek will prove profitable and a producer of gold in the immediate future. The veins are well defined, and are gold-bearing over a considerable extent of country. Prospecting has been done over a tract three by six miles in extent. There are no claims in the camp which have shafts sunk upon them to a depth greater than 10 ft., and the Golden Eagle, which is rich in free gold, is not an exception. Nine-tenths of the locations have not been touched with blasting powder, and nearly all the assays have been made from the surface rock. A number of assays made of surface rock show results running from $2.40 to $72 a ton in gold. The region is very high and the winter season begins early and lasts late. Snow is beginning to fall at the present time, and no one should go to the camp unless prepared for bad weather.

LARAMIE COUNTY.

It is reported that a mill run return from a shipment of 500 lbs. of ore taken from a new find on the northeastern slope of Laramie Peak gives 23 oz. of silver to the ton and 37% lead. The vein is 12 in. wide at a depth of 11 ft., and has been traced for several miles. The owners are preparing to develop the mine.

FOREIGN MINING NEWS.

BRITISH COLUMBIA.

TRAIL CREEK DISTRICT.

(From Our Special Correspondent.)

BIG THREE.—The mineral claims comprising this property are the View, Snowshoe and Southern Belle, on the south side of Red Mountain. The company has been severely criticised because it is said to be over-capitalized, but this objection can be urged against a number of popular companies in the camp. Like the Nest Egg, the Big Three is turning upon its traducers. Several men under Superintendent Williams are at work stripping the ledges and sinking. A tunnel as well as a crosscut is under way on these properties, which are now regarded on all sides as possessing a good surface showing.

BLACK BEAR.—Considerable development work has lately been done on this property. While the workmen were engaged in making an excavation, they uncovered the vein, which is said to be the same as that on the Josie and the White Bear. At present the work of placing the compressor plant is going on and some small buildings have been erected on the property. The Black Bear adjoins the Josie on the south and it is owned by the Le Roi Mining and Smelting Company.

BLUE BIRD.—The surface showing on this property is one of the best in the South Belt. The ledges are large and the iron capping itself is said to assay well. Mr. Fontaine, who is one of the four owners of this mine (the Blue Bird Mining Company), and who was the original locator of the Hattie, disputes the theory that the South Belt is not so auriferous as north of Trail Creek. He contends that the South Belt properties have lacked the necessary capital, but this is now forthcoming and it will place the South Belt in the front rank. The shaft of the Blue Bird is 25 ft. There is already a small quantity of shipping ore ready. The line of the Columbia and Western passes within a few feet of the Blue Bird, and its shipping facilities are of the best. Mr. Fontaine in his explanations has uncovered the same vein which runs through the Mayflower mine and the Lilly May.

SURPRISE.—This mineral claim, which is situated on the east side of Red Mountain, has been bonded to a French syndicate for $50,000. The Surprise is owned by Peck Brothers, of Chicago. Mr. Peter Porter, of Rossland, has also an interest in it. The time of the bond is 90 days, with an extension of 60 days.

WHITE BEAR.—The machinery for this mine has arrived at Trail Creek Landing. The management of this property is in charge of Mr. J. Y. Cole, formerly of the O. K. The work of placing the machinery will be pushed with vigor, as will also development work, which has lately been delayed, awaiting machinery.

MEXICO.

Recently a concession has been negotiated by Frederick Bartlett, of Chicago, and Henry Tudor Richards, of Los Angeles and Guaymas, for a railroad of standard gauge which will start from some point on the main line of the Mexican Central Railway and run westward, probably somewhat north of Batopilas, to some point on the Sonora Railway, with branches north and south, that will, according to the surveys already made, open up the gold fields and silver mining districts of Sonora, besides traversing some fine timber belts. The subsidy accorded is $8,500 a kilometer, or $13,600 per mile, in 5% bonds, and is for the main line only, but the branches are accorded special privileges which are likely to make them profitable. The charter will allow the company building the road to push a line southward into Sinaloa, and on to a point which will make a junction with the western branch of the Mexican Central Railway.

TURKEY.

OPAL MINING.—The Turkish Ministry of Agriculture, Mines and Forests, has granted a concession for 99 years for an opal mine, which was recently discovered at Ak-dagh, near Kavandji, in the sandjak of Kutahia, vilayet of Hudavendighiar.

LATE NEWS.

BOSTON & MONTANA MINING COMPANY.—At a meeting held in Boston, October 16th, the directors voted to declare the regular quarterly dividend of $2 per share, and an extra dividend of $1, both payable November 20th, to stockholders of record on October 22d. These dividends will require $450,000, and will make a total of $1,500,000, or $10 per share, paid this year.

OHIO COAL MINES.—Despatches from Columbus, O., say that a clause of the resolution adopted by the state miners' convention, last week, referring the question of whether the wage reduction proposition shall be accepted or not, to the local unions, providing that only those miners who could secure the present scale wages—61c. per ton—should work, pending the result of the vote. Under this rule, about 1,500 have quit work, but many of these same men have voted to accept the reduction. The result of the vote must be announced by October 17th, and as it seems altogether likely now that the reduction will be accepted, the shutdown is not likely to be of long duration.

BY TELEGRAPH.

(From Our Special Correspondent.)

LEADVILLE, Colo., October 16th.—It is definitely learned that a combination has been formed to handle the "Downtown" pumping proposition, and that this group of mines will be started up at an early day. A certain number of producing mines propose to pump out the water at their own cost. When this preliminary work is concluded the whole combination, which includes all the properties lying west of the Pendery fault, have agreed that they will prorate on the cost of pumping, each mine contributing in proportion to its production of ore. The work of unwatering these mines will be commenced soon; all the papers relating to the agreement have been signed. It is believed that all the properties concerned can be completely drained within 60 days from the time work is begun. The Smith-Moffatt combination, the Bon Air, the Northern, the Sixth Street, the Coronado, the Bohn, the Weldon and the Bison are in this new deal. Another party of miners from Joplin, Mo., numbering 175 men, will arrive here next Monday. A new proposition from the Miners' Union was submitted to the mine managers, through Governor McIntire, yesterday, offering to declare the strike off if all the men could be reinstated at the old rates of wages. The proposition was at once declined. The mine managers say that they expect to hire whom they please. There is no probability, under all these circumstances, that the strike will be declared off.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Oct. 16.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending October 10th, 1896, compared with the corresponding period last year:

	1896. Week.	1896. Year.	1895. Year.
Pennsylvania Railroad.....	77,963	2,758,203	2,852,200

PRODUCTION OF BITUMINOUS COAL, in tons of 2,000 lbs. for week ending October 10th, and for years from January 1st, 1896 and 1895:

Shipped East and North:	1896. Week.	1896. Year.	1895. Year.
Allegheny, Pa.....	44,901	1,785,169	2,156,582
Barclay, Pa.....	‡1,283	34,388	....
Beech Creek, Pa.....	‡52,830	2,216,046	2,200,638
Broad Top, Pa.....	7,332	295,184	256,205
Clearfield, Pa.....	78,322	3,569,493	4,182,058
Cumberland, Md.....	71,639	2,674,437	2,228,766
Kanawha, W. Va.....	†91,703	2,820,033	2,124,162
Phila. & Erie.....	4,900	61,318	37,549
Pocahontas Flat Top.....	*65,246	2,606,412	1,815,892
Totals.....	417,576	16,083,510	15,301,852

* For week ending September 26th.
† For nine days ending September 30th.
‡ For week ending October 7th.

Shipped West:	1896. Week.	1896. Year.	1895. Year.
Monongahela, Pa.....	26,568	979,935	560,764
Pittsburg, Pa.....	35,725	1,467,143	1,282,127
Westmoreland, Pa.....	34,490	1,451,048	1,281,880
Totals.....	96,783	3,898,128	3,125,771
Grand totals.....	514,339	19,981,638	18,427,623

Production of coke on line of Pennsylvania Railroad for the week ending October 10th, 1896, and year from January 1st, 1896, in tons of 2,000 lbs.: Week, 48,072 tons; year, 3,105,943; to corresponding date in 1895, 4,451,814 tons.

Anthracite.

The amount of coal that is to be put upon the market by the producers during the month of October has been fixed at 4,500,000 tons. Last week, it is said, 1,000,000 tons of coal were moved from the mines to the various consuming territories and there disposed of. If this is so the anthracite-coal trade can hardly be called dull. It is of course true that the business now is not equal to that of a year ago, but as the record made at that time was phenomenal, and the heavy output helped to demoralize the trade, a comparison with last year's big shipments would hardly be a fair one.

Trade along the line is still reported as being quite good, with a considerable amount of coal going East. The trade in New York harbor, it is said, has fallen off somewhat within the last two or three weeks. The business of the retailers continues quite brisk. A scarcity of egg coal is reported; stove coal is said to be firm, while the sales of chestnut are weak. The recent storms have materially affected the despatch with which coal has been moved by water, the bad weather having made barges scarce.

The September schedule of prices is as follows: $4 for broken, $4 25 for egg and chestnut and $4 50 for stove.

The Anthracite Coal Operators' Association held a meeting in New York on Wednesday, October 14th. Two interesting papers were read, one by Mr. N. W. Perry on the "Conversion of Culm into Gas," and the other by Mr. John C. Haddock on the "Wastes and Burdens of the Anthracite Coal Trade." The assistant secretary presented a report on the possibilities of an export trade in anthracite. There

was a discussion on the sizing of small coal—nut, pea and buckwheat—and the question of freight rates on these small sizes was also brought up.

Bituminous.

The seaboard soft-coal trade is running along with small variation. These seem to be flushes of improvement from time to time. One week is possibly a little more active than the previous one, but taking it all in all there is practically no change to note. Last week there was a demand from the Sound from people striving to get in a full supply before ocean freight rates went up; this increased the general appearance of activity, but this week the demand has fallen off on account of advances in ocean freights, and the general market is again running in the rut of the last few weeks. What few contracts are coming into the market are receiving considerable attention from the local dealers, but the quantity is not sufficient for the operators to give their individual attention to it.

There was some hue and cry at the beginning of the season that on account of the pool prices anthracite, in its steam sizes, would supplant bituminous coal in certain territories. The fact is that the advance in soft coal prices by the Association was so moderate that except in the poorest grade of coal the margin did not allow of this supplanting.

Points east of Cape Cod are getting slightly more than their proportion of the total tonnage at present. Sound business with the advance in ocean freights will probably be curtailed from the lower ports, and with the next advance of 5c. will go to New York harbor shipping ports. New York harbor trade is quiet and steady at about the usual tonnages.

In the Association affairs there are rumors of one or two expulsions and resignations. It is not thought, however, that this will affect the Association in any practical manner. The margin of profit is not large enough to permit any great cutting as long as the railroads do not favor one shipper above another. Some of the shippers of the better grades of coal at Baltimore are blamed as partly the cause for forcing the people who have been disciplined by the Association into the position they are in.

All-rail trade is quiet, with tonnages unchanged from previous weeks. Transportation from mines to tide continues excellent, and the usual time for coal to run through is sometimes shortened by 24 hours. This will also apply to all-rail shipments. Car supply is also of the best.

The coastwise vessel market is strong, and if anything rates are advancing. Vessels are quite scarce and shipping ports have been practically bare. The storms of the last few days have had the effect of driving what few vessels there have been out into safe harbors, delaying these arrivals just so much.

We quote current rates of freight from Philadelphia as follows: To Boston, Salem, Portland, Portsmouth and Wareham, 70@75c.; Providence, New Bedford and other Sound ports, 65c.; Lynn and Newburyport, 85c.@$1; Dover, $1.05@$1.10, alongside and towage; Saco, 95c.@$1, alongside and towage; Bath, 80@85c.; Gardiner, 90c. and towage; Bangor, 95c.@$1. Five and 10 cents above these rates are asked from Norfolk, Newport News and Baltimore.

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

Buffalo. Oct. 15.

(From Our Special Correspondent.)

The anthracite coal trade shows more activity for local consumption, and for near-by towns and villages. The weather is fine now after the heavy storms and cold rains which prevailed for many days. Small dealers are stocking up. Prices of coal are nominally unchanged.

The bituminous coal trade is moderately active, manufacturers feeling more confidence. Stocks are ample for all demands; in fact, too large, so that buyers almost make their own terms when negotiating a deal. The lessening of the number of vessels in commission on the lakes causes a light fuel demand from that quarter and considerable extra tonnage is thereby thrown on the market.

The shipments of coal westward by lake from Buffalo from October 4th to 10th, both days inclusive, aggregate 61,910 net tons, distributed as follows: 26,500 tons to Chicago, 15,500 tons to Milwaukee, 4,800 tons to Duluth, 2,000 tons to Superior, 5,165 tons to Toledo, 600 tons to Green Bay, 2,300 tons to Gladstone, 70 tons to Pequaming, 2,875 tons to Racine and 2,100 tons to Kenosha. The rates of freight were 20c. to Chicago, Milwaukee, Duluth, Superior and Gladstone; 25c. to Toledo, 30c. to Portage, Green Bay and Bay City; and 40c. to Racine and Kenosha, closing with some inquiry for small craft.

Steps are being taken to hold an Electrical Jubilee early in December, to celebrate the first introduction of electricity from Niagara Falls into our city.

The Western New York & Pennsylvania Railroad Company says "that it will be necessary to make extensive repairs or renewals to the Buffalo dock and coal trestles during the coming year. The old trestle was built of hemlock, some 15 years ago, and it will be more economical to rebuild it than to continue the extensive repairs required."

Steamboat fuel has been reduced in price at Buffalo to meet the competition between our coal dealers and Detroit firms. The latter are getting $2.20 per net ton; the former are selling at $2.15, a reduction of 10c. per ton from the quotations ruling for some weeks past at the dock.

Dealers here say that anthracite coal rates are well maintained in Buffalo.

Chicago. Oct. 14.

(From Our Special Correspondent.)

Anthracite.—The situation continues most discouraging to coal dealers in this market, and the outlook has not brightened. The amount of anthracite coal on the docks and yards of dealers is large, but the stocks of the average small dealer is very limited. It is readily observed that in order to advance the consumption of hard coal in this section there will have to be a reduction in the retail price, for it is now an assured fact that people will not buy coal at the present quoted figures. There is little opportunity for the retailer to cut prices in any way, as he is under compulsion to maintain the circular prices. The out-of-town outlook for trade is discouraging. Orders are few and for small quantities because of high prices. The railroads are now fighting among themselves on hard coal rates to Western points. The Wabash route has put into effect a rate of $2 per ton on from Toledo, O., to Kansas City. The Chicago-Kansas City lines have been charging $3 per ton and the Wabash rate will be met, and perhaps an even lower one will be declared.

Anthracite coal quotations are: Grate, $5.60; egg, stove and chestnut, $5.85. Retail prices continue $6 75 per ton.

Bituminous Coal.—Outside of that used for commercial purposes soft coal is in increased demand, and there is a great deal taking the place of hard. Coal demand for manufacturing purposes has not increased, but there is more inquiry.

Pittsburg. Oct. 15.

(From Our Special Correspondent.)

Coal.—The market presents nothing of special importance; the local demand continues active; boats that went out on the last run are beginning to get back here with empties. At Columbus, O., owners and miners confer, but both sides resist a compromise. Ohio operators will not wait upon the convention of miners, but have anticipated the action of the convention by posting notices that the rate from October 1st will be 45c. a ton, a cut of 16c. a ton, with the customary differential of 9c. a ton below the Pittsburg rate. The Pittsburg officials have not returned from Columbus; the miners will give an answer October 17th.

The railroad, as well as the river mines in this district, with the exception of those in the first and second pools, are running almost full time, as the demand is quite large at present. If the demand from the factories was better, trade could be called good. The outlook for the future is improving.

Connellsville Coke.—The boom that was expected did not materialize. Some ovens were fired, among them 400 of the Southwest Connellsville Coke Company's ovens which have been idle since August. Of these 250 will be fired at Morewood and the balance at Alverton. The demand fell off about 300 cars, the decrease being in both Eastern and Western orders—a number of furnaces going out of blast for repairs being the cause; the outlook is more hopeful. The summary of the region for the week shows 6,298 ovens in blast with 11,674 idle. During the week there were 76 ovens blown out at other points, which reduced the active list that much. The production of the region for the week, estimated upon the ovens drawn, amounted to 58,625 tons, being an increase over preceding week of 931 tons. In the running order, 401 ovens made six days; 4,284 ovens five days; 1,654 ovens four days, and 25 ovens, the Semet-Solvay plant, seven days, an average of 4·89 days as against 5·13 days the week previous. The shipments of coke from the region for the week amounted to 3,152 cars, distributed as follows: To Pittsburg and river points, 1,640 cars; to points west of Pittsburg, 975 cars; to points east, 537 cars.

Shanghai, China. Sept. 11.

(Special Report of Wheelock & Co.)

Coal.—The great scarcity of coal in Japan has prevented any business being done, as is usual when the article is scarce. There is a very good demand, and good prices have been offered, only to be promptly thrown aside and ignored. The result is that everything is at a complete stand-still, and it looks as if it would be some little time before we shall be able to replenish the market. The market is nearly bared of all Cardiff stocks, and very little inquiry exists. Sydney Wollongong has suffered a further decline of 25c. per ton, leaving matters weak. On Setember 8th there was an arrival of 1,648 tons, which has been sold on private terms. Reduced prices have cleared stocks considerably.

We quote: Cardiff, 11·25 taels per ton; American anthracite, 9 taels per ton; Sydney Wollongong, 7 25 taels per ton. Japan coal is 5·75 taels for Takasima lump; 4 taels for Namazuta lump, and 3·50@4 taels per ton for other sorts.

Kerosene Oil.—Devoes seems to have had all the attention during the past fortnight, and a good steady business has been done at 1 59 taels per case. Langkat has been placed in dribbling lots at 1·52 taels. Much more cannot be expected, as this oil is purely for local consumption and has not as yet reached the interior. We have not heard of many settlements in Batoum, but it is firm at quotations. An arrival from Batoum on September 6th brought 110,000 cases. Including this arrival, we estimate the stocks at wharves to be 475,000 cases Devoe's, 330,000 cases Batoum, and 5,000 cases Langkat.

Quotations are as follows, per case: American Devoe's, 1·59 taels; Russian Batoum, 1·55 taels; Russian Batoum, bulk, 1·45 taels; Langkat, 1·52 taels.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Oct. 16, 1896.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Oct. 18, 1895. Furnaces.	Tons.	Oct. 16, 1896. Furnaces.	Tons.	From Jan., '95. Tons.	From Jan., '96. Tons.
Anthracite.	56	34,250	26	15,150	913,518	937,019
Coke.....	150	172,450	81	94,650	5,993,794	6,106,804
Charcoal...	22	4,830	24	6,750	172,975	238,565
Totals ...	228	211,530	131	116,550	7,082,287	7,344,379

There is a slight improvement to be noted in the iron market, and more buying of raw material is going on. This may be attributed in part to the fact that stocks are generally low, and any new work as a rule compels manufacturers to buy material; in part to the low prices of pig iron, and in part to a growing confidence in the future. There is some speculative buying, chiefly of Bessemer pig. It is noticeable that the movement in steel billets, which are closely held by the pool at a high price, is very small, indicating that the cheapness of material has a good deal to do with the buying.

There is quite a movement in the way of exporting steel nails, wire and some other steel to Germany. It has attained such proportions that it is said the German makers are reducing prices to shut out the American goods.

A story is going around that an Ohio mill, which had obtained an order for 50,000 kegs of wire nails for Japan, had procured the steel at a considerable reduction from pool prices, thereby much disturbing the equanimity of the combine.

All export arrangements have been disturbed by the rise in ocean freights, and the actual difficulty in obtaining shipping room, all the available tonnage being taken for grain in consequence of the heavy demand abroad.

It is understood that the Carnegie Steel Company has secured the orders for the material for two of the new battleships. The steel for the one to be built in San Francisco will be furnished by the Bethlehem Iron Company.

NOTES OF THE WEEK.

Renewed reports of the sale of the Johnson Company's steel works at Lorain, O., have been emphatically denied by officers of the company.

The new pig-iron tariff issued by the Louisville & Nashville Railroad gives rates from Southern furnaces to leading Western points as below:

From	Cincinnati.	Chicago.	Pittsburg.	Buffalo.
Birmingham, Ala.....	$2.75	$3.65	$4 10	$4.25
Chattanooga	2.25	3.40	3.60	3.75
Sheffield, Ala.....	2.50	3.40	3.85	4.00
Middlesboro, Ky.....	1.85	3.15	3.35	3.50

These rates took effect October 15th. The Queen & Crescent Line's new tariff gives rates on pig iron to leading Eastern points as below, taking effect October 17th:

To	Birmingham.	Chattanooga.	Dayton.
Baltimore, all rail.....	.....	$4.01	$3.76
" rail and water....	.....	5.49	3.49
Philadelphia, all rail	$4.77	4.52	4.27
" rail and water.	.....	3.64	3.64
New York, all rail.....	5.78	5.53	5 28
" rail and water...	.....	3.64	3.64
Boston, all rail.....	6.08	5.83	5.58
" rail and water	.....	3.99	3.99

The rates are all per ton for iron in carload lots of not less than 17½ tons.

