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*Illustrated.

An appreciable addition to the iron producing areas of the world will be made by the building of the Siberian Railroad, which will nearly touch large deposits of iron ore and equally extensive coalfields, now unworked because of the difficulty and cost of transportation. So far as exploration has been carried the ores of western Siberia are of a nature resembling those of the Oural region, and will make high grades of iron specially suited for steelmaking. Much of the coal so far found is of somewhat inferior quality, but there are large areas where good coking coal has been found, and others will doubtless be developed. The Russian government has taken steps to encourage the location and development of these deposits and the manufacture of iron, and is also assisting by giving the services of the mining engineers attached to the engineering corps of the railroad. Nearly all of the Siberian lands are crown property, but concessions for mineral working will, it is stated, be granted on very easy terms.

COMPROMISE STAMP MILLS.

On another page will be found a drawing which illustrates the mortars recently designed for the stamp mill of the Newton mine, Colorado. It is an attempt to obtain a mill which can be adapted to the change which occurs when mine workings penetrate from oxidized to sulphide ores, a change which often means the substitution of amalgamation by concentration.

The introduction of a removable face lip which shall increase the depth of discharge, enable the use of an inside amalgamating plate and permit of battery amalgamation is, however, no new thing. This is done in California by the insertion of the chock-block, often made in sections so as to allow of the maintenance of a uniform issue as the dies wear down.

Such compromises between the shallow discharge and rapid drop of the Californian mill and the deep issue and slow speed of the old Colorado battery are only possible within narrow limits. At the Newton mill the drop is 18 in., the depth of discharge 12 in. and the stamps weigh 750 lbs. The removal of the false lip or chock-block will decrease the issue to 4 in. The idea is to change a typical Gilpin County mill into a Californian. The employment of an 18-in. drop with a 750-lb. stamp is a hybrid arrangement not adapted to the best work. The stamp is too heavy for the drop. In Californian practice a heavy stamp (805 lbs.) with high speeds (95 drops) and a short drop (4 to 6 in.) gives the conditions most favorable to fast crushing. In Colorado practice the light stamp (550 lbs.) and slow speed (28 to 32) are required by the very high drop (16 to 20 in.).

To change such a mill from a slow-working, amalgamating machine to a fast crushing contrivance, not only must the issue be decreased, but the drop must be cut down one-half and the speed trebled. The speed is regulated by both the amount of the fall of the stamp and the distance between the axes of the cam shaft and stamp stem. The cams to be used must be built on very dissimilar curves. The interior form of the mortar should be modified to an extent not obtainable by the mere removal of the false lip.

The idea of adapting the mill to changes in the ore is altogether right and praiseworthy. The designing of mortars of this class indicates a proper regard for the true principles of successful stamp milling, which have been so well defined in the series of excellent articles by Mr. T. A. Rickard which have appeared in the columns of the "Engineering and Mining Journal."

DISCHARGE OF REFUSE INTO STREAMS AND HARBORS.

The River and Harbor Act of August 17th, 1894, contains the following section:

Section 6: That it shall not be lawful to place, discharge or deposit, by any process or in any manner, ballast, refuse, dirt, ashes, cinders, mud, sand, dredgings, sludge, acid or any other matter of any kind other than that flowing from streets, sewers and passing therefrom in a liquid state, in the waters of any harbor or river of the United States, for the improvement of which money has been appropriated by Congress, elsewhere than within the limits defined and permitted by the Secretary of War; neither shall it be lawful for any person or persons to move, destroy or injure in any manner whatever any sea-wall, bulkhead, jetty, dike-levee, wharf, pier or other work built by the United States, in whole or in part, for the preservation and improvement of any of its navigable rivers, or to prevent floods, or as boundary-marks, tide-gauges, surveying-stations, buoys or other established marks; and any and every such act is made a misdemeanor, and every person knowingly engaged in or who shall knowingly aid, abet, authorize or instigate a violation of this section shall, upon conviction, be punishable by fine or imprisonment, or both, such fine to be not less than two hundred and fifty dollars nor more than twenty-five hundred dollars, and the imprisonment to be not less than thirty days nor more than one year, either or both united, as the judge before whom conviction is obtained shall decide, one-half of said fine to be paid to the person or persons giving information which shall lead to conviction of this misdemeanor.

Sections 7 and 8 refer exclusively to boats or vessels dumping prohibited materials in any harbor contemplated in Section 6. That section, however, as will be observed, has a much wider range. It is reported to have been introduced by Mr. Alderson, a representative from West Virginia, and to have been specially intended to apply to New River, in that State. But it may operate against many operations in coal-washing, ore-wash-

ing, stamp-milling, etc., elsewhere. Apparently, every such operation, if it discharges mud or other injurious refuse into the streams of harbors contemplated, is absolutely prohibited until the Secretary of War shall have granted specific and defined permission for it. And the waters thus protected are those of "any harbor or river of the United States for the improvement of which money has been appropriated by Congress." This clearly includes all past appropriations, as well as those contained in the act of which this section is a part. Congressmen who have heretofore secured public money for the improvement of insignificant streams, with the idea that they were making themselves popular among their constituents, may turn out to have subjected local industries to considerable vexation, through the jurisdiction thus conferred upon the general government. There is, however, no reason to anticipate more than a temporary inconvenience to such industries as are not in fact injuring navigable waters. The Secretary of War may be relied upon to use his discretionary power with common-sense. But it is evident that the practice of producing shoals for the government to dredge out, if it has anywhere obtained, will have to cease; and that the waters into which solid matter shall be hereafter permitted to be discharged, for the benefit of private enterprises, will not figure in the River and Harbor bills of the future. If they are really "navigable," individuals must let them alone; if they are not "navigable," the United States ought to spend no money on them. R. W. R.

NEW PUBLICATIONS.

In reviewing in these columns on November 17th "A Handbook of Gold Milling," by Henry Louis, published by Macmillan & Co., the price was inadvertently stated at $2.50 instead of $3.25, which it should have been.

COAL DUST AN EXPLOSIVE AGENT. As Shown by an Examination of the Camerton Explosion. By Donald M. D. Stuart, F. G. S. London; E. & F. N. Spon. New York; Spon & Chamberlain. Pages 103; seven plates.

The question as to the conditions under which coal dust acts as an explosive agent in mines has been engaging the attention of English mining engineers for several years past. Until quite recently, it was supposed that methane was the sole case of explosions, and, consequently, that the use of the safety lamp in fiery mines, coupled with efficient ventilation, was a perfect preventive. Gradually evidence was brought forward that explosions took place in mines where firedamp was not known as a rule, and also in fiery mines where no laxity had occurred in the use of the safety-lamp. It therefore became evident that there must be some other cause for explosions besides this gas. It was then suggested by many engineers that it was possible that the coal dust suspended in the air and accumulated in the workings would assist the action of firedamp, and that the two together might explode destructively, though the firedamp was not present in large enough quantities to explode of itself. Messrs. H. Hall and W. Galloway, of south Wales, conducted an extensive series of experiments, and conclusively showed that this idea was correct. Afterward, however, they went further, and proved that coal dust in itself was an explosive, even when no firedamp was present. The conditions under which their experiments were conducted were not identical with or similar to those to be found in a coal mine, so that their theory did not meet with general acceptance. Mr. Hall's report is printed in the proceedings of the Royal Commission on Explosions from Coal Dust in Mines in 1893. On the whole, the result of the commission has not been of particular value, except in so far as it has aroused the attention of mining men to the subject generally.

In November, 1893, an explosion occurred at the Camerton Collieries, Somersetshire. This mine was one where firedamp had never been known, and naked candles and lamps had always been used with impunity. It was evident, therefore, that there was an excellent opportunity of ascertaining the action of coal dust, to which it was thought the explosion was due. Mr. Donald Stuart, of Bristol, was called in to investigate matters, and after a very close and careful inquiry he has issued this complete and detailed discussion of the action of coal dust in general and at this colliery in particular. Mr. Stuart shows that coal dust is an explosive agent without the presence of firedamp, and also how and under that conditions great explosions may occur.

On the occasion of the explosion at the Camerton Colliery, the roof of an incline was being blasted off in order to make provision for the passage of wagons. The second shot was "blown out" and the energy liberated from the powder, instead of being expended in fracturing the rock, was thrown directly on the coal dust scattered about on the ground. The dust was thereby subjected to destructive distillation, and in the temporary absence of oxygen, great volumes of hydrogen and hydrocarbon gases were given off. Almost immediately after these gases were generated they exploded on contact with the air. The explosion thus caused probably raised more dust and subjected it to the same action, and the volume of gases given off passed along to a further supply of oxygen before they in their turn exploded. The same phenomena were then repeated. This is proved by the fact that not one explosion was heard, but 10 separate and successive ones, extending over more than 1,000 yards.

Mr. Stuart's reasonings and deductions from facts are carefully drawn. His conclusions and recommendations are also of value to coal miners, and will arouse a degree of interest in this subject which its importance to life and property fully deserves.

Almost at the same time that Mr. Stuart's book was published, the preliminary report by Prof. H. B. Dixon, of Owens College, Manchester, on the Albion Colliery explosion in south Wales made it appearance. In his preliminary report he does not bind himself to any opinions, but he indicates that from his first examination he finds the evidence preponderating in favor of the coal dust theory, though he explains it by saying that a shot raised a great cloud of dust which burnt rapidly, and does not refer to the coking of the coal dust and liberation of explosive gases.

THE METALLURGY OF GOLD. By T. Kirke Rose, Associate of the Royal School of Mines, etc. London; Chas. Griffin & Co. Philadelphia; J. B. Lippincott Co. 450 pages. $6.50.

The title page states that this is one of a series of treatises on metallurgy written by Associates of the Royal School of Mines, and edited by Prof. Roberts-Austen. The author is assistant assayer of the Royal Mint.

The first two chapters, dealing with the properties of gold and its alloys, and the chemistry of the compounds of gold, contains in a condensed form most of the information that would be expected, together with the addition of later data resulting from researches made by the author himself and by others.

Chapter III., on the occurrence and distribution of gold, is compiled from mint reports, the Mineral Industry, etc., and presents old facts in an old dress. The two chapters on placer deposits do not appear to be written by one who has himself had any familiarity with their working. Egleston, the California State Mineralogist, and the New Zealand mining commissioner have helped to make up the matter. Even that arch compiler and scrapbook maker, Locke, is quoted.

Chapters VI. to X., inclusive, are devoted to the stamp mill and its operation. The author has availed himself of the literature of the subject without adding anything new or indicating that he has had personal experience in the practice of stamp milling. Whenever he touches upon any chemical detail he is both authoritative and interesting.

The next four chapters are devoted to chlorination.

In describing the various mechanical roasting furnaces in successful operation, Mr. Rose has omitted the most successful of its class, viz., the Pearce turret furnace. These chapters on chlorination deal with the subject in a complete manner and afford full information regarding the multitudinous ways in which the process has been successfully applied under various conditions. The author has, very evidently, had practical experience of that whereof he writes. The handling of the chemistry of chlorination is particularly instructive. The description of the Swedish process throws out a suggestion for the future development of chlorination along new lines; that of bromination in Dakota will also prove suggestive. The information given regarding a metallurgical treatment whichis daily enlarging its area of usefulness, more particularly in the RockyMountain region, will be welcomed by many.

Chapters XV. and XVI. are given to cyanidation. A great deal has been written upon this process in the various technical journals. The 40 pages of this book devoted to the subject contain not only the pith of such information, but there is also added much hitherto unpublished material founded on experiments of the author, communications from the patentees and data from other sources. As would be expected South African experience is chiefly drawn upon. The Mercur mill also contributes. The author clearly sees the limitations of the process and recognizes the particular, one might say peculiar, conditions which have made it successful in the instances above quoted.

The remaining chapters on refining, parting, and the assay of gold ores, do not call for comment.

It will have become manifest from the foregoing brief synopsis that this is a book of very unequal merit. The larger part of it adds to the bulk of the volume without adding to its usefulness. The pages—90 and 40 respectively—devoted to chlorination and cyanidation will be of direct value to the profession. So also much that is included in the later chapters.

In welcoming a series of treatises on metallurgy to be prepared by Associates of the Royal School of Mines, the reviewer would, however, point out that subjects covering so wide a range and necessitating so extensive an experience as those included within the scope of a book of this kind, cannot be profitably handled by members of the profession so young as are both Mr. Rose and the reviewer. To them is offered the safe and more profitable work of investigations dealing with particular portions of these immense subjects, a corner—as it were—of that wide field of knowledge covered by the metallurgy of gold. T. A. R.

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.

Poor's Directory of Railway Officials and Manual of American Street Railways, November, 1894. New York; H. V. & H. W. Poor. Pages 406.

New South Wales: Statistician's Report on the Eleventh Census. 1891. Sydney, N. S. W.; Government Printer. Pages 334; illustrated with maps and diagrams.

Statistics of Lead, Copper, Zinc and Tin of the Metallgesellschaft for the years 1889-1893. Frankfurt am Main, Germany; Published by the Metallgesellschaft. Pages 64.

A Statistical Account of the Seven Colonies of Australia. 1894. By T. A. Coghlan. Sydney, N. S. W.; Government Printer. Pages 454; illustrated with map and diagrams.

Proceedings of the First Annual Meeting of the German Electro Chemical Society, October 5th and 6th, 1894, in Berlin. Halle, Germany; Wilhelm Knapp. Pages 61; illustrated.

The Practical Management of Dynamos and Motors. By Francis B. Crocker and Schuyler S. Wheeler. With a special chapter by H. A. Foster. New York and London, England; D. Van Nostrand Company, E. & F. N. Spon. Pages 206; illustrated.

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 French Edition of Howe's "Metallurgy of Steel."

In the "Revue Universelle des Mines," Vol. 27, 1894, Mr. Alexandre Pourcel reviews Hock's French translation of "Howe's Metallurgy of Steel," published by The Scientific Publishing Company. Messrs.

Baudry & Company, of Paris, send the following translation of M. Pourcel's review:

The "Metallurgy of Steel" was published in New York, January, 1890. The first edition was exhausted in a few months. The second, revised and enlarged, appeared the following year. Both had the same dedication, "To Sir Lowthian Bell, Bart.," to whom the celebrated American professor—who was at the Congress of Mines and Metallurgy of 1889 at Paris, and took part in the discussion several times, defending his opinion with equal grace and authority—had dedicated his masterly work.

The "Metallurgy of Steel" is a methodical compilation of all or almost all that has been written in all languages on steel and its manufacture.

But it is not only an encyclopædia of facts, well studied, well analyzed and furnished with bibliographical notes, which permit us to refer to the original sources, it is also an original work in which the wise and judicious criticism of the author has separated the known from the unknown phenomena, which are explained from those of which the cause, even though suspected, remains none the less obscure.

In order to translate such a work it was not enough to possess a thorough knowledge of the English language, it was also necessary to be a specialist in steel so as to bring to the task exactness and precision in the use of technical terms. The translator of a work of this extent and importance should be a practitioner capable of understanding well himself in order to translate it in clear language comprehensible to his readers.

Prof. H. M. Howe, who is not only a savant, but also one who can write with humor, has found in M. Hock a conscientious and faithful translator, with these two qualities of an accurate practitioner and a distinguished linguist."

It is with special interest that the pages in M. Hock's translation will be read in which he has brought into our language, without weakening their expression, the ironical fire which the author uses to lash or ridicule the empirics and charlatans, intentional or unintentional, who have found even recently so many gullible victims, so many dupes in a field which science at least for several years, should have freed from their speculations.

But a short while ago we had no treatise on the metallurgy of steel written in our language. This gap in our technological literature is to-day filled, since the publishers of the Polytechnic Library, MM. Baudry et Cie., have given in beautiful form, identical with that of the American edition, M. Hock's faithful translation of the masterly work—we repeat it—of Professor Howe, who was the President of the American Institute of Mining Engineers at the Chicago Congress.

Variscite in Utah.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: During the early months of the present year notice was given through the columns of your journal that there was discovered a rare and beautiful mineral in Utah called variscite.* Considerable attention was given to this discovery by collectors of minerals and dealers in gems throughout the United States and Europe at the time of the first notice. My own curiosity being aroused some weeks ago, I visited the locality in which it was discovered. The place is situated about 100 miles Southwest of Ogden, Utah, in a foot-hill of the East base of the Oquirrh range of mountains, and lies in the northwest corner of Cedar Valley, Utah County, Utah, about 3½ miles northwest of old Camp Floyd. The formation is metamorphic limestone with occasional beds of black pyritiferous slate. The mineral itself occurs in nodules, or reniform, varying in size from that of an English walnut to an occasional one of the size of an average cocoanut. Upon each of these there is an outer coating about ⅛ of an inch in thickness. This is laminer, yellow in color and from an ⅛ to a $\frac{1}{16}$ in. in thickness. Underneath this, like the kernel in a nut, lies the beautiful green mineral variscite. The composition of this is almost similar to that of turquoise, the base being a hydrous aluminum phosphate. The coloring principle arising probably through either iron or manganese. The natural gem in color is of great beauty, stands a high degree of heat, of considerable hardness, takes a fine polish, and is doubtless one of the most beautiful gem stones hitherto discovered upon the American continent. Upon first investigation of this discovery it was thought probable that the locality was that whence the Aztec monarchs of Mexico obtained the beautiful green jewels held in such high favor by the members of Montezuma's court. With a desire of finding proof that might lead to such a conclusion I searched the locality in which these gems are found without, however, discovering any traces of ancient workings. Near by I found two Metate, or mealing stones, such as were used by the Aztecs, and are common in Central America and Mexico to this day. I found, also, about two miles south of the variscite mines, upon ledges of rocks near what is known as the "Pass," hieroglyphical writings in considerable extent, the work, of course, of a lost race. I, however, failed to find any old workings of the mines, although, as seems to have been usually the case, they may have been worked at some point on this ground, all traces of such work having been carefully covered up by the ancient miners. It is strange that a year should have passed since the discovery of these gems, and yet the world knows so little about them. This partly arises from the fact that they are found in limited quantities and, secondly, that those who discovered thems eem to take very little interest in the find. A few pounds found their wayeast, and passed through the hands of dealers in New York and Philadelphia, but it is only now that attention from more distant points seems to be drawn to the discovery made in that remote part of Utah. From England, Germany and Russia collectors and lapidaries are making inquiries and requesting specimens of the mineral for jewelry manufacture, and also for the cabinet.

Dr. James E. Talmage, of the Deseret Museum; Prof. Henry Montgomery, of the Deseret University, Utah; Professor Bigsby, of Salt Lake; and Professor Merrill, of Washington, D. C., wrote articles during the present year upon this mineral. Save this, little has been done to bring it before the world so far. Thenceforth, however, no doubt the demand for it will become greater, and ere the end of the present decade Utah variscite will hold a most respectable place among American jewels, and its description occupy a place in the pages of standard geological works.

OGDEN, Utah, Nov. 10, 1894. DON MAGUIRE.

* "Engineering and Mining Journal," March 31st, 1894, p. 291.

The Mineral Industry, Vol. II., 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: . . . I have received the second volume of the "Mineral Industry," which is a magnificent work. It is, if possible, an advance on the first volume, and reflects immense credit upon you. Yours truly,

APARTADO 512, CITY OF MEXICO, Mex., Aug. 28, 1894. EDWARD HALSE.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: We always greatly appreciate such editions as the "Mineral Industry," and regard Vol. II. as almost indispensible in our reference library.

GEO. H. OCHS,
CHATTANOOGA, Tenn., Aug. 9, 1894. Manager "The Tradesman."

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: This second volume of the "Mineral Industry" is unquestionably a great improvement on the first one in the completeness of its articles, and as a work of reference it is unsurpassed and indispensible to all who are interested in mining, metallurgy and technology.

F. E. ENGELHARDT,
SYRACUSE, N. Y., Aug. 4, 1894. Analytical and Consulting Chemist.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We believe the "Mineral Industry" to be the best book of the kind extant, and one that no person who cares to keep abreast of the times could afford to be without. JOHN W. MORRIS,
Secretary the American Mining and Milling Machinery Company.
CLEVELAND, O., Aug. 10, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: We have recived your second volume of the "Mineral Industry." The opinion as to its merits seems so unanimous that it has not occurred to me I could possibly add anything, but suffice it to say that both Vol. I. and Vol. II. are always kept handy as we find it one of the indispensable tools of our office and laboratory too, WM. HOSKINS,
William Hoskins & Co., Manufacturers Hydrocarbon Blow-Pipe and Furnaces.
CHICAGO, Ill., Aug. 10, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: . . . "The Mineral Industry" for 1893 is received. It is a most valuable work for all connected with the mineral and chemical industries. It is in constant use in my office and is a great time-saver. With the book at hand I can in a few minutes get information which without it would cost me hours of searching. I wish you success in the continuance of this work. J. T. DONALD,
Analyst, Assayer and Mining Geologist.
MONTREAL, Can., Aug. 10, 1894.

EDITOR ENGINERING AND MINING JOURNAL:

Sir: Permit me to congratulate you on the MINERAL INDUSTRY'S get up and usefulness. We find constant need of it for reference in the office of the Geological Survey. I can warmly recommend the book to those who are interested in economic geology and metallurgy. It is of special importance on account of its statistical tables and the earliness with which they appeared for 1893. I wish you all success with your next issue. HENRY MCCALLY,
UNIVERSITY, Ala., Aug. 1, 1894. Assistant, Geological Survey.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: I have read the "Mineral Industry," Vol. II., with the greatest interest, and confess myself surprised at its completeness in statistical and descriptive matter. The combination of reviews of occurrence and distribution with processes of treatment and summaries of progress during the previous twelve months is most useful and convenient. I take pleasure in offering you my congratulations on the success of so large and serious a work. J. F. KEMP,
Professor of Geology, Columbia College.
NEW YORK, Aug. 4, 1894.

EDITOR ENGINEERING AND MINING JOURNAL.

Sir. Your enterprise in the compilation of the statistics and reports for the "Mineral Industry" finds no parallel particularly when consideration is made for the rapidity with which they are compiled and published. I cannot conceive of any improvement in the "Mineral Industry" to be expected or desired; but as the second volume so far surpasses the excellent first, I shall not be greatly surprised to find the third a distinct improvement upon all preceding ones. W. H. SEAMON,
Professor of Chemistry, University of Missouri,
ROLLA, Mo., Aug. 9, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: The "Mineral Industry" is a most admirable work, and brings within easy reach of the engineer and manufacturer a wealth of knowledge and practical data, so carefully arranged and classified that "looking up references" in the field covered by your work is now a pleasure instead of a hardship. Query: How did we exist prior to the advent of "Mineral Industry"? Please accept for yourself and coworkers my heartiest congratulations on the unqualified success of your efforts.

M. C. BULLOCK,
President M. C. Bullock Manufacturing Company.
CHICAGO, Ill., Aug. 10, 1894.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: As I am one of the contributors to the "Mineral Industry," I have some hesitation in saying anything; . . . but, at the same time, no one who looks over the volume can fail to see, first, that it is an improvement on last year's book, which was a marvel of painstaking work and accuracy, and, second, that you have added new features, which make the volume, it seems to me, indispensable, not only to those engaged directly in the production, refining or manufacture of metals, but to all whose business makes it necessary to watch the statistics which represent the growth of our country. I can only congratulate you again on what you have achieved. A. R. LEDOUX, Assayer and Engineer.
NEW YORK, Aug. 9, 1894.

THE ZINC AND LEAD MINING INDUSTRY OF SOUTHWEST MISSOURI AND SOUTHEAST KANSAS.*

Specially Prepared for the Engineering and Mining Journal by J. R. Holibaugh.

(*Continued from page* 485.)

Much of the early history of this important industry can only be secured from statements made by early settlers, some of whom have been closely identified with the mining operations from 1851 up to the present time. Almost all early records of production and prices paid for the ore are lost or destroyed. A large amount of ore and pig lead was produced from both Jasper and Newton counties during the war, as both armies obtained them from this district. From the most authentic source it is learned that the earliest discovery of lead ore in Jasper county was made by trappers and Indians on Center creek in 1836 at or near what is now Oronogo. This was surface lead, and was melted up in chip fires and molded into bullets, but no actual facts are obtainable as to mining until the opening of the Mosley mines in 1851. These mines are still in operation, and are located in Section 26 and 27, Township 26, Range 32, Newton County, Mo., about 15 miles southeast from Joplin. The next mine was discovered and opened up by George Cavenaugh on what was known as the Tingle land on Turkey creek and now the Granby Mining and Smelting Company land, located in the northwest part of Joplin. This mine was given the name of the "Leadville Diggins," and has retained it up to the present date. The first lead ore produced was sold to Mr. Lee Taylor at $16 per thousand, and he hauled it by wagon to the Grand River in the Indian Territory, built flat boats and shipped the ore to New Orleans. The next lead mines discovered and opened up were in 1857, at what is now Granby, Newton County. These mines proved very productive and have been worked almost continuously up to the present time. From 1861 to 1865 we can get but little reliable information except that a large production of lead ore was made, and during the time that this region was in possession of the Confederates, a Colonel Broadwell purchased all the ore that he could get paying $16 per thousand in gold. The Federal troops also purchased ore at $16 per thousand, but no records appear as to the amount. Active mining operations were commenced immediately after the war in 1865 at Oronogo by the Granby Mining and Smelting Company; then the Joplin mines were discovered by Messrs. Moffet and Sargeant, in August of 1870. The Webb City and Carterville district was opened in 1873, and Short Creek or Galena, Kan., in 1875.

EARLY HISTORY OF LEAD-ORE SMELTING.

Ex-State Geologist Prof. G. C. Swallow gives a record and shows a cut of a lead smelter located on Center Creek west of Oronogo in 1854. The location of this smelter is on the N.E. ¼ of S.E.¼, Section 10, Township 28, Range 33, Jasper county, Missouri, on land now owned by John H. Taylor. The next smelter was located at the "Leadville diggins," and was built by a Mr. Fitzgerald of Carthage, and the next was built in about 1858 at Granby, Newton county, and then the Nobleton Smelting Company in 1859. The next smelting operations were the Moffet & Sargeant Smelting Works on Joplin creek in 1871–1872. All of these early works have passed out of existence, and the only smelters now in operation are the Granby, operated by the Granby Mining and Smelting Company, at Granby, Newton County, the works of the Pitcher Lead Company at Joplin, and the Case and Searge Lead Company, Grand Falls, Jasper County.

PRODUCTION OF LEAD ORE FROM SOUTHWEST MISSOURI AND SOUTH KANSAS.

The following table has been compiled from every available source at command, but can only be given as approximately correct, since many records are lost or destroyed:

1851 to 1859,	25,000	tons of 2,000 lbs.	
1860 " 1869,	16,500	" " " "	
1870 " 1875,	23,700	" " " "	
1876, S. E. Kan. included...	6,776	" " " "	
1877	8,911	" " " "	
1878.....	9,625	" " " "	
1879	12,520	" " " "	
1880.....	11,694	" " " "	
1881.....	12,127	" " " "	
1882.....	11,980	" " " "	
1883.....	9,240	" " " "	
1884.....	10,350	tons of 2,000 lbs.	
1885.....	11,225	" " " "	
1886.....	11,575	" " " "	
1887.....	10,450	" " " "	
1888.....	12,350	" " " "	
1889.....	12,429	" " " "	
1890.....	14,601	" " " "	
1891.....	13,780	" " " "	
1892.....	20,360	" " " "	
1893.....	18,410	" " " "	
Total....	283,413		

GRANBY MINING DISTRICT.

No review of the lead mining industry of southern Missouri would be complete without a mention of this great lead producing district, which was first opened up in the year 1857, and up to 1860 had produced not less than 15,000,000 lbs. of lead. At the present time the mines are principally controlled and operated by the Granby Mining and Smelting Company, which smelts all of this lead ore. It is also a large producer of zinc ore and operates a zinc smelter at Pittsburg, Kan.

THE NOBLETON LEAD SMELTING COMPANY.

Through the courtesy of Mr. E. St. George Noble, of Galena, Kan., we are enabled to give a synopsis from the prospectus of the Nobleton Lead Smelting Company, which was organized in 1859 with a capital stock of $200,000 (2,000 shares of $100 each) under a charter from the State of Missouri, and controlled by lease from the Pacific Railroad Company for a term of 10 years for mining purposes, 3,520 acres of land at and near the present location of Granby, Newton County, Mo. This company platted a townsite of 320 acres, called Nobleton, and at the same time commenced mining and building a lead smelter containing four Scotch furnaces, and one high stack or furnace with condensing chamber and flue for conducting away the smoke. The plant contained the necessary machinery for driving eight Scotch furnaces, which would give a capacity of 48,000 lbs. crude lead ore daily, equal to a production of 36,000 lbs. of pig lead each 24 hours.

The lead ore found in the mines contained by assay 80 to 83% pure lead. The smelting, however, produced but 75 per cent. lead. The following paragraph is from the prospectus: "The first deposits or vein was found at 12 ft. from the surface of the ground and contained float mineral in small cubes mixed with carbonate of lead, or as the miners call it, drybone. The second layer or vein is 35 ft. from the surface. It is a regular but small vein mixed with large masses of zinc ore "sulphuret of zinc" or black jack as it is termed. This zinc ore is found in large masses, and can be obtained in any quantity at a nominal price, on account of the great distance from all present means of cheap transportation."

The Nobleton Lead Smelting Company established a rule to give the miner and prospector a claim of 2½ acres of land to operate and then sell his lead ore to the company at $16 per 1,000 lbs., the miner paying a rent of $2 per 1,000 lbs. to the company. The four Scotch furnaces smelt daily 24,000 lbs. of ore yielding 75 per cent., or 18,000 lbs. pure lead. The ore cost per contract $16 per 1,000 lbs., making for the 24,000 lbs. of ore $384. The first smelting in the Scotch furnace produced a yield of 65 per cent., at a cost of smelting the 24,000 lbs. of ore $85.68. The second smelting of the slag or refuse from the first smelting yields 10 per cent. additional pure lead at a cost of $28.04, making a total of $497.72. Transportation from the smelter by teams to railroad, a distance of 155 miles, per ton of 2,240 lbs., $25.76. Railroad freight from Syracuse to St. Louis, 163 miles per ton, $4.70. Add cost of smelting lead at the works, $61.94. Total cost of lead delivered in St. Louis, $92.40.

The market value of lead per ton in St. Louis at this time was $120.96, leaving a net profit to the smelter of $28.56 per ton of pig lead. In the fall of 1861 the smelting plant and mines was taken possession of by the Confederate forces, which operated them for some time, then the Federal troops captured them, and eventually the plant and all records were destroyed, so that no specific data can be given as to output.

The price of pig lead from 1771 to 1893 has been given as follows by Mr. W. H. Picher. It will be seen that some years are omitted in this statement, but at the present time these prices cannot be determined.

Year.	Price in London per ton of 2,240 lbs. £	s.	d.	Price per 100 lbs.	Year.	Price in London per ton of 2,240 lbs. £	s.	d.	Price per 100 lbs.	Year.	Price in London per ton of 2,240 lbs. £	s.	d.	Price per 100 lbs.
1771...	13	7	6	$2.89	1801...	24	0	0	$5.19	1835...	17	0	0	$3.18
1772...	12	7	6	2.67	1803...	27	15	0	6.01	1836...	25	2	6	5.44
1773...	12	2	6	2.62	1804...	28	0	0	6.06	1837.	21	15	0	4.71
1775...	13	1	3	2.83	1805...	27	12	6	5 98	1840...	18	2	6	3.92
1776...	12	17	6	2.79	1806...	35	15	0	7.74	1841...	20	2	6	4.35
1777...	12	17	6	2.79	1807...	30	2	6	6.52	1844...	16	18	9	3.66
1778...	12	7	6	2.67	1808...	30	0	0	6.49	1846...	18	18	9	4.10
1779...	11	10	0	2.49	1809...	31	3	9	6.52	1849...	15	18	9	3.45
1780...	11	2	6	2.41	1812...	23	2	6	5.00	1850..	17	10	0	3.78
1781..	14	15	0	3 15	1813...	25	15	0	5.56	1851...	17	2	6	3.71
1782...	16	17	6	3.65	1814...	26	15	0	5.79	1852...	17	17	6	3.87
1783...	16	2	6	3.49	1816...	16	5	0	3.52	1853...	23	7	6	5.06
1784...	16	2	6	3.49	1818...	27	8	9	5 94	1854...	23	13	9	5.13
1785...	15	2	6	3.27	1820...	21	10	0	4.67	1855...	23	1	3	4.99
1788...	21	10	0	4.67	1821..	22	10	0	4 87	1856...	24	0	0	5.19
1790...	16	2	6	3.49	1823...	22	5	0	4.81	1857...	23	17	6	5.17
1792...	19	8	9	4.21	1824...	21	0	0	4.54	1858...	21	10	0	4.67
1793...	19	2	6	4.14	1825...	25	5	0	5 46	1860...	22	5	0	4.81
1794...	14	10	0	3.13	1826...	19	0	0	4.11	1862...	20	17	6	4.52
1796...	18	8	9	3.99	1828...	15	15	0	3.41	1863...	20	17	6	4.52
1798...	15	10	0	3.35	1830...	12	2	6	2.62	1864...	21	15	0	4.71
1799.	17	17	6	3.87	1832...	11	12	6	2.51	1865...	20	2	6	4.35
1800...	21	0	0	4.54										

Year.	Price in London per ton of 2,440 lbs. £	s.	d.	Price per 100 lbs.	Price in New York.	Price in St. Louis.
1866.....	20	12	6	$4 46	$6.90	
1871.....	18	2	6	3.92	6 40	$7.18
1873.....	23	2	6	5.00	6.30	6.56
1874.....	22	0	0	4.76	6.00	6.55
1875.....	22	10	0	4.87	5 95	6.78
1879.....	14	15	0	3.04	4.18	3.95
1880.....	16	6	3	3.53	5 05	4 89
1884.....	11	2	6	2.45	3 73	3.57
1885.....	11	9	11	2.48	3.95	3.75
1886.....	13	4	5	2.86	4.63	4 46
1887.....	12	17	1	2 78	4.47	4.29
1888.....	13	18	3	3.01	4.41	4.25
1889.....	13	0	11	2.82	3.80	3.62
1890.....	13	7	10	2.90	4.33	4 22
1891.....	12	8	8	2.69	4.32	4.15
1892.....	10	14	10	2.32	4 07	3.89
1893.....	9	14	3	2 09	3 65	3.48

(*To be concluded.*)

DIVIDENDS PAID BY MINING COMPANIES DURING NOVEMBER 1894.

NAME OF COMPANY.	Paid in Nov.	Paid since Jan.	NAME OF COMPANY.	Paid in Nov.	Paid since Jan.
Alaska-Mex, Alaska	$30,000	$30.000	Hope, Mont.....	.....	$75,000
Alaska-Tred., Alaska....	.....	375,000	Horn Silver, Mont.	.....	100,000
American, Mont.....	.....	52.154	Iron Mount., Mont.....	.....	36,000
Aspen, Colo	.....	40 000	Kennedy, Cal.....	$48,000	528,000
Bald Butte, Mont.....	12,500	187,500	Mayflower Gravel, Cal	10,000	110,000
Belden Mica, N. H.....	5,000	55,000	Mercur, Utah.....	25,000	200,000
Bodie Con, Cal	25,000	50.000	Morning Star Drift, Cal	9,600	96 000
Boreel, Colo.....	.....	22,500	Moulton, Mont	.....	50,000
Bost. & Mont, Mont.....	.....	150.000	Moose, Colo	12,000	72,000
Bullion, B.& C., Utah....	.....	75,000	Mt. Rosa, Colo.....	.....	5.000
Cent.-Eureka, Utah....	30,000	120,000	Napa Con., L. Cal.....	.....	50,000
Cal. & Hecla, Mich.....	.....	1,000.000	Omaha, Cal.....	3,600	79.600
Champion, Cal.....	3,400	37,400	Portland, Colo	.....	90,000
Con. Cal. & Va., Nev ...	54,000	54.000	Quincy, Mich.....	.....	400,000
Cop. Queen Con., Ariz....	.....	150,000	Rico-Aspen, Colo	25,000	275,000
Della S., Colo.....	.....	50.000	Smuggler, Colo.....	50,000	600,000
De Lamar, Idaho.....	.....	400,000	Standard Con.....	.....	30,000
Elkhorn.....	.....	109 376	Tamarack, Mich.....	.....	200,000
Elkton, Colo	.....	45,000	Union, Colo.....	10,000	31,250
Franklin, Mich	.....	80,000	Victor, Colo.....	10,000	70.000
Golden Fleece, Colo.....	12,000	132,000	W. Y. O. D., Cal.....	3,000	30,000
Harqua Hala, Ariz.....	.....	72,000			
Hecla, Con., Mont.....	15,000	75,000	Total.....	$48,100	$6,565,650
Helena & Frisco, Mont..	.....	15,000			
Homestake, S. Dak.....	25,000	231,250			

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

THE GEOLOGY AND CHARACTER OF THE RAINY LAKE GOLD DISTRICT.

Specially Written for the Engineering and Mining Journal by W. W. Taylor, M. E.

Knowledge of the existence of gold about Rainy Lake extends back for a number of years, but it was not, however, till the fall of 1893 that any active interest in the region was manifested. At that time several speculators in St. Paul and Duluth organized a development company and platted a town on Black Bay, naming it Rainy Lake City. Since January the Bevier Mining Company, operating the Little American mine, has had a gang of men developing this property. The vein extends downward from the grass roots and consists of a close, white quartz, heavily mineralized with pyrite, principally marcasite. The presence of so much pyrite very naturally conveyed the idea that the concentrates would be very valuable; but the report of a special correspondent of the "Engineering and Mining Journal" of October 13th states that such is not the case, as the gold was got by direct amalgamation and averaged about $9 per ton. This property is referred to particularly, because it is the only one on which any considerable exploratory work has been done. The management claims an average width of 5 ft. for the vein. Whether it will pinch out with greater depth is yet unknown. It seems possible that such may be the case.

The veins of the district are not true fissures. The country is hydromica schist whose angle of inclination varies from 70° to 90°. The vein matter lies between layers of slate and follows its every twist and turn. The general strike of the slate, or, more correctly speaking, schist, is east of northeast. The region shows evidence of violent metamorphism. While there are no very great elevations the rocks are bent and twisted, often in a very confusing manner. The slate is full of veins, few of them carrying mineral. Often two independent veins will be found within a few feet of each other, and can be traced in this position for hundreds of feet till they disappear below the water of the lake, or the moss of a cedar swamp. In many places trap covers the slate for a short distance. In such cases the vein disappears below the trap, and farther on will be found to reappear along the general strike of the inclosing slate. In some cases a hidden vein has been relocated at a point over 500 ft. distant from where it disappears.

Other explorations in the district are the Little Canada and the Wiggins mine. The former, like the Little American, is located on an island, but on another vein. The latter is located on Shoal Lake, in Ontario. The properties on islands have experienced much difficulty with water after getting below the level of the lake.

The country is easy to explore. The rocks near the lake are usually bare and almost no drift occurs. The work in the district thus far has been only of an exploratory character. White labor was in good demand last winter at three dollars per day, and Indians could be hired for one dollar.

The country is now easily reached from Duluth by steamer to Port Arthur, then via Canadian Pacific Railroad to Rat Portage, thence again by steamer to Rainy Lake City. The winter road extends over the ice and through the pines 125 miles, northwest of Tower, Minn.

THE NEW PEDRARA ONYX.

The production of onyx for decorative purposes in the United States was somewhat less in 1893 than the previous year. In the "Mineral Industry," Vol. II., the output for the former year is stated as 2,175 cu. ft., as against 2,550 in 1892. Still the stone is so well adapted for purposes of decoration that there will always be a market for it, and as new deposits are found and the cost of the stone decreases it will no doubt be more widely employed than now.

One of the most interesting of the new deposits discovered in recent years is in Southern California, where the "New Pedrara" onyx is found. This onyx has been so named because of its close resemblance in color and quality with that of the famous La Pedrara quarry in the Tecali district of Mexico, 21 miles from the city of Puebla, which once furnished the most highly prized onyx in the world, but is now practically exhausted. The New Pedrara onyx is of pearl white, pale green and delicate rose colored tints, frequently variegated by a network of rose red veins, which enhance the value of the stone without weakening it or rendering it liable to fracture. It is remarkable for its texture, translucency and susceptibility to a high lustrous polish, and also for the complete absence of oxidation products, especially the reddish yellow, opaque limonite-like material which causes so much waste in the Arizona onyx. Nearly every piece rings under the hammer like an anvil, thus showing its complete freedom from flaws. It contains also scarcely any of the enclosed fragments of flint and siliceous rocks which constitute a serious defect in many varieties of onyx.

The property consists of about 5,000 acres of land in Lower California, near latitude 30, about 20 miles from the Gulf of California and 50 miles from the Pacific Ocean, at an elevation of 2,200 to 2,500 ft. above the sea level. It lies on the main watershed of the peninsula, from which there is a gradual descent to the Pacific Ocean, through a series of broad, open valleys, between mesa-topped ridges, while the slopes on the eastern side of the watershed are deeply scored by narrow, tortuous ravines.

There are two distinct sets of deposits on the property, about three miles apart. That known as the "northeast quarry," which is being worked at present, is found in one of the deep ravines on the Gulf slope, known as the "Tule Arroyo." A relic of the spring action by which onyx was formed is found at the bottom of the ravine, in an effervescent spring known as the "Volcan," which has built up around its little orifice a dome-shaped mound of tufa, or travertine, about 20 ft. in diameter. Small veins of onyx are found near the "Volcan," filling cracks in the steeply upturned metamorphic slates which form the steep wall of the ravine; but the main part occurs lower down where the ravine widens out to a considerable valley, once filled to a height of 50 to 100 ft. above the present bottom by a horizontal deposit of travertine and conglomerate, in which the sheets of onyx from 1 to 2 ft. in thickness are interstratified. The greater part of the original deposit has undoubtedly been removed by erosion.

The more accessible set of deposits, which are now being worked, and which are known as the "Southwest" or main quarries, are situated to the west of the watershed in a shallow ravine or arroyo tributary to the great interior valley that occupies the middle of this portion of the peninsula.

This arroyo slopes gently westward, as do the flat-topped ridges about half a mile apart, which bound it on the north and south. The springs which originally deposited the onyx in this valley apparently occupied an extent of about a mile up and down the valley. The onyx here occurs exclusively interstratified in the recent beds of travertine and cement which once filled the bottom of the ravine from side to side to a depth of 30 or more feet above the present bottom. Recent erosion of the present stream bed has removed a considerable portion of this material together with the onyx, but the great resistance of the latter has left mesa-shaped slopes on either side, to a great extent covered by beds of onyx, whose present outcrops extend over an area about ⅝ of a mile in length and ¼ of a mile in width. Three distinct ledges layers of onyx are shown by the outcrops, separated by cement and travertine. In the present quarry openings where a cliff of 22 ft. in height is exposed by the erosion of the stream bed, the aggregate thickness of the three ledges is from 7 to 9 ft. of onyx, the lower ledge furnishing dressed blocks 3½ ft. in thickness. The ledges may be expected to vary somewhat in thickness from point to point, but those exposed on the surface are fairly regular.

Owing to the peculiar manner of occurrence of the onyx, quarrying is very simple. The ledges are first stripped of the inclosing cement and travertine, which are so soft as to seldom require blasting, and blocks of the desired size are split off by wedges and feathers. They are then lifted out by derricks and, after squaring and pointing, are ready for shipment. The size of the blocks is practically limited only by the capacity for transportation. They are hauled by mule teams to the landing at San Carlos anchorage on the Pacific Coast, a distance of about 60 miles. Here they are lifted by derricks on the shore to small lighters, and taken out to a large lighter on a floating dock, which is provided with a derrick at either end and capable of carrying 400 tons. This floating dock is securely moored a few hundred yards from the shore, where the water is deep enough for vessels to lie alongside to load. At present the quarried blocks are taken by steamer to San Diego, and from there shipped by rail to interior cities.

Work at the quarries was only begun in the early part of 1893. Owing to the arid character of the country the work of development has been slow and somewhat expensive. No running water is found and springs are scarce, so that the region was practically uninhabited and had no wagon roads. The first work of development was building roads, digging wells and preparing landing facilities at the coast. The longer haul to the Pacific Coast was chosen partly because the shipping point there would be in the line of passing steamers and sailing vessels, but mainly because the long, gentle slope to the Pacific was so much better adapted for roadmaking and hauling than the steep and ragged descent to the Gulf of California, which is in places difficult to be traversed on horseback.

Only a small amount of onyx could be gotten out in time for the Columbian Exposition, and this was of necessity somewhat hastily prepared, as it only reached the hands of the marble workers a few weeks before the Exposition opened. In spite of these disadvantages a creditable exhibit was made, and two of the highest awards were accorded it.

The Semet-Solvay Coke Oven.—Before the Judicial Committee of the Privy Council, November 8th, a petition was presented for prolongation of letters patent dated November 17th, 1880, granted to Louis Victor Semet and Ernest Solvay, both of Brussels, for the invention of "improvements in apparatus for coking and distilling coal." The petition stated that the invention related to a novel mode of construction and arrangement of ovens for coking and distilling coal (which might be shortly described as "retort ovens"), by the use of which, as contrasted with other coking ovens in ordinary use, the quantity of coke obtainable from each ton of coal was largely increased, the duration of the processes of coking and distillation was most materially diminished, and the valuable by-products of the gas produced in coking were readily preserved and offered for condensation and utilization. The invention possessed very great merits. All possible efforts had been used, and very heavy expenditure had been incurred, in order to promote the use of the invention. For some time it was found impossible to obtain any practical introduction of the invention in this country, partly by reason of the expense of forming or setting up a battery of coking ovens, but chiefly by reason of the opinion which long prevailed in this country that coke and the by-products of coke produced in retort ovens were inferior to the products of bee-hive ovens. In Belgium, where coal mining and the manufacture of iron and steel were among the chief industries, evens constructed according to the invention had been in operation for some years past. The invention gained a silver medal at the Paris Exhibition of 1889 and a diploma of honor at the Antwerp Exhibition of 1894. The petitioners had, by means of attracting the attention of English manufacturers to the advantageous use which had been made of the invention in foreign countries, and by their efforts and expenditure, succeeded in establishing the reputation of the invention in this country, and they had now so effectively brought the advantages of the invention to the notice of the public that it would henceforth become remunerative and compensate the petitioners for their labor and expenditure in the past. The petitioners, subsequently to the date at which the provisional specification of this patent was lodged, took out patents for the same invention in France, Belgium, Germany and other countries, which foreign patents are still subsisting. Witnesses were called in support of the petition, and spoke to the great merits of the invention. It was stated that the opinion which for a long period prevailed in England that coke and the by-products produced in retort ovens were inferior to the products of beehive ovens now no longer existed. The patent taken out by the petitioners in France for the invention would expire in 1895, and the patents taken out by them in other foreign countres would expire at other dates subsequent to 1895. The patent which the petitioners took out in Belgium would expire in 1900. Their lordships agreed to recommend Her Majesty to prolong the letters-patent for a period of five years.

TIN MINING IN PERAK.

The annual report of F. A. Swettenham upon the progress in tin mining in the state of Perak, in the Malay Peninsula, gives the following information of output. The mines have already been fully described and illustrated:*

The tin and tin ore exported from the State during the year amounted to 316,201 pikuls, or 18,821 tons, against 278,254 pikuls in 1892. Of this quantity the Kinta district produced 230,725 pikuls, Larut coming next with 69,892 pikuls.

The highest export for any one month was 32,301 pikuls in July, and the lowest 20,253, in March. The average price of tin for the year was $37.60 per pikul—that is, about £75 a ton, and by the end of the year it had fallen to about £65. The price which ruled in 1892 was £90 a ton. It is curious that while the highest average local price recorded for one month—$39.85—was in March; when the production was least, the lowest, $36.13, was in June, the next month to that of the greatest output of tin.

The Government prospectors did a good deal of valuable work during the year, especially in the Kuala Kangsar district, but there is little doubt that immense tracts of payable land have never yet been touched. Of lode mining for tin, practically nothing was done, but the gold mine at Bukit Mas, in the Batang Padang district, has been further opened up, with the most encouraging results, and though yet in its infancy is making a steady yield of metal more than sufficient to pay all expenses.

For the moment Kinta is the center of mining enterprise, and I cannot do better than quote the following paragraphs from the able report of the district magistrate (Mr. J. B. M. Leech). The advancement of this district is almost incredible. Ten years ago it was little more than a vast stretch of jungle, unapproachable except by a shallow and rapid river, and possessing not a single mile of first-class cart-road, nor a village of any importance:

"During the year 240 titles for 4,492 acres of mining land were issued; 234 of these were new leases, and the remaining 6 agreements for leases; 57 leases for 822 acres of agricultural land were also issued, while at the end of the year there were in the land office, ready for issue, 106 mining leases for 2,015 acres; 2 suburban and 31 agricultural leases for 84 acres, and there were 859 mining leases for 15,847 acres, and 593 agricultural and suburban leases for 2,958 acres of land in various states of preparation. There remained besides 1,655 applications for 29,143 acres of land registered in the books, but still unattended to, while fresh applications keep pouring in every day. Considering the small staff, the amount of work done is very creditable, but an immense amount more could have been got through, and the land revenue could have been greatly increased if a sufficient number of demarcation and settlement offices had been allowed. . . . With reference to the titles in course of preparation, it is right to notice that though there is considerable delay in issuing them, owing to the weakness of the demarcation staff, this does not prevent the land being worked, as, directly the lines are cut round a block, and the boundary stones put in, permission is given to the applicant to work, although the title may not issue for months after.

"There were several successful land sales during the year. Some 296 acres of mining land in different parts of the district were sold by auction, and the average price obtained was $21.90 an acre, 36 acres of suburban land at Ipoh sold for $3,401, or $93.08 an acre, while 10 town lots at Ipoh fetched $288 a lot, and 5 town lots at Batu Gajah brought $179.20 a lot.

"With reference to the mining itself, there has been little change except in the case in the new system of hydraulic mining introduced by Messrs. Pike and Osborne, at Gopeng. But in the terms on which the Chinese mining coolies work there has been a very important (though a gradual) alteration, which is worthy of notice.

"Formerly the coolies were nearly all employed on what was really the truck system. They were engaged for terms of six or twelve months, either as contract coolies employed in stripping, as wages coolies employed in raising ore, or as co-operative coolies who shared in the profits of the mine. In either case they worked for a long term, generally a year, and were only paid once every six months, when the books were made up, wages paid, and profits divided. In the mean time, the coolies had to depend entirely for their subsistence on advances made by their employers, the advances frequently amounting to large sums, and a single coolie often owed his employer over $100. It was to protect the advances under this system that the Perak Labor Regulations and the system of discharge tickets were introduced. The system has, however, gradually changed, partly owing to the free sale of tin ore, which became common when the Straits Trading Company began to ship ore and smelt at Singapore (which did away with the old half-yearly smeltings), and partly owing to the great increase in surface workings in Kinta, which occurred with the introduction of the short washbox (lanchut kechil), which is now used in most mines. In the surface workings the returns are immediate, and the coolies declined to wait six months for a settlement. They insisted on being paid at short intervals, and if the towkay refused they ran away in hundreds, leaving nothing but debts behind them. Under such a strain the labor regulations and discharge-ticket system proved useless as a check. The demand for coolies was so great that no employer took much trouble to find out whether a coolie who asked for work had a discharge ticket or not, and runaway coolies were taken on wholesale. Under these changed conditions, giving large advances meant ruin to the employers, and the towkays wisely reduced the amounts anvanced, and now an advance to a coolie of more than $3 or $4 is rarely heard of, while in some cases the coolie on joining a new kongsi gets nothing but a few days' rice to keep him going till he has earned enough to buy anything else he wants. Indeed, I would not be surprised if in time a small food ration will be the only form of advance known in the district.

"As a natural result of this change, the present labor regulations (embodying, as they do, the discharge-ticket system) having ceased to be a protection to the employers of labor, sank into a useless formality, and in some cases a cause of annoyance to the towkays; and when the Protector of Chinese and I were appointed in August last to inquire into the working of the regulations, they were universally condemned by both the laborers, and the employers for whose protection they were originally introduced.

"The rates of wages paid to mining coolies during the year have been very high; they vary from 32 cents to 42 cents a day with a food ration, the food, as a rule, amounting to 15 cents more—this is for daily laborers, while in many mines where the coolies work on the co-operative system, each man frequently makes 70 or 80 cents, or even, in some cases, as high as a dollar a day.

"Of lode mining there has been none in Kinta during 1893. Both the Selama Company and the Menglembu Company have closed their lode works as unprofitable, while none of the other applicants for lode concessions has done anything.

In conclusion, I must mention the successful introduction of hydraulic mining by the Gopeng Company, which has a concession of 300 acres of hill land at Gopeng. This company, at a cost of about $50,000, has brought water 6½ miles from the Kampar River to its concession. For 4 miles it is conveyed in 14-in. steel pipes. The land is worked by means of a hydraulic monitor, which washes down the hill at the rate of 400 cubic yards in a day of 24 hours. Working on this method, only some 20 coolies are necessary, and owing to the enormous saving in labor thus effected the company is getting good interest on its capital, though the ground worked is poor, in many places too poor for Chinese to work. I believe this is the first time this system has ever been applied to tin mining."

* The "Engineering and Mining Journal," September 9th, 1893, page 263.

ELECTRIC HAULAGE AND MINE VENTILATION.

In the "Jahrbuch fur das Berg- und Huttenwesen" Mr. Georgi, Imperial Mine Administrator, speaks of the chain haulage plant operated by electric power at the Zauckerode steam coalmine. This chain haulage, which extends a distance of 320 miles, is effected by means of a Schuckert electric motor which is supplied with current by a dynamo which at 880 revolutions gives a current of 20 amperes at 410 volts. The motor runs at 1,150 revolutions, and, as the speed of the chain only reaches 2 ft. per second, a considerable reduction is necessary. This is effected firstly by worm gearing and secondly and thirdly by means of two reductions by belts. As the shaft upon which the driving sheave or pulley for the chain is arranged makes 11½ revolutions a minute, the ratio of conversion is as 100 to 1. The generating dynamo supplying current for the operation of the electric motor, and therefore of the chain, is driven by belt from a steam engine. The current is led to the motor partly by a 19-strand lead-covered and armored cable carried on porcelain insulators, and partly by an unarmored cable arranged on similar insulators. The mechanical efficiency of the electric motor—that is to say, the ratio between the current delivered to it and the mechanical power given off by it—is as follows:

	Per cent.
At mean load	85
At full load	88·8

Of the power given off at the shaft of the generating dynamo, that profitably utilized on the shaft of the electric motor is:

	Per cent.
At mean load	65·4
At full load	68

Of course, in consequence of the three reductions required to bring the speed down to 11½ revolutions a minute for the pulley driving the chain, the efficiency is lower than it would otherwise have been. In fact, the losses through this triple reduction are estimated to amount to between 7 and 8%.

An electric mine ventilator has for some little time been at work at the Vereinigte Bonifacius pits, near Kray-Gelsenkirchen. The ventilator is of the Capell type, and the electric plant put down is of the high-pressure direct-current kind. The steam engine, which is supplied with part of the surplus steam from the boilers at the mine, runs normally at 60 revolutions and gives 64 I. H. P. It has a grooved fly-wheel, and drives, by means of five hemp ropes, a grooved pulley on a countershaft, from which the generating dynamo is actuated by belting. The ratio of reduction is as four to one. The generating dynamo, which has a speed of 430 revolutions a minute, gives 42 amperes at 1,200 volts. The current from this machine, of which a duplicate will shortly be erected, is conveyed by means of four bare copper wires (each pair being arranged in parallel), carried on porcelain insulators on eighteen iron masts, ranging from 30 ft. to 46 ft. high, to the point of utilization at No. 3 pit. Here it is received by an electric motor which, at 200 revolutions a minute, gives a power of 60 effective horse power. This motor is coupled to a Capell ventilator 3 meters in diameter and 2 meters wide, and yielding an average of 2,000 cubic metres of air per minute. A second ventilator to act as reserve will shortly be installed. A series of tests with this ventilating plant has been carried out. It was found that the steam engine had a useful efficiency of 83%; that the useful effect of the total installation—that is, the relation of the useful work of the ventilator to the indicated steam power, was 48·9%; and that the efficiency of electrical transmission over a distance of 1,500 meters amounted to 82·9%. In this connection a most interesting table has been prepared by the Allgemeine Elecktricitats Gesellschaft, of Berlin. The table, which is given above, contains the figures necessary for a number of electric motors coupled direct to ventilators.

The Coal Mines of Chota Nagpur.—The principal coalmines in this part of Bengal exist in the Giridih and Gobindpur subdivisions of the Hazaribagh and Manbhum districts. The total quantity of coal raised from the Giridih mines was 562,037 tons, against 563,976 tons in 1892 and 558,407 tons in 1891. The average number of workpeople employed in them was 7,613, against 7,563 in 1892 and 6,398 in 1891. In the Gobindpur mines the output in 1893 was 65,226 tons, against 73,576 and 77,534 tons respectively in the two preceding years. The average number of workpeople employed in them was 2,207 in 1893, against 2,112 in 1892 and 2,506 in 1891. The Laikdih and Kumardubi coalmines are worked with success by Europeans. The Patlabari coalmine, worked by the South Barrakar Coal Company, is said to be doing fairly well, though it is not in a flourishing condition yet.

THE NEWTON MORTAR.

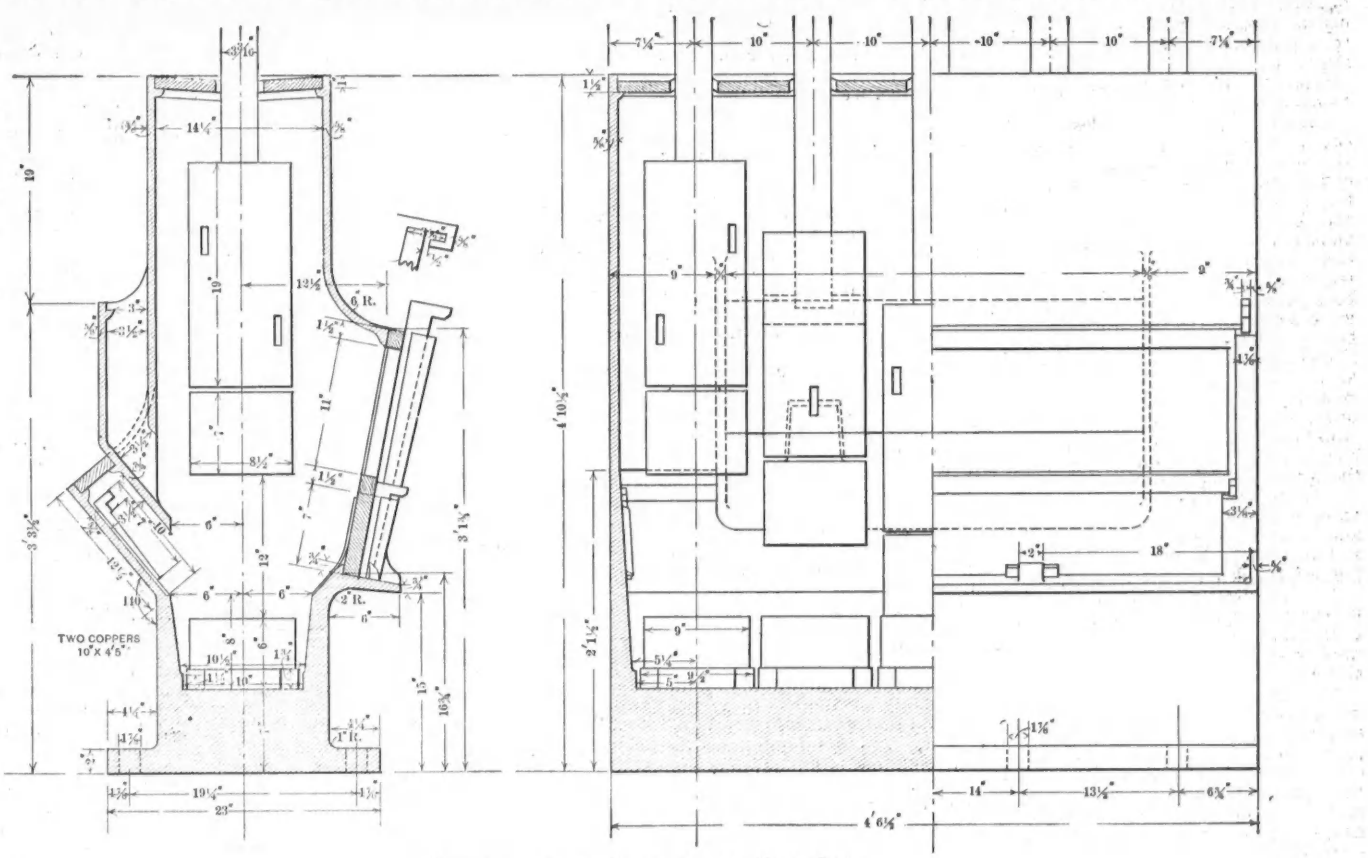
Written for the Engineering and Mining Journal by F. T. Snyder.