New York. Oct. 16.

The local market continues quiet, with a slight increase in sales, which would be greater if it was not so hard to place commercial paper. The shops still complain of dull business, though there has been some improvement, especially among thos engaged in structural work.

Exports are noted from this port of about 1,500 tons of ferro-manganese, and it is said that about the same quantity has gone from Baltimore. That such shipments can be made at present rates of ocean freights shows the amount of profit there must be in the manufacture.

Pig Iron.—More sales are reported and some contracts of fair size for New England delivery are noted. There is still talk of speculative buying, but agents are hesitating about sales at present prices for 1897 delivery and some are asking 25c. or even 50c. advance for anything after January. For present sales no change in prices is noted.

We quote for Northern iron: No. 1 foundry, $12@$12.75; No. 2, $11.25@$11.75; gray forge, $10.50@11. For Southern iron we quote: No. 1 foundry, $11@$11.50; No. 2 foundry, $10.50@11; No. 1 soft, $10.50@$11; No. 2 soft, $10@$10.50; forge, $9.75@$10.25. Basic pig is offered at $10.75@$11. All prices are for tidewater delivery.

Cast-Iron Pipe.—Very little new is to be noted and no contracts of any size are open.

Spiegeleisen and Ferro-Manganese.—No business of consequence is reported. Ferro-manganese is quoted at $46.50@$47 for imported 80%, New York. Some recent exports of domestic ferro are referred to above.

Steel Billets and Rods.—The pool prices are $21 75, New York, for Bessemer billets, and $23.75, New York, for open-hearth billets. No new business is noted. Rods are $28@$29, with few sales.

Merchant Iron and Steel.—The market is still quiet, but some increase in small orders gives promise of improvement. Prices shows no quotable change. For bars we quote: Common, 1·10@1·15c.; refined, 1·20@1·45c.; soft steel bars, 1·20@1·30c. Other quotations are: Steel hoops, 1·50@1·60c.; steel axles, 1·60@1·75c.; links and pins, 1·60@1·70c.; tire steel, 1·80@1·90c.; spring steel, 1·95@2·15c. All prices are for delivery on dock, New York.

Plates.—Sales are a little better, but there is no change in prices. We quote for universal mill plates, 1·30@1·40c. For steel plates we quote: Tank, 1·35@1 45c.; boiler shell, 1·45@1·55c; good flange, 1·60@1·75c.; firebox, 1.90@2·40c. Charcoal iron plates are quoted 2·25c. for shell, 2·75c. for flange, and 3 25c. for firebox. Rivets are 2 15@2 25c. for steel and 3@3·25c. for iron.

Structural Iron and Steel.—New orders are still few, and there is no change in prices. We quote for angles, 1·35@1·40c.; channels, 1·70@1·75c.; tees, 1·65@1·70c.; beams, 1·70@1·75c. for large orders, and 1·80@1·90c. for small lots. Deliveries are being made on several contracts which were concluded some time ago, but then suspended on account of financial difficulties.

Wrought-Iron Pipe.—Small orders still make up the business. Discounts are as follows for plain pipe, out of store: 1½ in. and over, 67, 10, 10, 10, 10 and 5%; 1¼ in. and under, 57, 10, 10, 10, 10 and 5%. Galvanized pipe, 1¼ in. and over, 55, 10, 10, 10, 10 and 5%; 1¼ in. and under, 52, 10, 10, 10, 10 and 5%. Boiler tubes, 1 in. to 2¼ in., 70, 10 and 5%; 2½ in. up, 70 and 5%. Cold-drawn seamless steel tubes, 60%.

Nails.—The pool price continues $2.55 per keg f. o. b. Pittsburg for steel wire nails, and $2.30 per keg f. o. b. Pittsburg for cut nails. Business is light. The report that the representatives of the pool have persuaded the Chicago jobbers to withdraw their cut prices has been confirmed, but no one outside knows how much the transaction has cost the combine.

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

Little is doing in rail fastenings. Angle-bars are 1·15@1·25c. and spikes 1·60@1.65c., tidewater delivery. Bolts are 1·85@1·95c. for square nuts, and 1·95@2·05c. for hexagon nuts.

Old Rails.—Old iron rails are quoted $12.50@$13.50, New York. Old steel rails are quoted $10@$11.50, and holders are firm in their views, some even asking $12. Old steel rails fit to relay, standard sections, can be had at $20@$22, New York harbor, according to condition.

Scrap Iron.—Demand is a little better. Prices depend on size and nature of lots. We continue to quote $10@$11.50 for good machinery; $8.50@$9.50 for ordinary cast scrap; $6@$7.50 for stove-plate and mixed. Two or three sales are reported of old car-wheels at $11@$11.50 per ton, Jersey City delivery.

Buffalo. Oct. 14.

(Special Report of Rogers, Brown & Co.)

The past week has been an uneventful one, nothing of importance having transpired in this market. There has been no change in prices and no diminution of the volume of business spoken of last week as showing an increase. The inquiry for deliveries a month or two later has perceptibly increased and the indications are that considerable business is awaiting the announcement of the election returns. The quotations given below are on a cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $12.25; No. 2 strong foundry coke iron, Lake Superior ore, $11.75; Ohio strong softener No. 1, $12.25; Ohio strong softener No. 2, $11.75; Jackson County silvery No. 1, $15.25; Southern soft No. 1, $11 40; Southern soft No. 2, $11.40; Lake Superior charcoal, $14@$14.50.

Chicago. Oct. 14.

(From Our Special Correspondent.)

Pig Iron.—The market for pig iron has not expanded, but there remains a steady demand for iron, chiefly in small quantities. Several thousand tons have been sold during the week in lots running from a car-load up to 500 tons. Considerable iron is being delivered on old contracts. The situation grows better from week to week, more confidence being displayed by consumers. The furnaces continue to take no orders for deliveries beyond the end of the present year, agents concluding that the prices now prevailing are entirely too low to warrant them booking so far ahead. We quote: Lake Superior charcoal, $13.50@$14; local coke foundry No. 1, $11 25@$11.75; No. 2, $10.75@11.25; No. 3, $10.25@$10.75; local Scotch foundry No. 1, $11.25@$11.75; No. 2, $10.75@$11.25; Southern coke No. 1, soft, $10.85@$11.10; No. 2, soft, $10.60@$10.85; Southern silveries No. 1, $11.35@$11.85; No. 2, $11 10 @$11.35; Jackson County silveries, $14@$16; Ohio strong softeners, $14@$14.25; Alabama car-wheel, $16.25@$16.75; malleable Bessemer, $12.25@$12.50.

Bar Iron.—There has been no increased buying, but a decided improvement in inquiry. It is evident that stocks in consumers' hands are very low. The prospect for business during the next few weeks is good. Bar iron is quoted: Common, 1·30c., and guaranteed, 1·35@1·40c.

Steel Rails.—Sales continue for small quantities. Rails are quoted at $29.

Billets and Rods.—There has been no improvement, but few sales of either having been booked. Billets are quoted $21.25; rods $27.50.

Structural Material.—Inquiry is rather good and shapes for railroad bridges are in fair demand. Building material has fallen off somewhat, though there are in the market some good contracts for buildings. Quotations are as follows: Beams and channels, 1·70@1·75c.; angles, 1·30@1·35c.; plates 1·35@1·40c.; tees, 1·50@1·55c.

Old Rails and Wheels.—A little larger business is doing in old iron rails, but old wheels are quiet. Old iron rails are now quoted $11@$12, and old wheels, $12.

Scrap.—There is a somewhat better demand noted, though the sales are as yet limited. Quotations are: Railroad forge, $8 50@$9. iron axles, $11.25@$11.50; cast borings. $2.50@$2.75; wrought turnings, $3.25; axle turnings, $5.25.

Cleveland. Oct. 14.

(From Our Special Correspondent.)

Iron Ore.—The condition of the iron ore market during the past week has been all that could be expected, considering the times and the season of the year. Some sales have been made but they do not represent all that developed during the week. The brokers and dealers are more hopeful than they have been and the outlook is encouraging. Both Bessemer and non-Bessemer ores were sold during the past week, more of the latter having changed hands than the former. The quotations follow: Standard hard speculars, Bessemer quality, $4 50@$5; standard hematites, Bessemer quality, $4@$4.25; standard hard hematites, non-Bessemer quality, $3@$3 50; standard soft hematites, non-Bessemer quality, $2 40@$3.

Lake freights took a sudden jump Monday. The rates prevailing at present are: From Escanaba to Lake Erie ports 65c. a ton; from Marquette to Lake Erie ports 75c. a ton. The cause for the sudden jump upward is said to be the extraordinary heavy movement of grain. Six charters at the rate named were made Monday; four Tuesday and two to-day.

Pig Iron.—The pig iron market has been quiet for several days, only moderate transactions being closed. They embraced a fair quantity of foundry and charcoal irons. Following are the quotations f. o. b. Cleveland: Lake Superior charcoal, $13.50: Bessemer pig, $10.75@$12; No. 1. foundry, $12.25; No. 2, foundry, $11.75; No. 1, Ohio Scotch, $12.25; No. 2, Ohio Scotch, $11.75; Mahoning & Shenango Valley neutral mill iron, $10; Mahoning & Shenango Valley red short mills, $10.25.

Cartagena, Spain. Oct. 3.

(Special Report of Barrington & Holt)

Iron Ores.—During the past month the activity in the local iron ore trade has still further increased. Much attention is being devoted to the development of the mines in this district, and considerable enterprise is being shown in prospecting for new finds of ore. There is a marked scarcity of the best descriptions of manganiferous ore, and prices show an advance for all kinds. Shipments have fallen to 11,000 tons in September, owing to the high rates of freight and difficulty in obtaining tonnage.

We quote for iron ores, f. o. b. shipping port, Cartagena or Portman: Ordinary, 50% Portman, 5s. 6d.@6s. per ton; special low phosphorus, 5s. 9d.@6s. 2d.; special and extra quality, 6s. 6d.@7s.; specular ore, 60% and guaranteed under 0·03% phosphorus, 9s.; Almeria ore, 56% iron, 8s. 6d. For manganiferous ores prices are: No. 1, 20% iron and 20% manganese, 14s.; No. 1B. 25% iron and 17% manganese, 11s. 3d.; No. 2, 30% iron and 15% manganese, 11s. No. 3, 35% iron and 13% manganese, 9s. 3d. per ton. All these ores carry about 11% silicon.

Other Minerals.—Iron pyrites, 40% iron and 45% sulphur, are quoted 10s. 6d., f. o. b. Cartagena.

Pittsburg. Oct. 17.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business since our last has slightly increased in some lines, but purchasers are generally inclined to maintain a policy of caution until the issues involved in the pending election shall have been definitely settled. The iron and steel trade has been moderate in volume, but the situation appears to be shaping for more action and a stronger market. The pig-iron industry is in better shape.

Consumers are not taking much material at present, but it is the general opinion that when they come into the market to purchase their winter supply prices will be certain to go higher. Statistically the market at present may be said to be firm, while the stocks of pig iron sold and unsold have been materially reduced. The strongest feature of the situation, however, we believe to be the small stocks at foundries. If business should start up with the foundries and manufacturers we would see a stiffening in prices, because many would be in immediate need of supplies of pig. While the pipe mills in the East maintain that business with them is very dull, Pittsburg mills seem to be doing a big business, making full time. We know of one mill that turns out 100 tons of finished pipe daily, which is shipped as fast as made, leaving the warehouse bare of stock.

Important events in the market were the shipments of 9,000 tons steel rails for Japan and 10,000 tons pig iron to the same country. This, together with what had been sold before, makes a total of 45,000 tons shipped this year.

So far prices are well maintained. Pig iron in the Ohio Valley is held firmly at $10.75@$10 85 for Bessemer at furnace. Steel billets show no change in prices. The pool price is $20.25 here. The middle men are still on hand with billets at $19.50@$19.75 per ton.

Latest.—The market is firm but quiet; sales show no important change. Steel billets show a wide range pool prices are still $20.25; outside prices, $19.40@$19.75. Gray forge $9 75@$10; there was a fair demand for No. 2 foundry. Bloom and billet ends are in fair demand. For sheet bars demand is improving. The Edgar-Thomson steel plant resumed on Wednesday, giving employment to 2,500 men.

COKE, SMELTED, LAKE AND NATIVE ORE.

Tons.		Cash.
2,000	Bessemer, Oct., Nov., Pitts	$11.75
1,500	Bessemer, Oct., Nov., Pitts	11.40
1,000	Bessemer, Oct., Nov., Pitts.	11.50
1,000	Bessemer, Nov.., Valley	10.90
1,000	Gray Forge, Oct., Pitts	9.85
1,000	Bessemer, Oct., Pitts	11.70
1,000	Gray Forge, Oct., Nov ,Dec ,Pitts.	9.75
300	No. 2 Foundry, Oct., Pitts	10.75
250	No 1 Foundry, Oct., Pitts	11.50
100	No. 2 Foundry, Oct., Pitts	11.50
100	No. 2 Foundry, spot, Pitts	11.50
100	Bessemer, spot, Pitts	11.50
100	No. 1 Foundry, Oct., Pitts	12.00
100	No. 2 Foundry, Oct., Pitts	11.60
100	No. 2 Foundry, Oct., Pitts	11.50
50	High Silicon, spot, Pitts	14.30
28	No. 2 Foundry, spot, Pitts	11.70
28	No. 2 Foundry, spot, Pitts	11.60
28	No. 1 Foundry, spot, Pitts	12.00

CHARCOAL.

200	Cold Blast, Pitts	$ 23.00
200	No. 2 and 3 Foundry, Pitts.	15.80
100	No. 2 Foundry, Pitts	16.00
500	Cold Blast, Pitts.	23.00
100	No. 1 Foundry, Pitts.	15.80
50	No. 2 Foundry, Pitts.	16.00

BLOOMS, BILLETS AND SLABS AT MILL.

3,000	Billets, Nov., Dec., at mill	$20.75
2,000	Billets, Oct., Nov., at mill	$20.25
2,000	Billets, Oct., Nov., at mill	19.60
1,000	Billets, Oct., Nov., at mill	19.50
200	Billets, Oct., at mill	19.40
200	Billets, spot, at mill	19.50

MUCK BAR.

1,000	Neutral, prompt, Pitts	$20.00
500	Neutral, Oct., Pitts	20.15

BLOOMS, BILLETS AND BAR ENDS.

2,000	Bloom ends, Dec., Pitts	$11.30
1,000	Billet ends, Pitts.	12.00

SHEET BARS.

1,500	Oct., Pitts	$22.00
400	Delivered, Pitts.	22.25

SCRAP MATERIAL.

500	No. 1 Wrought net, Pitts	$11.00
200	No. 1 Wrought, net, Pitts.	11.50
100	Wrought Turnings, net, Pitts.	6 50
100	Cast Borings, net, Pitts.	6.00
100	Cast Scrap, gross, Pitts.	9 25
100	Old Steel Rails, Pitts.	11.50

SKELP IRON.

600	Narrow grooved, Pitts.	$1.20 4 m.
400	Wide grooved, Pitts.	1.20 4 m.
300	Sheared, Pitts.	1 30 4 m.

SKELP STEEL.

500	Wide grooved, Pitts	$1.10 4 m
400	Narrow grooved, Pitts.	1.10 4 m.
300	Sheared, Pitts.	1.25 4 m.

STEEL WIRE RODS.

500	five-gauge delivered, Pitts.	$24.00

Philadelphia. Oct. 16.

(From Our Special Correspondent.)

Pig Iron.—Contrary to expectations expressed last week, the market has not developed any improvement unless an asked for increase in price for next year's deliveries can be regarded as such. It requires a good deal of inquiry to unearth a little business. The chief things dealt in are opinions and anticipations. Some iron is selling, but the buyers cannot be induced to purchase a ton more than they expect to make immediate use of. Forge iron makers and brokers have been looking over the field and they are now of opinion that their turn is at hand. It is quite true that a great many small users of finished products are waiting as long as possible before buying. Numerous repairs have been made in mills and some money has been spent in putting some of our foundries into better shape. No. 1 Foundry is $12.50; No. 2, $11.75; Gray Forge, $10.50@$11; Bessemer, $12.75; low phosphorus, $15.

Steel Billets.—Steel billets could be readily sold at $20.50, or a trifle more, but at $21@$21.50 there is only enough material sold to keep the work in hand moving. Buyers do not accept the statements made by producers' representatives that prices will advance in November.

Bars.—Prices are $1.15@$1.20 for good iron in large lots. There is an occasional sale. The small orders taken keep some mills on half time and a few a little more. Steel bars are $1.25@$1 50.

Sheet Iron.—In view of the uncertain course of large consumers this winter, no sales of importance are to be recorded this week, and manufacturers say they have to be content with small orders and irregular work.

Skelp.—No sales of consequence and nothing to

report. One reason given is that manufacturers have not been quoting or holding out inducements.

Pipes and Tubes.—As to pipe work mills are doing something on old deliveries of tubes; there is a regularity of demand, but the orders are trifling. A good deal of engine and boiler work, and of other work into which wrought-iron pipe enters is in readiness, and more labor will be engaged next month.

Merchant Steel.—The manufacturers have been quietly accumulating stock.

Plate and Tank.—Things are drifting along, and so far as office men can see there will be no change for three or four weeks. Some manufacturers say they will advance prices a trifle if circumstances permit, but it is a question. The anxiety for work, brokers think, will prevent any better price until mills begin to feel comfortably supplied with orders. Tank plates are 1·30; universals, 1·35; shell, 1·40; flange, 1·50.

Structural Material.—There is nothing whatever to add concerning the structural steel market.

Steel Rails.—No change in the market.

Old Rails.—Prices have been secretly shaded for some time and an open reduction to $12 is announced, but brokers who are in that line do not know of much business even at that.

Scrap.—The scrap dealers have gradually loaded up with a great deal of stuff, some of it not salable. There are no large buyers around, and the only thing to do is to wait for greater activity.

METAL MARKET.

NEW YORK, Friday Evening, October 16, 1896.

Gold and Silver.

Prices of Silver per Ounce Troy.

October.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	October.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
10	4·83¾	29⅛	64¾	.501	14	4·83¾	29¾	64⅜	.498
12	4·83¾	29⅞	64⅝	.500	15	4·83¾	29⅞	64⅝	.500
13	4·83¾	29¾	64⅜	498	16	4·83¾	30⅛	65⅛	504

Silver has shown a downward tendency owing to the reluctance of India to purchase at current rates, which results, presumably, from small shipments of her products for the present. The rate would probably have fallen to 29½d. but for the interposition of a continental order which carried the price up to 30⅛d. At this figure large supplies satisfied the demand and the market is weaker again.

The United States Assay Office in New York reports the total receipts of silver at 100,000 oz. for the week.

Average Monthly Prices of Silver

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

Month.	1896		1895.		1894.	
	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.
January	30·69	67·13	27·26	59·69	30·81	66·63
February	31·01	67·67	27·47	59·90	29·18	63·43
March	31·34	68·40	28·33	61·98	27·28	59·49
April	31·10	67·92	30·39	66·61	28·95	62·92
May	31·08	67·88	30·61	66·75	28·69	62·96
June	31·16	68·69	30·47	66·61	28·68	62·59
July	31·45	68·75	30·48	66·75	29·82	62·45
August	30·93	67·34	30·40	66·61	28·29	61·83
September	30·19	65·68	30·54	66·90	38·88	64·14
October			30·89	67·64	28·69	63·06
November			30·79	67·42	39·41	65·13
December			30·49	66·47	27·78	60·43

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, September, 1896, and years from January 1st, 1896 and 1895:

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
Sept.	$61,050	$31,159,130	$32,505	$183,6 8	I. $34,249,183
1896	55,570,421	61,838,856	114 201	1,376,019	I. 16,560,253
1895	73,19 ,282	28 839,939	326,653	1,3 6,112	E. 43,370,884
SILV.					
Sept.	5,334,110	741,678	168,880	1,212,6 5	E. 3,748,707
1896	46,441,041	8,4 4,637	561 842	13,216 568	E. 25,334 678
1895	38,661,610	7,960,664	69,965	9,128,483	E. 21,655,448

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 October 16th, 1896, and for years from January 1st, 1896, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$20,000	$1,013,770	$672,091	$54 138	I $405,817
1896	40,417,348	57, 08,436	31 071 031	2,231,207	E. 12,148,736
1895	56,656,035	2 ,839,765	29 167,149	1,324,543	E. 58,658,876
1894	82,432,600	14,378,414	25,073,694	1,249,190	E. 92,878,690
1893	69 633,143	57,277,185	23 653,967	2,888,542	E. 23,171 383
1892	58,698,649	6,563 489	16,329,544	1,843,686	E. 66,621,018

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

FINANCIAL NOTES OF THE WEEK.