The Newton Mine at Idaho Springs, Colo., has recently erected a new stamp mill, the mortars of which are an interesting compromise between the two extremes of the low discharge, fast crushing and the deep issue slow crushing types. An illustration of the mortar is shown herewith.

The ore is a typical Gilpin County ore; a mixture of very minute particles of iron and copper sulphides scattered uniformly through the gangue. It is practically free milling and cannot be concentrated at a profit. An examination of the mine shows that in all the lower workings, at an average depth from the surface of 300 ft., the free milling zone changes to an ore that would give tailings able to stand concentrating. Thus in the course of a year the mill would have to be changed by the addition of tables and the mortars used as crushing machines rather than amalgamators.

It was this fact which gave the mortar its characteristic features. These individually are not new, but their use in combination is novel.

The change from high issue amalgamating mortar to low issue crushing mortar is produced by the removal of the front splash board, which also carries an unusually wide front copper, both being unnecessary in a concentrating proposition. This board is secured by independent wedges and is not disturbed by manipulation of the screen, while readily removable for the purpose of cleaning the copper. The rear copper is also readily removable through a rear opening below the feed, and is securely



NEWTON MORTAR, 750-LB. STAMP, 18-IN. DROP.

and conveniently held in position by iron wedges, accessible from the exterior of the mortar.

It is the intention, by use of double sets of coppers, to cut down the stoppages for clean-up to a few moments each. A clean set of coppers simply being exchanged for the loaded ones, which are then freed of amalgam at the convenience of the mill foreman.

Wear of the dies is compensated for by making one side of the screen frame wider than the other and reversing.

In its general shape and clearances the mortar is a compromise between a high drop, inside amalgamating, and a low drop concentrating machine. The angle of inclination of the plates (50°) and that of the screens (12°) are a result of experimentation for capacity on the one hand and efficiency on the other.

The question of a wooden top housing was considered, as reducing weight, but was discarded on account of the tendency of wood to absorb amalgam. The height of feed is the one most convenient for hand feed and best suited for automatic feeders under the usual arrangement of mill flooring joists. Six of these mortars are in the Newton mill.

Gold Mining in British Guiana.—Increased attention is being given to the goldfields of British Guiana, which are claimed to be developing into one of the richest auriferous regions in the world. In 1884 but 250 ozs. of gold were exported; in 1885 the export was 939 oz.; in 1892 it was 199,615 oz.; and the end of the current year, it is predicted, will show a great increase upon these figures. Within the past few months, operations on an extensive scale have been projected. Proposals for the construction of a railway to the mining region have been advertised for by the colonial government. In addition to its goldfields, British Guiana is said to possess diamonds in abundance, and prospecting parties from South Africa are reported to be on their way to investigate this branch of mining industry.

DETERMINATION AND DETECTION OF COPPER.*

By M. Haupt.

The author recommends for the volumetric determination of copper a method which was proposed some time ago by De Haen. In applying this method the solution of a cupric salt is mixed with solution of potassium iodide. Cupric iodide is separated out, whilst there is a simultaneous liberation of iodine according to the equation:

$$2CuSO_4 + 4KI = Cu_2I_2 + 2K_2SO_4 + I_2.$$

This iodine is titrated with a decinormal solution of thiosulphate.

In determining copper in its alloys with zinc, tin or lead, they are dissolved to the extent of 1 or 2 grms. in concentrated nitric acid, and the solution is made up with water to 100 grms. After the meta-stannic acid has subsided, the clear solution is poured off, and a weighed portion is placed in a porcelain capsule. The excess of nitric acid is neutralized with calcium carbonate, the excess of the latter is removed by means of a few drops of hydrochloric acid, and the very faintly acid liquid is mixed with potassium iodide. The iodine thus liberated is determined volumetrically. The presence of lead does not interfere.

In presence of iron the determination of the copper cannot be at once undertaken. In this case the nitric acid is expelled by evaporation with an excess of sulphuric acid, the liquid is diluted with water, and heated after the addition of platinum wire and metallic zinc until the supernatant liquid is colorless. The copper and the metals precipitable by zinc are thrown down, while the iron remains in solution in the ferrous state.

The metallic precipitate is collected and filtered through a plug of wadding free from grease. It is washed with water, dissolved in nitric acid, and the solution is used for the determination.

A dilute solution of copper sulphate (1:100,000) which shows no perceptible blue tint with ammonia, and gives with potassium ferrocyanide a scarcely perceptible reaction, takes a distinct yellow color with a solution of potassium iodide. On further dilution (1:200,000), in which the reaction with ferrocyanide fails, solution of potassium iodide still gives a faint yellow tint, and on the addition of starch paste shows a distinct violet coloration. This last appears even at a dilution of 1:500,000.

Of course, in order to obtain this reaction no other substance must be present which might also liberate iodine or prevent its separation.

One of the most usual methods for the gravimetric determination of copper is to weigh it as cuprous sulphide. Concerning the behavior of cuprous sulphide on ignition in a current of hydrogen, there existed various discordant views until the question was finally decided by W. Hampe ("Chemiker Zeitung," ix., 1441).

Hampe ignited a weighed portion of cuprous sulphide for a considerable time, and repeatedly, in a Rose crucible in a current of perfectly dry and pure hydrogen. It appeared that pure copper sulphide at a red heat is very slowly but completely reduced; hydrogen sulphide escapes, and copper remains. The first ignitions of 0·2 grm. cuprous sulphide for 30 minutes at a moderately high temperature (ignition with a Berzelius lamp) and, as usual, after the addition of a little sulphur, gave quite constant weights. Such favorable results, however, were not obtained if the quantity of the cuprous sulphide was too large for the heat to fully penetrate. Hampe never takes more than 0·25 grm. sulphide for weighing.

If the addition of sulphur before reweighing is omitted, about 2 m.grms. of sulphur are carried off as hydrogen sulphide in an hour at the temperature of the Berzelius lamp. This quantity is not essentially in-

* "Zeitschrift für Analytische Chemie.

creased at a higher temperature. When about half the sulphur has escaped, the decomposing action of the hydrogen is retarded, and only about 1 m.grm. is driven off in an hour's ignition. The last 2 m.grms. of sulphur require a disproportionately long time for their expulsion. Finally, there remains pure copper.

Hampe finally performed the following experiment to meet the objection that the hydrogen employed might possibly contain traces of air and that watery vapor might possibly be formed in the ignited crucible, to the influence of which the reduction of the cuprous sulphide might be attributed:

The cuprous sulphide, contained in a platinum boat, was introduced into a glazed porcelain tube, which was heated to ignition in a combustion furnace after a current of pure dry hydrogen had previously been passed through the tube for a considerable time. Here all precautions were employed in order to obtain a perfectly dry current of hydrogen free from O before it came in contact with the sulphide. In this manner 0·25 grm. copper sulphide was completely reduced after ignition for 30 hours.

Hampe further investigated the behavior of copper sulphide on ignition in a current of carbon dioxide. According to his communications, copper sulphide on ignition in a porcelain boat in a glass tube over the Berzelius lamp in a current of dry carbon dioxide is not converted so readily into cuprous sulphide as in a current of hydrogen in an equal time and at the same temperature. At full redness there is formed in a current of dry carbon dioxide, free from air, firstly, semi-cuprous sulphide, which then undergoes an exceedingly gradual further decomposition. The presence of sulphur dioxide was demonstrated in the escaping gases. Experiments on the determination of copper sulphide by ignition in a current of carbon dioxide in a Rose crucible did not lead to useful results, as in a short time portions of metallic copper were formed.

According to a further experiment by Hampe, we may assume that copper sulphide does not undergo any appreciable change after ignition in pure carbon monoxide.

After J. Uhl had essentially confirmed Hampe's observations on the behavior of cuprous sulphide in a current of hydrogen (Berichte, xxiii., 2,153), Wegscheider resumed the investigation of the same question. He placed copper sulphide in a Rose crucible and heated it for 30 minutes in the small flame of a Bunsen in a current of dry hydrogen until the bottom of the crucible became slightly red; he then allowed it to cool in a current of hydrogen. The temperature near the bottom of the crucible was between 639° and 705°. The weight found was 0·3640 grm., corresponding to 99·64% of the copper taken. On further ignition for half an hour at the same temperature the sulphide underwent merely an insignificant decrease; it weighed 0·3637 grm.

It was then heated for half an hour with the full flame of a Bunsen in such a manner that the point of the flame played on the bottom of the crucible. The temperature lay between 776° and 818°. There was found on weighing 0·3634 grm., representing 99·48% of the copper used. Red places were distinguishable at the bottom of the crucible.

It was then heated for half an hour with a strong Bunsen flame, so as to play over the greater part of the crucible. The weight of the cuprous sulphide fell to 0·3603 grm., corresponding to 98·63% of the copper used. The temperature reached was still below the melting point of sodium carbonate (818°). The reddening of the contents of the crucible was considerably increased, especially near the bottom of the crucible.

Ignition for half an hour with the Techu burner (which still does not fuse sodium carbonate) reduced the weight of the contents of the crucible to 0·3588 grm., equal to 97·95 of the copper.

Gentle ignition with a little sulphur in a current of hydrogen restored the weight to its original value.

Hence it appears that on heating to faint redness (at the most 650°) the values attained are sufficiently accurate. At higher temperatures the particles nearest the bottom of the crucible, and therefore most strongly heated, are converted into metallic copper. The reduction proceeds slowly, whence it is conceivable that ignition which is too strong, but also sufficiently brief, may give accurate results.

A complete reduction of larger quantities of cuprous sulphide cannot be effected with a flame which heats the bottom of the crucible to about 800°. It is practicable with small quantities.

In a further experiment cuprous sulphide was placed at the bend of a narrow U-tube of sparingly fusible glass and heated to redness in a current of pure dry hydrogen, perfectly free from air. The result of the experiment agreed with the experience obtained on ignition in a Rose crucible.

In order to avoid the careful regulation of the temperature which is required on igniting copper sulphide in a current of hydrogen, the author tried the application of a current of hydrogen sulphide. The results are always too high.

It is not practicable to use a current of coal-gas in place of hydrogen.

The Tides of Hoihow.—The tides of Hoihow are, according to Mr. Consul Parker, of Kiungchow, as hopeless a puzzle as ever. Though the customs authorities have now four years' records, there is absolutely no rule to be deduced therefrom. The tides outside the spit are regular enough, but those inside elude the wit of man to account for, and the level of the water outside is positively said to be often several feet above that inside. There is a tidal creek near the consul's house, over which he can rarely walk during the day in summer; but he had walked over it every day but two at 6 p. m. during the past two months—close of last year and beginning of this—a fact which of itself renders the inner tide question inexplicable. Perhaps, says the "Indian Engineer," the best explanation given is that of a Chinese naval commander, who says that, owing to the conformation of the spit, it is impossible for the water to flow into the mouth of the creek when the northeast wind blows and the tide is rising. That would appear to explain why, during the day, the winter tides are almost invariably low inside the spit, while during the night, when the wind usually drops, they have an average height. Perhaps also the blowing of the wind from the southwest direction explains why, during the typhoons of the end of September and beginning of October, Hoihow was completely under water, and the tides were 4 ft. above the highest ordinary mark; but the consul is not able to say from what direction the wiud was actually blowing when the floods took place—it appeared to blow from li quarters.

CHANGES IN IRON AND CARBON DURING TEMPERING.*

By M. Georges Charpy.

The process of hardening steel by tempering has been made the subject of a great variety of explanations, which have not always harmonized with one another. M. Osmond has recently put forward the hypothesis that this phenomenon is due simply to an allotropic transformation of the iron, the carbon only serving to facilitate this transformation. This hypothesis has, however, been combated by several metallurgists, more especially by Messrs. Howe, Hadfield and Arnold. A series of experiments led me to the conclusion that an allotropic change was produced in the iron after tempering, which was readily characterized by the presence or the absence of a rectilinear level in the curve of tension. Furthermore, it has long been known that a transformation of the carbon is produced, characterized among other things by a diminution in the intensity of the color obtained by dissolving the steel in nitric acid. According to this the Eggertz calorimetric method for measuring carbon will indicate too small a quantity for tempered steel. I have verified the persistent character of this fact by a long series of experiments, and have demonstrated that the quantity indicated by the Eggertz method is smaller in proportion to the degree of hardness of the steel.

We have thus two clearly defined transformations. In fact, for hard steels, the two transformations are produced at almost identical temperatures, and for soft steels the Eggertz method becomes very uncertain. We may, however, obtain an indication by comparing the results furnished by various processes of tempering on the same steel.

A series of experiments on bars taken from an ingot of Martin steel containing 0·71 per cent. carbon gave some interesting results after tempering. The quantity of carbon was obtained by the Eggertz method, taking as a type the same steel carefully annealed.

An examination of the figures obtained showed that in the case of bars heated above 750° the carbon suffered no change. The iron was partially transformed in some, but there appeared to be no connection between this transformation and the variation of the breaking strain. The differences in the resistance of the bar are probably owing to the modification of the mechanical structure in the grain of the metal which appeared in the fracture. In those steels, tempered after heating at a temperature above 740°, the iron and the carbon are simultaneously transformed, but the iron is completely transformed in all those bars which have a higher breaking strain than 82 kilogs. The proportion of carbon transformed diminishes continuously, while the breaking strain rises and the lengthening decreases. It should be remarked, moreover, that the bars whose breaking strain is below 90 kilogs. are easily attacked by the file of other tool. Properly speaking, they are not tempered at all. Hard tempering only appears for very heavy strains, and the sole difference between these bars and the preceding consists in a diminution of the apparent quantity of carbon contained.

The following conclusions may be drawn from these results: Tempering products, among other modifications, a transformation of the iron (characterized by the traction test) and a transformation of the carbon (characterizrd by the Eggertz test). The first modification appears to have only a very slight influence on the breaking strain, while the transformation of the carbon seems to be correlative to the increase of hardness.

COAL MINING AND THE HEALTH OF MINERS.†

In a lecture recently delivered in London, Mr. Simeon Snell, ophthalmic surgeon of the General Infirmary, Sheffield, spoke of the importance of the mining industry and the health of those engaged in it. In Great Britain, he stated, there are 549,738 men working under ground in the coal mines and 133,270 above ground, making 683,008 in all. The hours of work vary from six to over eight, the average being from seven to eight.

Notwithstanding that the miner passes a third of his day in an atmosphere laden with coal-dust, the death rate from phthisis is remarkably low. A comparison of the coal miner with other workers in dust-inhaling occupations show this: Five Cornish miners die from phthisis for each coal miner. It has been thought that the coal-dust acts as a preventive. The opinions of the medical men are unanimous as to the comparative freedom of the coal miner from phthisis; the opinions embracing practically all parts of Great Britain.

As regards respiratory diseases other than phthisis, the miner fares worse than he does under phthisis, and he seems, perhaps, more liable than others to bronchitis and pneumonia. At the same time, among dust-laden occupations the only two with a less death rate from respiratory diseases are the carpenters and bakers. These diseases appear more frequent in dry and dusty mines, and it seems as if the particles of coal-dust, although not producing phthisis, may be regarded as a cause of bronchitis, and indirectly of emphysema. Other causes mentioned were damp and standing in cold currents of air when insufficiently clad. For diseases of the circulatory system the death rate is much below that for males generally. At the same time it was shown that the miner is prone to cardiac disorders. Considering the nature of his work and the opportunities for over-strain, this was not considered surprising. Functional affections are the most commonly met with, attended by rapid pulsating heart, shortness of breath, general weakness and unfitness for work. Under rest, recovery slowly took place. This applied to miners in all parts, and inquiry showed that this tendency is due to a variety of causes: 1. Constrained and cramped position at work. 2. Prevalence of dyspepsia, caused by irregular meals, indigestible food, excessive tea drinking, often strong. 3 Beer drinking. 4. Tobacco chewing. Rheumatism in all its forms, and sciatica, were mentioned as complaints to which miners are liable. Dyspepsia is also an ailment from which they commonly suffer. This was put down to their manner of life as to food and drink, and in some degree to the cramped position at work. The death rate from liver disease is lower than the general death rate. The same applied to alcoholism, urinary diseases, and those of the nervous system.

Nystagmus was mentioned as occasionally found in other workers, but

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*"Moniteur Industriel." †The "Colliery Guardian."

much more frequently among miners, and it might veritably be called the disease of miners. Mr. Snell stated that he had devoted considerable attention to this subject. The disease is characterized by rapid motions of the eyeballs, and the sufferer has the impression that objects upon which he looks move, generally in a circle. It frequently causes the miner to leave his work, but in the bulk of cases relief is obtained either by changing work in the mine or for a time relinquishing employment in the pit. It is chiefly found in the coal-getters, and this fact furnishes a clue as to the cause of the malady. The miner, when holing or undercutting the coal, has frequently, for long periods together, to work with his body, head and eyes in a constrained position, and it is the upward or more or less oblique direction of the eyes thus required which induces a weariness of the elevator muscles. The disorder is met with, no matter what kind of illuminant is used in the mines. With the worst light, of course, the effects of strain are more severe, and, other things as to work being equal, nystagmus will be found more frequent when the lighting is least satisfactory. Miners were also said to have other muscular disorders, such as tremors of the head, or of muscles of face and neck, Torticollis and "pick palsy" of the arm. Also they were subject to inflamed bursæ over the patella and olecranon (miner's elbow).

According to Dr. Ogle, the mortality from accidents is a very high one. Of 1,000 males generally the average between the ages of 25 and 65 from accidents was 67. That of miners, taking South Wales, the highest district, it is 229, or more than three times the average. The proportion under ground is greatly in excess of that among those engaged among machinery at or about the top of the mine. Statistics setting forth the deaths from accidents were given. It is evident from these that the younger hands are most liable to meet with fatal accidents, especially with those which are due to falls of roofs and sides. In Scotland 50% are said to be due to these falls. Out of a total number of 1,060 fatal accidents reported by the mining inspectors for 1893, 41% are given as caused by falls of roof and sides. Deaths from explosions are subject to great variation. Fatalities resulting from mishaps in the shaft and cage contribute largely.

In conclusion, Mr. Snell stated that a review of all the facts set forth in this lecture would show that the miners', compared with any other occupation, is a healthful one, or, to quote the words of the report of the Labor Commission, "The weight of evidence seems to be against the idea that coal mining is an unhealthful occupation, even when allowance is made for the probability that weakly men either avoid or soon abandon it."

PORTABLE ELECTRIC MINING LAMP.

In the accompanying illustration, Fig. 1, is shown an electric lamp which has been placed upon the market by the M. & M. Electric Company, of New York. It is especially designed for coal mining service, where it is desirable to have a strong light and freedom from any danger

FIG. 1.—ELECTRIC LAMP FOR MINERS.

of firing gases in a mine. It is very light, weighing less than 2 lbs., and will furnish a five-candle light for from three to four hours on a single charge of excitant. When exhausted it can be recharged at an expense of but 3c. by the use of 3 oz. of "electric sand," manufactured by the same company, dissolved in 6 oz. of water. While standing in the position shown in the cut there is no action in the battery, but by turning it upside down it furnishes light.

The case is of a durable composition and the construction of all openings is such that none of the liquid can escape. The lamp is provided with a handle so that it may be carried like a lantern, or, if preferred, an attachment is furnished so that it may be worn on a belt. Fig. 2 represents the lamp as adapted to the use of a bicycle.

A New Aluminum Alloy.—A patent recently granted to R. I. Roman, of London, is for an aluminum alloy consisting of copper, tungsten, aluminum, tin and antimony; for either of the two latter manganese or nickel being at times substituted. The proportions preferred are somewhat as follows, expressed in percentages: Copper, 0·375; tin, 0·105; antimony, 1·442; tungsten, 0·038; aluminum, 98·040. Tungstic acid and cryolite are melted together, equal proportions being employed. When the temperature reaches 1,200° C. aluminum is added so as to produce a 10% compound of aluminum and tungsten. A second alloy is made containing equal proportions of aluminum and copper. These two alloys are then melted together with pure aluminum in the proper proportions to form the alloy required as above; tin, antimony, or their substitutes being added in the necessary proportions; or they may be left out altogether when the copper and tungstic acid originally employed are chemically pure.

THE CALIFORNIA STATE MINERS' ASSOCIATION.

The third annual conference of this association opened in San Francisco, Nov. 19, with nearly 1,000 delegates in attendance. Among those present by special invitation were a score of delegates representing Nevada, Oregon, Washington, Idaho, Colorado and Montana.

Prof. J. H. Neff called the convention to order. Letters of regret were read from Governor-elect Budd, who is too ill to attend; Governor Richards, of Montana; Governor Sheldon, of South Dakota; and Senator White and Congressman Bowers, of California.

Governor Markham was then introduced, and made an address upon the importance of the mining industry and the part it had played in the building up of California.

J. A. Barnham, Congressman-elect from the First California district, delivered a brief address, promising that he would champion the cause of the miners, and that in particular he should urge appropiations sufficient to build dams for the impounding of all the heavier debris created through the operation of hydraulic mining, and that the muddy water which should flow over barriers he would have conducted into the Tule swamps along the Sacramento River. He believed hydraulic mining could thus be carried on and much valuable land reclaimed.

Mr. Ricketts read a paper on Land Office Rulings, sharply criticising the practice of the Interior Department in mining cases. A number of resolutions were introduced and referred to committees. A resolution approving the action of the Debris Commission was passed. On the second day addresses were made by Senator Perkins, Messrs. J. Clunie, C. W. Cross and others. The present officers were re-elected, as follows: President, Jacob H. Neff; secretary, W. C. Ralston; vice president, Samuel K. Thornton; treasurer, Julian Sontag.

The Committee on Resolutions reported urging coast Congressmen to give their best efforts to aid in the passage of bills indorsed by the convention; declaring that the scope of the State Mining Bureau should be broadened; that the bureau had the confidence of the convention, and should be maintained on a proper scale; asserting that the demonetization of silver in 1873 resulted in an era of falling prices; that silver should be restored to its true position and be coined at the ratio of 16 to 1; thanking the Board of Trade of San Francisco for its strong and liberal financial and moral support; acknowledging the assistance of the press; asking Congress to appropriate $50,000 to build trails and roads for opening and developing the mineral lands for sale by the government; favoring immediate action to stop the issuance of patents to the Central Pacific Railroad on pending selections for lands in the mineral section of California, now awaiting approval; and proposing a special committee of five to present to the Department of the Interior facts necessary to secure the rights of mining locators on lands within the Central Pacific grant, and urging that additional national aid be extended toward the improvement of the Sacramento River as far as Redding, so as to help in the development of the immense mineral resources of northern California by furnishing cheap transportation.

The committee also recommended the re-enactment of the law passed at the last session of the Legislature entitled, "The California State Debris Commission," which appropriated the sum of $250,000, to be available when the General Government appropriated a like amount, for the purpose of the building of restraining dams, under the direction of United States engineers.

The report was adopted, after some discussion, on the silver question.

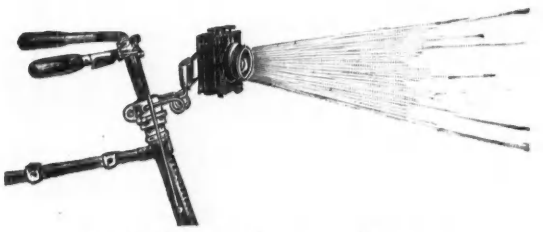

FIG. 2.—ELECTRIC LAMP FOR BICYCLES.

On the third day, Wednesday, November 21st, the Committee on Legislation submitted a long report. It recommended changes in the Revised Statutes of the United States relating to mining locations. In substance, these recommendations provide for the incorporation into the Stewart bill of the principal features of the Newlands measure, setting forth elaborate details regarding location of mineral lands, proving of claims, contests in the Land Office, etc. The report in relation to hydraulic mining recommended a number of verbal amendments to the present laws. The report was approved; and, on motion, the Committee on Legislation was made a permanent body, to act until the next annual meeting of the association.

At an afternoon session Judge Edward A. Belcher and D. E. Hayes were appointed members of the Executive Committee from San Francisco.

President Neff announced as the delegates to the Transmi sissippi Congress, St. Louis, Hugh A. Crawford, E. H. Benjamin and Thomas G. Merrill.

At its meeting for organization Mr. Neff was made chairman of the Executive Committee.

The meeting closed on Wednesday evening, when the members of the Association enjoyed a banquet in the Palace Hotel as guests of the bankers, manufacturers and merchants. William Watkins, president of the Board of Trade, sat at the head of the table.

Mr. Watkins made the opening speech, to which President Neff responded in behalf of the association. Mr. Sutro responded to the toast of the "Mining Industry of the Pacific Coast"; A. S. Hallidie, in behalf of the "Manufacturing Industries"; Irving M. Scott for "The Army and Navy," and Congressman Maguire for "The Law and the Mines." There were a number of other toasts, and the banquet lasted until a late hour.

PRODUCTION OF COAL IN CHINA AND JAPAN.*

In 1893 the exports of coal from Tamsin and Ketung, Formosa, rose to 23,748 tons, an increase of 9,245 tons, or 63·7%, over those of 1892, but decreased in value from 12s. 2¼d. to 10s. 1½d. per ton. During the year the supply was altogether from private pits; the Government mine remaining idle, and the machinery, still in situ, being rusted and ruined owing to neglect and to the water standing in the disused workings. The seams in the immediate neighborhood of the Government mine have been—at least nominally—forbidden ground for private enterprise. Formosa coal is excellent house coal. It is also good, if smoky, steam coal, though not equal to Japanese; but it must be borne in mind that none but surface coal is available here, whereas that produced in Japan is mined from deep seams, and were mines of the same character allowed in Formosa the quality of the output would improve.

Over 3,000 tons of coke was ordered from Belgium for the Honyang Iron Works in China. Although there is coal all around none is mined except in the most crude manner. When the openings once becomes flooded with water no effort is made to drain them, but new ones are made. In Jehang, another province, 651 tons of soft coal were mined in the west, at Hupei. Hard coal is found at Ching Men Chow, about 70 miles below Jehang.

In Japan, the exports of coal during 1893 rose to 1,505,413 tons, an increase of 605,015 tons, or 67·1%, over that of the previous year, while the value fell from 9s. 1¼d. to 8s. 2⅝d. per ton. Japanese coal is rapidly pushing its way westward, and is already largely used by ships coaling at Singapore. Last year about 480,000 tons of coal and 173,000 tons of so-called coal-dust were shipped to that place, Hong Kong and British India. To this quantity must be added a large proportion shipped in steamers nominally for ships' use, but in reality for purposes of trade.

In Hiogo and Osaka the export of coal fell to 52,238 tons, a decrease of 5,812 tons, or 10%, under that of 1892, and in value from 12s. 8½d. to 9s. 11 1/10d. per ton. The incalculable harm done by the struggle in the English coal trade made itself felt in the Far East, and Japanese colliery owners reaped temporary if not permanent advantages. The effects of the coal strike are felt even in Kobe, the price of Moji coal having risen considerably. Before the opening in 1888 of Moji, situated in Kiushire and opposite to Shimonoseki, Singapore was the last coaling station on the way home and the first on the way out. Until the strike English coal only was taken at Singapore, but now Japanese coal is principally supplied. The bad example set by Westerners in their manner of settling trade disputes is being followed by the Japanese, and during the past eighteen months there have been several strikes among them, one by the miners at Takashima, near Nagasaki.

In Nagasaki the imports of Cardiff coal, solely for the use of foreign ships of war, fell to 2,660 tons, a decrease of 3,561 tons, or 57·25%, under that of 1892, but increased in value from £1 8s. 1½d. to £1 9s. 5d. per ton. The total exports of coal from this port during the year were 381,631 tons, a decrease of 36,646 tons, or 8·75%. The value fell to £156,459, a decrease of £63,834, or 29%. Coal for ships' use increased by 20,651 tons, or 16·15%, but decreased in value from 11s. 6¾d. to 9s. 5d. per ton. Coal other than for ships decreased by 44,943 tons, or 23·45%, and in value from 10s. 2¾d. to 7s. 6½d. per ton. Dust coal decreased by 12,353 tons, or 12·65%, and in value from 9s. 9½d. to 7s. 2d. per ton. The net output of Takashima coal during the year was 252,320 tons, of which 127,016 tons were large and 125,304 tons small coal. The sales were 286,784 tons, divided into 150,242 tons small and 136,542 tons large coal. The destinations and quantities, in tons, were:

	Small coal.	Large coal.
Hong Kong	37,990	11,935
Shanghai	34,514	14,085
Yokohama	2,135	25,175
Osaka	7,001	584
Singapore	5,270	11,627
Three other ports	391	4,231
Bunkersete	62,941	68,925
	150,242	136 542

The stocks of Japanese coal available on December 31st, 1893, were only about 3,000 tons, and through the year the mines were unable to meet the foreign demand, local shipping requirements consuming the greater part of the output. While the export of coal from this vicinity decreased, the export from the special ports rose to 990,112 tons, an increase of 281,378 tons, or 39·7%, valued at 7s. 9¾d. per ton. The quantities exported from the various ports were: Kutehrnotsu, 452,524 tons; Moji, 431,259 tons; Thimonoseti, 64,037 tons; Karatsu, 42,292 tons; total, 990,112 tons.

Belgian Blast Furnaces.—The number of blast furnaces in blast in Belgium at the commencement of November was 28, while there were 14 furnaces out of blast at the same date. The total of 28 representing the furnaces in blast in Belgium at the commencement of November was made up as follows: Charleroi district, 12; Liege district, 11; and Luxembourg, 5. The production of pig in Belgium in October amounted to 77,500 tons, as compared with 60,140 tons in October, 1893.

Great Scarcity of Coal in China.—The "China Mail" says: In China there is a great scarcity of coal, and as Japan threatens to place an embargo on the export trade, and freights for cargoes from Newcastle, N. S. W., have been raised enormously, it is not outside the bounds of probability that the shipping trade will suffer. Were the Australians to take the advice of some of their leading journals and push forward their coal at reasonable prices, that coal might manage to be reinstated in the Far East, where it has been driven out by the competition of the Japanese. The foolish coal strikes in England and Wales have already ruined the chances of Cardiff coal out here, except for the British Navy.

Gold Mining in the Philippines.—A British company has formally opened mining works at Mambulao in the island of Luson. There is said to be in that quarter abundance of gold bearing ground. The syndicate has just brought into play there new and powerful machinery and has brought business activity and industrial energy into a region where miners have hitherto been content with primitive and inadequate appliances. The syndicate is said to be conducting operations on a large scale with machinery hitherto unknown in the Philippines. This means the spending of vast sums, but the syndicate looks with confidence to commensurate returns.

*Abstracts from British consular reports.

Method of Making Welsbach Burners.—The Welsbach incandescent gas burner mantles are made of fine cotton netting, carefully washed, to render it pure. The clean cotton mantle is soaked in a complex fluid containing, among other things, a chloride of zirconium. They are then dried, and after undergoing one or two intermediate operations, are strongly heated in a Bunsen flame, by which the cotton is burnt away. The skins, or films, which are left behind consist of the substances dissolved in the fluid just mentioned, and are so fragile as to crumble to dust at a touch. To make them sufficiently strong to bear handling they are dipped in collodion, and, after being trimmed with scissors wetted with methylated spirit, are packed in boxes for distribution. The light obtained as a result of this treatment is comparatively rich in actinic rays, so that it is quite possible to take photographs by means of it.

A New Form of Cellulose.—Cellulose in a dense form, having the appearance of ebonite, and capable of taking a high polish, can be prepared by treating cellulose with a 15% solution of sodium hydrate, and "mercerizing" it. The "mercerized" cellulose is then exposed to the vapor of carbon bisulphide, which forms a soluble compound with it. On dissolving this in water, the carbon bisulphide and sodic hydrate are gradually given up, cellulose being precipitated. If some of the solution is spread on glass a transparent film of cellulose can be obtained. Cellulose can also be deposited from the same solution on woven materials on paper, producing a permanent stiffening or sizing. The solution also forms a substitute for glue, of great strength, and insoluble in water when set. The material can also be obtained in continuous sheets or films.

The Estimation of Sulphur in Pyrites.—Mr. Frank Johnson, chief chemist at the Tharsis mines, Spain, communicates to "Chemical News" details of an improvement in the method of estimating sulphur in pyrites, the object being to obviate the inconvenience attending the presence of ferric salts in the solution from which sulphuric acid is to be precipitated by barium chloride. Mr. Johnson has for the past two years been reducing the ferric salt to ferrous, and at the same time destroying traces of nitric acid by boiling the acid solution with a sufficiency of sodium hypophosphite. This method gives results about ½% higher than are obtained by precipitating in the presence of ferric chloride; besides the method occupies less time and a smaller quantity of solution is used. In carrying out the process, 1 gr. of pyrites is weighed into a flask, 25 c. c. nitric acid added and allowed to stand for quarter of an hour without external heat; then 1½ gr. of potassium chlorate is dropped in and the assay warmed for a quarter of an hour, then boiled down to dryness on a hot plate, the flask being inclined to avoid loss by splutterings; 20 c. c. of hydrochloric acid are next added and half boiled off, 50 c. c. water added and the assay filtered from insoluble matter. The filtrate and washings are made up to about 200 c. c., and then 1½ gr. of sodium hypophosphite added; the assay is heated to boiling when it quickly loses all yellow color. A slight excess of barium chloride solution is then added and the assay allowed to stand for three hours, when, if the supernatant liquor be clear it may be filtered. The liquor is decanted on to the filter, and 1 c. c. hydrochloric acid dropped on the the precipitate in the flask, followed by 100 c. c. of boiling water. After five minutes this also is poured on the filter, and the washing continued as usual. The filtrate and washings amount to 400–500 c. c. Duplicate assays usually agree to less than 0·2 in about 50%. Blank assays show that 0·01 to 0·02 gr. of barium sulphate are to be deducted on this account.

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.

TUESDAY, NOVEMBER 20TH, 1894.

529,441 Method of Treating Ores. Henry H. Eames, Detroit, Mich., Assignor to John M. Nicol, trustee, same place. The ore is heated in a closed chamber, and the heated air drawn off and the metallic oxides condensed.

529,452. Gas Motor. Maurice Lorois, Nantes, France, Assignor to the Societe Anonyme des Moteurs thermiques Gardie, same place. Combination of gas engine, gas producer, air compressor and steam generator.

529,453. Process of Manufacturing Gas. Maurice Lorois, Nantes, France, Assignor to the Societe Anonyme des Moteurs Thermiques Gardie, same place. Superheated air is passed over carbonaceous fuel in combustion.

529,458. Process of Manufacturing Spiegeleisen. Gideon E. Moore, New York, N. Y. The ore is calcined in an atmosphere of reducing gases, and then smelted in a blast furnace.

529,476. Process of and Apparatus for Smelting Ores. Benjamin Brazelle, St. Louis, Mo. The ores are treated with gaseous fuel in a furnace of special construction.

529,536. Machine for Bending Special Shapes of Iron, Steel or Other Metal. Frederick Sotter, Coatesville, Pa. Combination of bending rolls and frame.

529,556. Regenerative Furnace. Alexander Laughlin, Sewickley, and Josef Reuleaux, Pittsburg, Pa. Said Reuleaux Assignor to said Laughlin. The furnace has several chambers, with regenerator for each, all connecting with a common stack.

529,565. Press for Riveting, etc., Metal. La Verne W. Noyes, Chicago, Ill. Motion is given by a shaft and eccentric.

529,587. Method of Grading Ores or Similar Materials. Daniel Brennan, Jr., Bayonne, N. J. The material is forced in a thin stream into a liquid medium and graded by the joint forces of gravity and resistance of the medium.

529,614. Well-Pipe Puller. Jerome S. Cousins, Williamsville, Mich. Combination of shaft, wheel and nut.

529,618. Car Elevator and Dumper. Louis E. Hoy and Harman Hoy, Silver Creek, Neb. Frame for carrying and holding car while dumping.

529,620. Composition of Metal and Method of Making Same. Philip Inch, Washington, D. C., Assignor of eight-fifteenths to Bernard N. Baker, Baltimore, Md. Alloy of tin, zinc and aluminum.

529,678. Pumping Engine. John Cochrane, Barrnead, near Glasgow, Scotland, and William Walker, Salford, Manchester, Eng., said Walker Assignor to said Cochrane. Steam pump with piston valve for the steam cylinder, moved by gearing from an intermediate rock shaft.

PERSONAL.

Messrs. Willard P. Ward and Richard K. Shields, of New York, have been visiting some mining properties in Utah.

Mr. Robert E. Preston, Director of the Mint, wil shortly pay a visit to Colorado, to inspect the Denver offices of the Mint bureau.

Mr. Moreton Frewen, the British writer on bimetallism, was last week in Salt Lake for a few days. He was on his way to Australia, where he expects to spend some time.

Col. Thomas W. Hart, the superintendent of the Bimetallic mine at Philipsburg, Mont., has resigned and Paul A. Fusz, the president of the company, is temporarily filling the position.

MM. Edouard Leuisse and L. Golchart, electrical engineers who have been connected with mines in France, last week visited several mines in the Connellsville district where electrical plants are in use.

Mr. Erskine Ramsay has been made general superintendent of the Pratt mines division of the Tennessee Coal, Iron and Railroad Company. This division includes 17 coal mines, 1,000 coke ovens and 40 miles of railroad.

Mr. W. C. Butler has been appointed superintendent of the mill and concentrating works of the Monte Cristo Mining Company, at Monte Cristo, Washington. Mr J. W. Mercer continues superintendent of the mines.

Mr. Ross E. Browne, Mining Engineer, returned to San Francisco last month from a visit to Quesnal Forks, Cariboo District, British Columbia, where he was engaged in the examination of some hydraulic gravel properties for Montreal capitalists.

Recently a meeting was held in Baltimore to prepare a memorial of Prof. Geo. H. Williams, the eminent geologist, whose early death was chronicled last July. At this meeting a committee was appointed to select a suitable permanent memorial, and this will, in all probability, be a portrait, which will be hung in McCoy Hall of the Johns Hopkins University in Baltimore.

Mr. F. W. Bradley is now manager of the Bunker Hill & Sullivan Mining Company at Wardner, Idaho. Mr. Bradley has a reputation for close working and economical management. It was under his charge that the Spanish mine in California in 1887-88 made a record which has never, we believe, been surpassed on low grade gold ores, the total cost of mining and milling for several months having varied from 52c. to 61c. per ton, never rising above the last-named limit.

OBITUARY.

Christian S. Kauffman, general manager of the Columbia Iron Company, Lancaster, Pa., and one of the best known iron manufacturers in the State, died at Columbia on November 20th, aged 68 years. He was State senator from 1879 to 1882, and was popular among his neighbors.

Ezra Brockway Ely, president of Coxe Bros. & Co., died on November 23d, at his home in Bergen Point, N. J. He was born in 1839, in Hyannis, Mass., and was a son of Ezra B. Ely, a farmer. Mr. Ely began his business career in the employ of the Camden & Amboy Railroad Company, and had charge of the Delaware & Raritan Canal towing-line, owned by that company. Later he had charge of the South Amboy coal-shipping wharves of the road, now known as the United Railroads of New Jersey Division of the Pennsylvania Railroad Company. Subsequently he went into the coal business himself, organizing the firm of B. F. Ely & Co. This was about 1867. On the death of E. F. Ely the firm of E. B. Ely & Co. was formed. That firm failed in 1875, and in January, 1877, E. B. Ely and S. W. Ely, as agents, took charge of the selling organization of the firm of Coxe Bros. & Co. That arrangement continued until Mr. Ely was elected president of the corporation organized out of the firm of Coxe Bros. & Co. and continued under that name. Besides being the head of that corporation, Mr. Ely was the vice-president of the Delaware, Susquehanna & Schuylkill Railroad Company, and also a director in the other corporations connected with the mining, transportation and selling of the coal handled by Coxe Bros. & Co. He was also a director in the Mechanics' Trust Company, of Bergen Point; the Bayonne Hospital and the Bayonne Building and Loan Association, and was one of the most active promoters and supporters of the many charitable and philanthropic institutions of that place. At one time he was vice-president of the New Jersey Athletic Club at Bergen Point where he lived for 12 years. Mr. Ely married Miss Hallett, of Hyannis, Mass. His widow and two children, a son and a daughter, both grown up, survive him. The son, Lester Ely, is connected with the corporation of Coxe Bros. & Co.

SOCIETIES AND TECHNICAL SCHOOLS.

American Institute of Electrical Engineers.—Mr. Ralph Pope, the secretary, has removed the office of this association to Room 1009, Havemeyer Building, No. 26 Cortlandt street, New York. This is the business office; the meetings will continue to be held at No. 12 West 31st street.

Anglo-American Club, of Freiberg.—The twenty-first anniversary of the founding of this club will be celebrated on Wednesday evening, December 5th. This coming of age of the club will be duly honored. The meeting will be held in the Gewerbehaus, and there will be a concert, followed by dancing. A large attendance is expected.

American Society of Civil Engineers.—At the regular meeting in New York, November 21st, a lecture was delivered by Mr. Cope Whitehouse describing his plan for turning the floodwaters of the Nile into a reservoir to be established in the Wady Raiyan and using this store water in the dry season. The reservoir will be substantially in the depression below the level of the Nile valley, and on the site of the ancient lake Moeris. About 10 miles of canal will connect it with the Nile. Mr. Whitehouse has been advocating this plan for some time and produced apparently conclusive arguments in favor of its adoption.

Engineers' Club of Philadelphia.—At the regular meeting, November 17th, Mr. R. A. Cummings, as chairman of the committee, presented a report on the proposal of Mr. Corthell for the establishment of an international institute of engineers. The report was set aside to be considered at the next business meeting. Mr. Geo. A. Bullock made some remarks on "Street and Highway Improvements in Philadelphia," which called out a lively discussion. Mr. John L. Gill, Jr., exhibited and explained a series of photographs taken in the neighborhood of Shamokin after the recent explosion there of 27 boilers, which were inspected with much interest.

Western Society of Engineers.—At the regular meeting in Chicago, November 7th, a number of applications for membership was received. Several elections to membership and as associates were announced. Reports were received from the treasurer and librarian. The secretary announced the death of Mr. Joseph P. Card, a member. After some discussion upon the subject, an informal vote was taken showing a majority in favor of occasional excursions to points of interest and important works within reach of Chicago. After some further discussion it was resolved that the society should join in the Municipal Improvement League of Chicago, and Mr. C. L. Strobel, R. W. Hunt and L. E. Cooley were appointed a committee to represent the society in the council of the league. A committee was appointed to nominate officers to be voted for at the annual meeting. A circular letter in relation to the Association of Engineering Societies was received and referred to; also a paper from Mr. Corthell in relation to an international engineering institute. Mr. E. F. Osborne read a paper on "Refrigeration by Carbon Dioxide," which was briefly discussed.

American Society of Mechanical Engineers.—The fifteenth annual meeting will be held in New York City, beginning on Monday evening, December 3d. The meetings will be held in the Society's rooms, No. 12 West Thirty-first street. The opening meeting on Monday evening will be given up to the usual preliminary business and the discussion of topical questions. On Tuesday there will be two sessions, a business meeting in the morning at which the reports of officers and committees will be presented and the general business disposed of. The evening session will be for the reading and discussion of papers. On Wednesday morning a session will be held for reading and discussion of papers; in the evening the President will deliver his annual address after which there will be a reception for members and ladies. On Thursday there will be a single session, in the morning, devoted to topical discussions and presentation of papers. The concluding session will be held on Friday morning, for the reading of papers and the closing business. Among those who will present papers at this meeting are: S. S. Webber, F. W. Dean, Prof. Gaetano Lanza C. V. Kerr, Charles T. Porter, Prof. W. F. M. Goss, W. J. Keep, G. M. Sinclair, C. J. Field, Thomas D. West, M. P. Wood, G. W. Bissell, Prof. D. S. Jacobus, J. H. Barr, J. C. Platt, A. W. Robinson, L. S. Randolph, G. R. Henderson and D. L. Barnes. It is further announced that the summer meeting will be held in Detroit.

Engineers' Club of Cincinnati.—The regular monthly meeting of the club was held November 15th with 25 members and several visitors, members of the joint committee on ship canal present. Committees were appointed to arrange for the entertainment of the Ohio Society of Surveyors and Civil Engineers on the occasion of its annual meeting to be held in Cincinnati in January next. The subject for discussion for the evening was the proposed ship canal from the lakes to the Ohio River, and for the surveys for which Congress has appropriated $20,000. Colonel Anderson opened with a general review of the subject and a statement of the objects and benefits to be derived from the construction of a canal, and urged action on the part of the citizens of Cincinnati to secure the route leading from Toledo to Cincinnati. Mr. Burke followed with a discussion of the feasibility of the various routes proposed, and stated that the sub committee, of which he is a member, of the joint committtee on ship canal from the various commercial bodies of the city, would recommend that the time for the report of the engineers engaged in making the surveys be extended, that the restrictions as to dimensions be removed so that the engineers might be free to make recommendations on that point, and if possible that the appropriation for the surveys be increased to allow of more extended and elaborate surveys being made. Mr. Ruggles discussed the question from the standpoint of the effect the building of a ship canal would have on the business of the railroads with which it would compete in transportation.

Engineers' Club of St. Louis.—At the regular meeting, November 21st, it was, on motion, ordered that a committee of three be selected by ballot to make nominations for officers for 1895, reporting at the next meeting. On balloting, Messrs. C. M. Woodward, J. B. Johnson and Robert Moore were chosen. The Committee on Library submitted a subscription list, with a request for signatures, the object being to form a library fund of $150 per annum to make up any deficiency in the club appropriation. Prof. C. M. Woodward then read his address on "The Relation of Technical to Liberal Education," explaining that the paper had originally been delivered before the Council of Education, a body of 60 teachers. The paper first defined at some length the terms "technical" and "liberal" as used in this discussion. The work of the civil engineer, the mechanical engineer, the electrical engineer, the architect and the chemical engineer were clearly pointed out. The prominent features of a liberal education, both as it formerly existed and as it is now modified by the widespread system of electives, was pointed out. The importance of the many new elements in education was explained. The best technical and liberal trainings nowadays cover much the same ground. Prof. H. A. Wheeler reported the results of a recent visit to Cincinnati, where he had gone to examine the Simanoin desiccation process for the reduction of garbage. He explained the system in detail, and compared it with the Merz system, from which it differed principally in that the desiccation and oil extraction were carried on in the same tank, instead of in separate vessels. He considered the process inferior to the Merz, both in its practical operation as shown in Cincinnati, and in the principles underlying its use.

INDUSTRIAL NOTES.

The Kennedy Valve Manufacturing Company has removed its salesroom from 52 Cliff to 75 John street, New York.

The net earnings of the Tennessee Coal, Iron and Railroad Company are estimated at $72,700 and fixed charges $59,700.

The manager of the Export Coal Company, at Pensacola, Fla., states that the coal chute at Pensacola, recently destroyed by fire, is now almost completed and will be placed in operation shortly.

An act to incorporate the Nicaragua Canal Company passed the House in Vermont and has gone to the Governor for his signature. This new company succeeds the Nicaragua Canal Construction Company, which was sold by the receiver some time ago.

It is expected that the Lookout Rolling Mill, at Harriman, Tenn., will be in full operation again by January 1st. This is the largest manufacturing plant at Harriman, and before the business depression began it made and shipped iron to Pittsburg at a profit.

It is reported that a proposition has been made to lease the Bristol furnace at Bristol, Tenn. The lessees propose taking the furnace for two years, paying $14,000 per annum for the property. The receiver has not yet decided whether or not to accept the proposition.

It is reported that the North Alabama furnace may go into blast shortly. Arrangements are under way to provide capital for operating, and, if successful, the plant will be started. The furnace was blown out last spring because of the unsatisfactory iron market.

The Sperry Electric Railway Company has just issued a very neat 40-page catalogue illustrating its single motor equipment, in which the driving wheels are all coupled and revolve in unison. It is claimed that this arrangement affords greater efficiency than where a separate motor is coupled to each axle.

An excellent example of a fine leather belt is shown in an order just filled by Messrs. Fayerweather & Ladew, of New York. The belt was of three ply oak tanned leather, 116 ft. in length, 75 in. in width and weighing 2,244 lbs. It was manufactured for the Newark Electric Light and Power Company's plant, Newark, N. J.

The Nassau Electrical Company, of New York, reports the sale of its electrical novelties as being good. Among these is the Capo Farad pocket blasting battery, which is well adapted to mining service. Considering the miniature size of this battery, the voltage and discharge are surprising. Each cell has a capacity of 3½ ampere hours at 1¼ volts.

The Gold Bluff Mining Company, of Downieville, Sierra county, Cal., has recently equipped its mine with electric machinery as follows: One 115 H. P. Wenstrom dynamo; one 6-in. Gould's triplex pump, driven by Wenstrom motor; one 18-in. Davidson electric ventilating fan; one 5-ft. Pelton water-wheel

with differential governor, and 250 16-c. p. incandescent lamps.

The C. & C. Electric Company has recently shipped an electric mining plant to Maiz Bros., Monterey, Mexico, consisting of a 40-H. P. electric hoist; 25-H. P. Root blower driven by electricity, together with several motors for various uses in the interior of the mine. The power is to be furnished by a 100 H. P. C. and C. generator, also shipped with the order.

A press dispatch from Birmingham, Ala., says that the city council of Bessemer has closed a contract with the Bessemer Land and Improvement Company by which the city buys the water works from the company for $125,000, and the company agrees to expend that amount and $200,000 more in the erection of a steel plant. The company's officers say that work on the steel plant will begin at once.

The Goulds Manufacturing Company, of Seneca Falls, New York, has in press an edition of "Power Pumps" for every service. This book will be 6¼ by 7¾ in., 96 pages, handsomely bound, devoted entirely to efficient power pumps and their applications. In connection, a large number of sketches is shown, illustrating machinery in operation for different service, etc., etc. The book will contain much information of value to engineers and pumpmen generally.

The Berlin Iron Bridge Company, of East Berlin, Conn., will furnish the new power station for the United Electric Light and Power Company on East Twenty-eighth street, New York City. The powerhouse is 100 ft. wide and 200 ft. long, and the engine-room 100 ft. wide and 80 ft. long; the boiler-room is 56 ft. wide and 100 ft. long, the whole covered with the Berlin Company's patent anti-condensation corrugated iron roofing. The coal pockets in the boiler-room have a capacity of 3,000 tons.

At a meeting of the Board of Directors of the Norton Iron Works, incorporated, Ashland, Ky., held on October 24th, a committee was appointed to take up the question of leasing the blast furnace of this concern. The cut nail factory resumed operations on Monday, November 12th, after a shutdown of about eight weeks, and the prospects are that it will continue in operation for the next two months at least. The factory contains 126 nail machines, the annual capacity being 350,000 kegs of nails.

The Queens County Boiler Works, Long Island City, N. Y., have recently made the following sales: One 66 × 30 ft. tank for Standard Oil Company, Fall River, Mass.; one 40 × 30 ft. tank for Standard Oil Company, New Bedford, Mass.; four 10½ × 15 ft. for Standard Oil Company, at Hazleton, Pa.; two asphalt stills, 10 ft. diameter by 20 ft. long, Trinidad Asphalt Company, New York; one 75-H. P. boiler to Long Island City Water-Works; two 60-H. P. boilers, Queens County Court House; one 75-H. P. boiler, Geo. Call & Co., Philadelphia, Pa.

Geo. L. Colgate & Co., of New York, report large sales of electrical specialties. At the present time they are about three weeks behind orders for the Climax iron clad resistance specialties. The Linton and Southwick quick break knife switch, for which they are general agents, is in demand and the manufacturers are unable to fill orders. This condition, however, will soon be overcome, as they are increasing their manufacturing facilities and are about ready to place upon the market something new in electric switches.

All the preliminaries in the way of procuring a charter, making surveys, etc., for the proposed iron and steel mill at Hyde Park, Pa., have been completed and the order given to rush the work to a finish. The $75,000 stock has all been subscribed for, and the following officers elected: President, J. D. Orr; vice-president, J. M. Fiscus; secretary, E. F. Schanwecker; treasurer, T. S. Irwin. The main structure will be built of iron, 113 × 175 ft.; annealing-house, 50 × 100 ft; wareroom and packing-house, 50 × 100; boiler house, 65 × 75 ft. The mill will be fired with natural gas, and its product will include black plates, sheet steel and iron. It is intended that the plant will be in operation by March 1st.

The Mobile Coal Company, Mobile, Ala., is making extensive improvements in the facilities for handling coal at its large yards and docks, which, when completed, will enable the company to transfer 3,000 tons per day quickly and cheaply. Only the most improved apparatus will be employed. For the rapid handling of coal from the vessels that bring it to the docks at Mobile from Philadelphia, there has just been installed a Hunt coal-hoisting elevator of the latest type, designed by the C. W. Hunt Company, New York. This elevator will lift the coal from the vessel and dump it into cars on an elevated trestle, by means of which it will then be carried into pockets for its storage or loaded onto cars for shipment to New Orleans and other points.

Orders for goods are not usually referred to as being so many feet in length, but the present instance is an exception to the rule. The manufacturers' agent, C. H. Tucker, Jr., of New York, has, during the present season, filed one order for mining supplies which, written upon the ordinary bill head paper having usual ruling and every line filled, measured 23½ ft. in length. When packed there were 585 cases requiring nine truckloads to get them to the wharf. The goods were sold to the South American Improvement Company, in Bolivia, for its Favorite mine, and consisted of groceries, hardware, clothing, and a complete hydraulic mining plant. An instance of "hustling" was one of the features of this shipment. There were but eight days between the receipt of the order and the sailing of the vessel which was to carry the goods, and it was necessary to buy a Giant nozzle in San Francisco. A telegram was sent at 9 a. m. asking if same could be supplied. At 11:30 an answer was received giving price and stating that $72 would be required to express same. The money was telegraphed, and at 3 o'clock a message was received saying that the shipment had been made. In six days' time the nozzle was duly received. One of the requirements of the above order was that every package should be painted red, so that it would be easily distinguished from other consignments.

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.

ARIZONA.

Yuma County.

Harqua Hala Gold Mining Company, Limited.—The following is the estimated return for the month of October: Crushed during the month, 3,273 tons; estimated gross value of gold produced, $14,000; miscellaneous revenue, $500; total revenue, $14,500. The estimated total expenses were $12,400, leaving the estimated profit for the month $2,100. The secretary says: This return is much under the estimated profit for the month as reported from week to week from the mine, and Mr. Raymond, the new manager, cables that he is sending an explanation by mail. Mr. Raymond took charge of the property October 18th.

CALIFORNIA.

Amador County.

Anita Gold Mining Company.—Articles of incorporation of this company have been filed. The incorporators are F. Reichling, of Oakland; Daniel E. Hays, of Mill Valley; John Barton, of Alameda; George Goodman, of Oakland; and Willis E. Davis, of San Francisco. The company is capitalized at $10,000,000, divided into 100,000 shares. The company is prospecting the old Bright mine, on Shober Hill, under the direction of P. Reichling. Several men are engaged at present in drifting for the ledge. They sunk a shaft between the croppings of the hanging and of the foot walls about 50 ft., and from that drifted north and now are crosscutting each way. As soon as the location of the walls is fixed a permanent shaft will be located, a steam hoist erected, and work pushed rapidly unti 500 ft. are reached, when the ledge will be prospected. L. Di Vecchio is foreman of the work.

Nevada County.

Badger Mining Company.—The stockholders of this company have bonded their mining claim, located on Pike Flat, to a company of San Francisco capitalists. The mine has been worked from time to time with some degree of success. The principal owners of the property are J. C. and Edward Coleman. A. Morehouse, Peter Johnston, John F. Kidder, E. H. Brown, John Glasson and T. J. Michell.

Erie Group.—The properties at Graniteville, known as the Erie and Dublin Bay mines and the Edison claim—five claims—were sold as one proposition last summer by Charles M. Joyce, of Chicago, to a Chicago syndicate. The company has taken possession and begun work, which will be prosecuted on a large scale next spring.

New York Consolidated.—James Burke is engaged in reopening this old claim on Kate Hayes Hill, Grass Valley, between the Kate Hayes and W. Y. O. D. mines. In the early days some very rich rock was taken out. The shaft is now down 100 ft., and the ledge has already been encountered; it is about 2 ft. in size and shows some free gold.

(From an Occasional Correspondent.)

Erie Mines.—This group of mines was purchased recently by Chicago parties, who are driving a tunnel to cut three of the large ledges at greater depth. Some of these properties were producers when worked many years ago during the era of expensive methods and inexperienced management.

Riverside County.

(From our Special Correspondent).

Golden Chariot.—Mr. J. M. Day, San Francisco, has made a deal with Jerry Shea, whereby he has obtained control of the Golden Chariot, the south extension of the Santa Rosa, and will soon begin developing the same.

Santa Rosa Mining Company.—This property was formerly known as the Rosalia. It is situated about six miles west of Perris, in Pinnacate district. Many years ago this vein was worked to water line, 50 to 150 ft., by Mexicans. Since that time it was worked to a limited extent by Americans, who had a small hoisting and pumping plant and light 5-stamp mill. It was not a success. The workings on the surface extend in a series of cuts and cones for about 1,000 ft., indicating a long shoot. A year ago or so the property passed into the hands of a Mr. Blaisdell, who sold it to a corporation of Eastern people, known as the Santa Rosa Mining Company, W. H. Griffith, superintendent. In September last the mine was full of water. Machinery for hoist and mill had commenced to arrive. The intention of the management, as expressed, was to wait until the hoisting and pumping machinery was in place before attempting to unwater the mine. At that time it was stated that a new shaft had been sunk to a depth of 200 ft., exposing a 3-ft. vein of rock of good grade. The quartz in this mine mills from $7 to $30 on an average of $12 to $15. Sulphurets are said to assay over $100 and constitute 1 to 3%. These statements, it is believed, come within the limits of truth. The mill, etc., were to have been finished in November. The mine makes considerable water. The formation is syenitic granite.

COLORADO.

Boulder County.

Humboldt.—The stamp mill is being erected on this mine at Ward.

Pride of Ward.—This mine, at Ward, has been leased and bonded to J. P. Hagan, who intends to develop and extend the old workings.

El Paso County—Cripple Creek.

Rosebud Mill.—On July 23d this mill at Cripple Creek was destroyed by fire. It was insured for the sum of $50,000 in 12 companies doing business in the State of Colorado. Within 90 days previous to the fire some $20,000 of improvements had been added in the way of chlorinating and cyaniding appliances. The mill was the best in the State, if not in the entire West, for the treatment of ores. Its cost amounted to over $100,000. The stock of the Rosebud Mining and Milling Company is nearly all held by the Societe Anonyme des Mines de Lexington, having its principal office in Paris, France. This corporation has invested several million dollars in mining enterprises in the West, of which the sum of $185,000 is invested in Cripple Creek, and is the only company that has made any investment, save strictly local capital. Since the fire the insurance companies have been contesting payment of losses, and it is possible that suit may be brought in the Federal Court at Denver to enforce payment. The reasons given, so far as have been shown, appear to indicate a desire on the part of the companies to avoid payment because of some technical and immaterial points brought forward by their adjuster. After agreeing to an umpire, should the adjusters, appointed separately by the insurance and Rosebud companies, disagree, the former now decline to act on his decision.

(From our Special Correspondent.)

Dolly Varden.—This mine, on the north slope of Raven Hill, ships about one car of ore per day, but, unfortunately, not much 20-oz. ore. The grade of ore dropped for a time pretty low; but with an ore shed the sorters are taking more pains and the quality of ore again reaches two figures in ounces. The present lessees are in a dilemma; they have mineral and the owners want it. Strike mineral in this camp and you strike litigation, and the only reason your correspondent has not been involved in mining litigation is, no mineral. The ground of contention is somewhat as follows: The lessees obtained a lease from the Enterprise Mining Company, signed by the president and secretary. A little work was done when the lessees asked for an extension of time, as well as a reduction of royalties, which was granted, and the lease signed the second time by the same officials. The complaint now is, that the officials signed the second lease without the consent of the stockholders. The company accepted the royalties, which for a time amounted to $100 a day, and still accepts them, and the same officials that signed the leases signed the complaint. The lessees should certainly know better than to "run against an ore body," and thereby avoid litigation.