There is but little change in the general situation. It is probable that gold imports will continue for a time at least. This, with the increase in the price of wheat and the prospect of heavy grain exports are favorable points, and we hear in several quarters of increasing confidence in the future. There certainly is such a feeling, but so far it has been confined to anticipation and has been little felt in action The movement of currency from New York to the West and South continues very large, greater than at this season for several years past.

One of the unfavorable features of the situation is the continued stringency in money; the difficulty of obtaining discounts on commercial or manufacturing paper affects business very considerably. It is evident that the increasing confidence which is felt or expressed has not overcome the conservative feeling of many who still hesitate about entering into any engagements for the future. Another point is the continued withdrawal of gold from the Treasury in small sums, evidently for the purpose of hoarding or holding for a premium. This also indicates a good deal of doubt still existing.

In view of the continued shipments of gold, it was generally expected that the Bank of England would raise the official discount rate. At the directors' meeting on Thursday, however, no action was taken and the rate remains at 3%. The outside rate is still below the Bank's in London.

The report of the Treasurer of the United States for the fiscal year ending June 30th last, now nearly ready, shows that the redemptions of legal-tender notes in gold have been heavier during the past year than ever before in the history of the Treasury. Treasurer Morgan will give the table which has appeared in several recent annual reports, showing these redemptions for each year and their remarkable growth since 1892. The highest total up to that time was in 1879, when redemptions were $7,976,698. They were only $40,000 in 1882 and only $732,386 in 1890. The redemptions of 1891 were $5,986,070; of 1892, $9,125,843; of 1893, $102,100,345; of 1894, $84,842,150; of 1895, $117,354,198, and of 1896, $158,655 956 The heaviest redemptions of the fiscal year 1896 were in August and September, 1895, and February and May, 1896.

The foreign trade of the United States for the nine months ending September 30th is reported by the Bureau of Statistics of the Treasury Department as below:

	1895.	1896.
Exports	$557,927 406	$666,0 9 386
Imports	6 1,043,139	522,(58,141
Excess	I. $43,115,673	E. $143,971,242
Net excess of exports, silver		25,334,678
Total		$169,305,920
Less net excess of imports, gold		10,560,253
Balance, excess of exports		$158,745,667

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

Shipments of specie from San Francisco by water in September were $1,072,602. For the nine months ending September 30th they were: Silver bars, $4,445,336; Mexican dollars, $4,302,414; Peruvian sols, $113,817; silver coin, $532,900; total silver, $9,394,557; gold, chiefly coin, $11,296,792; total, $20,691,349. The destinations of the above shipments were as follows:

	1895.	1896.
Hongkong	$8,367,936	$2,814,476
Shanghai	3,417,100	2,549,030
Japan	615,794	3,43 ,246
India		35,000
Central America	268,298	1 6 60
Honolulu	271,040	819,790
Mexico	4,850	3,446
New York	7,7 11,389	10,920,701
Total	$19,961,428	$20,69 ,349

There was a considerable decrease in shipments to the East, which was more than made up by the increase in shipments of gold to New York.

The statement of the United States Treasury on Thursday, October 15th, shows, balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Oct. 8.	Oct. 15.	Changes.
Gold	$125,019,921	$123,714,368	D. $1,305,563
Silver	14,241,714	14,061,734	D. 179,980
Legal tenders	59,915,912	59,124,826	D. 791,116
Treasury notes, etc.	36,377,776	36,712,041	I. 334,265
Totals	$235,555,363	$233,612,969	D. $1,942,391

Treasury deposits with national banks amounted to $16,140,000, showing a decrease of $704,811 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $124,108,280. Against these are held in the Treasury 11,243,862 coined standard silver dollars, and silver bullion purchased at a cost of $112,864,418, making a total of $124,108,280.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending October 10th, gives the following totals, comparisons being made with the corresponding weeks in 1895 and 1894:

	1894.	1895.	1896.
Loans and discounts	$500,168,200	$506 606,000	$456,393,300
Deposits	590,859,100	533,491,200	4 8,484,800
Circulation	11,553,700	14,307,300	20,295,800
Reserve:			
Specie	92,890,900	60,861,900	58,450,400
Legal tenders	115,671,200	86,687,800	71,770,100
Total reserve	$208,562,100	$147,549,700	$130,220,460
Legal requirement	147,714,775	133,372,800	114,621,200
Surplus reserve	$60,847,325	$14,176,900	$15,599,200

Changes for the week this year were increases of $8,227,300 in loans; $3 751,700 in deposits, $7,335,400 in circulation, and $2,649,300 in specie. Decreases were $3,361,800 in legal tenders and $926,825 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	.....	.....	$58,450,400
1895	.....	.....	60,861,900
Bank of England	$187,982,715	.....	187,982,715
1895	205,786,125	.....	205,786,125
Bank of France	389,731,400	$246,751,000	636,482,400
1895	392,843,063	246,684,303	639,527,366
Imp. Bank of Germany	.....	.....	201,050,000
1895	.....	.....	227,440,000
Austro-Hungarian Bank	153,686,000	63,585,000	217,765,000
1895	109,790,000	64,876,000	174,666,000
Netherlands Bank	13,175,000	33,647,000	46,822,000
1895	21,365,000	33,904,000	55,269,000
Belgian National Bank	.....	.....	19 828,000
1895	.....	.....	21,446,000
Bank of Spain	42,641,000	50,530,000	93,171,000
1895	40,022,000	56,385,000	96,407,000
Bank of Italy	61,655,000	11,670,000	73,325,000
1895	59,775,000	9,275,000	69 050,000
Imp. Bank of Russia	467,075,000	.....	467,075,000
1895	404,640,000	.....	404,640,000

The return for the Associated Banks of New York is of date October 10th; all the others are of October 15th, except the Bank of Italy, September 10th, and the Bank of Russia, September 1st-13th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England and the Bank of Russia report gold only. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year up to October 1st are reported by Messrs. Pixley & Abell's circular as below:

	1895.	1896.	Changes.
India	£2,818,680	£3,129,078	I. £310 98
China	1,451,724	574,413	D. 877,311
The Straits	614,803	545,686	D. 69,117
Totals	£4,885,207	£4,249,177	D. £636,030

Arrivals for the week this year were £183,00 in bar silver from New York, and £7,000 from the West Indies; a total of £190,000. Shipments for the week were £150,000 in bar silver to Bombay, and £5,000 to Calcutta; a total of £155,000.

The demand for Indian exchange continues strong, and the 40 lakhs of Council bills offered in London were applied for and taken up at an average of 14 22d. per rupee. Exports from India are light, but the demand has been sustained by heavy remittances on account of the new railroad work which is now going on in that country. The demand on Chinese and Japanese accounts has fallen for the present to almost nothing, chiefly because of unusually light exports of silk this year.

Domestic and Foreign Coins.

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

	Bid	Asked.
Mexican dollars	$0.50½	$0.51½
Peruvian soles and Chilean pesos	.45¾	.46½
Victoria sovereigns	4.84	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, though not entirely bare of any new features, otherwise continues rather lifeless. It is reported that one of the leading Lake companies has made a sale to manufacturers at 10½c., but it is understood that the quantity placed is small, owing to the reluctance shown on the part of buyers to enter into large contracts until the political situation has become clearer. For the same reason very little business has been transacted in other descriptions, prices for which have kept barely steady. We have to quote electrolytic copper in cakes, wire bars or ingots at 10¼@10⅜c., and cathodes at 10c. The demand for casting copper is far from brisk, but scant supplies have helped to hold prices up at about 10¼c.

The foreign market is again lower, prices for g. m. b.'s having receded to £46 15s.@£46 17s. 6d. for spot and £47 5s.@£47 7s. 6d. for three months prompt. The market for refined sorts is very unsatisfactory, great pressure being brought to bear on values by the persistent efforts on the part of a certain producing element to market large quantities in face of the fact that foreign buyers refuse to make larger purchases in view of the uncertainty prevailing here. We quote: English tough, £49@£49 10s.; best selected, £49 10s.@£50 10s.; strong sheets, £56 10s.@£57; India sheets, £53@£53 10s.; yellow metal, 4⅛d.

The annual report of the Western Union Telegraph Company for the year ending June 30th says that the company still continues the policy of using hard-drawn copper wire for all new construction and renewals on its main lines. The company added 24,278 miles of wire to its lines last year, making the total wire mileage at the close of the year 826,929 miles.

Exports of copper from Chile, reduced to long tons of fine copper, and including charters for September, amounted to 18,193 tons for the nine months ending September 30th, against 16,608 tons for the corresponding period last year, 15,928 tons in 1894, and 15,256 tons in 1893.

The following figures give the production (in tons of 2,240 lbs.) of copper in the United States and also by the chief foreign mines, with the exports from the United States, for September, and the nine months ending September 30th:

Production, fine copper, long tons.	September, 1896.	Nine months. 1895.	1896.
Reporting mines, U. S.	15,777	111,677	140,952
Pyrites and outside sources, U. S.	1,200	12,400	10,800
Reporting foreign mines	7,182	63,548	64,306
Total production, tons	24,159	187,625	216,058
Exports from U. S., fine copper	10,898	48,127	89,220

For the nine months the total United States production shows an increase this year of 27,675 tons, or 22·3%, while the gain in exports was 41,093 tons, or 85·6%. The increase in exports was greater than that in production by 13,418 tons.

Tin.—While until a few days ago the demand was very good, the higher prices established during the last few days have interfered somewhat. We quote: 13 for spot and October and 12.90 for November and December.

Foreign quotations have been marked up to £58 for spot and £58 10s. for three months prompt, being £1 higher than the quotation of yesterday. The tendency is reported to be a firm one.

Exports of tin from the Straits Settlements are reported as follows for the eight months ending August 31st, in long tons:

	1894.	1895.	1896.
To the United States	5,027	5,877	10,324
To Europe	25,497	25,020	21,591
To China and India	2,817	3,046	4,190
Total	33,341	33,943	36,105

Imports of tin into the United States for eight months, as reported by the Bureau of Statistics of the Treasury Department, were 11,921 long tons, against 16,383 tons for the corresponding period in 1895, showing a decrease of 4,462 tons, or 27·3%, this year.

Lead continues on its downward course. While offerings are not very plentiful, the demand on the other hand is so poor that prices have suffered notwithstanding, and must now be quoted 2·72½ New York and 2·50 St. Louis.

The London quotation, too, shows a decline of 2s. 6d., the price for Spanish being cabled as £11@£11 2s. 6d., and English 2s. 6d. higher.

St Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is dull and there is very little doing. Chemical and soft Missouri lead is freely obtainable at 2·50. Argentiferous lead is held at 2·55. Neither buyers nor sellers are making any strenuous efforts to trade.

Spanish Lead Market.—Messrs. Barrington & Holt write under date of October 3d: Although the price of silver has fallen, the local prices of lead are somewhat higher. The average for September, on wharf, was 57·10 reales per quintal, silver to be paid off at 14·55 reales per oz. Exports in September were: To Marseilles, 2,401 metric tons; to Antwerp, 602 tons, to United Kindgom, 1,979 tons; total, 4,982 tons, against 4,346 tons in August. There was also exported in September 2,635 kilos. silver ingots. For lead ores we quote: Potters ore, 8s. 9d. per cwt.; Linares sulphide, 6s. 9d.; Linares carbonate, 4s. 6d.

Spelter.—The better demand mentioned in our last issue continues, but supplies being adequate, prices have not changed from what we then reported, 3·65@3·70c.

The foreign quotation is again lower, being £16 5s.@£16 7s. 6d. for good ordinaries and 2s. 6d. higher for specials.

Antimony remains without change, the quotation for Cookson's being 7c.; U. S. Star, 6¾c., and Hallett's 6⅝c.

Nickel.—Demand is quiet, but prices show little change and we quote 33@36c. per lb. for ton lots and 37@39c. for smaller orders. London prices are 14d.@15d. for large orders and 15d.@16½d. for small lots. The New York price is on a parity with London, allowing for the United States duty of 6c. per lb. on the metal.

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

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

Quicksilver.—No change is noted in the New York price, which stands at $36.75 per flask. The London quotation is also steady at £6 12s. 6d. per flask; with £6 12s.@£6 12s. 3d. named from second hands. The quicksilver receipts at San Francisco in September were 1,409 flasks; for the nine months ending September 30th they were 21,559 flasks, against 23,546 last year and 19,619 in 1893. The shipments by water for the nine months were: China, 3,000 flasks; New Zealand, 20; Central America, 1,026; Mexico, 3,687; British Columbia, 17; New York, 3,500; total, 10,250 flasks; as compared with 11,293 last year and 11,236 in 1894. A considerable line has also been shipped to New York direct by rail from San Francisco and points in the interior.

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

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

Imports and Exports of Metals.

New York.*	Week, Oct. 8. Expts.	Impts.	Year, 1896. Expts.	Impts.
Aluminum lbs.			10,000	2,010
Antimony ore...short tons		5	10,000	2,477
" regulus. . casks				1,721
Brass, old...short tons.	7		244	
Copper, fine ...long tons	†365	39	54,050	20,705
" matte . . " "	†.58		13,491	1,281
" ore " "				4,592
" sulphate.. " "			1,436	
Iron ore " "				2,997
" pigs, bars, rods " "		284		50,857
Iron pyrites " "				4,660
" sulphate " "		1,658		2,208
Ferro-mangan'se " "			211	670
Ferro-silicon " "				70
Manganese ore.. " "				6,115
Spiegeleisen " "		37		25,117
Lead ore " "				
" pigs and bars " "	†275	756	11,525	31,932
Magnolia metal " "			67	
Nickel " "			659	30
Steel, billets, rods " "		403		20,519
Tin " "		350		949
Tin and black plates, boxes.		9,582		698,480
Zinc (spelter)...long tons	4		1,721	52

* Metal Exchange Reports. † Week ending Oct. 15.

Philadelphia.††	Imports. Week. Oct. 10.	Year, 1896.
Antimony, casks		162
Copper ore, long tons		16,610
Ferro-manganese, long tons	50	767
Ferro-silicon	50	535
Iron ore, long tons		218,332
" pig " "		600
" pyrites, long tons	1,575	1,575
" and steel scrap, long tons		618
Manganese ore, long tons		1,564
Spiegeleisen " "		134
Tin " "		416
Tin and black plates, boxes	3,860	45,978

†† From New York Metal Exchange Reports.

Baltimore.**	Week, Oct. 15. Exp.	Imp.	Year, 1896. Exp.	Imp.
Bismuth metal, cases				52
Chrome ore...long tons				4,802
Copper, fine " "	11,052		27,415	
" matte " "			500	
" sulphate " "	341		2,450	
Iron ore " "		5,851		321,971
" pigs, bars, ingots, blooms " "	150		450	2,621
Iron oxide...bags				300
" pyrites...long tons			150	
Ferro-manganese " "			362	1,508
Ferro-silicon " "				70
Lead " "	175		4,145	200
Limestone...short "			21	2,743
Manganese metal.long "			81	9,648
Spiegeleisen " "				410
Steel " "				7,836
Steel wire, bundles		885		9,892
Tin, long tons	113	67	438	2,551
Tin and black plates, boxes				130,183
Zinc (spelter) long tons	162		715	

**From our special correspondent.

Average Monthly Prices of Metals

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

Month.	1896.	1895.	1894	1893.	1892.
Copper (Lake):					
January	9·87	10·00	10·13	12·13	11·00
February	10·64	10·00	9·63	12·00	10·00
March	11·03	9·75	9·81	11·88	10·38
April	10·98	9·75	9·50	11·38	11·50
May	11·15	10·25	9·80	11·00	11·63
June	11·67	10·63	8·94	11·00	11·86
July	11·40	11·25	9·00	10·88	11·50
August	10·98	12·00	9·13	10·00	11·50
September	10·66	12·25	9·40	9·88	11·13
October		12·00	9·88	9·75	11·50
November		11·00	9·60	10·00	11·88
December		10·50	9·80	10·25	12·38
Tin:					
January	13·02	13·25	20·16	19·99	20·50
February	13·44	13·35	19·60	20·30	20·00
March	13·30	13·20	19·09	20·71	20·25
April	13·34	14·00	19·75	20·81	20·50
May	13·54	14·63	20·21	19·96	20·80
June	13·59	14·15	19·75	19·76	22·00
July	13·63	14·40	19·22	19·15	21·00
August	13·49	14·35	19.22	18·81	20·50
September	13·15	14·45	16·27	20·14	20·35
October		14·65	15·35	20·84	20·50
November		14·40	14·56	20·61	20·80
December		13·91	13·81	20·67	20·00
Lead:					
January	3·08	3.10	3.19	3·87	4·20
February	3·19	3·12	3·31	4·22	4·12
March	3·14	3·12	3·37	3·96	4·21
April	3·07	3·08	3·43	4·08	4·15
May	3·03	3·16	3·39	3·89	4·22
June	3·03	3·25	2·31	3·77	4·16
July	2·96	3·20	3·50	3·58	4·13
August	2·73	3·50	3·41	3.41	4·11
September	2·77	3·35	3·17	3·80	4·11
October		3·33	3·12	3·51	4·02
November		3·25	3·14	3·41	3·84
December		3·22	3·10	3.27	3·80
Spelter:					
January	3·75	3·28	3·56	4·39	4·69
February	4·03	3·20	3·85	4·39	4·69
March	4·20	3·23	3·89	4·28	4·89
April	4·09	3·30	3·62	4·38	4·68
May	3·98	3·50	3·47	4·41	4·79
June	4·10	3·65	3·40	4·27	4·71
July	3·97	3·75	3·43	4·13	4·78
August	3·76	4·15	3·38	3·89	4·69
September	3·60	4·30	3·44	3·69	4·53
October		4·10	3·45	3·68	4·41
November		3·55	3·36	3·65	4·47
December		3·49	3·43	3·80	4·40

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, Oct. 16.

Heavy Chemicals.—There is now perhaps a better outlook for the chemical market than for several weeks past. The demand for alkali is considerably better than it has been, and some further contracts for 1897 have been placed. These are said to be at lower figures than were obtained a year ago, and are even lower than the prices now ruling. No discontent is noticeable, however, among the trade in this regard. Some of the large glass works have started up during the week; this will help to revive the chemical market. In bleaching powder quiet rules. No new contracts are noted for the week, but some are expected in a month from now. Some contracts, placed last year, are said to have been cancelled in consequence of dull times among the users of bleaching powder.

No change is noted in the following prices: Caustic soda, 60%, $2.22½@$2.42½; 70, 74@76%, $2.12½@$2 37½ per 100 lbs. Alkali, 58%, 82½@90c. for 50-ton lots and over, and 90c.@$1 for smaller quantities; 48%, $1 20@$1.40 for jobbing lots. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.65@$1.75 per 100 lbs. Bicarb. soda, English, 1·60c.@2c. per lb; American, bulk, $1.50@$3.50 per 100 lbs. Sal-soda, English, 70@72½c.; American, 65c. (in barrels), 80c. (in kegs) per 100 lbs.

The Bureau of Statistics, Treasury Department, gives the imports of caustic soda into the United States for August, 1896, at 3,675,681 lbs. of sal soda, 1,339,060 lbs., and of soda ash, 8,300,359 lbs. For the eight months of 1896 receipts were 29,831,441 lbs. of

caustic soda, 9,643,155 lbs. of sal soda, and 127,392,225 lbs. of soda ash. As compared with the same period in 1895 this statement shows decreases as follows: 11,899,143 lbs., 6,293,304 lbs., and 51,435,141 lbs., respectively. We note by the regular monthly statement that there were in the bonded warehouses at the port of New York, on September 30th, 1896, 1,246,092 lbs. of caustic soda, and 2,324,822 lbs. of soda ash.

Acids.—There are prevalent in the acid market at the present time several conditions which tend toward a stable market. Both cotton and woolen mills are starting up in anticipation of demands, as is evidenced by the resumption of the Norfolk & New Brunswick Hosiery Company, one of the largest of its kind. So far there has been noticeable a better movement in both acetic and muriatic acids, and although sulphuric is rather quiet it continues firm at the prices quoted. This firmness is due to the stiffness of the brimstone market, but also by the scarcity of ocean freights. We quote: Acetic acid in barrels, $1.35@$1.45; in carboys, $1.40@$1.60; muriatic acid, 18°, 75c.; 20°, 75@85c.; 22°, $1.10@$1.25, according to make and quantity. Nitric acid, 36°, $3.25@$4.36; 40°, $4@$4.50; 42°, $4.50@$5.50. Oxalic acid, $7.25 ex-dock and $7.50 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@95c., 10@15c. higher for small quantities. Chamber acid, $6@$6.50 per ton at factory. Blue vitriol, $4@$4.25 according to grade and order.

Brimstone.—The market on the other side of the Atlantic is said to be strong, and the same impression seems to prevail as to the trade here. The competitors of the Sicilian combination appear to be bent on holding their own as regards prices. The advices received from abroad give the capitalization of the Societa Anglo-Siciliana at £1,035,000, divided into preference share amounting to 1,000,000 of £1 each, and 700,000 ordinary shares of 1s. each. So far it is said that only £735,000 of the capital stock has been issued, which has been subscribed for privately. Over 80% of the mines in Sicily are said to have joined the syndicate.

Prices of sulphur have been maintained, and this week we quote $23 for best unmixed seconds to arrive in October, $22.50 for November, and $20 for November-December shipments.

The Bureau of Statistics, Treasury Department, gives the imports of crude brimstone into the United States during August, 1896, at 6,852 tons, valued at $98,405. These receipts compare with 15,315 tons, valued at $192,018, in 1895. For the eight months of 1896, imports aggregated 92,664 tons, valued at $1,227,600, as against 81,589 tons, valued at $1,055,666, in 1895. The average value per ton of crude brimstone imported from January to August, 1896, was $13 24, while for the corresponding period in 1895 it was $12.94.

We note the arrival of 1,887,247 kg. of copper pyrites on October 14th, imported from Huelva, Spain, by the Pennsylvania Salt Manufacturing Company.

Fertilizing Chemicals.—Generally speaking this market has been rather quiet during the past week, though the demand from Southern manufacturers continues. The leading ammoniates are in moderate request and values are steady. The agents' prices for potash salts are said to be maintained, while business is quiet and merely of a jobbing nature. We quote: Sulphate of ammonia, gas liquor, $2.10; bone, $2.05@$2.10 per 100 lbs. Dried blood, high grade, $1.60 per unit, New York; low grade, fine ground, $1.37½ f. o. b. Chicago. Azotine, $1.60, basis New York. Concentrated phosphate (30% available phosphoric acid), 57½c. per unit. Acid phosphate, 13%@15%, av. P_2O_5, 64@65c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 85c. per unit. Acidulated fish scrap, $8.50@$9, and dried scrap $16.50@$17 f. o. b. fish factory. Tankage, high grade, $14; low grade, $13½@$14. Bone tankage, $21; ground bone, $22@$22.50. Bonemeal, $19.50@$21.

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

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

Muriate of Potash.—The Bureau of Statistics reports imports in August at 3,075,497 lbs., a decrease of 612 139 lbs. as compared with that month in 1895. Receipts for the eight months in 1896 amounted to 47,645,334 lbs., an increase of 6,974,343 lbs. over 1895. Prices are 1·78c. at New York and Boston; 1·79½c. at Philadelphia, Baltimore and Norfolk, and 1·81½c. at New Orleans for 80@85% (basis of 80%), in lots of 50 tons and upward.

Nitrate of Soda.—This market has ruled quite steady during the past week. There was an arrival of 28,747 bags of nitrate of soda on October 14th, part of which will be used in the filling of contracts while the remainder will be sold in a jobbing way. The call for nitrate of soda was moderate in the middle of the week, and at the close we quote 1·75c. on spot, 1·77½c. for November, and 1·80@1·82½c. for future delivery.

NOTES OF THE WEEK.

The Bureau of Statistics, Treasury Department, gives the imports of guano into the United States during August, 1896, at 1,671 tons, an increase of 1,487 tons as compared with 1895. The receipts for the eight months of 1896 aggregated 4,671 tons, an increase of 3,363 tons over 1895. Crude and native phosphates were imported in August, 1896, to the extent of 12,875 tons; an increase of 11,065 tons over 1895. During the eight months of 1896 the imports amounted to 10,037 tons, an increase of 9,207 tone as compared with the corresponding period in 1895.

The exports of domestic fertilizers from the United States for the month of August, 1896, aggregated 46,137 tons, an increase of 3,479 tons over 1895. The eight months' statement show that the exports for 1896 were 345,062 tons, a decrease of 108,835 tons as compared with 1895.

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

	1896.	1895.	1894.
	Bags.	Bags.	Bags.
Imported into Atlantic ports from West Co st S. A., from Jan. 1, 1896, to date	680,574	610,265	466,167
Stock in store and afloat Oct. 1, 1896, in New York	146,517	73,283	57,741
Boston	.....	1,900	1,691
Philadelphia	8,827	400	.....
Baltimore	1,500	1,000	6,000
Norfolk, Va	.....	360	.....
Charleston	.....	.....	.....
To arrive, actually sailed	146,500	230,000	231,000
Vis. supply to Jan. 15, 1897.	303,344	306,943	299,432
Stock on hand, Jan. 1, 1896.	53,839	58,367	44,938
Deliveries past month	55,863	72,215	73,892
" since Jan. 1 to date.	577,769	591,689	445,673
Total yearly deliveries	.....	828,042	701,202
Prices cur. Oct. 1, 1896.	1 72½@1·75	1·80@1·82½	2.02½@2·05

Liverpool. Oct. 7.

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

There is not much stirring in chemicals on the spot, but buyers show rather more disposition to cover for their 1897 requirements.

Soda ash is still dull, and nearest spot range for tierces, according to market may be called about as follows: Leblanc ash, 48%, £4@£4 5s.; 58%, £4 5s. @£4 10s. per ton, net cash. Ammonia ash, 48%, £3 @£3 10s.; 58%, £3 5s.@£3 15s. per ton, net cash; bags, 5s. per ton under price for tierces. Soda crystals are quiet at £2 5s.@£2 7s. 6d. per ton, less 5% for barrels, and 7s. less for bags.

Caustic soda is rather inactive and prices favor buyers. We quote spot range, as to market, as follows: 60%, £6 2s. 6d.@£6 5s.; 70%, £7 2s. 6d.@£7 5s.; 74%, £8 2s. 6d@£8 5s.; 76%, £8 15s.@£9 per ton, net cash.

Bleaching powder is in poor request, and hardwood is nominally quoted at from £6 12s. 6d.@£7 per ton, net cash, according to destination.

Chlorate of potash is slow, and although 4¼d. per lb. is nominally quoted, 4d. is nearer the value.

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

Sulphate of ammonia is dragging, at about £7 15s. @£7 15s. 6d. per ton, less 2½% for good gray, 24%@25% in double bags f. o. b. here, as to quality.

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

Carb. ammonia is dull at 3d. per lb. for lump, and 3¼d. per lb. for powdered, less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 384 and 385 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 ...	Denver, Colo.	British Columbia.

NEW YORK, Friday Evening, Oct. 16.

The mining stock market has continued slow during the past week as it has been for some time. The only occurrence of any importance is the deal which is under way to consolidate the Bulwer, the Standard Consolidated and the other Bodie mines. This deal has caused a much better movement in Bulwer and other stocks listed on the San Francisco Exchange, prices there advancing from 25c. to 50c. since yesterday, which caused a corresponding increase in this market.

The Comstocks during the week received more attention than for some time past, with prices stationary. The following sales were recorded: Chollar, 200 shares, at $1.80; Comstock Tunnel, 500 shares, at 6c.; Consolidated California & Virginia, 200 shares at $1.80@1.70, the latter price being the closing; Crown Point, 100 shares, at 55c.; Potosi, 200 shares, at 60c.; Yellow Jacket advanced from 35c. to 65c. on sales of 300 shares.

The Colorado stocks were given some consideration during the week, mostly in Cripple Creek stocks. The Bruce Mining Company has leased its property to a firm in Colorado, who are said to be responsible people.

In the California stocks there has been a much better inquiry, although prices have not received much improvement.

Mr. C. H. Morgan, the superintendent of the Brunswick Consolidated Mining Company, in writing to the manager, Mr. J. J. Halpin, under date of October 8th, says: "The shaft is down to the middle of the 900-ft. station, with only 3 ft. more to go before reaching the bottom of the 900 level, after which a 15-ft. sump will have to be sunk to hold the water and the level will then be run. Run No. 31, October 1st, gave 80·25 oz., resulting in a net deposit in bank of $1,323.'

Horn Silver of Utah made its appearance this week, and records one sale 100 shares at 1·50.

The annual meeting of the Comstock Tunnel Company, which owns and operates the Sutro tunnel in the Comstock lode, was held in New York City this week, and the following directors were elected: R. Hobart Smith, Franklin Leonard, Ambrose Leonard, Gordon Macdonald, Maurice L. Muhleman, Henry H. Truman and Nigel B. Gresley. Mr. Franklin was re-elected president. There was a large falling off in the company's revenue from royalties for the year ended August 31st, 1896, said to be due to the partial suspension of operations in the mines tributary to the tunnel. The gross receipts were only $23,500. The operating expenses for the year were cut down from $20,000 to $16,000.

Boston. Oct. 15.

(From Our Special Correspondent.)

The interest in copper stocks has been largely confined to the dealings in Boston & Montana, which has sold as high as $86¼ and as low as $78½ during the past week. The advance early in the week to $86¼ was on reports of an increased dividend next month, but later it was stated that the mine was curtailing its production and that the dividend would not be increased, hence the decline as stated. An effort on the part of the shorts to cover caused a rally to $83, which was lost to-day, the stock selling down to $80¼, with a rally at the close to $81.

The balance of the list has declined in sympathy, to a greater or less degree, with limited dealings. Calumet & Hecla lost $5, declining to $310, without any rally. Quincy was dull and inactive, only 10 shares changing hands for the week at $110¼ to $111. The scrip declined to $80, a loss of $2½. Tamarack dropped from $85½ to $80 on moderate dealings. Osceola sold at $25 for round lots; some small lots brought $26@$27; closing sale $25. Kearsage was fairly steady at $10¼@$10½. Atlantic declined from $17½ to $17. Franklin sold at $9 and Centennial at $2, assessment paid. Butte & Boston declined to $2. Tecumseh advanced from $3½ to $4, and Wolverine was firm at $7. Old Dominion declined to $14¼ and rallied to $15⅝ in later dealings.

In gold stocks there was but little doing, Pioneer being most active, selling up to $6½, but losing the advance later and closed at $5½. Santa Ysabel declined from $9½ to $8, and Merced from $7¼ to $5¾. Gold Coins lost $¼, selling at $2¼. Napa quicksilver sold at $7, a gain of $½ since last sale.

Cleveland. Oct. 14.

(From Our Special Correspondent.)

The only change in the iron stock market during the past week was a decline in the selling price of Lake Superior Iron. Last week the asked price quoted was $31; this week the holders post it at $25. The market has been very weak, the result of the closing of several of the mines. The quotations follow:

Name of Company.	Par val.	Oct. 14. Bid.	Ask.
Aurora	$25	$6.00	$8.00
Biwabik	100	.....	34.00
Champion Iron Company	100	10.00	30.00
Chandler	25	.....	35.00
Cincinnati Iron	25	10.00	13.50
Cleveland-Cliffs Iron Company	100	45.00	.....
Jackson Iron Company	25	70.00	75.00
Lake Superior Iron Company	25	.....	25.00
Lake Superior Consolidated	100	.....	21.00
Minnesota	100	.....	44.00
Pittsburg & Lake Angeline	25	.....	75.00
Republic Iron Company	25	18.00	.....

Salt Lake City. Oct. 10.

(Special Report of James A. Pollock.)

Somewhat of a better feeling prevailed in the local mining stock market during the past week, and, while the volume of business was not materially heavier, prices were as a rule higher and the close stronger than for some weeks past. The annual meeting of the Ajax comes October 19th. Some changes may be made in the directory. The properties are making a good record, but the stock remains unchanged. Anchor was again well maintained. Light shipments of good-grade ore have been resumed, and this may account for the improvement in prices. Bullion Beck was in considerably better demand and the quotations were stronger, especially at the close. With hardly enough stock on the market to make reliable quotations, Centennial Eureka continues strong, but without special activity. There was quite a list of delinquent Dalton stockholders, although it is expected nearly all will pay before the sale. The stock remained unchanged. Dalton & Lark did nothing. Daly-West was in good demand, but buyers and sellers were some distance apart at the close. Daly remained quiet. Eagle and East Golden Gate did little, if anything. The latter was offered down, but buyers failed to come out. Four Aces did some business at about the previous week's figures. Galena will pay its usual dividend of 5c. per share October 10th. The stock was only fairly active, but maintained the existing quotations. Geyser is reported to be looking very well, but public interest in the stock, pending court decisions, is limited. Horn Silver has just held its annual meeting, resulting in the re-election

of the old directors. Lucky Bill was stronger despite the assessment, on account of the mine improvements. Mercur will pay its regular dividend of 12½c. per share October 20th. An increased demand for the stock advanced prices somewhat, as there is comparatively little stock on the market. The mill is treating about 250 tons of ore daily, and the grade continues high. Fears for the pending dividend caused Mammoth to weaken somewhat at the close, but several heavy stop orders are reported to be out. An improvement in the showing at the mines is reported. Ontario was quiet. Silver King continued strong, with very light offerings. Its earnings are heavy as usual, but better prices for the metals are awaited. Although the mill is doing good work and the mine is showing up well, Sunshine continues low; there is not much stock on the market, however. Swansea stock was much stronger, as was also South Swansea, which registered marked advances. Utah will pay its October dividend on the 10th.

San Francisco. Oct. 10.

(From Our Special Correspondent.)

Monday was a legal holiday here and the market did not open until Tuesday, when there was some appearance of activity and a little rally in prices. It did not last long and dullness set in again. One or two other short upward movements were engineered during the week, but the effects were not lasting nor were sales heavy. The fact is that just now the speculation in wheat is taking off a good many of the dealers, and the mining market is left to take care of itself.

The closing quotations are about as follows: Chollar, $2.20@$2 25; Consolidated California & Virginia, $1.75@$1.80; Confidence, $1.45; Hale & Norcross, $1.40; Ophir, $1.25; Best & Belcher, $1; Potosi, 75c. Quotations on the Bodies, with light sales, were: Bodie Consolidated, 55c.; Bulwer, 40c.; Mono, 17c.

Business on the Gold Mining Exchange was again very light. About the only quotations to note are: Savannah, 47c.; Lockwood, 27c.

Mining assessments falling delinquent in October amount to $122,900, of which Nevada mines want $97,400, California mines $13,000, and an Alaskan mine $12,500.

The Reward Gold Mining Company, of Nevada County, has levied an assessment of 2c. per share, delinquent November 2d.

The sum of $63,255 was disbursed for wages by the mining and other companies on and around the Comstock for the month of August. The amounts disbursed were as follows: Hale & Norcross, $3,294; Andes (estimated), $1,200; Consolidated California & Virginia, $10,630; Mexican, $1,813; Ophir, $2,631; Best & Belcher, $1,278; Gould & Curry, $1,781; Alta, $1,646; Utah, $425; Occidental (estimated), $3,800; Brunswick Exploration Company, $6,222; Savage, $2,800; Crown Point, $2,117; Yellow Jacket (estimated), $1,500; Confidence, $415; Challenge, $225; Belcher, $2,760; Segregated Belcher, $1,200; Consolidated Imperial, $400; Bullion, $1,045; Chollar, $3,951; Potosi, $2,535; Union Shaft, $2,403; Sierra Nevada, $706; Alpha and Exchequer, $807; Nevada Mill (estimated), $2,500; Electric Light (estimated), $500; Water Company (estimated), $3,600; Quartz mills (estimated), $5,000.

The following mining companies report having had cash on hand October 1st, 1896, as per sworn monthly statements filed in their offices: Alta, $171; Alpha Consolidated, $8,830; Andes, $7,251; Best & Belcher, $14,977; Belcher, $15,989; Bodie Consolidated, $535, with $3,602 of unsold bullion; Bulwer Consolidated, $4,479, with $6,430 of unsold bullion; Bullion, $8,213; Caledonia, $4,190; Confidence, $6,151; Chollar, $15,648; Consolidated Imperial, $3,456; Consolidated California & Virginia, $14,816; Church, $6,858; Challenge Consolidated, $157; Consolidated New York, $1,274; Crown Point, $13,002; Exchequer, $1,346; Gould & Curry, $2,185, with $5,000 due on the company's note at the Nevada Bank; Julia Consolidated, $42; Hale & Norcross, $472 and 90 tons ore valued at $1,500 (due the bank, $3,000); Mexican, $3,382; Mono, $1,633; Overman, $5,565; Ophir, $1,679; Occidental Consolidated, $939; with $5,500 due to the Nevada Bank and expenses of the mine for the past month unpaid; the greater part of an assessment of 10c. per share is to be collected, and the proceeds of 15¼ tons of concentrates, valued at $149 per ton, are to be received. Potosi, $139; Savage, $4; Silver Hill, $795; Sierra Nevada, $21,954; Summit, $410; Segregated Belcher, $529; Standard Consolidated, $22,579, with bullion and concentrates valued at about $11,000 in transit; Silver King, $588; Syndicate, $700; Union Consolidated, $16,434; Utah Consolidated, $351.

The Lady Washington has no cash on hand and owes $327.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, B. C., Oct. 8.

At no period has there been more activity in the camp than there is at present. The output of ore has greatly increased, especially the shipments by the Columbia & Western, which now amount to 400 tons per day, all to the Trail Creek smelter. These shipments are principally from the Le Roi and the War Eagle, but small shipments to the same smelter have been made by the Evening Star, Josie and Iron Horse, as well as to the South and West by the Josie and Iron Mask.

The fact that there are various sets of quotations for the different mining companies which have been prospected in this camp is not to be wondered at when it is remembered that the promoters are all over offering stocks. The fall of Jumbo has not been satisfactorily explained any more than the reported fall of Hall stock; except in the case of the former the advance was too rapid.

The War Eagle Gold Mining Company has this week declared another dividend of 6c. a share. One of the best sales that has taken place in the camp is that of C. & C., which has been sold by Evans, Coleman & Evans, of Vancouver, to an English syndicate for, it is said, $25,000 in cash and $150,000 in paid-up shares. The figures remain to be verified, though the sale has really taken place.

London. Oct. 3.

The mining stock market has been flat all week, because everybody was fearing numerous failures at the fortnightly settlement. As I mentioned last week the dear-money scare frightened speculative bulls, and it was quite expected that many operators would be unable to carry over at this week's settlement. Consequently everybody waited until the settlement was over before they did any further business. Thus the market has been very uninteresting. As, however, the settlement passed over with only a very few failures, operators are showing more inclination to do business, and if no other discouraging cause arises, there should be more activity next week.

The depression has been specially observable in South Africans. In this section some flutter has been caused by the extraordinary action of Colonel Ferreira and his men in jumping a large number of deep-level claims to the south of Johannesburg, some of which are owned by the City and Suburban and by other big companies. This action is quite incomprehensible to people in England and apparently also to the government in the Transvaal, for the jumpers have been arrested. A considerable amount of the property is held under terms which prevent any opportunity for jumping.

In the West Australian section dullness has ruled all the week, but some interest has been caused by the report that the West Australian government intends to build an extension of a railway to Menzies, starting from Southern Cross. It was always expected that the railway would be commenced at Kalgurli or Coolgardie, and, in fact, these two places have been running as rivals for the advantageous connection. Presumably the government has considered it best to ignore the rival claims and to select Southern Cross instead, so as to stifle jealousy.

The New Zealand section has been fairly strong, but business has been very limited. Other sections of the market have been in a state of suspended animation and nothing is heard of Americans or British Columbians.

Paris. Oct. 4.

(From Our Special Correspondent.)

Political matters and the preparations for the Czar's reception have taken up the public attention this week to a great extent, and the stock market has not been very active. In politics it is still the Turkish question, and here one sees that England is very ready to take up in Turkey the part she has played in Egypt, but it will hardly be permitted. However, this affair moves slowly, and one must wait. The reception to the Czar will be a most notable public occasion, and already Paris is crowded with people who have come to witness it and join in the fetes. Politically also the visit will be an occasion of moment, we do not doubt.

In the stock market the metallurgical shares have continued strong, and some of them show gains on even the high prices that have ruled lately. There has been quite a movement in Mokta-el-Hadid, a company which exploits iron mines in Algeria; it appears that the company will take one-fifth share in the new corporation which is to work the phosphate deposits of Gafsa. The capital of this concern will be 20,000,000 fr.; it will operate the mines on a large scale and will also build a railroad to transport the products.

The speculation in the copper shares has been somewhat quieter, but they have all risen a little, Rio Tinto leading, as usual. The demand for the metal continues good, and the price is well maintained, in spite of the large imports from your side of the Atlantic. The Société des Metaux has declared a dividend of 30 fr. per share for the year lately closed, but the report has not yet been made public.

The zinc and lead shares have been generally firm. The price of lead has fluctuated somewhat, though the demand has been good enough to absorb the additional supplies which the Spanish mines have furnished this year. The price of zinc has also been good and the report of large imports from your country does not seem to have affected it. So far, I believe, the arrivals have not been important, but it is said that more is coming.

Huanchaca (silver) is improving; it is said that the extraordinary flow of water, which last year impeded operations, has been brought under control and that much better results may be expected for the current year.

Naturally there is just now much interest in Russian investments. Huta-Bankowa, Briansk, Dombrowa and the other stocks dealt in here are all strongly held, and I hear of several new companies whose shares are soon to be brought out.

The market for the Transvaal gold shares is in uncertain condition. In spite of the reports of increasing production and of economies in working, the prices do not improve, and I hear of an increasing number of selling orders, which seems to show that many of our investors have made up their minds to unload these stocks. The West Australian gold-mining companies never really found much favor here, and are now becoming actually discredited.

AZOTE.

MEETINGS.