La Plata County.

(From our Special Correspondent.)

Ashland.—A new strike is reported from this property, which exceeds anything previously recorded of the mine. The vein is 4 ft. wide, and from a lot of ore taken out and brought to Durango for test the following results were had: First class, $2,318, and second class $97 per ton, the greater part of the values being in gold. J. P. Eaker is working the mine under lease, and has now everything ready to begin shipments in the spring.

Baker Contact.—The 10-stamp mill has now been in operation for about three weeks, and although at this writing no clean-up has been made it may be stated that the plates will save more than double the amount anticipated or expected. The undertaking was started on the proposition that $4.50 could be extracted by stamp-mill process. It is, therefore, quite certain that the 100-stamp mill will be erected in the near future. La Plata Mountain has now proved by actual test that it has a large body of free milling ore, so large that a 100-stamp mill can be supplied.

Brunswick.—A new shaft is being sunk and at a depth of 15 ft. a body of ore was struck, which much resembles some of the best from the Durango Girl.

Columbus.—A force of men is at work sinking on the ore chute, and as the shaft goes down the quality of ore is improving in tellurium and free gold.

Mountain Lily.—This mine is now a steady shipper; 14 men are employed and the output is about two tons per day of $100 ore, all of which goes to the smelter at Durango.

Mt. Lewis Mining and Milling Company.—This company, owner and operator of the cyanide mill on Junction Creek, has brought up machinery needed to increase the capacity of the mill from 10 to 20 tons per day and will have the plant ready for operators as soon as the snow is off the hills.

Small Hopes.—Shaft and bunkhouses are built on this property and work will be prosecuted steadily during the winter.

Standard Smelting and Refining Company.—This company, of Durango, has decided to put up another lead furnace as the supply of ore of this kind is more than one furnace can handle.

San Miguel County.

Allegheny.—The sale of this mine at Telluride to Robert Billings has been concluded and the money paid. The capacity of the mill is to be doubled and other improvements made.

IDAHO.

Bingham County.

Idaho Mining Company.—This company has just been organized. The capital stock is fixed at $150,000, divided into 150,000 shares. Ezra Thompson is president; Joseph R. Morris, vice-president; William A. Wilson, treasurer; Charles Mader, secretary; and these, with Charles C. Dey, form the board of directors for the ensuing year. The property of the company consists of the Robinson and the Austin lode mining claims and a mill site all situated in Mount Pisgah mining district. The incorporators are residents of Salt Lake, Utah.

Canyon County.

It is stated that the coal deposits lately discovered on Willow Creek near Emmett are to be thoroughly explored with a view to developing them on a large scale.

Shoshone County.

Morning Mining Company.—This mine at Mullan, under the co-operative plan of Mr. D. B. Huntley, is said to be looking finely. There is a good body of ore in the lower tunnel and in most of the upper workings. No stoping has been done in the lower tunnel, but drifting is being steadily prosecuted. There are 150 men working in the mine in addition to those employed in the mill, on the railroad and on outside work. They are a carefully selected body of men, and are taking out lots of ore. It is hoped that there is no truth in a current report, that the local miners' union will attempt to stop the operations at the mine.

INDIAN TERRITORY.

The United States Mine Inspector for the Territory gives the following as the tonnage of each company in the district during the fiscal year ending June 30th, 1894: Osage Coal and Mining Company, 226,523 tons; Choctaw Coal and Railway Company, 333,616 tons; Atoka Coal and Mining Company, 133,480 tons; Southern Coal and Lumber Company, 261,596 tons; Tebo Coal and Milling Company, 3,600 tons; Choctaw Coal and Mining Company, Johnstown, 2,500 tons; sundry slope and strip pits, 5,000; total, 966,315 tons.

KANSAS.

Chautaugua County.

Brush Creek Coal Mining Company.—This company has been organized to take the property of the old Kansas City Clay and Coal Company at Leeds, and to operate the coal mines there.

MICHIGAN.

Iron—Gogebic Range.

Ashland Iron Mining Company.—The reorganization of the management has been completed, and a force of 40 men has been put at work in the mine, which will be increased to 125 as soon as possible.

Iron Belt.—Preparations are in progress to begin active work at this mine.

Iron—Menominee Range.

Chapin Mining Company.—This company, of Iron Mountain, has filed articles of association. The capital stock is $500,000 and the incorporators are M. A. Hanna, C. A. Hanna, A. M. Robbins, and others. This is the reorganization of the old Chapin company heretofore referred to.

MISSOURI.

Bates County.

Rich Hill Coal Mining Company.—This company is putting down a new shaft near Brushy Mound, northwest of Rich Hill, where borings have shown the existence of a good vein.

MONTANA.

Silver Bow County.

Anaconda Mining Company.—The preliminary steps toward the construction of a branch line of the Union Pacific from Melrose up Camp Creek to the new mines of the Anaconda company are well under way, says the Butte "Inter-Mountain." The road will run up Camp Creek for about 10 miles, where it will switch off and follow Wickiup Creek up about four miles to the group of 19 claims owned by the Anaconda company. The entire distance is almost on a dead level. There will be no rock work or short curves, and only three small bridges will have to be built. The estimated cost of the branch is $100,000, and it is understood that the Anaconda company has guaranteed the Union Pacific receivers 7% on the investment. There is no doubt that the mines of the Camp Creek district will be opened up rapidly after the completion of the branch line. Four of the claims belonging to the Anaconda have already been partially developed, and large bodies of rich copper ore have been encountered on all of them.

Butte & Boston Mining Company.—The mammoth Reidler pump which has been ordered for the Silver Bow shaft No. 1 will be placed at the 1,000-ft. level. This is the greatest producer of the Butte & Boston Company, says the Butte "Inter-Mountain." At the 1,000 ft. station an excavation about 20 ft. high, 50 ft. long and 20 ft. wide has been made for pumping apparatus, which will have a capacity of 2,000 galls. of water per minute.

Estella.—This mine, says the Butte "Inter-Mountain," will soon pass into the hands of a company of which Silas F. King is the agent, negotiations to that end being now in progress. The Estella is the property owned by James A. Murray, over which the lawsuit between Mr. Murray and F. A. Henize originated. The purchase price, it is said, will not be very far from $100,000. This is one of the richest copper properties in the district.

High Ore.—The shaft-house recently destroyed by fire at the High Ore shaft No. 2 is being replaced by another which will in many respects be superior to the one which went up in smoke some weeks ago. At the new shaft work will be prosecuted with greater vigor than ever during the winter. This is the property upon which the Anaconda intends to make the test of the permanency of this district's great copper deposits. Preparations have been made to develop this shaft to a depth of 4,000 ft., making it the second deepest in the world.

NEVADA.

Storey County—Comstock Lode.

Occidental Consolidated Mining Company.—At the annual meeting in San Francisco last week 38,400 shares of the outstanding stock were represented and George R. Wells was re-elected president, H. Zadig vice-president and Nat. T. Messer, E. B. Holmes and A. S. Wollberg directors, with A. K. Durbrow secretary and J. H. Kinkead superintendent. The company has $467 on hand.

The following are extracts from the recent weekly official letters from the mine superintendents:

Alta.—On the 725 level a west crosscut from the bottom of the north winze was extended 21 ft.; nothing favorable was encountered. The west drift on the 825 level was advanced 28 ft.; total length, 587 ft. We are running south on a streak of fair grade milling ore in the hanging wall of the old ore body, about 10 ft. distant, and parallel with the same, 2 ft. wide the average assay value of which is $26 per ton. Having milled 176 tons of ore.

Andes.—On the 420 level the west crosscut from the north drift from the top of the upraise up 50 ft., has been advanced 12 ft.; total length, 72 ft. Formation soft porphyry.

Best & Belcher.—On the 200 level the joint winze started in west crosscut No. 4, on our south boundary, has been sunk 9 ft., passing through quartz. On the 800 level the north drift started from west crosscut No. 4, 570 ft. from the main north drift, has been advanced 17 ft.; total length, 79 ft.; face in quartz and porphyry.

Consolidated California & Virginia.—On the 1650 level we have continued to stope out ore from the new ore body from the sixth floor up to the eleventh floor, and on the eleventh floor have advanced one set of timbers to the south in ore, the top being in porphyry and quartz. We have extracted during the week from these stopes 350 carloads, about 347 tons, of ore, the average assay value of which, per mine car samples, was $79 30 per ton. No work has been done in the winze during the week. On the 1750 level have continued work in the south drift, which leads the way for connection with the ore body on this level. The face of the drift is in hard rock.

Gould & Curry.—On the 200 level we have started jointly with the Best & Belcher Company to sink a winze on our north boundary. The same has been sunk during the week a distance of 9 ft., passing through quartz. The south drift started from west crosscut No. 5, 1,115 ft. from northwest drift, has been extended 13 ft., passing through porphyry clay and quartz; total length 364 ft. At the end of this drift we have started a west crosscut No. 4, and advanced it 8 ft.; face in porphyry.

Hale & Norcross.—On the 975 level have advanced north drift from the end of No. 1 west crosscut 8 ft.; total length, 18 ft.; face in porphyry and small stringers of quartz. The small ore seams continue about the same as last report. Have had to ease timbers in the west crosscut on this level the past week. On the 1,100 level are working on the third floor above this level. The roof shows a little ore.

Mexican.—On the 1,465 level the drift running north from the end of west crosscut started from the op of the upraise which was carried up 45 ft. above the sill floor of this level at a point 40 ft. west from the main north drift and 100 ft. north from the south line of the mine, has been extended during the week 18 ft.; total length 118 ft. Face in porphyry and quartz carrying some value. As joint work with the Ophir Company are making repairs in the Ophir shaft on the 1,100 level and upward.

Ophir.—On the 1,465 level the west crosscut, 62 ft. up, from the upraise carried up 80 ft. above the sill floor of this level, at a point 70 ft. in from the mouth of the crosscut run east from the main north lateral drift and 124 ft. north from the main east crosscut from the shaft, was extended 18 ft.; total length, 124 ft.; continuing in porphyry and quartz of low assay value. In the Central Tunnel the drift running southeast from the end of the south drift from the bottom of the winze, on the 250 level of the mine, was extended 32 ft.; total length, 132 ft. The average assay value of the ore in the face is $17.60 per ton. The upper portion of the face carries the better part of the ore, while the bottom shows a mixture of porphyry and quartz. Have extracted from this drift during the week 63 tons of ore averaging $52.33 per ton.

Union Consolidated.—The west crosscut from the south lateral drift run from the joint west drift, at a point 1,520 ft. west of the shaft, has been advanced 24 ft.; total length, 240 ft.; face in clay and porphyry, with stringers of quartz.

West Consolidated Virginia & California.—On the 1,100 level during the past week the west crosscut run from a point 320 ft. north of the 1,100 level station has been extended 19 ft. in hard syenite, and is now in a total distance of 1,304 ft.; face in a hard porphyry formation, with some hot water coming in. The trend of rock is northwest and the dip nearly perpendicular. The flow of hot water has slightly increased. The temperature of the drifts is 104°. On the 900 level the east crosscut from the Sierra Nevada north lateral drift, which was run from the joint west drift at a point 1,520 ft. west of the shaft, has been advanced 23 ft.; total length, 240 ft.; face in clay and porphyry.

NEW JERSEY.

Morris County.

A syndicate has purchased 30 acres of land near Whippany in which there is a deposit of clay from which firebrick and tile will be made by a company organized for that purpose. There is some probability of the construction of the railroad line from Whippany to Morristown, for which surveys were made several years ago.

NEW MEXICO.

Sierra County.

Charter Oak Gold Mining Company.—This company has been organized for the purchase and operation of mining claims, both lode and placer, in the Las Animas mining district in Sierra County. Also to erect mills and reduction machinery in the Omaha, Good Hope, Oro, Whistle Prick and F. W. Parker Placer mining claims. The company is stocked at $1,000,000, to be divided into shares of $1 each and to be forever non-assessable. The company is to run for 50 years and its principal office, where stockholders' and directors' meetings shall be held, is Fairfield, Ia. The principal office is to be at Faulkner, Sierra County. The incorporators are Ellsworth Turney, Elmer A. Howard and William H. Mohr, of Fairfield, Ia.; and Rodney H. Fry and Frank W. Parker, of Sierra County.

Taos County.

Iron King.—The owners of this mine in the Cochiti district are building a pipe line to carry water from the mouth of the Cochiti canyon to their stamp mill at Allerton. This line will be about two miles long. As soon as this is obtained work at the stamp mill will be resumed, and the ore gotten out of the Iron King will be treated at Allerton for shipment.

Gold Hill Tunnel.—This tunnel at Bland is now in 265 ft. and work is being pushed.

NEW YORK.

Erie County.

Depew Natural Gas Company, of Buffalo.—This company has been organized to bore for and distribute natural gas in Erie County. Capital, $10,000; directors, John O'Brien, Frank L. Phennig, George and K. M. Clark, of Buffalo.

Springville Natural Gas Company.—This company has been organized to produce and supply natural gas in the towns of Collins and Concord, and the village of Springville. Capital, $20,000. Directors, H. D. Smith, M. N. Brooks, H. G. Leland and Frank D. Smith, of Springville.

Warren County.

According to a press dispatch, Mr. Samuel M. Palmer has filed, with the Secretary of State at Albany, two claims for gold mines discovered in Glens Falls. The first is in the center of Dix avenue, through lands of Walter G. Rogers and the estate of John Keenan and others, northwesterly through Rosekranz Swamps. The second is at the junction of Platt street and the Delaware & Hudson Railroad. The discoverer has samples of the rock, which were assayed at the United States Assay Office in New York, and yielded gold. Mr. Palmer will not begin operations for some time, as he is engaged for a prospecting tour in Alabama.

Such reports, as we have noted elsewhere, are not altogether new, but must be accepted with great caution.

OREGON.

Baker County.

Sloan & Haskell Placers.—These mines at Susanville, recently purchased by an Eastern syndicate, are also to be operated on a more extensive scale than ever the coming year. A large shipment of hydraulic pipe is on the way from San Francisco. Other improvements are to be placed on the mines at once.

Susanville Placers.—The new owners are arranging to work on a large scale. A shipment of 1,000 ft. of 15 in. hydraulic pipe has been made from San Francisco and will be put in place on the ground this fall. A new ditch is being constructed and when finished the hydraulics will be given a pressure of 360 ft., about 200 ft. more than formerly.

Linn County.

According to local advices a property in the Quartzville district, comprising, in addition to a group of eight gold-bearing quartz mines, a large field of placer ground embracing 400 acres, has been sold to parties who will work on a large scale. Mr. Wm. B. Lawler, of Salt Lake City, is at the head of the enterprise. Associated with him is Mr. Horace Hotchkiss, of New York city; Sourdis Brothers, of Paris; J. F. Medina, of Paris, and others. The property was inspected by Mr. Alfred Rickard and other mining engineers before the purchase was closed.

PENNSYLVANIA.

Anthracite Coal.

Lehigh Valley Coal Company.—This company is preparing to open two new collieries in the Mid-Valley region near Mt. Carmel. Contracts have been let to Murray, Dougal & Co. and the Carlisle Manufacturing Company to build 1,400 new coal cars for the E. P. Wilbur Trust Company, for use on the Lehigh Valley.

Neilson Colliery.—A fire that had been raging for 62 hours in a breast of No. 10 vein of the Neilson shaft at Shamokin, was brought under control November 26th and extinguished on the following day. The breast contained 200 cars of cut coal. It was found necessary to load this burning coal into mine cars, the work being extremely hazardous, as the men had to combat the flames amid deadly gases, intense heat, and scalding steam.

Bituminous Coal.

The mine inspectors of the bituminous coal districts held a meeting in Pittsburg last week to take action on a letter received from Governor Pattison asking them to make any suggestions they saw fit in reference to amendments in the mining law. All the inspectors were present and after a thorough discussion it was decided to recommend that no changes be made on the present law. The question of weighing coal was discussed and the Governor will be asked to recommend to the Legislature the passage of a law providing for the appointment of an inspector whose duty it shall be to visit mines with or without the consent of operators to examine the scales and adjust them.

Aurora Coal Company.—This company's old mine is now in the hands of R. G. Brooks, of Scranton. He is repairing the place so that the men can return to work on Monday. The mine has been idle three months.

Coleraine Colliery.—The proposed rock tunnel to be driven in No. 1 slope, in search of the Buck Mountain vein, will in all probability not be begun before January. Bids are now being received for the work.

Morris Ridge Colliery.—A large plant is to be put in at this colliery near Centralia to wash the coal from the culm banks.

Newton Coal Company.—The work of sinking the new shaft of this company at Pittston Junction is going on rapidly. The shaft is down to bedrock, and the preparations for going through it are completed. Three shifts will be put to work. The company officials say, however, that they will not be able to hoist coal before April 1st.

Roaring Run Coal and Coke Company.—A charter has been applied for by this company to engage in the business of mining in Westmoreland County. Among the subscribers are Samuel R. Shipley, Winthrop Smith and Joseph P. Richardson, of Philadelphia.

Washington & Lake Erie Gas Coal Company.—This company, of Philadelphia, has been chartered. The capital is $150,000. Among the incorporators are J. Gardner Cassatt, Thomas A. Biddle, of Philadelphia, and Robert Mitchell, of Germantown.

Lebanon County.

McKretzer Mine.—A local report has it that in this mine in Jackson township, which has been abandoned for several years, "indications of gold and silver" have been found, and that it is to be developed by Philadelphia parties. Dr. McKretzer, of Philadelphia, is the present owner. This is not the first time discoveries of the precious metals have been reported in eastern Pennsylvania; but all such reports should be accepted with great caution.

SOUTH DAKOTA.

Lawrence County.

Caliboga.—This mine, it is stated, will be thoroughly opened up this season; a 135 ft. shaft has been sunk on the property, from the bottom of which a 32-ft. dritt has been run, crosscutting the vein of ore, which has an average width of 15 ft. Sample shipments of the ore have been made to the Globe smelter at Denver, aggregating 70 tons, the returns from which show an average value of $30 per ton. It is a silver proposition, but carries from $5 to $7 per ton gold and from 38 to 45% lead. The owners have just completed steam hoisting works and put in a pump to clear the lower workings of water, of which there is now 80 ft. in the shaft. The pump has a capacity of 750 galls. per minute. The property is situated on Jim Creek, a few miles northeast of Rochford.

Homestake Mining Company.—The foundation for the big air compressor is nearly completed and will soon be ready for the machinery, a part of which has already arrived. The engine to run the compressor will be in the neighborhood of 600 H. P. In this same building will be two dynamos, each of which will have a capacity of over 300 lights, and both run by a 75-H. P. engine, which will be set in an offset of the building. With these lights the Old Abe shaft, the principal drifts and the Star shaft will be lighted.

UTAH.

The bank transactions in ore and bullion in Salt Lake City for the week ending November 24th amounted to $157,566, an increase of $30,537 over the preceding week. In addition, the Ontario Company shipped 28,997 fine oz. of silver and the Daly Company 20,847 fine oz. of silver.

Shipments of ore and bullion for the week were: Ore, 18 cars, 684,970 lbs.; bullion, 20 cars, 773,422 lbs.; copper matte, 3 cars, 132,700 lbs.

Beaver County.

Copper King.—This claim, in the North Star district, is said to show a body of copper ore of remarkable size, carrying some silver. Only surface developments have been made as yet.

Millard County.

Ibex Mining Company.—The new smelting works at Leamington are rapidly approaching completion. Five large buildings have already been erected, consisting of the smelter building itself, the furnace and blower building, the assay office, the boarding-house, the offices for the superintendent and the ore bins. The ore floor and bins occupy a space of 31 × 100 ft., and will carry a depth of 8 ft. in ore, and at all times a two months supply. On the north side of the ore bins are located the sampling works, with a track running between the two, so that from each car of ore one-fifth of the ore, as it comes from the car, goes to the sampler, while the balance is deposited into the bins on the south track. The sampler building in size is 36 × 36 ft. The furnace and blower building is 35 × 90 ft., and the boarding-house is 22 × 50 ft., two stories high, with kitchen, washroom, cellar, etc. The assay office is 22 × 36 ft., two stories high, with office, furnace and laboratory below, and sleeping apartments above. The offices of the company, built south of this point, are 22 × 50 ft. and two stories high. The coke floor is so constructed that from the same landing the furnaces are supplied, and the surplus is stored until the reserves reach 300 tons.

Salt Lake County.

Coromandel.—In this mine, at Bingham, the vein is now said to run from 13 to 14 ft. wide, while very good ore is being taken out. The shaft is down 450 ft.

Dalton-Lark.—In this mine at Bingham, the vein has been traced for about 1,500 ft. The ore is lead and silver, yielding about $25 per ton. About 1,800 will be shipped in November and December.

New American Gas and Fuel Company.—This company has applied to the Salt Lake City Council for a charter to furnish fuel to the city. It is over two years since the gas wells on the Salt Lake shore were discovered; and during the interval since that time the company, which professes to be in readiness to commenbe work at once, has been organizing. It claims now to have behind it capital enough to bring the gas from the wells to the principal points in the city within 90 days.

Summit County.

Anchor Mining Company.—At the annual meeting in Park City, last week, the old directors were re-elected.

Grass Creek Mines.—The old Grass Creek mines are now in the hands of one company and embrace the old Church-Cannon property of 240 acres and the Cullen-Spriggs mine of 160 acres. W. W. Cluff is managing this consolidated property for the Utah Improvement Company which intends building a railroad from Salt Lake City. The properties are well opened by tunnels, are provided with machinery and can easily turn out 400 or 500 tons of coal per day as soon as transportation is supplied. At present to ship requires a five-miles haul to the railway.

Old Allen.—This mine is being put in good shape for large productions. At present its capacity is small, 20 tons per day, but in a month it will turn out 50 tons per day. Its vein, 11 ft. thick, dips at an angle of 45°. It was originally worked by sinking from the outcrop, which is 700 ft. from the present vertical shaft, which tapped the vein at a depth of 300 ft. One level is being extended each way from the bottom of the shaft, another 200 ft. above on the dip of the vein, and a winze or incline was run down from the bottom of the shaft 80 ft. and a level run there. But little except dead work or rather development work has been done this year, and yet considerable coal has been sold.

Ontario Mining Company.—The connection with the new drain tunnel has been finally completed and the water from all the workings has been turned into the tunnel. The pumps have been stopped, but will be kept in place and ready for use in case of any accident. It has now been decided that the work of pushing the drain tunnel through from shaft No 2 to shaft No. 3, a distance of about 1,100 ft., will not commence until early in December.

Wasatch Coal Mine.—The largest producer at Coalville for several years has been this mine, managed by the Home Coal Company until lately, but which is now under management of the Weber Coal Department of the Ontario Silver Mining Company, says the Salt Lake "Tribune." This company has in the 10 months of 1894 turned out nearly 50,000 tons of coal. The plant consists of large boiler capacity and powerful steam hoist, and a very thoroughly equipped tipple, screening and loading chutes located in a long building built across the gulch and over the several railroad tracks of the spur road extending some three miles from the yards of the Union Pacific at their Coalville station. The slope runs down at an angle of 36° 256 ft. until it strikes the vein, which has a dip of 19°. This slope or entrance is now down 650 ft. Six levels 100 ft. apart have been opened, part of these being under and back of the incline before it taps the vein. The coal averages 10 ft. thick, and is mined the usual way by cutting out rooms, leaving ample pillars between, which pillars in time will be drawn out. The upper level has been opened 4,500 ft. and the other five an average of about 3,000 ft. each. The mine as now opened has a capacity of 500 tons of coal per day, and 80 men are at present employed.

Tooele County.

Mercur Gold Mining Company.—It is now practically certain that there are two great blanket deposits of gold ore in the Mercur district, says the Salt Lake "Herald," this certainty having been brought about by the recent rich strikes made in the Ruby, one of the properties of this company. After nearly exhausting the upper deposit in the property the company determined to do some experimenting, and, acting under the advice of experts, began to sink on the tunnel level some 700 ft. from the mouth. The winze is now down about 60 ft., and, except for a few feet below the floor of the tunnel, it is all in ore, which averages $10.50. Heretofore the company has been very well satisfied if it secured $8 ore from the Ruby. This discovery indicates that the rock increases in richness with depth. The deposit is seemingly inexhaustible.

Experiments have demonstrated that cyanide will successfully treat the lime rock which the company has heretofore been throwing upon the waste dump, and with the completion of the new mill it is proposed to put through every ton of this rock. The company has just refused to give a lease on the dumps.

Later accounts are that sinking on the new discovery in the Ruby claim has been continued. The foot of the tunnel shaft is now down 85 ft. and is still in ore. About 45 ft. shows a higher grade, but the remaining 40 ft. a lower grade, of ore. The company will continue to sink until the depth of the deposit is ascertained before beginning to crosscut.

Booth & Edwards, who are leaching the Mercur dump, are meeting with excellent success, says the Mercur "Mercury." They are getting the process down to a fine point, so that now they are extracting as high as $1.05 per ton. They are treating 70 tons a day and expect to increase the capacity soon. They will put in more tanks, inclose the plant and put in a steam pump, when they will be able to put through 50 tons. They employ a force of five men.

Utah County.

Rockwell Onyx Bed.—It is reported that Orin Rockwell has sold this property to a new company. A force has been at work on the bed for some time.

VERMONT.

Windsor County.

Ottacreechee Mining Company.—This company has secured a claim in Bridgewater, and sunk a shaft 10 ft. deep on a hill 800 ft. above the Ottacrechee River. A vein of quartz 2 to 3 ft. wide has been struck, which is said to carry gold. Mr. J. W. Wilder, of Leominster, Mass., is at the head of the company, and George W. Lombard is managing the work.

WASHINGTON.

Okanogan County.

Much excitement is reported over a rich pocket or placer discovered near Slate Creek, in the Cascade Range, by two young men from Anakortes. Many prospectors are going to the region.

Mary Anderson.—At this mine, on Mount Chapaca, M. A. Rush and others have started sinking a shaft and are also running a tunnel to cut the ledge some 50 ft. below the surface. In the outcrop the ledge shows some 6 ft. wide. It carries silver and some gold.

Silver Bell.—The Tacoma Smelting Company has been sinking all summer on this claim in the Pine Creek district and intends working six men during the winter.

Snohomish County.

Pride of the Mountain.—A snowslide struck the large drying-house of this mine, near Monte Cristo,

November 23d, and buried 10 miners. The alarm was given, and a force of 75 men and boys went to the rescue of the imprisoned men. When Louis Erickson's feet were reached by the shovelers he was discovered head downward and was taken out dead. The others were injured, but all of the 10 men were rescued alive except Erickson.

WEST VIRGINIA.

Jefferson County.

A party of coal operators from the New River district of West Virginia has been in consultation with President Ingalls and other officials of the Chesapeake & Ohio Railroad for several days. The railroad company has been heretofore the purchaser of all the New River coal, and it is understood the operators desire to form some other basis for the conduct of their business. Mr. Evan Powell, one of the biggest operators in the New River district, and who heads the present delegation, says: Five gentlemen, who are the owners of mines in West Virginia, have incorporated the Kanawha & New River Coal and Coke Company, with a capital stock of $1,000,000. I am one of the incorporators. We expect to have the stock taken up by nearly every one of the 100 operators in the New River district. We have not completed the organization as yet, but the company is duly incorporated, the stock being issued, and will soon be in working order. We will have our headquarters in Charleston, W. Va. The company is formed to sell the coal produced by the operators in the New River district. Mr. Powell declined to speak of the conferences with the railroad officials.

WYOMING.

Albany County.

(From our Special Correspondent.)

Work has been resumed on the soda deposits near Laramie and some 2,000 tons of natural sulphate have been collected. The owners expect to gather 5,000 tons. The plant for calcining will blow in in a few days. The 5,000 tons of natural crystals will produce about 2,300 tons of calcined sulphate. This soda is sold chiefly to glassmakers.

Watkins.—The owners of this mine in the Centennial district are convinced that they have discovered a fine quality of platinum. The ore very closely resembles the Australian samples; and if the mines hold out as the first assays show, the owners have a bonanza.

Carbon County.

(From our Special Correspondent.)

Messrs. Baroch & Ridel, of Rawlins, have opened a new iron mine a few miles northwest of the city. The ore is a red hematite, and assays from 62 to 66% metallic iron. These gentlemen have contracted a large amount of the ore to the Denver smelters to be used as a flux. Already some 400 tons have been shipped.

Fremont County.

(From our Special Correspondent.)

Garfield.—This mine at Atlantic has been leased from the Boston company by some practical miners and capitalists of Telluride, Colo. They have just erected with their stamp mill some Woodbury concentrators and anticipate good results. The Garfield is an immense lode of low grade ore.

Helen G. Mining Company.—This company, of Lewiston, has just completed the erection of a large building for the new 60-stamp mill which is now on the road from Rawlins here. The company has an immense pile of ore on hand, and expects to have the mill in operation before the first of January next. It owns the Mason lode, which is over 40 ft. wide, and assays between $7 and $8 per ton.

Mary Ellen.—During the past season this gold mine at Atlantic City has taken out and shipped over $10,000 in gold bullion. This mine, which is at present 185 ft. deep, runs a night and day shift of 16 men.

Miners' Delight.—This old mine has been pumped out, and the company commenced taking out ore November 4th. The stamp mill on this property will be run all winter.

Laramie County.

Diamond Coal Company.—This company is operating a coal mine in Wyoming, but is composed entirely of Utah capitalists. Last week at Salt Lake the directors opened the bids, and let the contract for a 200 H. P. engine and boiler and screens. Messrs. Griffin & Wench, of Zanesville, O., represented locally by Messrs. Jones & Jacobs, were the successful bidders, says the Salt Lake "Herald." The company is still at work building the 1¼ mile spur from the Short Line track to the mine. The rails are now being laid, and the trestle being completed as rapidly as possible. About 100 men are being employed. Over 100 tons of coal are being turned out every day.

(From our Special Correspondent.)

The graphite mines situated in Halleck Canyon, on the boundary line between Albany and Laramie counties, are just now attracting a great deal of attention. Considerable prospect work has already been done and several claims located the present season. Assays made in Denver and at the State University of Wyoming show a high percentage of graphite. The locations have been carefully made. The ore body lies between well-defined walls of slate. It is well located for profitable and economical working, both from the contour of the mountain containing the mineral and from its proximity to railroad connections. While little if any skilled work has been done on the property, still enough has been developed to show that it has great value and is of large extent. A tunnel has been run in a distance of 150 ft., at the end of which a crosscut was made of 45 ft., showing ore the entire distance.