Bassick Contact Gold and Silver Mining and Milling Company, at 627 Main street, Silver Cliff, Custer County, Colo., on October 26th, at 2 p. m.

Bulwer Consolidated Mining Company, at 310 Pine street (rooms 15-17), San Francisco, Cal., on October 22d, at 12 m.

Herkimer Mining and Milling Company, Commercial Block (room 106), cor. Second South and Commercial streets, Salt Lake City, Utah, on October 21st.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dlnq.	Sale.	Amt.
Alta Silver.	Nev.	53	Oct. 12	Nov. 2	.10
Bay State	Cal.	33	Sept. 30	Oct. 20	.03
Bunker Hill.	S. D.	8	" 21	" 21	.002½
*Central Eureka.	Cal.	....	Oct. 10	.....	.02
*Channel Bend.	"	....	" 16	.....	.02
Christmas	Utah.	3	" 10	Oct. 27	.002
De Soto Gold.	Cal.	1	" 17	Nov. 16	.07
Dutch Canyon	Utah.	...	" 6	Oct 31	.01
Flint Creek	Mont.	....	" 5	" 27	.002½
Gold Queen.	"	....	" 17	"	.30
Gould & Curry.	Nev.	79	" 5	" 27	.15
*Gray Eagle	Cal.	....	" 5	.....	.10
Haskell Gold.	Cal.	3	" 23	Nov. 16	.02
North Banner Con. Tunnel.	Cal	40	" 19	" 9	.02
Occidental Con.	Nev.	24	" 8	Oct. 29	.10
Ophir Silver.	"	69	" 7	" 27	.25
Potosi.	Nev.	46	Nov. 4	Nov. 24	.05
*Savage.	"	90	" 4	" 24	.20
*Star	Mont.	....	" 2	" 23	.0°01½
*Troy.	Alaska	....	" 14	.....	.12½
Union Con. Silv.	Nev.	53	" 28	Oct. 22	.20
Utah Con.	"	23	" 13	Nov. 2	.05
*Victory Silver.	S. D.	6	Nov. 7	" 27	.001½
Yellow Jacket, Silver	Nev.	61	Oct. 15	" 20	.25

* New assessment.

DIVIDENDS.

NAME OF COMPANY	Current Dividends. Date.	Am't.	Paid since Jan. 1, 1896.	Total to date.
*Ætna Con.	.....	.....	$30,000	$70,000
Alaska-Mexican.	.....	.....	5,209	155,031
Alaska Treadwell.	.....	.....	275,000	2,950,000
Anaconda	.....	.....	750,000	750,000
Anchorite-Leland.	Oct. 15	$6 000	6,000	.....
Aurora Iron	.....	.....	50,000	700,006
Bangkok-Cora Bell.	.....	.....	6,000	107,510
Big Six	.....	.....	2,500	2,500
Boston & Mont.	.....	.....	1,050,000	4,475,000
*Bullion Beck & Ch.	.....	.....	185.000	2,135,000
*Calumet & Hecla.	.....	.....	2,000,000	46,350,000
*Cariboo.	.....	.....	60,410	109,410
*Centennial-Eureka	.....	.....	300 000	1,830,000
C. O. D.	.....	.....	5,000	25,000
Dalton & Lark	.....	.....	87,500	87,500
Daly	.....	.....	37,500	2,887,500
Deadwood Terra	.....	.....	100,000	1,240,000
Dominion Coal	.....	.....	600,000	.....
Elkton Con.	.....	.....	30,000	106.960
Florence	.....	.....	54,390	89.348
*Galena.	Oct 10	5,000	30,000	56,000
Gold Coin.	.....	.....	65,000	80,000
*Golden Eagle.	.....	....	10 000	10,000
Golden Fleece.	.....	.....	132,000	533.179
Gold & Globe Hill.	.....	.....	19,500	28 875
Hecla Con.	.....	.....	30,000	2,130,000
Helena & Frisco.	.....	.....	50,000	475,000
Highland	.....	.....	120,000	3,204 918
*Homestake	Oct. 26	31,250	312,500	6,025,000
Hope	" 1	10,000	30,000	622,252
Horn Silver.	..	.....	50.000	5,130,000
*Iowa.	.....	.....	50,000	50,000
*Iron Mountain.	.....	.....	35,000	145,000
*Isabella	....	.....	180,000	2 2,500
Jackson.	.....	.....	7,500	475,000
Le Roi.	.....	.....	125,000	200,000
Mammoth	Oct. 1	20,000	40,000	1,130,000
*Mercur.	.....	.....	150,000	500,000
Minnesota Iron.	.....	.....	495,000	3,240,000
Mont. Ore Pur. Co.	Oct. 15	40,000	320,000	480,000
Moon-Anchor.	.....	.....	24,000	24,000
Moose	.....	.....	6,000	186,000
Mt. Rosa.	Oct. 15	5,000	5,000	15,000
Napa Con.	" 1	†20,000	70,000	810,000
*New Elkhorn	.....	.....	72,000	72,000
*Ontario.	.....	.....	135,000	13,310,000
Osceola Con.	.....	.....	125,000	2,072,500
Ottaqueachy	.....	.....	1,000	1,000
Portland.	Oct. 15	30,000	180,000	803,000
Quincy	.....	.....	700,000	8,370,000
*Silver King	.....	.....	337,500	787,500
Sacramento.	.....	.....	2,000	2,000
*Slocan Star.	.....	.....	200,000	250,000
Small Hopes	.....	.....	25,000	3,275,000
Smuggler-Union	.....	.....	100,000	100,000
*Swansea	Oct. 10	5,000	10,000	11,500
Tamarack.	.....	....	150,000	4,320,000
Union.	.....	.....	23,500	73,000
*Utah	Oct. 10	2,000	20,000	173,000
*Utah Con.	.....	.....	3,000	3,000
Victor.	.....	.....	140,000	605,000
Victor M. & L.	.....	.....	12,000	42 000
War Eagle.	Oct. 15	30,000	55,000	187 500
Wasp.	.....	.....	40,000	40,000
Totals.	.....	$204,250	$10,375,100	$124,613,483

* September dividend paid. † Extra dividend of 10c. per share included.

STOCK QUOTATIONS.

BOSTON, MASS.*

Name of Company.	Location.	Par val.	Oct. 9 H.	Oct. 9 L.	Oct. 10 H.	Oct. 10 L.	Oct. 12. H.	Oct. 12. L.	Oct. 13. H.	Oct. 13. L.	Oct. 14 H.	Oct. 14 L.	Oct. 15. H.	Oct. 15. L.	Sales.
Allouez	Mich.	25													
Arnold	"	25													
Atlantic	"	25	17.50		17.50		17.00								60
Bost. & C. C	Colo.	1													
Bost. & Mont.	Mont.	25	86.25	83.50	84.00	82.25	81.63	79.00	82.00	80.00	82.75	81.50	82.50	80.50	29,402
Butte & Bost	"	25	2.38	2.25	2.00		2.13		2.00	1.50					645
Cal. & Hecla	Mich.	25			315				310		310				61
Centennial	"	25					2.00								100
Dominion Coal.	N. S.	100	7.50	7.38	7.25	7.00	7.63	7.13	7.63	7.50	7.88	7.63	7.75	7.50	2,401
" pref.	"	100	8.00				80.00								10
Franklin	Mich.	25					9.00								10
Gold Coin	Colo.	1	2.50		2.50		2.50						2.38	2.25	550
Illinois Steel	Ill.	100	42.00	41.00	40.00		41.00	39.75			44.00	42.00	42.00	41.00	477
Kearsarge	Mich.	25	10.63	10.50	10.50		10.25				10.50		10.50		520
Lake Sup. Iron.	"	25													
Merced	Cal.	15							7.25	6.25	6.25	5.75	6.00		690
Minnesota (Ir.)	Minn.	100													
Napa	Cal.	7									7.00		6.88		250
National	Mich.	25													
Old Dominion	Ariz.	25	15.25	14.75	14.75	14.50	14.25		15.00	14.75	15.63				1,850
Osceola	Mich.	25	24.75				25.00		26.00		27.00	25.00			173
Pioneer	Cal.	10			5.75		5.50	5.38	6.25	6.00	6.50	5.38	6.00	5.50	1,295
Pontiac	Mich.	25													
Quincy	"	25	110¾						111						10
do. scrip	"								81.00		80.00				57
Santa Rosa	Cal.	10													
San. Ysabel (G.)	"	5			8.75	8.50	8.00								170
Tamarack	Mich	25	85.50		85.00		85.00		85.00	82.00	84.00	81.00	81.00		145
Tamarack, Jr.	"	25													
Tecumseh	"	25							4.00	3.50					225
Westingh E. & M	Pa.	50													
do. pref	"	50							49.00						50
do. scrip	"														
Wolverine	Mich.	25			7.00						7.00		7.00		385

* Official quotations Boston Stock Exchange. Total sales, 40,306.

INDUSTRIAL, COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Oct. 10. H.	Oct. 10. L.	Oct. 12. H.	Oct. 12. L.	Oct. 13. H.	Oct. 13. L.	Oct. 14. H.	Oct. 14. L.	Oct. 15. H.	Oct. 15. L.	Oct. 16. H.	Oct. 16. L.	Sales
Balt. & Ohio	100	14		14						14⅜		14⅝	14⅜	1,4 0
Ches. & Ohio	100			13¾	13⅝	13⅝	13½	14⅛	14⅛	14		14	13¾	3,2 0
Col.C. & I.Dev	100													
Col. Fuel & I.	100			17⅝	16½	18	17¼	19	18	18⅛	18	17⅛	17	3,600
Col.,H.V. & Tol	100	16½		16	15⅜	16¼	16	16⅛	16¼	16¾		16¼	16	1,420
do. pref.	100													
Col. & H.Coal	100													
Del. & Hud. C	100	120¾		121¼	120	121¼	119¾	123¼		123¾		122¼		633
Del., L. & W.	50			153		153		156	154½	156	155½			430
General Elec.	100	25¾	25½	25¾	24½	25¾	27	27¼	26⅞	27	25¼	25¾	25¾	9,612
Lake Erie & W	100													
do. pref.	100					64		65½	65¼			65¼		415
Morris & Essex	100													
Nat'l Lead	100	20		20		21	21¼	20¾	20¼	20		20		2,600
do. pref.	100													
N. J. Central	100	100⅝	100	100	98									1,700
N. Y., L. E. & W	100													
do. pref.	100													
N.Y., Ont. & W.	100	13¾	13¼	13⅜	13	13¾		14	13¾	13⅜				3,000
N.Y., Susq. & W	100							8						100
do. pref.	100	20¾	19¾	19⅞	19⅝	21½	20	21		21				1,4 0
Norfolk & W.	50													
do. pref.	50									14½				30
Phila. & Read.	50	23	21¼	22¼	21	22⅞	21¾	23¼	23			23¼	22¾	91,132
Tenn. C. & I.	100	30⅝	30	23	22⅞	21¼	20⅝	22¼	21¼	22⅝	21¾	21⅜	21⅜	10 9 0
do. pref.	100													
Wheel. & L. E	100	5¾	5⅛	5¼	5⅜	5¼	5⅝	6	5⅝	6	5⅛	5¾	5⅛	6,010
do. pref	100													

* Official quotations N. Y. Stock Exchange. Total shares sold, 137,582.

NEW YORK.*

Name of Company.	Location.	Par val.	Oct. 10. H.	Oct. 10. L.	Oct. 12 H.	Oct. 12 L.	Oct. 13. H.	Oct. 13. L.	Oct. 14. H.	Oct. 14. L.	Oct. 15. H.	Oct. 15. L.	Oct. 16. H.	Oct. 16. L.	Sales
Adams	Colo.	10													
Ajax	Utah.	10													
Alamo	Colo.	1													
Alice	"	1													
Alliance	Utah.														
Amer. Flag	Colo	10													
Anaconda	"	5													
Argentum-Jun.	Colo.	2													
Bedford Con	Mont.														
Belcher	Nev.	100													
Best & Belcher	"	100													
Bodie Con	Cal.	100											.65		100
Bullion Beck & C	Utah.	10													
Bulwer	Cal.	100			.45								.48		1,500
Breece	Colo.	25													
Brunswick	Cal.	1									.18	.15	.20		.20		1,400
Centennial Eur.	Utah.	50													
Choilar	Nev.	10							1.80						200
Chrysolite	Colo.	20													
Comstock T.	Nev.	100							.06						500
do. bonds	"														
Con. Cal. & Va.	"	100			1.80						1.70				200
Con. Imperial	"	10													
Creede & C. C.	Colo.	1	.08								.07				1,300
Cripple C. Con.	"	1													
Crœsus	"	1	.02		.02						.02		.02		2,000
Crown Point	Nev.	100	.58												100
Dalton	Utah.	25													
Daly	"	20													
Eureka Con	Nev	2													
Father de Smet	S Dak	1 0													
Gold Coin	Colo.	1													
Golden Fleece	"	1													
Gould & Curry	Nev.	100													
Hale & Norcross	"	100													
Homestake	S. Dak	100													
Horn Silver	Utah.	25			1.50										100
Iron Silver	Colo.	2													
Isabella	"	1													
King & Pemb.	Ont.	10													
Lacrosse	Colo.	10													
Leadville Con.	"	10													
Little Chief	"	10													
Mexican	Nev.	100													
Mollie Gibson	Colo	5							42						200
Mono	Cal.	10													
Mt. Rosa	Colo.	1	.20												200
Occidental Con	Nev.	100													
Ontario	Utah.	100													
Ophir	"														
Pharmacist	Colo	1	.12		.11						.12		.12		.12		2,900
Phœnix	Ariz.	1													
Portland	Colo.	1													
Potosi	Nev.	100							60						200
Quicksilver	Cal	100													
Savage	Nev	100													
Sierra Nevada	"	100													
Silver King	Utah.	20													
Sm. Hopes Con.	Colo.	20													
Specimen	"	1													
Standard Con.		10													
Syndicate	Utah	1													
Tetro	Nev.	100													
Union Con.	"	100													
Utah Con	"	100													
Victor	Colo.	1													
Work	"	1													
Yellow Jacket	Nev.	100	.35										.65		300

* Official quotations N. Y. Stock and Con. Stock & Petroleum Exchanges. Total shares sold, 13,200.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val	Oct. 5. B.	Oct. 5. A.	Oct. 6. B.	Oct. 6. A.	Oct. 7. B.	Oct. 7. A.	Oct. 8 B.	Oct. 8 A.	Oct. 9. B.	Oct. 9. A.	Oct. 10 B.	Oct. 10 A.	Sales.†	Sales.*
*Ajax	$1														
Alamo	1	.04½	.04¾	.04⅝						.01½	.04⅝			16,7 0	
*Am'ric'nC	1			.02¾	.02¾										3,000
Anaconda	5	.65	.65	.63		.62	.63¼	62		.62	.63	.62½		11 200	
*Aola	1														
Arg'ntumJ	2			.49¾	.49¾	.49½		.50		.52	.52½	.54	.55	12,356	
Bangkok	1														
*Bankers	1														
Banner	1			.01¾	.01¾										
*Ben Hur	1			.0 ¾	.05¾										6,0 0
*Blue Bell	1	.09¾	.08¾			.09¾	10	.08	.09¾						2,000
Bob Lee	1											.01		9,000	
Bost. & C.C.	1														
*Bucknorn	1	.02¼	.02¾			.02¾	.02¾					.02¾	.03		13,000
*Colo.C. & M	1			.04½		.04½	.04¾	.04¼	.04¼			.04¾	.04¾		18,000
Columbine	1														
Copper M	1														
Cr. & C. C.	1	.08¾	.08¾	.08¾		07	.08			.07¾				11,500	2,000
C. C. Con.	1	.14		.14¾		.14¾		.13¾	.13⅜	.13¾	.13⅜	.13¾	.13⅜	6,600	7,000
Cr. Cr. Exp.	1														
Croesus	1					.01½						.01¾		7,000	
*Dante	1														
Des Moines	1	.02¾		.02¾		.02¾	.03							4,000	2,000
*Enterprise	1	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾	.07¾			.07¾	.07¾		14,000
Fanny R.	1														
Favorite	1			.08											
Franklin	1	.08¼	.09	.009						.009	.09½			6,000	
*Garfield-G	1	.07¾	.07¾	.07¾	.08¼	.07¼	.07¾	.08¼	.08¼			.08¼	.08¼		88,156
*Gold. Age	1					.02¾	.02¼								1,000
*Gold. E'g'e	1					.02¼	.02¼								1,000
Gold Fi'ce	1									1.01¼	1.02			7,000	
Gold & Gl.	1														
Gold King	1														
*Goldstand	1														
*Gould	1							11¼	.11¾			11¼	.12		3,000
Grotte	1														
Henrietta	1														
*Humboidt	1														
Ida May	1														
Ingham, C.	⅛														
*Iron Clad	1														
Isabella	1	.45¾	.46¾	.41¾	.45	.42	.42¾	.41¾	.42	.41	.41¾	.39	.41¾	127,2 4	9,200
do. stamp	1	.45	.46¾	.41¾	.42	.4.5¾	.41	.40¾	.41	.40		.38½		26,300	
Jack Pot	1	.06	.07½	.07		.07¾		.07½		.07½				9,850	6,000
Jefferson	1		.12¾												2,000
*Keystone	1							.01¾	.03¼						1,000
Ladessa	1														
L'nc'lnB'y	1														
LottieGib	1														
Marion	1					.008¼								12,800	
Matoa	1	.14¾	.14¾											6,00	
Mollie G.	5			.45		.46				.45¾		.45¾		2,800	
Monarch	1														
Mt. Rosa	1	.19¾	.22	.20		.18	.19	.17		.17	.17¼	5.16¾		34,200	3,000
Mutual	1	.03½	.04½												5,000
Nugget	1	.06¼	.10												1,000
*Ophir	1														
Oriole	1			.02¾		.02¾		.02¾				.02¾	.02¾	7,000	1,000
*Orphan B.	1									.09¼		.10		5,500	
*Pappoose	1			.03½	.03¼	.03¼	.04	.03¾	.04½						5,500
Pharmacist	1	.13	.13¾	.12¾	.13¼	.12¾	.12¾	.12¾	.12¾	.12	.12¼			17,500	5,000
Portland	1	1.50	1.55¼	1.55		1.48		1.46						7,300	
*Princess	1														
*Reno	1	.03¼													1,000
*Sacram'to	1														
Silver St.	1														
Specimen	1			.08	.08¼	.07¾				.08				5,000	
*Sq'w't. T.	1			.02¼	.02¾			.02½	.02¾			.02½	.02¾		30,0 0
*Temonj	1							.08	.09						1,00
Trachyte	1			.03		.03	.03½			.03	.03¾			9 000	1,00
Union	1	.33	.33¼	.32	.32¾	.31¼	.31½			.31¾		.31¼	.31¼	22,403	200
Virginia M.	1														
Work	1	.09½		.09	.09½	.09	.09¾	.09¼		.09½	.09¾	.09¾		44,000	
Total shares sold: Listed														422,063	212,056
" " Unlisted														2,166,065	483,00

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

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Oct. 9.	Oct. 10.	Oct. 12.	Oct. 13.	Oct. 14.	Oct. 15.
Alta	Nev.	100	.12		.14	.15	.15	.14
Belcher		100	.64	.38	.66	.62	.59	.64
Best & Belcher	"	100	1.00	.98	.93	.89	.90	1.20
Bodie Con	Cal.	100	.54		.50	.50	.55	.55
Bulwer	"	100	.40		.41	.41	.41	.40
Challar	Nev.	100	2.20	2.00	1.85	1.90	1.95	2.35
Con. Cal. & Va.	"	100	1.75	1.70	1.60	1.65	1.60	1.90
Crown Point	"	100	.55	.57	.55	.52	.53	.54
Gould & Curry	"	100	.73	.71	.66	.66	.65	.90
Hale & Norcross	"	100	1.40	1.35	1.25	1.30	1.30	1.70
Mexican	"	100	.47	.40	.40	.41	.40	.52
Mono	Cal.	100	.15		.15	.15	.16	.15
Ophir	Nev.	100	1.20	1.20	1.15	1.15	1.10	1.40
Potosi	"	100	.76	.74	.62	.62	.63	.85
Savage	"	100	.55	.51	.47	.46	.43	.76
Sierra Nevada	"	100	.72	.71	.63	.63	.68	.75
Union Con	"	100	.60	.59	.47	.54	.51	.60
Utah	"	100	.07	.06	.10	.09	.09	.10
Yellow Jacket	"	100	.35	.37	.62	.60	.56	.60

* Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Oct. 15.

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.	10	32	35	Ore Knob	"	10		
G. Cr'k Coal	"	100	101	105	Silver Valley	N. C.	5		75

* Official quotations Baltimore Stock Exchange.

BRITISH COLUMBIA.* Week ending Oct. 10.

Name.	Selling price.	Name.	Selling price.	Name.	Selling price.
Bound'y Creek:		**Trail C'k** (con.):		**Trail C'k** (con.):	
G. Hester District	$8.05	ButteGoldLeasing	$ .17½	Le Roi	$8.00
Old Iron. Leas.	.15	B. Columbia G. K.		Lily May	.15
C'p McKenney:		Caledonia Con	.07½	Little Darling	.12
Cariboo M. & S. Co.	0.36	California	.08	Mabel	.15
Ainsworth & Nelson Dis.:		Center star		Mayflower	.15
Delia M. & M. Co.		Commander	.23	M nte Cristo	.20
Hall Mines	8.15	Crown Point	.52	Moruta	.15
Colville Res.:		Deer Park	.16	Mug Wump	.15
Buton G. M. Co.		Dewdney	.06	Nest Egg	.12
Fidelity G. & C. Co		Enterprise	.20	Northern Bell	.10
Joe T. Gold M. Co.		Evening Star	.30	O. K	32½
Mountain View		Eureka Con	.5	Palo Alto	.09
Res. Min. & M. Co.		Georgia	.35	Prœnix	12½
Idaho District:		Gertrude	.15	Poorman	.11
Oro Pinar Placer		Good Hope	.06½	Red Mt. View	.20
Daisy Group		Great Western	.20	Rossland Red Mt.	.20
Gray Eagle	1.00	Helen	.12½	St. Elmo	12½
Idler		High Ore	.17½	Silver Bell	.06
Noble Five Con	.25	Hill Top	.06½	Silverine	12½
Slocan Star	2.15	Homestake	.20	Southern Cross & Wolverine Con	.20
Wonderful Group	.15	Imperial	.05	Virginia	.28
Trail Creek:		Iron Mask	.75	War Eagle	1 75
Alberta	.10	Ivanhoe	.10	West Le Roi	.15
Big Three	.10	Josie	.60	White Bear	.15
		Josie Mac	.05		
		Jumbo	75		

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

LONDON. Oct. 2.

Name of Company.	Country.	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
				£ s. d.	s.d.		£ s. d.	£ s. d.
N'th Americans:								
Alaska-Mexican	Alaska	Gold	£200,000	1 0 0	0 4.8	July 1896	1 17 6	2 0 0
Alaska-Treadwell	"	"	1,000,000	5 0 0	1 6	" "	5 2 6	5 5 0
De Lamar	Idaho	Gold& silver	400,000	1 0 0	1 0	May, 1896	13 1	14 0
Montana	Montana	Gold&silver	660,000	1 0 0	0 3	June, 1896	4 0	4 6
Palmarejo	Mexico	" "	800,000	1 0 0	....	....	2 0	2 6
Pinos Altos	"	" "	100,000	1 0 0	.....	....	2 6	3 9
Plumas-Eureka	Colorado.	Gold	281,250	2 0 0	0 9	Apr., 1896	5 0	10 0
Richmond	Nevada	G'ld,sil.,le'd	270,000	5 0 0	1 0	Dec., 1895	17 6	1 2 6
Sierra Buttes	California	Gold	245,000	2 0 0	0 6	Apr., 1895	2 6	7 6
Springdale	Colorado	"	200,000	4 0	0 2	Sept.,1894	6	1 0
S'th Americans:								
Colomb. Hydra'lic	Colombia.	Gold	75,000	1 0 0	1 0	July, 1895	6 3	8 9
Frontino & Bolivia.	"	"	140,000	1 0 0	0 9	July, 1896	1 2 6	1 7 6
St. John del Rey	Brazil	"	562,000	1 0 0	xn	Jan., 1895	15 0	17 6
Copper:								
Anaconda	Montana.	Cop. & Sil.	6,000,000	5 0 0	2 6⅛	May, 1896	6 7 6	6 10 0
Cape Copper	So. Africa	Copper.	600,000	2 0 0	2 0	June "	2 8 9	2 11 3
Copiapo	Chile	"	200,000	2 0 0	2 0	May, "	2 5 0	2 10 0
Hall Mines	BritishCol	Cop.&Silver	250,000	1 0 0	......	....	1 12 6	1 17 6
Mason & Barry	Portugal	Cop.& sulph	1,050,000	4 0 0	2 6	May, "	2 17 6	3 2 6
Rio Tinto	Spain	Copper	3,250,000	10 0 0	12 0	" "	24 7 6	24 12 6
Tharsis	"	Sulpr &cop'r	1,250,000	2 0 0	4 0	April, "	5 12 6	5 17 6
Australians:								
Bayley's Reward	W.Au't'lia	Gold	480,000	1 0 0	0 4	Dec., 1894	4 3	4 9
*Broken Hill Prop.	N.S.Wales	Silver	384,000	8 0	1 0	Aug., 1896	2 8 9	2 11 3
Mt. Morgan Gold	Qu'ns'and	Gold	875,000	17 6	0 6	Sept., "	3 8 9	3 11 3
South Africans:								
British S.Africa Co	So. Africa.	Lands &Ex.	2,500,000	1 0 0	xrts.	July, 1895	2 18 9	3 1 3
*City & Suburban	Transvaal	Gold	85,000	4 0 0	10 0	" "	4 12 6	4 17 6
*Crown Reef	"	"	120,000	1 0 0	10 0	Apr., 1895	10 15 0	11 0 0
De Beers	CapeCol'y	Diamonds	3,950,000	5 0 0	22 0	July, "	29 5 0	29 10 0
Ferreira	Transvaal	Gold	90,000	1 0 0	25 0	Aug. "	19 0 0	20 0 0
*Geldenhuis Estate	"	"	200,000	1 0 0	6 0	July, 1895	3 13 9	3 18 9
Henry Nourse	Witw'sr'd	"	100,000	1 0 0			6 10 0	6 15 0
*Heriots (New)	"	"	115,000	1 0 0	5 0	July, 1896	8 17 6	9 2 6
*Jagersfontein	OrangeF.S	Diamonds	1,000,000	5 0 0	10	Apr., 1896	9 2 6	9 7 6
Langlaagte Estate.	Transvaal	Gold	500,000	1 0 0	3 0	July, "	5 0 0	5 5 0
Primrose (New)	"	"	280,000	1 0 0	5 0	Feb., 1896	5 0 0	5 2 6
Robinson	"	"	2,750,000	5 0 0	5 0	July, "	8 10 0	8 15 0
Sheba	"	"	850,000	1 0 0	1 0	Sept, "	1 17 6	2 0 0
Simmer & Jack	"	"	5,000,000	5 0 0	......	.....	6 0 0	6 10 0
Wemmers	Witw'sr'd	"	55,000	1 0 0	10 0	Apr., 1893	8 7 6	8 12 6

* Dividend pending. † Reconstruction or increase of capital pending.

PARIS. Week ending Oct. 1.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	100.00	1,980.00	1,985.00
" " Firminy	"	" "	3,000,000	500	85.00	1,700.00	1,723.75
" " Fives-Lille	"	" "	12,000,000	500	35.00	760.00	780.00
" " la Marine	"	" "	20,000,000	500	37.50	940.00	925.00
" " Longwy	"	" "	....	500	35.00	8.0.00	780.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	175.0	170 00
Anzin	France	Coal	....	....	160.30	4,625.00	4,600.00
Boleo	Lower Cal.	Copper	....	500	65.00	1,385.00	1,395.00
Briansk	Russia	Coal & Iron	....	....	....	1,300.00	1,3 0.00
Bruay	France	Coal	3,000,000	400	700.00	22,575.00	2?,?90.00
Callao	Venezuela.	Gold	32,200,000	125	...	8 50	8.50
Cape Copper	S. Africa	Copper	....	50	1.50	61.00	62 50
Champ d'Or	"	Gold		25	.....	43 00	42 00
Courrieres	France	Coal	600,000	300	160.00	4,550.00	4,530.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	738.00	717.00
Dombrowa	Russia	Coal	....	500	....	571.00	572.00
Dynamite Centrale	France	Explosives	....	500	25.00	5 0.00	497.00
Fraser River	Brit. Col'mb	Gold	....	....	......	38.00	37.50
Huanchaca	Bolivia	Silver	....	125	5.00	83.50	85.50
Buta-Bankowa	Russia	Iron & steel		....	......	2,800.00	2,800.00
Langlaagte Estates	S. Africa	Gold	11,750,000	25	11.25	133.00	127.00
Laurium	Greece	Zinc & lead.	16,300,000	500	40.00	640.00	6?5.00
Lautaro	Chile	Nitrates	....	125	.....	152 00	148.00
Malfidano	Italy	Zinc	12,500,000	500	44 90	1,040.00	1,03?.00
Metaux, Cie. Fran. de	France	Metal d'iers.	25,000,000	500	37.50	556.00	554.00
Mines d'Or de la Russie.	Russia	Gold	.....	....	....	1,005.00	1,005.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	775.00	780.00
Nickel	N.Caled'nia	Nickel	12,720,000	500	30.00	160.00	170.00
Paccha-Jazpampa	Chile	Nitrates	.....		....	23.00	22.00
Peñarroya	Spain	Coal, etc.	....	500	52.50	1,560.00	1,570.00
Rebecca	Colo'do,U.S.	Gold	....	....	......	15.50	15.00
Rio Tinto	Spain	Copper	81,250,000	250	10.05	598.00	604.50
Robinson	S. Africa	Gold	....	125	12.50	222.50	219.50
Saint Elie	Fr. Guiana	"	4,000,000	25		19.00	19.00
Salines de l'Est	France	Salt	......	500	27.00	307.50	305.00
Sels Gem.de la Rus. Mer	Russia	" etc	....		....	605.00	607.00
Tharsis	Spain	Copper	....	50	8.75	147 00	148.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	30.00	510.00	510.00

MEXICO. Week ending Oct. 8.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo	9,600	$0.59	....	$14	$ 8
Angustias	Guanajuato	2,400	10.00	....	5 5	600
Arevalo y Anexas	Hidalgo	....	10.00	....	280	300
Asturiana y Anexas	Zacatecas	2,500	10.00	....	400	390
Bartolome de Medina	Hidalgo	2,000	3.50	....	180	150
Carmen	"	1,100	7.75	....	400	450
Castellana y SanRam	Tepic	2,448	3.00	....	170	170
Cerro Colorado	Chihuahua	15,000	....	$1.00	10	10
Cinco Senores y An.	Guanajuato	2,000	15.00	....	1,(8)	950
Concepcion y Anexas	S. Luis Potosi	2,700	....	....	200	100
El Oro	Guanajuato	500	....	....	80	80
Guadalupe	"	10,000	2.00	....	100	180
Luz de Maravillas	Hidalgo	1,100	....	....	110	125
Pabellon	"	1,000	27.89	....	180	200
Purisima de los Com.	Zacatecas	2,400	....	....	10	15
Real del Monte	Hidalgo	2,554	10.00	....	850	800
Rosario y Anexas	Durango	4,800	....	....	70	60
San Francisco	Hidalgo	2,000	6.00	....	425	450
S. Ped. Chalchihuites	"	1,000	2.00	....	100	100
San Rafael y Anexas	"	1,200	20.00	....	500	600
do. free stock.	"	1,200	14.00	....	300	250
Sta. Maria de la Paz.	S. Luis Potosi	2,400	.....	....	180	190
Soledad	Hidalgo	960	7.50	....	250	200
Sorpresa	"	960	5.00	....	200	170
Trinidad	Guanajuato	2,000	....	....	100	90
Tlauzingo	Puebla	2,400	....	....	30	40
Union	Hidalgo	2,000	8.00	....	425	380
Zaragoza	"	1,100	....	....	15	15
Zomelahuacan (gold)	Vera Cruz	5,000	....	....	100	100
Zona Min. de Pozos.	Guanajuato	2,400	......	1.50	50	40

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.* Aug. 13.

Name of Company.	Capital.	Share value Nominal	Share value Paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent.	$27	$27½	$28
Caracoles	315,000	100	100	5 "	25	30	30
Descub. de Huantajaya	1,000,000	100	100	3 "	14	16	15
Huanchaca de Bolivia	8,000,000	25	25	4 "	47	47½	47½
Oruro	800,000	200	200	....	490	500	500
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	30	35	35
Todos Santos	2,000,000	100	100	1 "	17	18	17
Nitrate Cos:							
Agua Santa	3,000,000	50	50	4 "	163	164	163
Antofagasta	2,000,000	200	200	5 "	151	152	151
Union	3,000,000	200	500	....	40	41	41

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

SHANGHAI, CHINA.* Oct. 4.

Name of Company.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad.	China	45,000	$5	$5	Oct., 1894	$0.25	Taels 2.19
Punjom Mg. Co., Ltd.	"	60,000	4	3.75	....	....	" 9.85
do. pref	"	30,000	1	1	....	....	" 2.85
RaubA'lian G.Mg. Co.	"	200,000	£1	13s. 10d.	Dec., 1893	0.21	" 3.83
Sheridan Con.Mg. Co.	Colorado,U.S	20,000	Taels 100	Taels 100	....	......	" 2.50

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

DENVER, COLO.*

Name of Company.‡	Par val.	Oct. 5. B.	Oct. 5. A.	Oct. 6. B.	Oct. 6. A.	Oct. 7. B	Oct. 7. A.	Oct. 8. B.	Oct. 8. A.	Oct. 9. B.	Oct. 9. A.	Oct. 10. B.	Oct. 10. A.	Sales.
L'd Mines														
Anaconda	$5	.61	65	.53¼	.56	.63	.64	.62	.62½	60	.62⅝	61⅛	.62⅛	25,800
Bangkok	1	.03⅛	.05	.03⅞	.04⅛	03	04	.03⅛	..	.03⅝	.04⅛	.03⅝	.04¼	7,000
Bankers	1	12	.12⅛	.12	.14	.11¾	.12¼	11⅛	.12¼	.1.⅜	.12	.11⅛	.12	100,000
Gar.-Grouse	1	.07⅛	.08	.09	.08¼	.07⅞	08	07⅞	.18	.08	.08⅛	.08⅛	.08⅝	157,137
Golden Fl	1	1.00	1.04	1.02	1.05	.96	1 01	1 03	1.04⅛	1.01	1.05	97	1 06	3,300
Gold & Gl.	1	10	20		.....	......	......			...	.....	......	.25	5,000
Gold Stand.	1	.04⅝	.04⅝	.04⅝	.04⅝	.04⅝	.04⅛	.04¾	.04⅝	.04⅜	.04⅝	.04⅝	.04⅞	9,000
Insley	1	01	.011	.011	012	.0.0⅛	.012	010½	.012	010½	.012	.011	.011¼	95,000
Iowa	1	....	.55	.....	.55	...	.....				.56	.....	.55¾	2,000
Ironclad	1	....	.....	.12	.14	.11⅛	.12⅝	.11	.11¾	.11⅛	.12¼		.12	74,500
Isabella	1	.46	.46¼	.43½	.44	.43⅛	.....	.40⅛	.41⅝	.41	.41⅞	.40	.41	62,800
Mollie G.	5	.45	.....	.45½	50	45	.50	45	.48	.45	.48		......	1,600
Mt Rosa	1	.19⅛	.21½	.18	.22	.17⅞	.18¼	.12	.21			16	18	10,000
New Zeal'd	1	.04½	.05	04	.04¾	.03⅞	.04⅝	.04	04⅝	.04⅛	.04⅝	04⅛	.05	17,000
Pharmacist	1	...	....	12	.14	.12	.13	.12	.13	....	. .	.11⅛	.13	48,500
List. Pr.														
Agate	1	003	.003⅛	.003	.004	.003	.004	.003⅝	.004	003⅝	004	.003⅛	.....	138,000
Aola	1	.02⅛	.02⅝	02½	02⅛	.02	.03	.02⅛	.02⅛	.02⅛	.02⅛	.02⅛	.02⅛	33,000
Big Johnny	1	.03⅛	.02½	.02⅜	.02⅜	.02⅛	.002¾	0.2⅝	003⅛	.003⅛	.003⅝	.003½	.004	147,000
Blue Jay	1	.004¼	.004⅛	.004¼	.004½	.004	.004⅛	.....	.004½	.003¾	.004	.003⅛	.004	70,000
Cannon Ball	1	.005⅛	005⅛	.005⅛	.005⅛	.005½	.006	.005⅛	.006	.005¼	.005⅛	.005	.005½	219,000
Champagne	1	006½	.007½	.006½	.01	.006	01	.006⅛	.009	.006	.008	.006	.009	1,000
C. C. Imp.	1	003	.....	.008		.004	005	003⅛		.005	.007⅛	.003		249,000
Defender	1	008⅝	.009	.003⅛	.01		.....	.008⅛	.011¼	.009	.012½	.008⅝	.01	119,000
Dictator	1	.006½	.007	.006⅛	.007½	.006⅛	.006⅝	008¼	009	.008	.008⅛	.008	008⅛	167,000
Dixie	1	.003	0.3⅛	.03¼	.004	.003⅛	004	0 3⅛	.004⅛	.003⅝	.004⅛	.003⅝	.005	255,000
Eclipse	1	004⅛	.005½	.005¼	007	.004	.005	.005	.005¼	.005	.005⅛	004	.005	19,000
Finance	1	.11	.010⅛	.008	011	.005	1	009	.009½	.009¼	01	.009		33,000
Gene Field	....	.002¼		.002⅛	.003	.003⅝	.003¼	.002⅝	.004	.004	.005	.004⅛	.005	12,500
Geo. Wash.	1	01⅛	01⅜	.01½	.01⅜	.01⅛	01⅜	.01		.01⅜	.02⅛	.01⅛	02⅛	32,000
Gold Field	1	.006	.006⅛	.007	.007⅛	.007⅛	.009	.008	.01	.007⅝	.008⅛		.007	59,000
Gold Queen	1	.002⅛	.003¼	.002	.003⅛	.002⅛	.002⅛	.002⅛	.003¼	.002⅛	.003	002⅛	.002¾	31,000
Gregory	1	.006	.006¼	.005¾	.006½	.006	.006¼	.005¾	.006	006	.006¼	0.6	.005¼	39[illegible],000
Hecla	....	.004	.....	.004⅝	..	.004⅛	.006	.004⅛	.007	.004	.006	......	.008	14,000
Henrietta	1	.01⅜	.01⅝	01⅜	.01⅝	.01⅛	.01⅝	.01⅜	.01⅝	.01⅛	01¼	.012½	.013	157,000
Illinois	1	.007¾	009	007⅝	.008	.007½	.008	.007⅛	.009	.007⅛	.007¾	.007	007½	71,000
Internat'l	1	.002⅝	.003	.002⅝	.003		......	.002⅜	0 3	002¾	.003	.003	.003¼	164,000
Justine	1	.005	.005½	.004⅛	......	.004⅝	.005⅛	004⅝	.006	.004⅝	.005	.004⅝	.005¼	9,000
Lincoln Boy	1	.003¼	.....	003⅝	.004¼	.003¼	004⅛		.006	003	.004	.003	.003¼	58,000
New Haven	....	.03	.....	.3	..	...		.		.3	.....	...	.....	12,000
Orient	1	.002	.002⅛	.002	.004	.002	.003	0 2	.002¼	.002	.002⅛	......		104,000
Pilgrim	1	.005⅛	.006	.00⅝	.010	.006	006⅛	.006⅝	......	.007⅛	.008⅛	.	.008⅛	116,000
Puritan	1	.005¼	.005⅝	.05⅛	.007	005⅛	005⅛	.006	...	.006⅝	.07	.006	..	185,000
Q'n Victoria	1	.007⅛	.006	.007⅛	.007⅝	.007⅛	.008	.007⅛	.008	.007⅝	008	007¼	.008⅛	412,000
Reno	1	.03⅛	.03⅝	.03⅝	.03⅝	.03¼	.03⅛	.03⅝	.03⅝	.03⅝	.03⅝	.03⅝	.03¾	76,000
Royal Age	1	.008⅛	.009	.007¼	007⅛	.007⅛	.009	008	.008⅛	007⅛	0 8	.007½	.008⅛	257,000
Senator	1	0 4	005	.04⅛	.005	.004⅛	0 4⅝	004⅛	005	.004⅛	004⅛	.004¼	.004⅝	234,000
Sentinel	1	.003⅝	.004	.03⅝	.004¼	.003⅝	.005	.003⅝	.004	004⅛	.005	.004⅛	.005	207,000
Sev. Hills	..	006	.009	.007	.010	.005	.007	007	.012	.0 6		.005	....	1,000
Unity	1	005⅛	.006	.006⅛	.009	.005	.006	005⅛	.005⅝	.005⅛	.005⅛	.005	005⅛	257,000
W. C Cons	..	.001	.003	.001⅛	.002⅛	.001½	....	....	....	.10.	.102	......	.....	51,000
Unl. Act.														
Ætna	1	.013	.013⅛	012⅛	.013⅛	010⅛	013⅛	.008	.01¼	.009	011	.008	.012	139,000
Alamo	1	.04⅝	.04¾	.04⅝	.04⅞	.04⅝	.04⅝	.04⅝	.04⅝	.04½	.04⅝	.04⅝	.04⅝	3,500
Arcadia	1	.11	.15½	.12	.15	.12½	.13¼	.12⅛	14	.12⅞	.13½	.12½	.14	20,000
Argentum J	2	.49½	.53⅛	.51	.54	.50	51	.50	51	.51	52	.54¼	.55⅝	5,500
Chimborazo	1	.009½	.01⅛	.009½	.01	.009	. .	.008⅛	....	.009	.011	.008½	.011	12,000
C. K. & N.	1	.007⅝	.008⅛	0 8⅛	.009	.....	...	008⅛	.009	.009	.009¼	.008⅝	.009	4,000
C. C. Con	....	.....	.14⅛		...	...	.13⅝	..	....	.13	.14	.12⅛	.13⅛	1,000
Colo.C.& M.	1	.04	04⅛	.08	.08⅝	.04	...	.04	.04⅛	.03⅝	.04¼	.03⅝	.04⅛	21,000
Currency	..	04	.04⅛	...		.04¼		.04		.04⅛	.....	.03	.05⅛	2,000
Enterprise	1	07¼	.08½	07	.08¼	.07½	.08	.07½	.08	.07⅛	.08	.07½	08⅛	16,500
Goldsmith	..	.....	....		....	..	..	.09½	.012	.009¼	011	.009	. .	68,000
Mt. Beauty	..	..		.02⅝	.03⅛	.02⅝	.03¼	.02⅝	.03	02⅞	03⅛	.03⅜	.03⅛	2,000
Portland	1	1.47	1.63	1.47	1.50	1.45	1.51	1.40	1.48	1.40	1.45	1.35	1.45	17,500
S'cram'nto	1	.04⅛	.05¼	.05¼	......	.04⅞	.05⅛	......	.....	.04⅝	.05½	.04⅞	.05⅛	8,000
Union Gold	...	.30	.34⅛	......	....	.31	.33			30	.33	.29		8,500
Wh. of For.	1	.009	010⅛	.008	.009	.008⅛	.009⅛	.006	.008⅛	.006	.008	.005	.007⅛	294,000
Work	1	.19¼	.10	..	.....	..	......	.09¼	.09⅝	.15⅛	.09⅝	.09⅝	.10	5,000

*Official quotations Colo. Mg. St'k Exch. Sales, listed, 4,992,137; unlisted, 627,500; total, 5,619,637.