Natrona County.

(From our Special Correspondent.)

Pennsylvania Oil Company.—Only nine months have passed since this company, of Casper, placed its first petroleum on the general market. The demand for this natural oil for lubricating purposes has so increased that the company has contracted for the drilling of four new wells. The company's oil-field is located 50 miles north of Casper, consequently the petroleum has to be hauled this distance by wagons and stored in tanks located on the Fremont, Elkhorn & Missouri Railroad, near Casper.

Uinta County.

(From our Special Correspondent.)

Union Pacific Coal Company.—This company quite recently broke the seal of No. 7 mine, at Almy, expecting that the fire had been extinguished and that they could resume work. The fire was found to be quite extensive, and the mine was again banked. This property was fired, it was thought, by an incendiary about a year ago. The closing of the mine this winter will cause considerable extra expense to the Union Pacific Railway, since it will have to depend on Rock Springs for fuel for the Western division, which will make a very much longer haul.

FOREIGN MINING NEWS.

GERMANY.

The total production of pig iron in Germany for the month of September is reported by "Stahl und Eisen" at 473,070 metric tons, a decrease of 16,041 tons, or 3·3%, from August, but an increase of 62,877 tons, or 15·1%, over September, 1893. Of the output this year 130,270 tons are classed as forge iron; 83,714 tons as foundry iron; 37,841 tons as Bessemer pig; and 221,245 tons as Thomas pig iron. For the nine months ending September 30th the total production was 4,088,246 metric tons, showing an increase of 441,373 tons, or 10·8%, over the corresponding period last year.

Prussia.

The output of coal from the Prussian mines for the nine months ending September 30th is stated by the "Kohlen Zeitung" at 52,008,870 metric tons, an increase of 2,340,869 tons, or 4·7%, over the corresponding period in 1893. For the nine months the production of brown coal (lignite) was 12,626,905 metric tons, showing a decrease of 94,624 tons, or 0·7%, from last year.

MEXICO.

Hidalgo.

Cruz y Todos Santos.—The shaft has been cleared to a depth of 80 meters. At a depth of 100 meters, to be reached, it is hoped, next January, the El Refugio and San Judas workings, obstructed by the caving in of the shaft some years ago, will be encountered and opened up.

Victoria y San Andres.—A company is being formed to acquire and operate these mines, the former situated contiguously to Santa Gertrudis y Anexas and the latter near the Santiago and Lobo mines. The capital is $25,000 in $5 shares. The Victoria consists of four claims. The shaft is at present at a depth of 85 meters, and is equipped with an American hoist having a 300-meter steel cable. In the San Andres a ramification of the main lode has been struck in ore assaying from 4 to 5 marcs. The shaft is down 135 meters, and is equipped with a Mexican hoist. The mine comprises eight claims.

NEW ZEALAND.

The lately discovered coal seam at Brightwater, near Nelson, in New Zealand, has been prospected, and proved to be a rich, workable seam of bituminous coal. As soon as a few remaining shares are taken up the prospecting company expects to push on the work, so as to have an output in the market at the earliest possible date. It is high time (writes the "Wanganui Herald") these coal mines were developed to their proper extent, and the importation of Australian coal rendered unnecessary by the lessened cost to consumers of New Zealand coal, which at present is at least from 30 to 50% too high. If the government took over the Mokihinui mine and sold the output f. o. b. at Westport to all who required cargoes, the increase of shipping at that port would be very great, as there is a big demand for the highly bituminous coal from the Buller district. At present no one outside the coal and shipping people can obtain a cargo, as the trade is a close monopoly.

ONTARIO.

(From our Special Correspondent.)

Canadian Mica Mining Company.—Several members of this English proprietory company have recently been in Canada examining their properties. These are Henry Baumgarten, president; William Spencer and A. D. Marsh. Among the mica mines owned by this company are two in the county of Frontenac, and options have been taken on several others. The demand for the mica produced by the company during this season has been good, shipments being made wholly to Europe.

Crystal Gold Mining Company.—This company has been incorporated at Rathbun to work the McConnell gold mine on Lake Wahnapitae, capital $1,000,000. Pembroke, Ottawa, Mattawa and Montreal parties are chiefly interested. Extremely fine samples have been shown from this property, and development work is now going on, which the company intends to continue all winter.

Ledyard Gold Mines Company.—The first gold brick produced by this company, of Belmont township, Peterborough County, was brought to Toronto a few days ago. It was worth $160 and was the product of 52 tons of ore, which also yielded concentrates to the value of $600, the total value of the ore treated being thus $760, or about $15 per ton. The plant has a capacity of 15 or 20 tons of ore per day.

Spanish River Talc and Nickel Mining Company.—This company has taken out a charter of incorporation, the object being to work a talc property in the township of May, owned by F. J. Lee and H. Dreany, both of North Bay, Ont. It is proposed to erect works for treatment of the talc at Webbwood, on the Spanish River.

Lake of the Woods District.

(From our Special Correspondent.)

Regina.—English capital is being interested in the gold mines of the Lake of the Woods country. The Regina location on Whitefish Bay has been sold by the owners, Messrs. Henesy, McLean and Proulx, to Mr. W. G. Motley, representing an English syndicate. The price is stated at $30,000. Mr. Motley has purchased the plant of the Rat Portage Reduction Works and will remove it to Whitefish Bay to work the Regina ore.

Sultan.—This mine, the only one in the district which has been steadily worked, and which is regularly turning out gold bricks, is also said to have been sold to English parties for $200,000. Mr. J. F. Caldwell was the late owner.

Rainy Lake District.

(From our Special Correspondent.)

Prospecting in the Rainy Lake region has continued with great activity as long as the season permitted. Two weeks ago there were 10 men looking for gold on the Canadian side for every one there during the time of the American boom last spring. Three mines are being worked on a considerable scale—the Weigand, at the mouth of the Seine River; the Mosher, and the Luella, which is owned by a St. Paul and Minneapolis syndicate. The Weigand mine is undoubtedly rich. In all of these supplies for winter work have been procured, and material for the erection of stamp mills is on the way. To lessen the inaccessibility of the Rainy Lake country in the winter time, the Ontario Government has in contemplation the construction of a winter road from Wabigoon station, on the Canadian Pacific Railway, to the mouth of Seine River on Rainy Lake, a distance of 70 miles. The outlook is for a lively resumption of prospecting work next spring both north and south of the Canadian Pacific Railway line.

Sudbury District.

(From our Special Correspondent.)

Drury Nickel Company.—The plant and mines of this company are advertised to be offered at judicial sale at Sudbury, December 5th next. The sale has been brought about in consequence of proceedings taken by one of the creditors. It is said there has been dissension among the shareholders. There is a complete nickel mining and smelting plant on the property, and abundance of ore.

QUEBEC.

A party including E. M. Dudley, of Toronto, W. Spencer and H. Baumgarten, of London, England, and others has been visiting a number of the mica mines. It is said that Mr. Baumgarten has bonded several mica properties for a syndicate in which they have a large share. The most important of the mines acquired by the syndicate are a series situated near Murray Bay, 15 miles inland from the St. Lawrence. Others are at Beaver Lake, 14 miles from Tadoussac at the mouth of the Saguenay. At the former 40 men are now employed, and at the latter over 150, and this number will be largely increased next year when electric plants have been introduced. The syndicate professes to have demands for the entire output of these mines. Some investments in asbestos properties are also reported.

SOUTH AFRICA.

Transvaal.

The Siemens-Halske cyanide process is being adopted by the Metropolitan, the May Consolidated and the New Croesus companies, and the first results, apart from those already obtained at the Worcester works, may be expected in a month or two. The royalty has been definitely fixed at 3% on the gold obtained.

Henry Nourse Deep Level Company.—The shaft, which cut the Main Reef series at depths of 929 ft., 940 ft. and 980 ft., has now reached a depth of 1,017 ft. without meeting with further ore bodies. The management believes that the North Reef has not yet been tapped, and if a drive which is now being put in leads to its discovery, the sinking of the shaft will be continued until the body is cut.

Witwatersrand District.—The September analysis of production issued by the Chamber of Mines shows that during the month there were 2,260 stamps at work in the district. The quantity of ore crushed was 240,548 tons; of tailings worked, 243,502

tons. All of the tailings were treated by the cyanide process with the exception of 2,400 tons by the Siemens-Halske process. The average yield from mill working was 0·47 oz. per ton; from the tailings, 0·214 oz. per ton. The production of the district for the month was as follows: Mill working, 112,646 oz.; concentrates, 7,000 oz.; tailings, 52,527 oz.; alluvial, 25 oz.; other sources, 4,510 oz.; total, 176,708 oz. The largest producer for the month was the Langlaagte Estate, 12,665 oz., the Robinson coming second with 11,971 oz. Other large producers were the Crown Reef, 10,727 oz.; the City & Suburban, 9,533 oz.; the Gildenhuis Estate, 7,843 oz.; the New Primrose, 7,315 oz.; and the Simmer & Jack, 6,833 oz.

The telegraphic report gives the total output of the district for October at 173,378 oz., which is less by 3,329 oz. than that for September and by 1,599 oz. than that for August, but shows an increase of 36,696 oz. over October of last year. For the ten months ending October 31st the output has been 1,666,251 oz., against 1,193,478 oz. for the corresponding period last year; 986,324 oz in 1892; 575,532 oz. in 1891, and 397,722 oz. in 1890. At the usual rate of Witwatersrand gold—about 0·800 fine—the production so far this year has been equivalent to 1,333,000 fine oz. of gold; and the probable total output for the year will be 1,613,000 fine oz. of gold.

TURKEY.

The Turkish Government has recently granted a French syndicate a concession to work for 99 years a zinc mine recently discovered near Cambia on the island of Scios.

The Turkish Government has just granted a concession for 60 years to work the borax deposit recently discovered near the Sultan-Tchiari, in the vilayet of Kudavendighiar. One of the holders of this concession is a Turk and the other an Italian.

LATE NEWS.

Fire broke out on the morning of November 28th in shaft No. 1 of the Spring Valley Coal Company, at Spring Valley, Ill. The extent of the fire is not ascertained as yet, but it is feared that the loss will be heavy.

At the Stockton colliery near Wilkes-Barre, Pa., on the night of November 27th, a large cave-in took place. The hole is said to start from the surface and to extend to No. 8 shaft, then dropping down almost perpendicularly. The settlement of the earth in the neighborhood has affected the tracks of the Lehigh Valley Company so that trains have to be run with caution.

The suit between the Tyler and the Last Chance mining companies at Wardner, in the Coeur d'Alene district, Idaho, which was decided in favor of the Tyler Company by the United States Circuit Court of Appeals in San Francisco in October last, is to have another hearing, the United States Supreme Court having granted a rite of certiorari. This will carry the case up to the Supreme Court for final decision.

Joplin Lead Market, Missouri.

(From our Special Correspondent.)

General activity and heavy sales of ore were the features of this zinc and lead mining district during last week. The prices of zinc ore were well maintained through the week at $17.50 to $20 per ton, with an average of $18. Lead ore remained firm at $16.25 per thousand, with no particular prospect of an advance. The Webb City and Carterville district loaded and shipped 51 cars of zinc ore during the week, the heaviest sales being made by the Center Creek Company of Webb City and the Eleventh Hour Company of Carterville. Following are the sales of ore from the different camps: Joplin, 1,129,750 lbs. of zinc ore and 386,080 lead, value $17,113; Webb City, 936,640 lbs. of zinc ore and 51,520 lead, value $9,717; Carterville, 1,208,840 lbs. of zinc ore and 41,630 lead, value $11,750; Oronogo, 41,030 lbs. lead, value $320; Zincite, 55,550 lbs of zinc ore and 73,280 lead, value $1,681; Galena (Kan.), 1,090,160 lbs. of zinc ore and 181,920 lead, value $10,180; district's total value, $50,831; Newton County, 325,570 lbs. of zinc ore and 122,140 lead, value $4,946; Wentworth, 83,500 lbs. of zinc ore, value $793; Stotts City, 44,160 lbs. of zinc ore, value $420; Aurora, 882,000, lbs. of zinc ore and 150,000 lead, value $8,322; Springfield, 44,000 lbs. of zinc ore, value $395; lead and zinc belt's total value, $65,707.

Cripple Creek, Colorado.

(From our Special Correspondent.)

American Eagles 1, 2 and 3.—These claims, situated near the apex of Bull Hill and owned by the McRay Brothers, are being worked by the owners with the most flattering results. The west shaft has been sunk 50 ft., from which a carload of 4 oz. ore was extracted. At the bottom of the shaft a cut was driven to ascertain the boundaries of the vein, and what looked like the footwall was 16 ft. apart from the hanging wall, all of which was good mineral, averaging over $20 per ton. One of the brothers broke in to-day what he considered the footwall, and the sample gave over 7 oz. in gold. This vein has been opened in three different places on the claim and all yielding pay ore. The American Eagles from present appearances can be relied on as prolific shippers during the coming year.

Moose.—This mine, owned by the Moose Mining Company, is situated on Raven Hill, employs 60 men, and is already making improvements at surface as well as underground. The seventh levels at 400 ft. deep have been driven north and south 25 ft. and are being pushed with all speed.

Orphan Bell.—This group of four claims is largely worked under lease by 13 different lessees, working 43 men. The Mercer & Wilson lease has 2 ft. of pay ore. A sample test of several tons sent to the sampler gave $86 and $33 per ton. The old shaft sunk to the depth of 180 ft. two and a half years ago is also worked under lease, but the vein is apparently in a break, and it is thought that by driving west a few feet rich mineral will be encountered. The owners sunk a shaft 50 ft. and crosscut to the Buena Vista vein, and now the shaft is being sunk in order to strike the Buena Vista vein on the dip, and within the side lines of the Orphan Bell claim; then look out for a lawsuit or a compromise under the rulings of the Amy-Silversmith case.

Pharmacist.—This mine on Bull Hill employs about 13 men. The dump is being screened and sent to the mill.

Union Mining Company.—The Pike's Peak of this company is a steady shipper to the extent of four cars a week. A contract was let to sink the main shaft 50 ft. deeper from the 175-ft. level at $8 a foot. All the ground of this company is worked under lease, and altogether 86 men are employed.

Victor.—The old stand-by declared a dividend of $10,000 on the 1st and another dividend of $10,000 on the 15th, making $20,000 for the month. This is the second gold property in the State to-day. The Little Johnnie, of Leadville, owned by the Ibex Mining Company, has no peer on the continent. Imagine a pocket of ore 300 ft. long, 20 ft. wide and 60 ft. deep of a uniform grade of over $100 in gold per ton. At the Victor the developments are always kept away ahead, and the amount of reserves are steadily increasing.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Nov. 30.

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending November 24th and year from January 1st:

Shipped East and North:	1894. Week.	1894. Year.	1893. Year.
Phila. & Erie R. R.	2,076	67,557	72,603
Cumberland, Md.	§71,435	2,617,792	3,792,518
Barclay, Pa.	†	16,841	41,917
Broad Top, Pa.	9,755	331,383	520,276
Clearfield, Pa.	74,157	2,397,006	3,468,153
Allegheny, Pa.	35,911	1,107,206	1,132,665
Beech Creek, Pa.	‡63,924	2,013,167	2,196,572
Pocahontas Flat Top.	69,795	3,096,720	2,605,887
Kanawha, W. Va.	‡82,097	2,385,905	2,947,711
Totals.	408,240	14,658,477	17,078,082

† Returns not received.
‡ To November 21st.
§ To November 17th.

Shipped West:	1894. Week.	1894. Year.	1893. Year.
Pittsburg, Pa.	38,081	1,314,875	1,098,176
Westmoreland, Pa.	35,272	1,457,636	1,679,741
Monongahela, Pa.	14,103	602,546	634,341
Totals.	87,456	3,375,057	3,412,258
Grand totals.	495,696	17,433,534	20,490,340

Production of coke on line of Pennsylvania Railroad for the week ending November 24th, 1894, and year from January 1st, in tons of 2,000 lbs: Week, 106,607 tons; year, 3,140,060; to corresponding date in 1893, 3,537,952 tons.

Anthracite.

So far as concerns actual market conditions we do not find that the anthracite coal trade has undergone any change of consequence since our last report. There is perhaps more active demand from some dealers for cargo lots for immediate delivery. Stocks in dealers' yards do not show the depleted condition which is needed to create a really healthy demand. Navigation on the lakes has virtually ended for the season, and this cuts off one large outlet for certain producers who must now devote all their attention to the Atlantic tidewater markets. Moreover, the senseless policy of sellers during the past two months has been such that deliveries on old orders, taken at low prices, will extend into next year, thus rendering an advance in prices practically impossible.

When we sounded a note of warning in our issue of November 17th we expected that it would help the "powers that be" to realize that the condition of the anthracite market was such as to necessitate prompt action if the trade was to escape utter demoralization. The presidents of some of the coal roads held a meeting in Philadelphia on Friday last and another on Tuesday, November 27th. Just what took place at these meetings has not been announced. The one encouraging feature from the producers' standpoint was the presence at the meetings of President Roberts, of the Pennsylvania Railroad Company. In the past his company has not regarded the "recommendations" of the sales agents, nor was it represented at the monthly farces known as "meetings." That Mr. Roberts should now deem the situation critical enough to render necessary his presence at the meeting of the presidents might be taken as indicative of a resolve to make some new agreement, were it not so well known that he never enters into agreements of the coal trade kind. The matter of allotments doubtless received some attention at this meeting. We have it on excellent authority that the Pennsylvania's old allotment was cut down 4% at a previous meeting, though, of course, the company paid not the slightest heed to it, never recognizing the right of the other companies to interfere with its coal business.

The presidents will meet again in a day or two. The sales agents held a meeting at the office of the Pennsylvania Coal Company on November 27th. It was decided to try to obtain the following net prices for December: stove, $3.60; egg and chestnut, $3.45; broken, $3.35, all on board. At the same time the agents "recommended" that the output be restricted to one-half of the June output, or about 2,500,000 tons. Another meeting of the sales agents will be held on Monday next, December 3d, to ratify their decision of last Tuesday. This means, of course, that the presidents will be called upon to approve the "recommendation" of the agents. It is understood that not all the companies are actuated by friendly feelings in this crisis and that some opposition is developing especially on the part of a certain transportation company.

The rumor gained credence after Tuesday's meeting that the Delaware & Hudson did not intend to adhere to the restriction during December. This is now denied. That the Delaware & Hudson has a just grievance against the other companies cannot be gainsaid; as it, of all the producers, has been a praiseworthy exception in the matter of restriction this year. During October it was practically the only company that did not overproduce, being so conscientious in its adherence to the "recommendation" of the sales agents as to find itself short of coal; and thus it was also to maintain prices. To-day, we are informed, it is moving all the coal that it is producing and finds its available stocks what they ought to be. The production of anthracite this year shows a decrease of about 2,000,000 tons as compared with 1893, and of this sum almost one-fourth is the decrease in the tonnage of the Delaware & Hudson. As this company's allotment is 10%, the decrease in its output should be only 200,000 tons.

Now that the trade is suffering from the results of overproduction it is neither fair nor true to accuse the D. & H. of contemplating a step which is not calculated to restore confidence in the market.

The condition of the trade is now such as to require conservative action on the part of producers. The sales agents will meet again on Monday next, practically to report in what spirit their recommendations of last Tuesday have been received by the head officers of their respective companies. The decision of the Delaware & Hudson and the views of one or two others will be heard with much interist. But we would state for the benefit of pessimists that there is not going to be any "war," and that "threats" have not been made.

NOTES OF THE WEEK.

The statement of the Philadelphia & Reading Coal and Iron Company for October and the eleven months of the fiscal year from December 1st to October 31st is as follows:

	October.	Eleven months.
Gross earnings	$2,485,087	$20,012,530
Expenses	2,530,149	19,963,556
Profit or loss	L. $45,062	P. $48,974
Fixed charges	52,000	1,232,126
Deficit	$97,062	$1,183,452

Expenses include colliery improvements, which amounted to $63,749 for October and $568,850 for the eleven months.

Bituminous.

There is no change to report of the soft coal market. The trade continues dull and new orders are very scarce. All producers, however, are mining comparatively freely and their outputs are fairly large. Shipments on old contracts have been nearly completed and consumers are receiving all the coal desired. It is generally believed that stocks for consumption are not as heavy as usual at this time of the year, consumers having neglected to put in large winter supplies thus far on account of the open season.

No changes of any importance have occurred in prices, despite the fact that all the producers are so desirous of getting new business had the prices rendered it possible—they now have absolutely no margin. We quote the following f. o. b. prices at the various ports: Norfolk and Newport News, $1.80@$2.10; Baltimore, $1.90@$2 25; Philadelphia, $1.80@$2.25; New York shipping ports, $2.40@$2.75; alongside New York, $2.75@$3.

Transportation is better on all lines, the railroad officials having apparently taken stringent measures in the case of smaller shippers who did not supply promptly the vessels to take the coal arriving at the shipping ports. These shipments have been put out of the way to the advantage of those shippers who handled their coal promptly. It was these small shippers who have been the cause of the blockade noticed in this column during the past few weeks, and from now on it is not likely that they will receive as much attention in their request for empty cars at the mines as they did a month or two ago.

The car supply is good but limited to the probable amount that can be handled by shippers at tidewater. There is considerable coal now en route from mines to tide on the main line roads. A great portion of it is at or near the shipping ports, but it is being taken care of fairly well as it arrives, though the recent heavy winds will probably delay the arrival of vessels, and thus cause a shortage of vessel tonnage. The all rail business remains quiet.

In the vessel market there is a scarcity of light craft at the shipping ports, thus delaying the for-

warding of cargoes to a considerable extent. A large fleet of light vessels has been expected for several weeks, but it has not yet made its appearance. Such vessels as arrive are promptly chartered at high rates.

Rates are nominal, being to a great extent governed by the urgency of the needs of shippers. We quote this week the following Ocean freight rates from Philadelphia: To Boston, Salem and Wareham, $1.05; Providence, New Bedford, New Haven, Bridgeport, Allyn's Point and other Sound ports, 85c.; Lynn, $1.10@$1.25; Newburyport, $1.25; Portsmouth and Portland, $1.10@$1.15. From Norfolk, Newport News and Baltimore the rates are 10c. higher.

Boston. Nov. 28.

(From our Special Correspondent.)

The weather of the week was not favorable to the hard coal trade. The retailers who are not disposed to purchase unless actually compelled to, have dropped out of the market pretty much. They seem to entertain no fears whatsoever of an early advance in prices. While the companies are asking full circular prices for anthracite coal the individual operators are making concessions.

The companies' prices net New York are as follows: Stove, $4; egg, $3.65; free broken, $3.60; and chestnut, $3.90.

Individuals' white ash coals can be had as follows: Stove, $3.40@$3.45; egg, $3.25@$3.35; free broken, $3@$3.05; chestnut, $3.40@$3.50. Lykens Valley (at Philadelphia): Broken, $3.45@$3.55; egg, $3.15@$3.25; stove, $5.45@$5.55; and chestnut, $4.70@$4.75.

There is not much soft coal being bought on the market. The arrivals are considerable, however, but it is almost all on old contracts. Prices are firm because of the high freight rates. On cars here prices are: Cumberland, $3.70@$3.75; Pocahontas and New River, $3.40@$3.45; and Clearfield, $3.35.

Vessel owners are maintaining freight rates well, notwithstanding the greater supply at Southern ports. Rates are as follows: from New York, 50c.@70c.; from Philadelphia, $1; from Baltimore, $1.10; from Newport News and Norfolk, $1.

Retail trade is light, and prices are unchanged.

Buffalo. Nov. 28.

(From our Special Correspondent.)

Diligent inquiry has failed to secure many items of interest in regard to the anthracite and bituminous coal trade. The sales of the former are fair for local use and near-by points, as the severe weather necessitates greater consumption of fuel, and of the latter manufacturers are pretty well stocked up, so trade is light.

Prices of anthracite nominally unchanged. Bituminous favors buyers as supply is large and operators desirous of money.

The lake season is about over. In several days severe storms have been prevalent, and last night and this morning the cold was stinging. Probably not more than a dozen cargoes will be shipped from now until the close of navigation.

The shipments of coal westward from Buffalo by lake from November 18th to 24th, both days inclusive, aggregated 99,300 net tons, distributed as follows: To Chicago, 54,050 tons; to Milwaukee, 9,000 tons; to Duluth, 4,500 tons; to Toledo, 950 tons; to Superior, 4,800 tons; to Alpena, 250 tons; to Marine City, 300 tons; to Manitowoc, 3,800 tons, to Pt. Huron, 1,050 tons; to Bay City, 1,350 tons; to St. Clair, 150 tons, and to Port Stanley, 850 tons. The rates of freight were: 60c. to Chicago, 55c. to Milwaukee and Manitowoc, 40c. to Bay City, Marine City, St. Clair, Port Huron and Alpena; 30c. to Duluth, Superior and Gladstone, and 25c. to Toledo. Shipments nearly over for the season of 1894.

The cutting of coal rates at all principal points is the only topic of interest discussed. As you know the result of the meeting in New York yesterday, nothing more need be said on the subject. In Buffalo there has been little done in reducing the published quotations unless the transactions have been kept private.

Natural gas is giving out in Canada, near Welland, from which field a large portion of our city is supplied. The company taking the gas, however, has the Pennsylvania fields to draw from, and its officials do not fear apparently that they will have to reduce the area of limits of the city now supplied. It is only a question of time, however, when the problem of the supply fuel gas will be determined.

Chicago. Nov. 28.

(From our Special Correspondent.)

The buying of anthracite coal in and about Chicago remains on a par with last week, thus making the week on the whole unsatisfactory to dealers in this vicinity. Cold weather has stimulated selling but little, though we have had no real cold as yet. The policy of buying just enough for immediate wants remains in force, and with the exception of a case here and there, this is almost universal. Retailers in town and out are carrying stocks of 50% of their usual capacity, and in many cases greatly less. The wholesale slashing of prices continues, and it may be remarked that no reasonable offer is refused. Hard coal can be bought for from $4.65 up, the average price standing at $4.80. The action of the coal agents in the East will not affect this market materially, though it may have the effect of creating firmer prices.

Bituminous coal sales are as yet limited and prospects are not very brilliant for an increased demand this year. Consumers in various lines are buying moderately, but are hesitating in placing contracts for large quantities even at prevailing low prices. Indiana block and other soft coals from outside Illinois are in much better demand than the Illinois product. This is from the fact that coal can be handled cheaper from Indiana, and possibly West Virginia, than from the Illinois fields.

Coke sales remain steady and a desire is observed to use 48 hour coke in place of the 72-hour. This may be from the fact that there is a difference of 15 to 20 cents per ton in price.

Circular rates on anthracite coal are: Grate, $5.25; egg, stove and chestnut $5.50. For bituminous prices are, f. o. b. Chicago: Youghiogheny, $3.15; Raymond, $3.50; Shawnee, $2.50; Blossburg, $3.90; New Kentucky, $2.75; Hocking, $2.90; Brazil Block, $2.40; Birdseye Cannel, $5.25.

Connellsville foundry coke is selling for $3.90; Connellsville coke crushed, $4.15; Pocahontas, $3.85; New River, $3.85@$4.

Pittsburg. Nov. 29.

(From our Special Correspondent.)

Coal.—The situation shows but little change. There is fully 18,000,000 to 19,000,000 bushels of coal ready to depart as soon as circumstances will permit. The prospect at present is not very rosy. The week's receipts from the pools aggregated 2,375,000 bushels. A large number of boats above Davis Island dam are hitched to tows ready to start as soon as the water will permit; it will require a 10-ft. stage for coalboats; barges can be sent out in less water. The season has been a hard one on coal owners. The New York & Cleveland Gas Coal Company has advanced the wages of its employes from 55 to 62c. a ton for mining; all the miners have signed an agreement to work for three months at this rate from this date. The 1,300 miners employed by the firm have signed individually not to join any labor organization while in the company's employ. The miners' union intended to order the men out on December 1st; the men think an advance of 7c. a ton better than being idle all winter.

Connellsville Coke.—The market has improved. Shipments were larger, showing an increase of 281 tons. Production is keeping close to the 140,000 ton mark. Nearly 14,000 of the total of 17,594 ovens in the region are in blast and the most of them are making full time; this gives an enormous producing capacity for the last of the year. Generally at this time of the year there is a slowing up among the furnaces, but not so this fall. The consumption of coke is about equal to production; there has been very little stocking among the buyers since the first of November. It is hardly probable that the price of coke will be tampered with until after the first of the year. The week's production in cars, 7,555, distributed as follows: to Pittsburg, 2,453 cars; to points east, 1,401 cars; to points west, 3,693 cars. Prices steady, unchanged.

Shanghai, China. Oct. 12.

(Special Report of Wheelock & Co.)

Coal.—The market for Japan coal is in an excited state, and natives will not make offers, fearing a sudden influx. Three cargoes were placed at 8·50 taels per ton, but since then the market has dropped off a tael. In Cardiff steam coal another cargo is reported, but demand is light. In Australian coal no offers can be obtained for cargoes of either Wollongong or Newcastle, and the market is weaker for retail lots. Quotations are, for cargo lots, 12 taels per ton for American anthracite, 12·50 taels for Cardiff steam, 11@11·60 taels for Australian, 7@8 taels for Japanese; that is, for such sorts as are to be obtained, which are not the best.

Kerosene Oil.—Transactions have been light, but prices are fairly firm. Stocks have diminished owing to large deliveries, and are now reported at 1,252,962 cases American and 282,377 cases Russian. Quotations are: Devoe's, 1·29 taels per case; Batoum 1·25 taels per case; Batoum bulk, 1·15 taels per two tins.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Nov. 30, 1894.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Dec. 1, 1893.		Week ending Nov. 30, 1894.		From Jan., '93.	From Jan., '94.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	35	16,449	37	18,990	1,312,338	785,907
Coke.....	59	60,567	126	141,402	5,074,905	4,684,914
Charcoal...	25	5,170	23	4,746	374,534	199,714
Totals....	119	82,117	186	165,138	6,761,777	5,670,535

While we do not note any change of importance in the iron and steel market here, our correspondents in Chicago, Pittsburg and Buffalo report a material improvement which, in the first named city, has resulted in numerous good sized sales of pig iron. The Pittsburg market, while a waiting one, has a strong tone, and Buffalo reports steady sales. Philadelphia is not so encouraging, little business being reported. Taken altogether, however, the market seems to be in unusually good shape for this time of year. As a rule, from the middle of November to the middle of January the market rules dull, as winter work is completed and manufacturers hold off until the annual balance sheet is drawn. This year is so far an exception, and the present conditions, together with the knowledge that many large buyers, among them the railroads, who have been compelled through financial tightness to get along without making necessary repairs, must soon come into the market, augur well for the iron and steel trade during 1895. If our consumption continues to increase at its present rate we will, by the end of the first quarter of 1895, be in a position to absorb nearly the entire pig iron output of the country. Our present rate of production is over 8,500,000 per annum, and this, together with part of our stocks, is being taken by manufacturers.