SALT LAKE CITY, UTAH.* Week ending Oct. 10.

Stocks.†	Par value.	Bid.	Asked.	Actual selling price.	Stocks †	Par value	Bid.	Asked.	Actual selling price.
Ajax	$10	$0.50	$0.64	$0.58	Horn Silver	$25	$1.00	$2.00	....
Alliance	1	.15	.35	....	Little Pittsburg	....	.01	.02¼	.01⅛
Annie	.....	.05	.10	....	Lucky Bill	....	.20	.25	....
Am. Nat. Gas	....	.01	.02	.01⅛	Malvern	....	.20	.25	....
Anchor	20	1.40	2.00	1.55	Mammoth	25	2.00	2.05	2.05
Bogan	1	.07½	.11	.10	Mercur	25	5.95	6.25	6.15
Brick Con.	.....	.50	.60		Morgan	125	.30	.40	....
Bullion Beck & C.	10	5.35	6.25	6.05	Ontario	100	9.00	10.25	....
Centen'l Eureka.	50	57.50	65.00	62.50	Overland	.....	.25	.45	....
Dalton	5	.02¼	.03	.02⅛	Rover	10	.25	.35	.30
Dalton & Lark	.....	.20	.30	.....	Silver King	20	14.75	17.50	15.50
Daly	20	5.00	6.25		Sioux Con	10	.75	1.00	....
Daly West	20	8.00	8.75	8.25	Sunshine	10	1.70	2.00	1.70
Eagle	10	.04	.07	..	Swansea	....	2.30	2.50	2.35
East Golden Gate	....	.01	.01	.02	So. Swansea	....	.90	.95	.95
Four Aces	....	.19	.23	.21	Tetro	1	.05	.07½	....
Galena	10	1.60	1.70	1.65	Utah	....	1.40	1.50	1.40
Geyser	....	.65	.90	.75	Utah Con	1	.60	.90	....
Herschel		.07½	.10	.....					

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

PHILADELPHIA PA.*

Name of Company.	L'ca-tion.	Par Val'e	Oct. 8. H.	Oct. 8. L.	Oct. 9. H.	Oct. 9. L.	Oct. 10. H.	Oct. 10. L.	Oct. 12. H.	Oct. 12. L.	Oct. 13. H.	Oct. 13. L.	Oct. 14 H.	Oct. 14 L.	Sales
Ace'leneL'tCo.	.	25	.....	.....	.....		....	....	.....	.....		....		....	....
Cambria Iron.	Pa.	50	40.00	39 00	40.00	..	....		.....	....	39.50	.	39 50	....	168
Choc.&Gif.Ctfs	I.T.	50	6.25	6.13	6.38	6 25	6.25	6.00	.....		.....		6.38	6.25	795
Hunt & Br.Top.	Pa.	50	...	...	....	...	...	...	...		...		...	...	....
" pref.	"	50					.....		49.75						2
Lehigh C. & N.	"	50	42 0	41.00	42.0	41.00				....	42.00	41.00	42.00	41.25	28
Lehigh Valley.	"	50	29 50	29.00	29.50	29 00	29.00	28 75	29.00	.....	29.00	28.0	29.50	29.00	617
Li'leSchuylkill	"	50	...								59.00				3
Penna. R. R.	"	50	51 50	....	51.5	51.38	51.63	51.25	51.63	51.25	51 75	51.50	51.75	51.50	3,378
Penna. Steel	"	....													
‡UnitedGas Im	"	....	66.88	66.75	...						67.00	....	67 13	66.88	415
Welsb.of Can	Can.	....					1.75		1 75						150
Welsbach Com	Pa.	....							19 00						10
" pref.	"	....	60 0												13
Welsb'h Light.	"	......	41.40	40 00	40.50	40.00					40.00		40.00		614
Westmoreland.	"						47.0		47.00						1

* Official quotations Philadelphia Stock Exchange. ‡ Ex-dividend. Total sales, 6,208.

HELENA, MONT.* Week ending Oct. 10.

Name of Company.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	Butte, Mont.	$1	$1.25	$1.50	....	....
Bald Butte	L. & Clarke Co.	Helena "		1 50	2.00	....	....
Bi-Metallic	Granite "	St. Louis, Mo.		....	3 25	....	....
Combination	" "	" "	10	.35	.50	......	....
Granite Mt	" "		.....	1.25	1.75	.....	....
Helena & Victor	Missoula "	Helena, Mont.	5	.20	.25	.....	....
High Ore	Jefferson "	Butte "	....	1.00	1.50	.....	....
Iron Mountain.	Missoula "	Helena "	10	.45	.47½	2,300	.42 to .42½
Judge	Meagher "	" "	....	....	....	....	....
Merrill (Gold)	Jefferson "	Butte "	1	...	.....	....	....
Ontario	DeerLodge "	Helena "	1	......	......	....	....
Yellowstone	Meagher "	" "	5	15	17½	1,000	17

* Special Report of Samuel K. Davis. Total shares sold, 3,300.

PITTSBURG, PA.* Week ending Oct. 12.

Name of Company.	Loca-tion.	Par val	Bid.	Ask.	Selling price.	Name of Company.	Loca-tion.	Par val	Bid.	Ask.	Selling price.
Coal:						Nat. Gas:					
Mansfield	Pa.	50	.....	.....	....	Allegheny	Pa.	100	......	......	....
N.Y. & C. Gas C.	"	50	40	....	......	Chartiers Val	"	100	4⅛	6⅛	....
Mining:						Manufacturers	"	100	.	......	....
Ent'prise	Colo.	5	.....	.....	....	Peoples' Nat. Gas	"	50		......	....
Lustre	Mex.	10	8	8¾	....	Peoples' Pipeage	"	25	14¼	15	....
Silverton	Colo.	10	....	......	....	Pennsylvania	"	50	4	6	....
Miscellaneous:						Philadelphia	"	50	17	17½	.....
Carborundum	Pa.	100	.....	......	....	Wheeling	W.V.	50	18	18½	.....

* Official quotations Pittsburg Stock Exchange.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c	Colo..	$1,500,000	150,000	$10	*				$693,500	Oct..	1895	.04
2	Ætna Cons., q	Cal ..	500,000	100,000	5	*				70,000	Sept..	1896	.10
3	Alaska-Mexican, g	Alask	1,000,000	200,000	5					155,031	Aug..	1896	.09
4	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				2,950,000	Aug..	1896	.35
5	American Belle, g. s. c	Colo..	2,000,000	400,000	5	*				50,000	April.	1891	.12
6	Anaconda Copper	Mont.	30,000,000	1,200,000	25					750,000	May..	1896	.62½
7	Argentum Juniata, s. l. g	Colo..	2,600,000	1,300,000	2	*				156,000	Oct..	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					700,000	Feb..	1891	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	*				437,500	Dec..	1895	.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	Bodie Cons., g. s	Cal ..	10,000,000	100,000	100	$716,490	April.	1896	.15	1,677,572	Dec..	1894	.25
18	Boston & M. Cons., g. s. c	Mont.	3,750,000	150,000	25	*				4,475,000	Aug..	1896	3.00
19	Brotherton, i	Mich.	2,000,000	80,000	25	*				120,000	Mar..	1893	.50
20	Bunker Hill & S., s. l	Idaho	3,000,000	300,000	10					150,000	Oct..	1888	.06
21	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					46,350,000	Sept..	1896	5.00
22	Centen'l-Eureka, g. s. l. c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	1,830,000	Sept..	1896	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	Chrysolite, s. l	Colo..	10,000,000	200,000	50	*				1,650,000	Dec..	1884	.25
26	Clay County, g. s. c	Colo..	60,000	60,000	1	*				52,000	Nov..	1891	.02
27	C. O. D., g	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
28	Cœur d'Alene, s. l	Idaho	5,000,000	500,000	10					340,000	June..	1893	.06
29	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	441,800	April.	1896	.30	3,898,800	Feb..	1895	.25
30	Cons. New York, g. s.	Nev..	10,000,000	100,000	100	168,000	Jan ..	1896	.05	10,000	Feb..	1893	.10
31	Coptis, g. s	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
32	Cortez, Ltd., s. g	Nev..	1,500,000	300,000	5					735,000	Feb..	1893	.15
33	Dalton & Lark, s. l	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
34	Daly, s. l	Utah.	3,000,000	150,000	20					2,887,500	Aug..	1896	.25
35	†Deadwood-Terra, g	S. D..	5,000,000	200,000	25	*				1,240,000	Aug..	1896	.50
36	De Lamar, g. s	Idaho	2,000,000	400,000	5	*				2,094,100	April.	1896	.25
37	Derbec Blue Gravel, g	Cal ..	10,000,000	100,000	100	110,000	June.	1893	.10	280,000	Aug..	1891	.10
38	Dexter, g. s	Nev..	1,000,000	100,000	10	8,000	June.	1892	.08	100,000	Aug..	1893	.33
39	Elkton Cons., g	Colo..	1,250,000	1,250,000	1					106,969	Aug..	1895	.01
40	Elkhorn, s	Mont.	1,000,000	200,000	5					1,212,000	June..	1895	.06
41	Enterprise, g. s	Colo..	2,500,000	500,000	5	*				825,000	May..	1893	.25
42	Eureka Cons., g. s. l	Nev..	1,000,000	50,000	20	555,000	July..	1896	.10	5,112,500	Jan ..	1892	.25
43	Evening Star, s. l	Colo.	500,000	50,000	10	*				1,437,500	Dec..	1889	.25
44	Florence, s	Mont.	2,500,000	500,000	5	*				89,348	May..	1896	.02
45	Franklin, c	Mich.	1,000,000	40,000	25					1,240,000	Jan ..	1894	2.00
46	Gold Coin, g. s	Colo..	1,000,000	200,000	5	*				80,000	Aug..	1896	.10
47	Golden Eagle, g	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
48	Golden Fleece, g. s	Colo..	600,000	600,000	1	*				533,179	Aug..	1896	.01
49	Gold & Globe, g	Colo..	750,000	750,000	1					28,875	June..	1896	.00 3/10
50	Gold Rock, g. s. c	Colo..	500,000	500,000	1	*				28,750	Dec..	1891	.01
51	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
52	Granite, s. l	Idaho	500,000	200,000	2.50	*				83,400	Nov..	1890	.10
53	Gt. West'n Quicksilv., q	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
54	Harquahala, g	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
55	Hecla Cons., g. s. c. l	Mont.	1,500,000	30,000	50	*				2,130,000	Feb..	1896	.50
56	Helena & Frisco, s. l	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
57	Holmes, s	Nev..	10,000,000	100,000	100	345,000	Mar..	1890	.25	75,000	April.	1892	.25
58	Homestake, g	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	5,986,750	Sept..	1896	.25
59	Hope, s	Mont.	1,000,000	100,000	10	*				622,252	Oct ..	1896	.10
60	Horn-Silver, g. s. c. sp. l	Utah.	10,000,000	400,000	25	*				5,130,000	Jan ..	1896	.12½
61	Iowa	Colo..	1,000,000	1,000,000	1					40,000	Aug..	1896	.01
62	Iron Mountain, s. l	Mont.	5,000,000	500,000	10	*				445,000	Sept..	1896	.01
63	Iron Silver, s. l	Colo..	10,000,000	500,000	20	*				2,500,000	April	1889	.20
64	Isabella, g	Colo..	2,250,000	2,250,000	1					202,500	Sept..	1896	.01
65	Jack Rabbit, g	Cal ..	10,000,000	100,000	100	118,000	April.	1894	.02	260,000	April.	1891	.10
66	Jay Hawk, g	Mont.	1,425,000	285,000	5					33,375	Dec..	1892	.12
67	Kearsarge, c	Mich.	1,000,000	40,000	25	190,000	Oct..	1887	1.00	120,000	Dec..	1895	1.00
68	Kennedy, g	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
69	Leadville Cons., s. l	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
70	Little Chief, s. l. i-o	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
71	Maid of Erin, g. s. c. l	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
72	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,130,000	Oct..	1896	.05
73	Mayflower Gravel, g	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
74	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct..	1891	.03¾
75	Mercur, g	Utah.	5,000,000	200,000	25	*				500,000	Sept..	1896	.12½
76	Minnesota Iron, i	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
77	Mollie Gibson, s	Colo..	5,000,000	1,000,000	5	20,000	Jan ..	1891	.02	4,080,000	Jan ..	1895	.05
78	Monitor, g	S. D..	2,500,000	250,000	10					45,000	Oct..	1890	.03
79	Montana, Ltd., g. s	Mont.	3,300,000	660,000	5	*				2,890 637	Oct..	1895	.06¾
80	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				440,000	July..	1896	1.00
81	Moon Anchor Gold		600,000	600,000	1	*				24,000	July..	1896	.01
82	Moose, g	Colo..	600,000	600,000	1					186,000	Jan ..	1896	.01
83	Morning Star Cons., s. l	Colo..	1,000,000	100,000	10	*				1,025,000	Dec..	1891	.25
84	Mt. Diablo, s	Nev..	5,000,000	50,000	100	140,000	July..	1896	.05	225,000	Aug..	1893	.25
85	Mt. McClellan, g. s. l	Colo..	1,250,000	250,000	5	*				21,936	June.	1891	.03
86	Mt. Rosa, g	Colo..	1,000,000	1,000,000	1					10,000	Jan ..	1895	.00½
87	Napa, q	Cal ..	700,000	100,000	7	*				810,000	Oct..	1896	.20
88	New Elkhorn	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
89	New Guston, g. s. c	Colo..	550,000	110,000	5	*				1,198,120	Oct..	1892	.25
90	New Hoover Hill, g	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1885	.20
91	North Banner, g. s	Cal ..	1,000,000	100,000	10	21,794	Oct..	1896	.02	20,000	July..	1891	.05
92	North Belle Isle, s	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10	230,000	May ..	1888	.50
93	North Com'wealth, s	Nev..	10,000,000	100,000	100	85,000	April.	1890	.25	25,000	June.	1891	.25
94	North Star, g	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
95	Nugget, g	Colo..	1,000,000	1,000,000	1	*				10,000	Jan ..	1895	.00½
96	Ontario, s. l	Utah.	15,000,000	150,000	100					13,310,000	Oct..	1896	.10
97	Osceola, c	Mich.	1,250,000	50,000	25	*				2,072,500	July..	1896	1.00
98	Pacific Coast Borax, b	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
99	Parrot, c	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
100	Petro, s	Utah.	1,000,000	10,000	100					17,500	July..	1891	.75
101	Pharmacist, g	Colo..	1,200,000	1,200,000	1					80,000	Jan ..	1893	.01
102	Portland, g	Colo..	3,000,000	3,000,000	1	*				773,000	Aug..	1896	.03
103	Quicksilver, pref., q	Cal ..	4,300,000	43,000	100	*				1,823,911	June.	1891	1.25
104	" com., q	Cal ..	5,700,000	57,000	100	*				643,867	July..	1882	.40
105	Quincy, c	Mich.	1,250,000	50,000	25	*				8,370,000	Aug..	1896	6.00
106	Reed National, s	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
107	Robinson Cons., s. l	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
108	Running Lode, g. s. l	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
109	Savage, g. s	Nev..	11,200,000	112,000	100	1,006,600	June.	1896	.20	4,460,000	June.	1869	3.00
110	St. Joseph, l	Mo..	2,500,000	250,000	10					2,524,000	Dec..	1895	.25
111	Silent Friend, g. s. l	Colo..	500,000	500,000	1	*				60,000	Aug..	1891	.25
112	Silver Cord Com., g. s. l	Colo..	5,000,000	500,000	10	*				270,000	April.	1889	.10
113	Silver King, s	Ariz..	10,000,000	100,000	100	222,858	June.	1896	.25	1,950,000	July.	1887	.25
114	Silver King, g. s. l	Utah.	3,000,000	150,000	20					787,500	Sept..	1896	.25
115	Silver Mg. of L. V., s	N. M.	500,000	500,000	1	*				300,137	Dec..	1891	.04
116	Small Hopes, s	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
117	‖Smuggler Union	Colo..	5,000,000	50,000	100					100,000	July..	1896	1.00
118	Standard Cons., g. s	Cal ..	10,000,000	100,000	100					3,771,160	June.	1895	.10
119	Swansea, g. s. l	Colo..	600,000	60,000	10	*				39,000	Sept..	1892	.10
120	Tamarack, c	Mich.	1,250,000	50,000	25					4,320,000	June.	1896	3.00
121	Teal & Poe, s. l	N. M.	150,000	150,000	1	*				9,000	Nov..	1891	.01½
122	Tom Boy, g	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
123	Tombstone, g. s. l	Ariz ..	12,500,000	500,000	25	*				1,250,000	April.	1882	.10
124	Trinity River, g	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
125	United Verde, c	Ariz..	3,000,000	300,000	10	*				562,500	Dec..	1893	.25
126	Union, g	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
127	Union Leasing	Colo..	500,000	500,000	1					340,000	July..	1895	.04
128	Victor, g	Colo..	1,000,000	200,000	5	*				605,000	July..	1896	.10
129	Woodside	Utah.	1,000,000	100,000	10					25,000	Oct..	1889	.25
130	Yankee Girl, s	Colo..	1,300,000	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..	1896	.01½
2	Ajax, g	Colo..	1,000,000	1,000,000	1				
3	Alamo, g	Colo..	1,000,000	1,000,000	1				
4	Alice, g. s. c	Colo..	5,000,000	5,000,000	1	*			
5	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec..	1896	.10
6	Allouez, c	Mich.	2,000,000	80,000	25	1,440,987	June.	1864	.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	3,579,760	Oct..	1896	.10
9	American, c	Idaho	5,000,000	500,000	10	*			
10	Anaconda, g	Colo..	5,000,000	1,000,000	5				
11	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
12	Anchoria-Leland, g	Colo..	600,000	600,000	1	*			
13	Aola, g	Colo..	1,000,000	1,000,000	1	*			
14	Argonaut Cons., g. s.	Colo..	1,000,000	1,000,000	1	*			
15	Atlantic Cable Cons.	Colo..	1,500,000	1,500,000	1	*			
16	Bahama, g	S. D..	1,250,000	250,000	5	3,125	Sept..	1896	.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	3,030,000	Sept..	1896	.10
25	Burlington, g. s	Cal..	10,000,000	100,000	100	3,000	May..	1896	.03
26	Buskhorn, g	Colo..	900,000	900,000	1				
27	Butte Queen, g	Cal..	1,000,000	100,000	10	16,000	Feb..	1893	.10
28	Calumet, g	Colo..	1,400,000	1,400,000	1	*			
29	Central Lead, l	Mo..	400,000	4,000	100	*			
30	Central North Star, g	Cal..	1,000,000	100,000	10	10,000	July..	1893	.10
31	Challenge, s. g	Nev..	5,000,000	50,000	100	295,000	April.	1896	.05
32	Chollar, g. s	Nev..	11,200,000	112,000	100	2,021,600	July..	1896	.25
33	Cleveland Cliffs, l	Mich.	5,000,000	50,000	100	*			
34	Columbine, g	Colo..	1,000,000	1,000,000	1	*			
35	Confidence, g. s	Nev..	2,496,000	24,960	100	1,636,974	Sept..	1896	.30
36	Cons. Imperial, g. s	Nev..	5,000,000	50,000	100	2,082,000	Aug..	1896	.01
37	Copper Mountain, g	Colo.	1,000,000	1,000,000	1	*			
38	Creede & C. C., g	Colo..	800,000	800,000	1				
39	CrippleCreekCons., g	Colo..	2,000,000	2,000,000	1				
40	Crip. Cr'k Gold Expl'n	Colo..	1,800,000	1,800,000	1				
41	Dante, g	Colo..	1,250,000	1,250,000	1	*			
42	Denver City, s	Colo..	5,000,000	500,000	10	*			
43	Denver Gold, g	Colo..	300,000	60,000	5				
44	Dickens-Custer, g. s.	Colo..	2,100,000	420,000	5				
45	Enterprise, g	Colo..	800,000	800,000	1				
46	Eureka Con. Drift, g	Colo..	500,000	500,000	1	90,000	Oct..	1892	.07
47	Exchequer, g. s	Nev..	10,000,000	100,000	100	715,000	Nov..	1895	.05
48	Favorite, g	Colo..	1,200,000	1,200,000	1	*			
49	Fortunatus, g. s	Colo.	100,000	100,000	1	*			
50	Found Treasure, g. s	Nev..	10,000,000	100,000	100	55,770	Jan ..	1892	.50
51	Franklin Gold, g	Colo..	1,000,000	1,000,000	1	*			
52	Free Coinage, g	Colo..	1,000,000	1,000,000	1	*			
53	Galena, l. s	Idaho	500,000	500,000	1				
54	Garden City, g	S. D..	2,500,000	250,000	10	2,898	Sept..	1891	.00½
55	Garfield-Grouse, g	Colo..	1,200,000	1,200,000	1	*			
56	Giem, g	Cal..	10,000,000	100,000	100				
57	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July..	1896	.00¼
58	Golden Age, g	Colo..	1,000,000	1,000,000	1	*			
59	Golden Dale, g	Colo..	2,000,000	2,000,000	1	*			
60	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,000	Aug..	1892	2.00
61	Gold Flat, g	Cal..	1,000,000	100,000	10	13,000	Aug..	1893	.05
62	Gold King, g	Colo..	1,000,000	1,000,000	1	*			
63	Gold Rock, g	Colo..	1,000,000	1,000,000	1	*			
64	Gold Standard, g	Colo..	1,000,000	1,000,000	1	*			
65	Gould & Curry	Nev..	10,800,000	108,000	100	4,801,800	Oct..	1896	.15
66	Hale & Norcross, g. s.	Nev..	11,200,000	112,000	100	5,758,800	Aug..	1896	.15
67	Hartshorn, g. s	S. D..	1,250,000	250,000	5	8,750	Sept..	1891	.00¼
68	Head Cent. & Tr., g. s.	Ariz .	2,000,000	200,000	10	22,824	Mar ..	1892	.05
69	Hidden Treas., g. s	Cal..	20,000	20,000	1	1,000	Nov..	1893	.05
70	Himalaya, s. l	Utah.	1,800,000	180,000	10	10,000	Oct..	1892	.01
71	Idaho Co., Ltd., g	Idaho	100,000	1,000	100	*			
72	Idlewild, g	Cal..	1,000,000	100,000	10	*			
73	Inez, s. l	Idaho	1,000,000	1,000,000	1	*			
74	Jack Pot, g	Colo..	1,250,000	1,250,000	1				
75	Jackson, l	Mich.	300,000	12,000	25	*			
76	Justice, g. s. c	Colo..	500,000	500,000	1	*			
77	Keystone, g	Colo..	1,500,000	1,500,000	1	*			
78	Kingman Silver, g. s.	Ariz..	10,000,000	100,000	100	5,000	Sept..	1891	.05
79	Lacrosse, g	Colo..	1,000,000	100,000	10	*			
80	Lottie Gibson, g	Colo..	1,000,000	1,000,000	1				
81	Matoa, g	Colo..	5,000,000	1,000,000	5				
82	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
83	Mexican, g. s	Nev..	10,080,000	100,809	100	3,063,920	May..	1896	.20
84	Michigan Gold, g. s	Mich.	2,500,000	100,000	25	40,000	Mar..	1892	.10
85	Milwaukee, s. l	Idaho	500,000	500,000	1				
86	Modoc Chief, g. s. l	Idaho	1,000,000	200,000	5	4,375	Jan ..	1892	.00¼
87	Monarch, g	Colo..	1,000,000	1,000,000	1				
88	Mutual, g	Colo..	500,000	500,000	1				
89	Neath, g	Colo .	1,000,000	100,000	10				
90	New Gold Hill	N. C..	1,750,000	350,000	5				
91	New Viola, s. l	Idaho	750,000	150,000	5	*			
92	Occidental Cons., g. s.	Nev..	10,000,000	100,000	100	438,652	Sept..	1896	.10
93	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
94	Oro Cache, g. s	S. D..	1,250,000	250,000	5	6,250	July..	1893	.004
95	Orphal Bell, g	Colo..	1,000,000	1,000,000	1				
96	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,177,040	June.	1896	.10
97	Pappoose, g	Colo..	2,000,000	2,000,000	1	*			
98	Peer, s	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
99	Peerless, s	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
100	Pine Hill, g	Cal ..	1,000,000	100,000	10	20,000	July..	1896	.05
101	Pioche Con., g. s. l	Nev..	20,000,000	2,000,000	10	*			
102	Potosi, g. s	Nev..	11,200,000	112,000	100	2,016,000	May..	1896	.20
103	Princess, g	Colo..	1,000,000	1,000,000	1				
104	Puritan, g, s	Colo..	1,500,000	150,000	10	*			
105	Quincy, c	Colo..	3,000,000	300,000	10				
106	Red Mountain, s	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
107	Ruby & Dun., g. s. l	Nev..	25,300	506	25	*			
108	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
109	Seg. Belcher & M., g. s.	Nev..	10,000,000	100,000	100	330,000	Oct..	1895	.10
110	Silver Age, g. s. l	Colo..	2,000,000	200,000	10	*			
111	Silver Hill, s	Nev..	10,800,000	108,000	100	1,992,600	July..	1894	.05
112	Silver Queen, c	Ariz..	5,000,000	200,000	25	*			
113	Silver State, g	Colo..	700,000	700,000	1	*			
114	Siskiyou Con., s	Cal ..	2,000,000	200,000	10	44,000	June.	1896	.01
115	Specimen, g	Colo..	1,200,000	1,200,000	1				
116	Temonj, g	Colo..	1,000,000	1,000,000	1	*			
117	Tornado Con., g. s	Nev..	100,000	100,000	1	*			
118	Union Con., g. s	Nev..	10,000,000	100,000	100	2,545,000	Sept..	1896	.20
119	Utah Cons., s	Nev..	10,000,000	100,000	100	415,722	Oct..	1896	.05
120	Victory, g. s	S. D..	1,250,000	250,000	5	1,250	Nov..	1895	.005
121	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
122	Waterloo, g	Cal..	2,000,000	200,000	10	30,000	Aug..	1893	.15
123	West Granite Mt., s	Mont.	500,000	100,000	5				
124	Whale, g. s. l	Colo..	500,000	500,000	1	*			
125	Work, g	Colo..	1,250,000	1,250,000	1	*			
126	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.
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.