NOTES OF THE WEEK.

One of the most important incidents of the week is the official announcement by the steel rail manufacturers that the price of rails for 1895 will be reduced about $2 per ton on all sizes over 45 lbs. per yard, making the price $22 in the East and $23 in the West, figures which are still much above the parity of other classes of steel. The majority of makers have entered into this agreement. Heretofore changes have been based on all sizes over 50 lbs. Whether or not this is going to bring the railroads into market remains to be seen. While the great majority of these are financially in no position to purchase, still, necessary repairs have been neglected for so long that there seems little doubt but that they will be forced to buy during the year. Just how much may be judged when the annual balance sheets are drawn up.

It is reported that contracts for the first quarter of 1895 have been made by Connellsville coke producers at $1 at ovens. If such should be the case, unless the increased production of pig iron causes a shortage in Lake ores now on dock, both Bessemer and foundry iron producers will be enabled to hold the cost of manufacture at its present low point during that period. In such event it is doubtful whether any material advance in the price of iron can take place. If it does, the margin for shading quotations will be such that good buyers will still get their supplies at about present prices.

Pig Iron.—The market has been quiet during the week, but there is no apparent change in the tone, which remains fairly firm. It is, perhaps, not so strong as last week, but the change is very slight. Quotations remain as follows: Northern brands, No. 1 X, $12.50@$13; No. 2 X, $11@$12.50; gray forge, $10.50@$11; Southern irons, No. 1 foundry, $11.75@$12.50; No. 2 foundry; $10.75@11.50; No. 1 soft, $10.75@$11.25; No. 2 soft, $10@$10.75.

Spiegeleisen and Ferromanganese.—An order of considerable size was recently taken for Chicago delivery during 1895. The market remains quiet, though lots of foreign ferromanganese are being offered for $48@$50. Nominal quotations remain, $20.50@$21 for 20% spiegeleisen, and $43@$50 for 80% ferromanganese.

Billets and Rods.—As noted last week there has been a scaling down in prices, domestic billets being quoted at $17.50@$18, with a weak market. Wire rods remain firm at $24.50@$25.

Rails and Rail Fastenings.—The announcement of the rail manufacturers for 1895, noted in the market review, has reduced the price of rails 45 lbs. and over to $22 in the East and $23 in the West. The price at tidewater will be $22.75. In rail fastenings quotations are: Fish and angle plates, 1·20@1·40c. at mill; spikes, 1·40@1·60c.; bolts and square nuts, 2@2·25c.; hexagonal nuts, 2·10@2·30c. delivered.

Structural Iron and Steel.—While there has been but little business done during the week the promise for a number of extensive contracts for the ensuing year is keeping the market fairly firm. Prices still continue low, and on some shapes it is stated that considerable shading has been made. Nominal quotations remain: Angles, 1·20@1·35c.; beams up to 15 in., 1·30@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·50@1·60c. on dock.

Old Material.—There has been little done in this market, and no change in prices are noted. Nominal quotations remain: Old steel rails, $9.50@$10; old iron tees, $10@$11 per ton; New York railroad scrap, $11.50@$12 per ton, delivered at mill, and yard scrap at $10; wrought turnings, delivered at mill, $8@$8.50; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50, New York; cast borings, $6@$6.50, delivered at mill.

Merchant Steel.—Business in this line has been quiet, though a fairly steady stream of small orders is noted. Quotations are: Tool steel, 5·65@6·25c. tire steel, 1·30@1·40c.; toe calk, 1·65@1·75c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85@2c.; open-hearth carriage spring, 1·70@1·90c.; crucible spring, 3·40@3·65c.; axles, scrap, 1·30@1·50c.; steel, 1·25@1·55c.; bars, common, 1·15@1·30c.; refined, 1·25@1·80c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·50c.; plates, flange, 1·50@1·65c.; firebox, 2@2·25c.; marine, 2·45@2·70c.; sheared, 1·80c.; shell, 1·40@1·50c.; tank, 1·20@1·40c.; universal mill, 1·25@1·40c. delivered.

Buffalo. Nov. 29.

Special Report of Rogers, Brown & Co.

Without any "fuss and feather" about it, a considerable amount of business in foundry iron is being consummated, larger indeed than is generally credited. There is a growing disposition to cover requirements for the whole or part of the coming year which the producing interests are unwilling in most instances to meet. The tone of the market is firm on the basis of existing prices. We quote f. o. b. cars at Buffalo as follows, although large orders are

done at somewhat less: No. 1 foundry strong coke iron, Lake Superior ore, $11 75; No. 2 foundry strong coke iron. Lake Superior ore, $11.25; Ohio strong softener No. 1, $12.25; Ohio strong softener No. 2, $11.25; Jackson County silvery No. 1, $15.75@$16 75; Lake Superior charcoal, $13.50; Southern soft No. 1, $11.50; Southern soft No. 2, $11.25; Hanging Rock charcoal, $18.50.

Chicago. Nov 28.

(From our Special Correspondent.)

The Chicago iron market for the week is what might be termed the unexpected. Dealers in most all classes of iron were quite of the impression that business would gradually retrograde as the year drew to a close; but in this they are agreeably disappointed, as the past week shows that more business has been transacted in pig iron, black sheet, billets and plates than for some weeks past. Pig iron particularly has shown up well, and sales exceeding 500 tons were numerous. Mining machinery and other manufacturers in this vicinity report business greatly increased, and prospects bright for 1895.

Pig Iron.—This has been an unusually good week in pig iron, as sales have in the aggregate been larger than any week in November. Several of 500 tons, a few of 1,000, one of 1,500 and one of 2,000 tons represent the larger ones of the week. There are now numerous inquiries coming in, and one contract of 5,000 tons is being figured on. Some of the larger sales of the week have doubtless been taken at very low prices. There is some talk of the furnaces in this locality forcing up prices after the first of the year, but it is noticed that contracts are being made right along at prevailing prices for delivery as far ahead as July, 1895. This, naturally, does not suggest an early improvement in prices, but it is more than probable an effort will be made to advance them after the first of the year. Southern iron is in small demand, but one good-sized sale having been effected in Chicago territory during the week, that was for 500 tons No. 1 soft, it selling at about $10.25, Chicago. Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13.50@$14.50; Lake Superior coke No. 1, $10.25@$10 50; No. 2, $10@$10.25; No. 3, $9.50@$9.75; Jackson County silveries, $14.50@$15; Southern coke, foundry, No. 1, $11@$11.25; No. 2, $10.25@$10.50; No. 3, $10@$10.25; Southern coke, soft, No. 1, $10.25@$10.50; No. 2, $10@$10,25; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.50@$12; No. 2, $11.50@$12; Tennessee charcoal No. 2, $14@$14.50. Bessemer, $10.50@$11; Ohio strong softeners, $13@$13.50.

Structural Material.—But little business of any character has been closed in structural material for the week, business being almost at a standstill. Quotations are f. o. b. Chicago: Angles, 1·45@1·50c.; tees, 1·65c.; universal plates, 1·50@1·55c.; beams and channels, 1·50@1·60c.

Plates.—A fair week's business has been done with inquiries enough to insure a steady demand the rest of the year. Prices are: Flange steel, 1·65@1·75c.; fire box steel, 3·50@4·50c.; tank steel, 1·40@·50c.; boiler tubes, 70 to 75% discount.

Merchant Steel.—Quite a good business has been transacted with the week, some of the larger concerns having bought quite freely. Inquiry remains good. Prices are, carload lots: Smooth-finished machinery, 1·75@1·90c.; tire steel, 1 70@1·80c.; Bessemer bars, 1·40@1·50c.; toe calks, 2·10@2·20c.; crucible spring, 3·40@3·65c; tool steel, 5¼@6½c. and upward; specials, 10·50@11·50c.

Galvanized Sheet Iron.—Trade remains dull from both store and mill, with prices from mill 75, 10 and 5% off.

Black Sheet Iron.—Competition is great after a thirty car load contract for black sheet. This is the largest contract that has been in this market for some time and it is probable that the successful bidders will have quoted a very low price. Prices prevailing is 2·40c. for No. 27, f. o. b. Chicago.

Bar Iron.—Some few small orders are being received, but indications do not point to a better trade before 1895. Prices remain 1·05@1·10c.

Billets.—A good week's business is observed, some very good sales having been made for delivery next year at the low price of $17.

Steel Rails.—Business being poor the steel companies close down this branch of their works December 15th. Quotations are $25@$27.

Old Rails and Wheels.—No business in either old rails or wheels has been transacted in the Chicago market during the week. Old iron rails are selling at $11 and old wheels $10.

Scrap.—Business has been slow, with few sales in small lots. Quotations are: Forge, $8.50@$9; cast iron borings, $3.50; wrought iron turnings, $4@$4.50; axle turnings, $6.50; mixed steel, $5.50; tires, $12.50@$13; iron axles, $13.

Pittsburg. Nov. 29.

(From our Special Correspondent.)

Raw Iron and Steel.—The market is still a waiting one. At the same time the larger portion of the iron and steel departments are waiting the advent of the new year, and by that time most of the large contracts made the last three months for pig iron and steel billets will have been filled, and both consumers and producers will be ready to make new contracts for 1895 delivery. For some time past sales have been restricted to amounts sufficient to meet present wants. This has generally been the situation toward the close of the year, but more so at the present time than usual since consumers desire to carry the smallest possible stocks over with the new year. The present uncertainty in regard to values also exerts an important effect upon both buyers and sellers in their policy as regards the future; neither side is forcing business to any extent, preferring to await developments of the next five weeks to determine the course of trade. The small supply of available stocks in both producers' and consumers' hands, the facility with which the coudtry has absorbed the great increase in the production of crude iron, and the impossibility of the railroads and large industrial establishments postponing much longer needed improvements and additions, point to the new year as one likely to show marked activity in iron and steel. No one looks for any material change for the better, either in demand or in prices, during the balance of the year, and no marked improvement in values can take place until there is an expansion in the demand sufficient to prevent the competition of the many idle works awaiting better times to resume operations, from depressing the market when they insist on their share of business. In the local pig-iron market existing conditions are considered to be fairly satisfactory; the weakness of Southern iron has had no appreciable effect in stimulating the demand.

Market dull; buyers are offering lower prices. The decline of $2 per ton in steel rails is no surprise to any person who has watched the course of events. The "Engineering and Mining Journal" said weeks ago that billets must advance or steel rails decline, as there was too much difference in billets at $15.50@$15.75 and steel rails at $24. There will be no reason to be astonished if a further decline takes place in the near future, unless the two new mills are provided for. The reports sent out from New York that billets were selling at $15 and Bessemer pig at $10 are not correct; there never were sales at these prices here or anywhere else.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.		Cash.
2,500	Bessemer, Dec., Jan	$10.40
2,000	Bessemer, Dec...	10.35
1,500	Bessemer, Dec...	10.50
1,000	Bessemer, Dec...	10.45
1,000	Bessemer, prompt	10.40
600	Grey Forge, Dec.	9.70
500	Bessemer, Dec...	10.50
500	Gray Forge, Dec.	9.65
500	Mill Iron.....	9 65
300	Gray Forge,.....	9.65
300	No. 2 Foundry...	11.50
250	No 1 Foundry ..	11 50
200	No. 2 Foundry ..	10 60
100	No. 1 Silvery....	13.80
100	No. 2 Silvery....	12.50

CHARCOAL.

250	Cold Blast.....	23.50
200	Warm Blast, Extra.....	20.00
100	No. 3 Warm Blast.....	23.50
50	No. 2 Foundry...	16.50
50	Cold Blast.....	23.50
50	No. 2 Foundry ..	16.50

BLOOMS, BILLETS AND SLABS.

2,000	Billets, Dec., Jan., at mill.....	$15.75
1,500	Billets, Dec., at mill.....	15.70
1,000	Billets, Dec., at mill.....	15.50
1,000	Billets, Dec., Jan., at mill.....	15 60
500	Billets, prompt, at mill.....	15.40
500	Billets, Dec., at mill.....	15.35

SKELP IRON.

2,000	Wide gr'ved.1 12½ 4 m.
500	Nar'w gr'v'd.1·12½ 4 m.
400	Wide gr'ved.1·12½ 4 m.
320	Sheared.....1·27½ 4 m.

SKELP STEEL.

650	Wide gr'ved.1·00 4 m.
400	Sheared .....1·10 4 m.
300	Nar. gr'ved. .1·00 4 m.

MUCK BAR.

500	Neutral, Dec..... 18.75
100	Neutral, Dec..... 19.00

BLOOMS, BILLETS, BAR ENDS.

500	Bloom and Billet Ends..... 11.00

STEEL WIRE RODS.

600	5 gauge, at mill.. 21.65

FERRO-MANGANESE.

100	80%, delivered.... 50.60

SHEET BARS.

380	delivered... .....21.70

OLD RAILS.

450	Mixed steel rails. 9.50
350	Iron rails..... 12.75
200	Iron rails..... 12.50

SCRAP MATERIAL.

350	Cast scrap, gross. 8.50
350	Old car wheels, gross..... 9.00
150	No. 1 RR.W., net 10.00

Philadelphia. Nov. 30.

(From our Special Correspondent.)

Pig Iron.—The week has passed without developments. Very little business has been done. Iron bought a month ago is being delivered and the supplies in several instances will carry the consumers to the close of the year. Leading brands of No. 1 are quoted at $12.50; No. 2, 11.50, and forge $10.50. There are the usual variations for quality and amount bought.

Muck Bars.—Business is sought for at $18.50.

Billets.—Present requirements are pretty well covered, as makers are quoting 25c. above the bottom prices of ten days ago. There is no business. The impression is that no sales will be made above $17.50 for the present.

Bars.—Store sales foot up well, but mill orders this week have been light. Common iron has been asked for by two or three car-building concerns who expect to be supplied at 1c.

Nails.—Forced sales of cut nails were made this week at exceptionally low prices for spot cash.

Skelp.—Inquiries were made yesterday for a lot of skelp, some 500 tons. Usual quotation 1.22½.

Sheet.—Store distribution is good in a retail way, but orders have not been placed at mills for a week or more. The outlook, however, is good. Prices very low.

Plate.—Boiler iron and steel supplies will soon be called for in considerable quantities to supply small consumers near by. A good deal of shop work is in sight for January.

Structural Material.—There is a rumor this week of two big jobs of railroad terminal work, but as usual, inquiry to ascertain ends in fog. About the facts of the case are that our railroad people here contemplate important improvements involving the use of considerable material, but no one knows for certain anything more.

Steel Rails.—Girders are wanted at $24. Railroad men think they ought to have, and will have, standard section at $20. There is some talk of $24 being made a price, but buyers say there will yet be a regular stamp on rail quotations. Rail makers refuse to say anything satisfactory.

Old Rails.—As usual more old rails are offered than can be sold.

Cartagena, Spain. Nov. 17.

(Special Report of Barrington & Holt.)

The trade in iron and manganiferous ores was practically at a standstill in November, shipments only amounting to 7,000 tons for the month ending with the 15th. Exchange on London has fallen 1·50 pesetas per £1, hampering the export trade badly. On ordinary Portman ore this already makes a difference of 5d. per ton, and on manganiferous ores of 10d., which is a serious matter for merchants who have sold ahead.

Current quotations for December are as follows: 50% Portman ore, 5s. per ton, f.o.b. shipping port; special low phosphorus, 5s. 2d.@5s. 6d.; extra quality low phosphorus, 6s.@6s. 2d.; specular iron ore, 60%, with maximum of 0·03 phosphorus, 8s. 6d.; No. 1 manganiferous, 20% manganese, 11s. 3d. per ton; Nos. 2 and 3, 13 to 15% manganese, 8s.@8s. 6d.; manganese ore, 35 to 40%, 10d. per unit; iron pyrites, 45% sulphur, 10s. 3d. per ton.

METAL MARKET.

NEW YORK, Friday Evening, Nov. 30, 1894.

Gold and Silver.

Prices of Silver per Ounce Troy.

November	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	November.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
24	4.87	28⅞	62¾	.486	28	4.87	28⅝	61¾	.478
26	4.87	28⅛	62⅝	.485	29	...	28½	....	....
27	4.86¾	28½	62½	.481	30	4.87¼	28 9-16	62¼	.482

The demand for the East has been smaller owing to the weakness of China and Japan Exchange. But continental buying has absorbed the silver offering—at lower rates, however—and market closes dull at figures quoted. Shipments this week will be larger than have been prevailing for weeks past.

The United States Assay Office at New York reports the total receipts of silver at 138,000 oz. for the week.

Gold and Silver Exports and Imports.

At all United States Ports, October, 1894, and Ten Months, 1894 and 1893.

	Gold.		Silver.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
Oct..	$1,080,889	$1,675,371	$4,407,848	$1,501,054	E. $2,312,312
1894..	91,602,714	18,598,371	39,773,554	11, 98,407	E. 101,479,490
1893..	76,789,532	67,541,569	36,877,387	16,424,323	E. 29.698,027

The statement includes 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 November 24th, 1894, and for Years from January 1st, 1894, 1893 and 1892.

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports	
We'k	$53,800	$51.497	$354.512	$7,123	E. $349.692
1894..	85,535,165	15,317,161	30,453,952	1.564,031	E. 99,107.925
1893..	70,311,114	62,050,329	28.916.131	3,118,49-	E. 34,058,426
1892..	59,997,653	8,072,057	19,903,816	2,937,203	E. 68,892,109

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

During the five days ending November 29th the imports and exports of gold and silver from the port of New York were as follows: Imports, gold, $980,073: silver, $12,235. Exports, gold, $23,000; silver, $401,130. All the gold exported was in American coin and went to the West Indies; the silver was in American coin and bullion, all of which went to London. Among the silver exported, $1,535 was Mexican coin, in transit to London, November 27th.

FINANCIAL NOTES OF THE WEEK.

Business continues to improve slowly in a general way. The elections being well over, people have settled down to work and there is no longer any motive to misrepresent the condition of trade, which is undoubtedly more active than it was a month ago. The recovery would have been stronger and more marked were it not for the drawback of light grain crops in the West and Northwest, which will for a time limit the purchasing power of a considerable number of people. The effect of this is not

so great, however, as to offset the general improvement.

Speculation is a little halting and uncertain. The railroad shares, in which there is usually the most trading on the exchanges, are somewhat depressed by the condition of several of the leading speculative companies, and by the continued disposition of London and Berlin to unload their holdings. Money continues extremely abundant and cheap at the financial centers. In New York there has been an increase in rates, due chiefly to the operations connected with the new bond issue, but this appears to be only temporary. A favorable point is the increase in demand for time loans by manufacturers and others who use the money in legitimate business operations.

The $50,000,000 issue of government bonds was largely oversubscribed, as was expected. Bids to the amount of $105,000,000 were received from various sources, in addition to which a New York syndicate, headed by Mr. John A. Stewart, of the United States Trust Company, put in two alernative bids for the entire issue, one at 116·889 and one at 117·07, the higher offer being condition on the award of the entire amount to the syndicate. This last-named bid was accepted by the Secretary and the award made accordingly; at 117·07 the issue will realize to the Treasury $58,535,000, and the rate of interest will be about 2·878% on that sum. The syndicate, of course, bought the bonds to sell again, and at first offered them to the public at 119, but raised the price to 119¼ a few days later.

The Secretary's motives in accepting the syndicate bid seem to have been, besides the convenience of dealing with a single party, the fact that the money would be promptly paid in, and that the gold would be furnished by the banks, making it a clear gain to the reserve, and preventing the loss that was feared by drafts on the present stock in exchange for legal tenders.

It continues to be understood that currency reform will be the main topic of the President's message next week and also of the Treasury reports, though, of course, the exact nature of the recommendations is not yet known. As we have noted heretofore, the plan which seems to have the most promise of success in Congress is the appointment of a currency commission. It does not seem probable that Congress will be ready, in the short session which will begin on Monday, to take any radical steps.

The statement of the New York banks for the week ending November 24th shows increases of $3,053,550 in surplus reserve, $1,638,400 in specie and $871,100 in legal tenders; decreases of $3,933,600 in loans, $2,176,200 in deposits and $15,600 in circulation. The total reserve was $215,120,400, being $36,027,600, in excess of the legal requirements. The decrease in loans was partly due to recent heavy sales of securities; but most of the changes noted probably result from preparations made for the bond issue, which include some shifting of accounts and collection of gold from various sources.

A defalcation of $354,000 in the National Shoe and Leather Bank caused some excitement during the week, but does not appear to have affected the bank's soundness. The case presents some remarkable features, which we have not space here to enlarge upon. The worst point is the comparative ease with which a subordinate clerk was able to cover up a long series of deficits.

The statement of the United States Treasury on Wednesday, November 28th (Thursday being a holiday), shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	Nov. 27.	Nov. 28.		Changes.
Gold	$57,742,764	$68,152,811	I.	$10,410,047
Silver	7,209,879	6,623,266	D.	586,613
Legal tenders	8,946,246	6,458,332	D.	2,487,914
Treasury notes, etc.	27,447,877	26,752,955	D.	695,122
Total	$101,346,766	$107,987,164	I.	$6,640,398

The gold balance already shows some increase from the bond transaction; it will be largely increased next week from the same cause.

Government deposits with national banks on same date amounted to $10,712,842, a decrease of $10,418 during the week.

Mr. R. E. Preston, the Director of the Mint, has submitted to the Secretary of the Treasury his report of the operation of the mints and assay offices for the fiscal year ended June 30th, 1894. The value of the gold deposited is stated at $140,942,000. The deposits and purchases of silver during the year are 22,746,661 fine oz., the coining value in silver dollars being $29,409,000. Since the repeal of the purchasing clause of the act of July 14th, 1890, silver contained in gold deposits, bar charges and fractions, amounting to 82 990 fine oz., costing $53,096, was purchased for the subsidiary coinage under the provisions of Section No. 3526 of the Revised Statutes of the United States. The coinage of the year was: Gold, $99,474,912 50; silver dollars, $758; subsidiary silver, $6,024,140 30; minor coins, $716,919.26; total, $106,216,730.06. The gold coinage for the year being the largest every executed at the mints of the United States in any one year. Of this coinage $76,219,912 50 was executed by the mint at Philadelphia, and was made from bullion which had accumulated at the New York Assay Office since 1880, and which, to meet the requirements of the Treasury, it became necessary to transfer and coin. The Director states that the highest price of silver during the rear was $0·7645 and the lowest $0 5918, showing a fluctuation of $0 1725 per fine oz.

A summary of the report prepared by Mr. Preston on gold and silver production in 1893 was, through the courtesy of the Mint Bureau, published in the "Journal" of June 16th last.

The new system of accounting introduced in the Treasury Department on recommendation of the Dockery Commission has had a full month's trial, and is found to work very well. The chief point of reform is in the prompt auditing of the accounts of disbursing officers, while there is a general simplification of methods throughout the department.

The Bank of England on Thursday, November 29th, reported its total gold holdings at £34,956,000; a decrease of £62,132 during the week. The outgo to France continned large and there was also some gold sent to Germany, so that the total decreased, in spite of the transfer from Berlin of a Russian balance of £750,000. There are reports of shipments to the United States, but none has actually been noted as yet.

The Bank of France on Thursday, November 29th, reported its specie holdings at 1,984,850,000 fr. gold and 1,240,750,000 fr. silver. Changes during the week were increases of 17,463,000 fr. gold and 1,618,000 fr. silver.

Specie holdings of other European banks on Thursday, November 29th, are reported by cable to the "Journal of Commerce" as below:

	Gold.	Silver.	Total.
Imp. Bank of Germany	....	....	$268,900,000
Austro-Hungari'n Bank	$76,900,000	$71,182,000	148,082,000
Netherlands Bank	20,395,000	34,092,000	54,487,000
Belgian National Bank	.....	.... ..	25,224,000
Bank of Spain	40,021,000	51,023,000	91,044,000

The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately. No report of so late date is received from the Imperial Bank of Russia.

A new Russian loan for $20,000,000 in 3½% bonds is shortly to be placed in London, Paris and Berlin. About three-quarters of this is a conversion of existing 4% and 4½% bonds.

Shipments of silver from London to the East for the year up to November 16th are given by Messrs. Pixley & Abell's circular as below:

	1893.	1894.	Changes.
India	£6,022,451	£1,415,313	D. £1,607,138
China	1,738,516	2,592,347	I. 853,831
The Straits	1,424,013	1,166,746	D. 257,267
Total	£9,184,980	£8,181,406	D. £1,003,574

Shipments for the week were £131,400 to Hong Kong, £15 000 to Shanghai, $135,000 to Bombay, and £12,500 to Calcutta. Imports included £46,000 from Chile, £17,000 from the West Indies, £5,000 from Australia and £2 000 from Egypt. In Mexican dollars there are noted receipts of £20,000 from New York and shipments of £17,000 to Penang.

Indian exchange was again weak, and though the full amount of 40 lakhs in Council bills was taken, the price fell off 3/32d. to an average of 13 1/16d. per rupee.

The Mint at Paris has recently delivered to the Treasury 200,000 fr. in new pieces of 50 centimes. This delivery makes up about two-thirds of 3,600,000 of those pieces which had been ordered. The mint is now engaged on pressing orders from the Treasury in coining 2,200,000 fr. in silver, 1,600,000 fr. in one-franc pieces, and the remainder in two-franc pieces.

The Mint, which also does some work for foreign countries, has received from the Bolivian Government an order for 3,000,000 coins of nickel alloy, 1,000,000 of which are to be 10-centavo pieces and 2,000,000 will be 5 centavo pieces. The Mint has also orders from the Greek Government for 1,500,000 fr. in value of nickel coinage in pieces of 20, 10 and 5 lepta.

The adoption of a gold standard in British Honduras, to which reference has heretofore been briefly made, was announced by a proclamation of the governor, by which the enforcement of the coinage ordinance of 1894 was brought into effect on October 15th, 1894. The purpose of the ordinance is to demonetize the silver coins that for years have been accepted as legal tender throughout British Honduras, and establish a currency of a uniform value. The only coins that will be recognized by the government hereafter as standard are the gold coins of the United States and the British sovereigns and half-sovereigns. The standard gold coin of the State is declared to be the United States gold dollar of its present weight and fineness. The other gold coins mentioned are designed as "additional coins" that the government will recognize and accept. The subsidiary coins that the government will recognize, and which it has declared to be legal tender, are 50, 25, 10 and 5 cent pieces of silver 925 fine of various standard weights, and a 1-cent piece of mixed metal. The subsidiary coins have been minted in London under the direction of a Board of Commissioners of Currency, with an office in Belize. Currency notes of various denominations from $1 to $100 and multiples of $100 have also been issued as legal tenders. These are issued by the government against gold deposits made with the Treasury, and are redeemable at any time by the holder in current coin, either gold or silver, at the option of the Commissioners. The gold coin received in exchange for currency notes will be retained by the government to form a note guarantee fund for the purpose of meeting the payment of the notes. The silver coins formerly in use in British Honduras were those of nearly every country and State in North and South America. Under the new law these will be redeemed, the Mexican dollar at 50 75 cents and others in proportion. The change has caused much local disturbance in business.

Domestic and Foreign Coins.

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

	Bid.	Asked.
Mexican dollars	$0.50	$0.51
Peruvian soles and Chilean pesos	.48	.51
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	3.88
Twenty marks	4.75	4.78
Spanish 25 pesetas	4.80	4.84

Other Metals.

Copper.—There has been a large inquiry throughout the week, which could only be partly filled because Lake copper is not obtainable at market values, and makers of electrolytic have difficulty in executing the orders now on their books. There are rumors to the effect that the Calumet & Hecla Company refused an order for 1,000,000 lbs. at 9¾c., and this price must be considered very high, especially when it is compared with sales reported from Europe for leading brands of Lake copper, which net only about 9·40c. f. o. b. New York. Electrolytic copper is in much better demand, and we have to quote 9·30@9·40. For casting copper the demand is still slack, but nothing is obtainable below 9·10@9·15. Considering that prices for copper obtainable here are about 2 or 3% better than can be realized in Europe, it is strange that the market continues so flat on the other side, as naturally no pressure can be expected from here and the flat tendency must therefore be attributed to other sources.

In London the market opened at £40@£40 2s. 6d., but was dull throughout the week and closed at the lowest, viz., £39 12s. 6d.@£39 15s. spot and £40@£40 2s. 6d. for three months prompt. For refined and manufactured we quote: English tough, £42@£42 5s.; best selected, £42 5s.@£42 15s.; strong sheets, £50@£50 10s.; India sheets, £46 10s.@£47; yellow metal, 4¼d.

Copper Exports.—The exports of copper from the port of New York for the week ending November 29th, as reported by the New York Metal Exchange, were as follows:

Havre—La Touraine	Ingots	20 tons
" "	Bars	30 "
Rotterdam—Spaandam	Plates	25 "
Naples—Setimoo	Ingots	5 "
Bremen—Aller	"	8 "
Hull—Martello	"	75 "
Rotterdam—Werkendam	Bars	40 "
" "	Ingots	51 "
" "	Pigs	50 "
" "	Plates	65 "
Matte:		
Liverpool—Momadic		182 tons.
Bristol—Wells City		1 "

New York Imports and Exports of Metals.—Imports of metals into this port for the week ending November 22d are reported by the New York Metal Exchange as follows: 75 tons tin from Singapore; 325 tons Straits tin, 100 tons lead, duty paid, 50 casks antimony from London; 50 tons Straits tin, 10 tons Banca tin from Holland; 500 tons lead, duty paid, from Antwerp.