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Bullionist.
Denver Republican.
El Minero Mexicano.
Electrical Plant & Electrical Industry
Financial Times.
Indian Engineering.
Ir'n & C. Trade Review
McNeill's Code
Mining Journal.
Scientific Pub. Co.
So. African Mg. Jour.
Zeitschrift fur Prackticshe Geologie
Wall Street Reporter.

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

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

Quicksilver.
Eureka Co.

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

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

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

Rock Drills. (See Air Compressors.)

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

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

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

Second Hand Machinery.
Hine & Robertson.
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Shoes and Dies
Chester Steel Cast. Co
Carome Steel Works.
Crescent Steel Co.
Denver Eng. Wks. Co.
Fraser & Chalmers

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

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

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

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

Telegraph Wires and Cables
Okonite Co., Ltd.,

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

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New York Belting and Packing Co., Ltd

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Leffel, Jas., & Co
Pelton Water Wheel Co.
Stilwell-Bierce & Smith Valle Co

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Eddy Valve Co.
Jenkins Bros.

Ventilators
Bullock, M. C., Mfg. Co.
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Weston Electrical Instrument Co.

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Lambert's Wharfage Co.

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Chester Steel Cast. Co.
Taylor Iron & Steel Co.

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Cookson & Co.
Foster, Blackett & Co.

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

Wire Rope & Wire
Besley, Chas. H., & Co.
Broderick & Bascom Rope Co.
California Wire Wks.
Cooper Hewitt & Co.
Hunt, C. W., Co.
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Trenton Iron Co.

Wire Rope Tramway.
Brown Hoist. & Conv.
Machine Co.
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Inquiries from employers in want of Superintendents, Engineers, Metallurgists Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

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

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

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

1484 WANTED.—A MILL MAN WITH some experience, who understands concentrating ores by Cornish Jig process, to act as night foreman in small concentrating plant in northern part of Mexico; must speak Spanish. State salary, which must be moderate to commence with. Address CONCENTRATOR, ENGINEERING AND MINING JOURNAL.

1485 WANTED.—A CHEMIST TO TAKE charge of a small chlorination mill treating pyritic concentrates containing gold, silver and a little copper. Address OREGON, ENGINEERING AND MINING JOURNAL.

1486 WANTED.—A MAN TO TAKE ENtire charge of a mining property in Mexico; must be a first-class man and thoroughly conversant with the management of Huntington Mills and chlorination; one who speaks Spanish preferred; permanent engagement, with good prospects, given to first-class man. Address INDEPENDENCIA, ENGINEERING AND MINING JOURNAL.

1487 WANTED—FOR A SOUTH AMERican Copper-Silver Smelting Works, a thoroughly competent manager, to erect and superintend the same. While it is proposed to smelt only to a matte at first, the manager should be thoroughly conversant with all the processes used in the treatment of copper and silver ores; conditions—water power, cheap wood, dear coke, good climate, altitude 3,000 feet above sea. ARGENTINA, ENGINEERING AND MINING JOURNAL.

1488 WANTED—AN ENGINEER AND Assayer who has had experience in the mines of the Ouro Preto District, Brazil. Address with full particulars, F. F. F., ENGINEERING AND MINING JOURNAL.

1489 WANTED—A MAN ACQUAINTED with lead smelting, sweep smelting, cupolation and refining and desilverizing processes, to run a small blast furnace and refinery in South Africa. A technical graduate preferred, but practical experience absolutely necessary, as well as tact and ability to manage men. A man between 30 and 40 years of age preferred. A good salary will be paid to the right party, who will be expected to return it in a responsible position. Address TRANSVAAL, ENGINEERING AND MINING JOURNAL.

1491 WANTED—A FIRST-CLASS MILLman who thoroughly understands amalgamation and concentration of gold ores and assaying; state experience, age and wages expected; mine in one of the Southern States. Address THOROUGH, ENGINEERING AND MINING JOURNAL.

1492 WANTED—A YOUNG MAN WHO is competent as an analytical chemist, with some experience as an engineer, can find a situation at a moderate salary with a mining company in Virginia, by furnishing satisfactory testimonials of his character, ability and experience. Address MINING COMPANY, ENGINEERING AND MINING JOURNAL.

1493 WANTED—BY AN IRON COMPANY —A General Superintendent to take charge of a blast furnace plant, with coal mines and coke ovens. Applicant must be thoroughly qualified in modern blast furnace practice. Preference will be given to a man of technical education Good position for a man of thorough experience and ability. Address IRON, ENGINEERING AND MINING JOURNAL.

1494 UNITED STATES CIVIL SERVICE Commission, Washington, D. C.—An examination will be held by this Commission on October 28th, 29th, 30th and 31st for the positions of junior architectural draftsman, architectural draftsman, structural iron draftsman, heating and ventilating draftsman, computer, and senior architectural draftsman, in the office of the Supervising Architect of the Treasury. The subjects of these examinations will be as follows:

JUNIOR ARCHITECTURAL DRAFTSMAN.—(1) Orthography; (2) letterwriting; (3) mathematics (elementary), including arithmetic, plain geometry, algebra and trigonometry; (4) theoretical and applied mechanics; (5) knowledge of materials and construction; (6) orthographical projection and free-hand drawing; (7) architectural drawing and design. Time allowed for examination: Subjects 1 to 3, six hours; subjects 4 to 8, two days of eight hours each. The salaries of these positions are $600 to $1,000 per annum.

ARCHITECTURAL DRAFTSMAN.—(1) Orthography; (2) letterwriting; (3) mathematics (elementary), including arithmetic, plain geometry, algebra and trigonometry; (4) higher mathematics and mechanics; (5) knowledge of materials and construction; (6) architectural drawing and design; (7) free-hand drawing and orthographical projection, and (8) specifications. Time allowed for examination. Subjects 1 to 3, six hours; subjects 4 to 8, three days of eight hours each. The salaries of these positions are $1,200 to $1,400 per annum.

STRUCTURAL IRON DRAFTSMAN.—Subjects (1), (2) and (3) as above specified; (4) higher mathematics and mechanics; (5) knowledge of materials; (6) drawing and design. Time allowed: Subjects 1 to 3, six hours; subjects 4 to 6, three days of eight hours each. The salary of this position is $1,600 per annum.

HEATING AND VENTILATING DRAFTSMAN.—Subjects (1), (2) and (3) as above specified; (4) practical knowledge of heating and ventilating construction; (5) drawing and design. Time allowed: Subjects 1 to 3, six hours; subjects 4 and 5, two days of eight hours each. The salary of this position is $1,200 per annum.

COMPUTER.—Subjects (1), (2) and (3) as above specified; (4) knowledge of materials and construction: (5) mensuration and mechanics; (6) specifications, contracts, etc., and (7) computing quantities. Time allowed: Subjects 1 to 3, six hours; subjects 4 to 7, three days of eight hours each. The salaries of these positions are $1,200 to $1,800 per annum.

SENIOR ARCHITECTURAL DRAFTSMAN.—The subjects of this examination are practically the same as those for architectural draftsman, except that competitors will be required to show a more thorough knowledge in regard to subjects 5, 6, 7 and 8. Time allowed: Subjects 1 to 3, six hours; subjects 4 to 8, three days, eight hours each. The salaries of these positions are $1,600 to $2,000 per annum.

These examinations will be given on the dates mentioned at Washington, D. C., and at other points where the Commission has competent boards of examiners. Competitors will be supplied with all necessary writing paper, drawing paper and tracing linen for the examination, but must bring pen and ink and all the instruments and other materials likely to be used in connection with the examinations.

Applicants for these positions will be required to file at the Civil Service Commission with their applications certificates or letters from present or former employers to show that such applicants have had practical office experience with some reputable firm of architects or engineers. The experience required before admission to the examinations is as follows: Senior architectural draftsman, six years; architectural draftsman, four years; junior architectural draftsman, none; structural iron draftsman, and heating and ventilating draftsman, two years at his special class of work; computer, none.

Persons desiring to be examined should write to the Commission for application blanks and file them with the Commission at the earliest possible date.

SITUATIONS WANTED.

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

ASSAYER AND CHEMIST, GRADUATE of Northwestern University, '95, desires position; experience limited; best of references. Address N. W. U., ENGINEERING AND MINING JOURNAL. No. 14,827, Oct. 24.

AN EXPERIENCED ORE BUYER AND assayer is open for engagement; speaks Spanish. Address SAMPLER, ENGINEERING AND MINING JOURNAL. No. 14,832, Nov. 7.

WANTED—POSITION AS MINING SUPERintendent, assayer or mill man; nine years' experience; amalgamation or concentration. Address M. D. S., 38 So. Grant Ave., Denver, Colo. No. 14,833, Oct. 31.

WANTED — POSITION — A GRADUATE Chemist, Assayer and Metallurgist; acquainted with the cyanide and chlorination processes; first-class references; speaks five languages; 30 years old. Address E. de G., 206 Boston Building, Denver, Colo. No. 14,835, Oct. 31.

MINING AND MECHANICAL ENGINEER of executive ability and 20 years' experience is open for engagement with first-class company, as superintendent or resident manager; specialty, erection and treatment of low-grade ores; speaks German and Spanish; references the best. Address A. L., ENGINEERING AND MINING JOURNAL. No. 14,809, Nov. 7.

CHEMIST, GRADUATE STATE UNIVERsity, desires employment in works, foundry or office; has had two years' experience clay and iron laboratories; can invest several hundred dollars, together with services, in small chemical business. Address JOURNAL, 737 Monadnock Block, Chicago, Ill. No. 14,826, Oct. 31.

POSITION WANTED BY ASSAYER AND Chemist, graduate of technical school; experienced with smelter and mine work; out of work on account of Leadville strike; best of reference. Address BOX 672, Lake Geneva, Wis. No. 14,836, Nov. 7.

SUPERINTENDENT AND ACCOUNTANT, age 32, temperate, wants position with mining company; eight years' experience; no objection to location. Address GOLD, ENGINEERING AND MINING JOURNAL, 12 Montgomery St., San Francisco, Cal. No. 17,837, Oct. 31.

CHEMIST, GRADUATE OF TECHNICAL School, '96, desires position in any kind of chemical work; experience limited, but will work cheap where there is chance to rise; best of references. Address W. A. L., ENGINEERING AND MINING JOURNAL. No. 17,839, Oct. 24.

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Contracts Open.

TREASURY DEPARTMENT, Office of Supervising Architect, Washington, D. C., October 17th, 1896. —Sealed proposals will be received at this office until 2 o'clock p. m., on the 17th day of November, 1896, and opened immediately thereafter, for all the labor and materials required for the low-pressure, return circulation, steam heating and ventilating apparatus, for the U. S. Post Office building at Newburgh, N. Y., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Newburgh, N. Y. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Heating and Ventilating Apparatus for the U. S. Post Office Building at Newburgh, N. Y.," and addressed to WM. MARTIN AIKEN, Supervising Architect. Orig.

DREDGING.—U. S. Engineer Office, 106 Granby street, Norfolk, Va.—Sealed proposals for dredging western branch of Elizabeth River, Va., will be received here until October 26th, 1896, and then publicly opened. Information furnished on application THOMAS L. CASEY, Captain Engineers.

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DIVIDENDS.

GOLD-COIN MINES COMPANY,
44 PINE STREET,
NEW YORK, Oct. 20, 1896.

A dividend of TEN CENTS per share has been declared, payable November 2d, 1896, to stockholders of record October 24th, 1896.
The stock transfer books will be closed at 12 o'clock noon, October 24th, and re-opened November 2d at 10 A. M.

D. C. CHOATE, Secretary.

ISABELLA GOLD MINING COMPANY.
COLORADO SPRINGS, Colo., September 10th, 1896.
DIVIDEND NO. 9.

A dividend of ONE CENT PER SHARE ($22,500) has been declared, payable September 25th, 1896, to stock holders of record September 18th, 1896.
The stock transfer books will be closed September 18th, 1896, at 3 o'clock p. m., and will be re-opened on the morning of September 26th, 1896.

PERCY HAGERMAN,
Vice-President and Treasurer.

ONTARIO SILVER MINING COMPANY.
MILLS BUILDING, 15 Broad St.,
New York, Oct. 19, 1896.
DIVIDEND NO. 207.

A dividend of TEN (10) CENTS per share has been declared, payable at the office of the company, San Francisco, or at the transfer agency in New York, on the 31st inst.
Transfer books close on the 24th inst.

LOUNSBERY & CO., Transfer Agents.

OFFICE OF THE ADAMS MINING CO.,
ROOM 66, LACLEDE BUILDING,
ST. LOUIS, MO., Oct. 20, 1896.

The Stockholders of this company are requested to attend a meeting for the purpose of electing seven Directors to serve during the ensuing year, said meeting to be held at the office of this company, 618 Mining Exchange, in the City of Denver, Colo., upon Thursday, November 19th, 1896, and for any other business that may properly come before it. Polls open from noon until 3:00 P. M., to Stockholders of record October 30th. Transfer books will close October 30th and reopen November 20th.

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W. W. SYLVESTER, Secretary.

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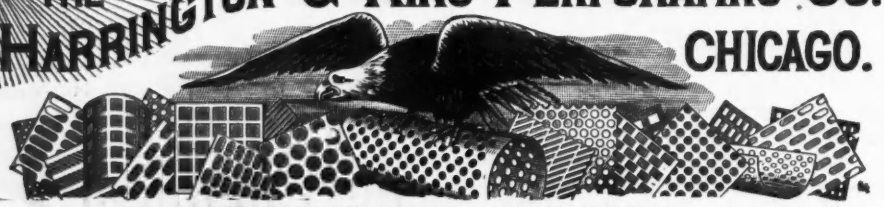

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