Exports of metals (other than copper) from this port for the week ending November 22d are reported by the New York Metal Exchange as follows: 23 tons old brass, 24 tons iron pipe to Liverpool; 58 tons iron pipe to Hull; 80 tons nickel to Hamburg; 104 tons old iron rails to St. John; 29 tons tin scrap to Antwerp; 44 tons tin scrap to Rotterdam.

Exports of copper from Baltimore for the week ending November 28th, are reported by our special correspondent as follows:

Liverpool—Sedgemore	6,807 ingots	112,000 lbs.
" "	719 cakes	227,620 "

Other metals exported during the week were: 902 slabs spelter, 45,271 lbs., and 66 bbls. zinc dross, 50,048 lbs., to London.

Tin.—We continue to closely follow the ups and downs of the London market, which during the present week were again rather marked, and the market is now decidedly lower. From all this it appears that the "syndicate," about which so much has been heard, must be on the verge of liquidating if it has not already done so. In any case, there has been no marked support to the market of late. On the other hand, prices are attracting a great deal of attention, and consumers are buying quite freely for delivery up to the first half of next year. We have to quote spot at 13·95, and for delivery up to June, at buyer's option, at 13·90@14.

The London market opened on Monday at £63, declined to £62 5s. the next day, then became firmer and advanced to £63 7s. 6d. on Thursday, but reacted to day to £62 15s.@£62 17s. 6d. for both spot and three months deliver. The shipments from the East continue on a heavy scale.

Tin Plate Manufacturers.—Special Agent Ira Ayer, of the Treasury Department, has submitted a

report in which he states that during the quarter ending June 30th, 1894, 40 firms in the United States manufactured 46,466,335 lbs. of tin and terne plates proper, against an output of 38,260,411 lbs. by 36 firms during the previous quarter. Of the output for the quarter, 33 591,344 lbs., or more than 72%, was made from sheets rolled in the United States, and of this amount 32,477,703 lbs., or about 97%, consisted of the class of plates weighing lighter than 63 lbs. per 100 sq. ft. Of the commercial plates manufactured during the quarter, 26,752,996 lbs. were coated with tin and 19,713,339 lbs. were terne coated. The quantity of American sheet iron and steel made into articles and wares tinned or terne plated was 1,807,854 lbs. This makes the aggregate output of tin and terne plate for the quarter, from all sources, 48,274,189 lbs. That of the previous quarter was 40,423,300 lbs. The production for the quarter, subject to comparison with net imports under the department's ruling, inclusive of products from American sheet iron and steel tinned or terne-plated, was 34,285,557 lbs., compared with 28,545,162 lbs. during the previous quarter.

The production for the fiscal year ended June 30th, 1894, subject to such comparison, was 88,642,045 lbs., or 9,334,106 lbs. in excess of the net imports during the year ended June 30th, 1892, subject to comparison with such domestic production.

The production of black-plates in the United States during the quarter was 37,864,901 lbs., and of this amount 32,449,205 lbs., or more than 85%, belonged to the class weighing lighter than 63 lbs. per 100 sq. ft. The production of the previous quarter was 30,070,701 lbs., of which more than 78% was of the lighter class. The production of American black plates of the class weighing lighter than 63 lbs. per 100 sq. ft. was 8,934,342 lbs. in excess of that of any previous quarter. In the manufacture of tin and terne plates proper during the year ended June 30th, 1894, there was used 85,968,202 lbs., or 61·74%, of American black plate, and 53,255,265 lbs., or 38·26%, of foreign black plate. The amount of American sheet iron and steel made into articles and wares tinned or terne plated during the year ending June 30th, 1894, was 6,268,263 lbs.

Lead.—The firmer tendency reported in our last issue has disappeared. Foreign lead was freely offered at 3⅛@3·15, and this to a certain extent depressed the market. The scarcity of spot lead has also disappeared, and business being somewhat slack consumers are keeping aloof. We have to quote 3⅛@3·15.

The London market continues flat, Spanish lead being quoted £9 11s. 3d.@£9 12s. 6d.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "No new developments in pig lead except a somewhat easier feeling. Prices have declined from 2·92½c. to 2·90c., at which 100 desilverized tons were sold November 28th. Holders show an unwillingness to sell at less than 2·92½c., and some even ask 2·95c."

Spanish Lead Market.—Our special correspondents write from Cartagena as follows: The local price for pig lead during November has fluctuated between 43·75 and 45 reales per quintal. Silver is liquidated at 14 reales per ounce. Quotations for lead ore, f. o. b shipping port, are: Potters' ore, 8s. 3d. per cwt.; Linares sulphate, 6s. 3d. per cwt.; Linares carbonate, 4s. 2d. per cwt. The total shipments of pig lead from Cartagena during the month ending November 15th were 4,504 metric tons.

Spelter continues dull and very little business has been doing, but if anything prices are a little stiffer, and we have to quote 3·35@3·40.

In London good ordinaries are quoted £14 10s., and specials £14 12s. 6d.

Antimony remains flat; Cookson's at 8¼@8½; L. X. at 8c.; Hallett's at 7⅞; U. S. French Star, 9c.

Quicksilver.—This market continues quiet and unchanged as to prices. We quote: New York, $37; London, second hand, £6 10s.; Rothschild's price, £6 15s.

Aluminum.—Current quotations are unchanged as follows, No. 1 being over 93% pure metal, and No. 2 over 91% pure: No. 1 in rolling ingots, 63c. per lb. for small lots at factory; 60c. in 100 lb. lots; 58c. in ton lots. No. 1 in ingots for remelting, 60c. for small lots, 55c. for 100 lb. lots, and 53c. in ton lots. No. 2 in ingots for remelting, 55c., 53c. and 50c. per lb., according to size of order. Sheets, 80c. @$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Castings, 90c. per lb. up, according to number, weight, patterns, etc. Tubes, from 20c. to $3.15 per foot, according to thickness and diameter.

Abroad quotations for 99% pure metal in Paris are 6·50@7 fr. per kilo. for ingots; 8 fr. and upward for sheets; 11 fr. for wire over 0·5 mm. and 19 fr. for tubes. The Neuhausen Company quotes No. 1 (guaranteed 98% pure, and in fact 99·75%) at 5 fr. per kilo. for ingots in small lots; for large lots a considerable discount is allowed. This price is at the works in Switzerland.

Bismuth.—Recent sales in New York are lacking and quotations are nominal at $2@$2.50 per lb., according to quantity.

Magnesium.—No quotations are to be found for this metal in New York, where sales are seldom made. Prices in Germany are, for lots of over 10 kilos.: Ingots, $6.75 per kilo.; bars, $6.50; powder, $9; ribbon and wire, $9.50. For orders of less than 10 kilos., 25 cents per kilo. must be added for ingots or bars, and 50 cents for ribbon, wire or powder. These prices are delivered at works; the Aluminum und Magnesium Fabrik, Hemelingen, Germany, is the only maker of the metal in commercial quantities.

Nickel.—Sales reported were all on private terms. Quotations are nominal at 40@45c. London quotations are 16½@17¼d. per lb., with a lower tendency. In Paris pure metal is quoted at 5 fr. per kilo., equal to about 43½c. per lb. Copper-nickel alloy, 50% nickel, 3 fr. per kilo.

Phosphorus.—Quotations continue steady at 50@52½c. per lb., f. o. b. New York or Philadelphia.

Platinum.—Abroad the prices are still firm, with no recent change.

For chemical ware, hammered metal, Messrs. Eimer & Amend, New York, quote crucibles and dishes 41c. per gram for orders of over 250 grams; 43c. for orders of 100 grams or over, and 45c. for small lots. Wire and foil are 40c., 41c. and 42c. per gram, respectively, for orders of the quantities named. Current retail prices for crucibles are 50c. per gram.

Sodium.—In England and Germany makers quote 90@$1 per lb. Sales in this market are too small to furnish quotations.

CHEMICALS AND MINERALS.

New York, Friday Evening, Nov. 30.

Heavy Chemicals.—Some improvement is noticeable in the tone of the heavy chemical market, due chiefly to the growing firmness in prices. A better jobbing demand for caustic soda is reported, though business for next year's delivery is quiet. Alkali and carbonated soda ash are higher, foreign makers showing no disposition to book any more orders at the low prices which prevailed some weeks ago. Bleaching powder has been in fair demand at unchanged prices. We quote for this week as follows: Caustic soda, 60%, 2·10@2·25c. for spot; futures 2c. and upward; 70 to 74%, 2·05@2·30c. Carbonated soda ash, 48%, is 95c.@$1, according to quantity and delivery; small parcels range higher. Alkali, 48%, is 97½@1c., with special makes at 1@1·05c. Bicarb is 2@2½c. for spot. Bleaching powder is 1·75@1.90c. for English; 1·5 @1·65 for German and Belgian. Sal soda is steady at 70@75c. for domestic; some sales of foreign at 65c. are reported.

Acids.—The market continues quiet, with only a fair jobbing demand reported. Despite the low prices prevailing, consumers are not buying as freely as was expected. The attempts made and making to form a "trust" have come to naught, some of the most prominent manufacturers having refused to join it. Any one who knows the conditions of the market and the motives that prompt some of the men at the head of the movement, knows that such attempts are foredoomed to failure. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$165 (in barrels). Muriatic, 18°, 80@90c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5 25. Mixed acids according to mixture: oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $3.25@$3.50.

Brimstone.—The market continues quiet. Quotations for best unmixed seconds, both spot and shipment, are $17; best thirds are $1.25 less.

Fertilizing Chemicals.—There is nothing of consequence doing in this market. Owing to the small demand of the past few weeks stocks are accumulating and prices show a slight decline. Only a small business is doing, a manufacturer now and then placing an order where he thinks the price warrants it. We quote this week: Sulphate of ammonia gas liquor, $3.50 for spot and $3 45 for shipments; bone sulphate is held at $3.35. Dried blood, high grade, $2.20; low grade, $2.10. Azotine, $2.20. Concentrated phosphate (30% available phosphoric acid), 75c. per unit. Acid phosphate, 13% to 15%, av. P_2O_5, 57c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 90c. per unit. Acidulated fish scrap, $14@$15, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $22@22.50; low grade, $21. Bone tankage, $22; ground bone, $20. Bone meal, $23@$24.

In lots of 50 tons on contracts we quote: Double manure salts, 48-53% (basis of 48%): New York and Boston, $1.12; Philadelphia, $1.14½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.17. High grade manure salts, 90-95% and 96-98% basis 90%), respectively: New York and Boston, $2 07@$2.11; Philadelphia, $2.09½@$2.13½. Charleston, Savannah, Wilmington, N. C., and New Orleans, $2.12@$2.16.

Phosphate Rock.—Quotations at Charleston, S. C., are: $4@4.25 for standard land, kiln dried rock, ground rock, in buyer's bags $5.50@$5.60, in seller's bags $1 higher. Acid phosphate is dull at $5.75@ $6.25.

Muriate of Potash.—Arrivals aggregate 200 tons this week. Quotations are fairly steady and unchanged, and for lots of 50 tons are as follows: 80 85% and minimum 95% (basis 80%), respectively: New York and Boston, $1.78@$1.91; Philadelphia, $1 80½@$1.83½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.83½@$1.86.

Kainit.—Prices for kainit (minimum 23%) in cargo lots for 1894 delivery are nominally unchanged and are as follows for invoice and actual weights respectively: New York, Boston and Philadelphia, $9@ $9.25; Charleston, Savannah, Wilmington, N. C., and New Orleans, $9.75@$10. For sylvinit, 27-35%, prices are firm, as follows, per cent. per gross ton, invoice weight: New York, Boston and Philadelphia, 37½c.; Charleston, Savannad, Wilmington, N. C., and New Orleans, 41c. Actual weight, 1c. more per cent. There is a little better demand, but not enough to warrant an increase.

Nitrate of Soda.—This market continues fairly active. Quotations this week are: Spot, $2.12½; near-by arrivals, $2.05@$2 10, according to position; shipments next year, $1.87½.

Charleston, S. C. Nov. 27.

(From our Special Correspondent.)

Everything in the fertilizer trade continues depressed, and sales are light. Current quotations for acid phosphate, 13 5% available, are $8 f. o. b. cars in bulk, and $9@$9.50 in bags at seller's works. Ammoniated goods, 2·5% ammonia, $17.50@$18 in bags f. o. b. cars at works. Sales of phosphate rock have also been light. High grade land-rock is quoted at $3.75@$4 f. o. b. vessel at mines; river rock at $3.75. There is some talk again about combining the Carolina and Florida miners to regulate output and advance prices, but the outcome is very uncertain. Present prices hardly pay the producers.

Liverpool. Nov. 13.

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

There is little life to report in chemicals, and for some lines prices have declined.

Soda Ash.—A limited business passing in Leblanc ash and quotations nominal at about the following range: Caustic ash, 48%, £3 15s.@£4 per ton; 57 and 58%, £4 10s.@£4 15s. per ton. Carb. ash, 48%, £3 5s.@£3 15s. per ton; 58%, £3 15s.@£4 per ton, net cash.

Ammonia ash, 58%, in good request and quoted at £3 10s.@£3 12s. 6d. per ton net cash for tierces, and 5s. less for bags.

Soda crystals inactive, at nominally £2 10s. per ton, less 5%.

Caustic soda slow of sale and for export the maximum price has been reduced 5s. per ton. The fact that American caustic soda is now competing on this market is not an encouraging feature for English manufacturers. For English make the spot range according to market is about as follows: 60%, £6 15s.@£7 5s. per ton; 70%, £7 15s.@£8 5s. per ton; 74%, £8 15s.@£9 5s. per ton; 76%, £9 15s. @£10 5s. per ton, net cash. For parcels under 10 tons, 5s. per ton extra is charged.

Bleaching powder attracts only a moderate amount of attention from buyers, and for hardwood packages the nominal quotations range from about £7 5s. to £7 15s. per ton net cash, according to export market.

Chlorate of potash is quoted 5½d. per lb. for prompt delivery, but this quotation is quite nominal, as there is no business reported.

Bicarb. soda is unchanged at £6 15s. per ton, less 2½% for 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia easier at £12 12s. 6d.@£12 15s. per ton, less 2½%, for good gray 24-25% in double bags f. o. b. here.

Nitrate of soda quiet at £9 2s. 6d.@£9 5s. per ton, less 2½% for double bags f. o. b. here.

Carb. Ammonia.—Lump, 3¾d. per lb.; powdered, 4d. per lb., less 2½%.

MINING STOCKS.

[For complete quotations of shares listed in New York, Boston, San Francisco, Aspen, Colo.; Colorado Springs, Colo.; Duluth, Minn.; Helena, Mont.; Baltimore, Philadelphia, Pittsburg, London and Paris, see pages 526 and 528.]

New York, Friday Evening, Nov. 30.

We must again report a dull and featureless mining stock market. Holidays which come in the middle of a week always disturb trading more or less, and transactions in this market have been so light during the past few months that any unfavorable influence is reflected in the small volume of business.

The Comstocks have been quiet and in most instances show a decline in prices. Consolidated California & Virginia was traded in to the extent of 541 shares. The prices declining from $4 to $3.70. There was a solitary sale of 100 shares of Hale & Norcross at 90c. Comstock Tunnel shows transactions of 1,000 shares of the stock at 7c. and a $1,000 bond at 8%. Other sales were: 100 shares of Sierra Nevada at 60c.; 200 shares of Yellow Jacket at 58@60c.; 300 shares of Chollar at 60@ 74c., and 100 shares of Potosi at 60c. Mexican declined from 95c. to 88c., though only 200 shares were sold.

Of the California stocks we note a sale of 200 shares of Bodie Consolidated at 80c. Plymouth, which had not been traded in for a long time, this week shows sales of 700 shares at 30c., which seems to us rather a high quotation when it is known that several holders would be willing to sell their lots at 25c. a share.

Of the Colorado shares Lacrosse was rather quiet this week, only 400 shares being sold at 5c. A sale of 100 shares of Little Chief at 13c. is reported.

Of the Utah stocks Ontario shows a sale of 50 shares at $10. Horn Silver was not traded in during the week. Late advices from Frisco state that the Horn Silver mill is working on day shift only owing to insufficient water. The management expects, however, to get enough water before long to enable the mill to run continuously. The mill is handling with entire success from 90 to 100 tons of ore per day of 12 hours. This yields from 20 to 25

tons of concentrates. The hoisting of ore from the lower levels of the mine has commenced and shipments of crude ore will soon be resumed.

For some reason or other El Cristo shows a sale of 100 shares at 3c.

Total transactions this week amount to but 5,091 shares, of which 2,991 were dividend shares and 2,100 non-dividend shares.

Boston. Nov. 28.

(From our Special Correspondent.)

The interest in the market for copper stocks the past week has centered in the Montana stocks, which have shown considerable activity and an improvement in prices. It is said that the orders to buy these stocks come from parties who fully believe in them and expect to see much higher prices ruling within the next month. Boston & Montana opened at $29⅝ and sold up to $30½, with a slight reaction. It is gossip that the company will have earned this year in spite of the low price of copper $750,000, or $5 per share. The company has paid two dividends of $1 each. The balance is absorbed by the sinking fund and interest and the purchase of the Comanche mining property. Butte & Boston advanced from $10⅛ to $10⅝, with reaction to $10⅜. There have been good buying orders for this stock, and we should not be surprised to see it sell much higher in the near future.

The Lake Superior stocks have been dull, with a good strong undertone, however, and it is good opinion that with the advancing tendency of the metal there will be an active movement in them before the year closes. Calumet & Hecla sold in a small way up to $284½, a gain of $1½. Tamarack was strong at $150, an advance of $2 for the week. Quincy advanced from $94 to $95, with a good demand for it at the highest figure. The scrip sold at $34½@$34 for small lots. The bear movement against Osceola was not much of a success, and the sellers of last week were the buyers this, carrying the price up from $19 to $22¾, and not much to be had at this price.

Franklin sold in a small way at $12½, against $13 last week. The new purchase by the company has been named Franklin, Jr. Kearsarge sold at $7½, and Tamarack, Jr., at $10¼@$11.

Wolverine has been very quiet this week, and declined from $3 to $2¾, for a 100 share lot.

3 P. M.—Owing to the holiday to-morrow there was very little done at the Exchange after the noon hour. Boston & Montana sold off to $29¾; Butte & Boston to $10½, and Osceolo to $22.

Salt Lake City, Utah. Nov. 24.

(Special Report of James A. Pollock.)

The stock market this week was as lively as last. The increasing volume of business is producing a feeling of encouragement in investment circles, and is imparting a buoyancy and tone to the market that have not been felt for some time past.

The rumor of the probable declaration of a dividend by the directors of the Anchor Company stimulated inquiries for that stock, which closed at $4.50 asked, showing an advance of 50c. a share for the week. The Anchor is free of debt and in a position to pay dividends. Bogan is on the market at $1 per share. This property is the extension of the Silver King mine and the owners claim to have the same vein. Bullion Beck is inactive. The Alamo claim recently purchased by this company is proving a rich block of ground and producing a large amount of ore.

Cane Springs is reported to have sent in gold bricks to the value of $50,000, the product of its Crawford mills. Dalton of Marysvale changed hands at 3@3½c. a share. Centennial-Eureka continues strong. Daly sold at $7.50. No sales reported in Daly West. Elko, the new Mercur stock just placed upon the market, is selling well at 25c. a share. Horn Silver sold at $3 25, which is an advance of 25c. a share for the week. The mine is shipping high grade ore at present. Mammoth brought $1.20. The new mill is working satisfactorily. Silver King is on the upward turn, with shares held at $14. Tetro is being looked into by Eastern investors.

San Francisco.

BY TELEGRAPH.

SAN FRANCISCO, Cal., Nov. 30.—With but few exceptions the course of the market during the week has been a steady decline. Business has been light, and opening quotations to-day are as follows: Best & Belcher, 74c.; Bodie, 86c.; Belle Isle, 10c.; Bulwer, 6c.; Chollar, 55c.; Consolidated California & Virginia, $3.65; Gould & Curry, 48c.; Hale & Norcross, $1.10; Mexican, 76c.; Mono, 5c.; Navajo, 15c.; Ophir, $2.20; Savage, 42c.; Sierra Nevada, 65c.; Union Consolidated, 39c.; Yellow Jacket, 52c.

London. Nov. 14.

(From our Special Correspondent.)

Montanas have been rather weak during the past few days on account of the report for October showing such a small profit. The price relapsed about 2s., but after the weak holders had had time to consider the true position of the mine, as recorded in this column last week, courage came back, and the price of the shares recovered most of its fall. De Lamars have been in good request all the week on the report for October, which shows that the profit continues to be at the rate of about 25%.

The shares of the Richmond Consolidated have been brought from comparative oblivion by the issue of the report for the year ending February 28th. The company has for more than a year been on the look out for a new property, and Mr. Probert has examined many mines with the object of purchasing one. The company announces that it has secured a mine and has been working it for a few months, but for some special reason they consider it best not to disclose its identity or locality. This announcement, though vague, has had the effect of stimulating an inquiry for the shares, because every one expects a board of directors such as that of the Richmond to do as well in the future as in the past.

From time to time I have mentioned that the Mesquital del Oro Company, of Zacatecas, Mexico, was in difficulties, owing to the poorness of the mine, which does not allow the debenture bonds to be paid off or interest to be paid on them. It was quite expected that the debenture-holders would step in and take possession of the property. This, however, has been averted by a private arrangement. Weak holders of ordinary and preference shares have been bought out, and the remaining stockholders are already debenture-holders or have been persuaded to become such. Thus it is not specially in the interest of the debenture-holders to step in. Then again a good deal of difficulty would be met with in the Mexican law courts, because part of the original purchase money consisted of a percentage of the output for 20 years, and it would not be easy to settle this claim in reconstruction. The directors intend to advance more money for pumping plant, and afterward to extend the stamp and amalgamator plant, and to study the possibility of increased economy in extraction. It is the intention of Mr. Arthur Claudet, one of the directors and debenture-holders, to read a paper on the problem of the treatment of the ores, before the Institution of Mining and Metallurgy, some time early next year.

The decision of Mr. Justice Romer, in the MacArthur-Forrest cyanide patent suit, has had very little effect on the shares of the African Gold Recovery Company.

Although new West Australian companies continue to come out, there is a gloom over this branch of the mining stock market. There are signs that a panic may take place at almost any time for the number of adverse rumors floating about show that a collapse is expected. The reports which are now coming over from Coolgardie from reliable experts are the reverse of encouraging. Mr. Samuel Gifford, who was sent out by Messrs. John Taylor & Sons, to find a property at or near Coolgardie for the Australasian Mining Company, has not been able to find one which he can recommend. His general opinions on the formation of the country are not flattering. He says: The main geological features are volcanic rocks associated with schists; there are no regular reefs, but there are numerous veins of quartz, erratic and broken throughout. There are plenty of indications of the existence of gold with rich ore occasionally in pockets. From present developments, it seems as if the ore diminishes in value with depth. The gold is associated with ironstone.

Paris. Nov. 20.

(From our Special Correspondent.)

Our political flurry has passed over to a considerable extent, and with the settlement in Russians more attention has been paid this week to the general market. At the same time our own stocks are still a little neglected, the speculative element being largely taken up by the South African mining shares, which have become a passion with some of our people who are inclined to take risks. The metallurgical shares have been more dealt in than for several weeks, with varying results. Acieries de France have fallen somewhat, a result which is due to the delay in calling the stockholders' meeting—a delay which is not understood and which causes a very unfavorable impression. On the other hand, Fives-Lille, Ateliers de la Loire and Saint Etienne have improved somewhat in price. The production reports this year show that our iron people are holding their own, although there has been no great increase, the loss in manufactures having been in other trades; this, all things considered, is a favorable result. Following the metallurgical shares the coal and iron stocks have been more active, but the changes have not been notable, with the exception of Dombrowa, which is still variable owing to reports of the damage done by the accident in the mine.

In the copper stocks the fall in prices in the London market has not been favorable and some of them have fallen slightly, notably Cape Copper and Jerez Lanteira. Tharsis has also fallen a little, but Rio Tinto has been kept up by the clique. There is still talk of an agreement which shall include the producers on your side of the water. You can tell better than I what the result will be there, but I can assure you that the European companies will only be too glad to join in any agreement.

In the other metal stocks, Malfidano has been steady on light sales. Vieille-Montagne has fallen a little, although payment of part of this year's dividend is announced. Laurium is steady, but Aguilas is weak. Nickel shows some small fluctuations, but upon the whole has risen slightly.

Huanchaca shows an upward tendency and is quoted at a rise. In spite, however, of all the efforts to force a boom in this stock, the sales are almost entirely speculative and there is very little buying from outsiders; in fact our trumpeters have trumpeted a little too loudly, and the effect has been to frighten away rather than to attract the pigeons, who, it was hoped, would take the stock out of the hands of its present holders.

As I noted above, the speculation in the Transvaal gold stocks is assuming very large proportions. It is however, mainly carried on through London brokers. Only a few stocks—the Robinson, the Langlaagte Estate and two or three others—are quoted officially on our market, although an offer has been made to introduce more of them, by the "coulissiers" who would like to secure some of the commissions that are now going across the channel. The authorities of the Bourse, however, have not smiled upon their efforts. It is to be feared that there will be some heavy losses in this department later.

As it seems to be pretty well settled that the war in Europe may be postponed for a year at least, we are to have a little one on our own account. The expedition to Madagascar, which is to subdue the Hovas and make the great island an appanage of France, is to be undertaken. Great preparations are being made, though it will probably be three months before the expedition is ready to sail. It will include not less than 15,000 men, and our War Minister has asked for a special credit to cover the costs of the expedition. It is stated, however, that this will not affect our taxes for this year, as the credit will be obtained by reducing the amount of floating debt which was to be paid off.

The full returns of our exports and imports for October are not made public as yet, but from what can be gathered in advance the month showed a large increase in exports of manufactures. Apparently trade is improving somewhat, for complaints of want of employment and of closed factories have diminished considerably during the past month.

Our friends at Berlin who were badly hit in speculating for the fall in Russians have now tried to abolish time operations in rouble notes, but without success, as the committee of the Bourse has refused to make the change. This committee has very close relation with the Ministry of Finance, and especially in international matters its decisions are usually the result of the hint from the Minister.

We hear of a new Russian loan of 500,000,000 fr. which, it is said, will soon be offered in London, Paris and Berlin. The loan will be a 3½% one, and about three-quarters of it will be a conversion of the existing 4 and 4½% bonds. Doubtless it will be taken without difficulty.

AZOTE.

DIVIDENDS.

Bodie Consolidated Mining Company, dividend No. 22 of 25 cents per share, $25,000, payable December 5th at the office of the transfer agency, Room 17, No. 57 Broadway, New York, only on stock issued from the agency in that city; and at the San Francisco office, Room 62, Nevada Block, No. 309 Montgomery street, only on stock issued there.

Delaware & Hudson Canal Company, dividend of 1¾%, quarterly, payable December 15th. Transfer books are closed from November 28th to December 17th.

Grey Eagle Mining Company.—A stock dividend, subject to assessment No. 38, has been declared by this company, payable at the office of the company, Room 4, Nevada Block, No. 309 Montgomery street, San Francisco, Cal.

Standard Consolidated Mining Company, dividend No. 86, of 10 cents per share, $10,000, payable December 20th, at the Farmers' Loan and Trust Company, No. 22 William street, New York, and at the office of the company in San Francisco, Cal. Transfer books close December 10th, and reopen December 21st.

Tennessee Coal, Iron and Railroad Company. The coupons due December 1st, 1894, on the bonds of the Cahaba Coal Mining Company will be paid on and after that date at the Fourth National Bank, New York City.

Victor Mining Company paid a dividend of five cents per share, $10,000, on November 1st, also a dividend of a like amount on November 15th, at the office of the company in Colorado Springs, Colo.

MEETINGS.

Mexican Gold and Silver Mining Company, at the office of the company, Room 79, Nevada Block, No. 309 Montgomery street, San Francisco, Cal., December 4th, at 1 p. m.

The Pontiac Mining Company, Champion Empire Consolidated Mining Company and the St. Joe & Mineral Farms Consolidated Mining Company will hold a meeting at the offices of the companies in Aspen, Colo., to vote on the question of consolidating the three companies.

Received Too Late for Classification.

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

Name of Company.	Par val.	Nov. 24. H.	Nov. 24. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27. H.	Nov. 27. L.	Nov. 28. H.	Nov. 28. L.	Nov. 29. H.	Nov. 29. L.	Nov. 30. H.	Nov. 30. L.	Sales
Belcher, Nev.	100	—	—	—	—	—	—	—	—	—	—	—	—	—
Belle Isle, Nev.	100													
Bodie Cons., Cal.	100											80		200
Bulwer, Cal.	100													
Chrysolite, Colo.	50													
Comstock T. bonds, Nev.														
" scrip., Nev.												08		1,000
Cons. Cal. & Va., Nev.	100	4.00		3.95		3.80						3.85	3.70	541
Crown Point, Nev.	100													
Deadwood, Dak.	25													
Eureka Cons., Nev.	100													
Father de Smet, Dak.	100													
Gould & Curry, Nev.	100													
Hale & Norcross, Nev.	100			.90										100
Homestake, Dak.	100													
Horn Silver, Utah.	25													
Kentuck, Nev.	100													
Leadville Cons., Colo.	10													
Little Chief	50							.13						100
Mono, Cal.	100													
N. Belle Isle, Nev.	100													
Ontario, Utah.	100			10 00										50
Ophir, Nev.	100													
Plymouth, Cal.	50							.30						700
Quicksilver, Pref., Cal.	100													
" Com., Cal.	100													
Savage, Nev.	100													
Sierra Nevada, Nev.	100	.60												100
Silver King, Ariz.	100													
Standard Cons., Cal.	100													
Victor, Colo.	5													
Yellow Jacket, Nev.	100	.60										58		200

Name of Company.	Par val.	Nov. 24. H.	Nov. 24. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27. H.	Nov. 27. L.	Nov. 28. H.	Nov. 28. L.	Nov. 29. H.	Nov. 29. L.	Nov. 30. H.	Nov. 30. L.	Sales
Am. Flag	100													
Alpha, Nev.	100													
Alta, Nev.	100													
Barcelona, Nev.	25													
Belmont, Cal.	100													
Best & Belcher, Nev	100													
Brunswick, Cal.	5													
Castle Creek.	100													
Chollar, Nev.	100											.74	.60	300
Comstock T., Nev.	100	.07												1,000
Con. Imperial, Nev.	100													100
El Cristo, Rep. of Co	5			.63										
Exchequer, Nev.	100													
Independence, Nev.														
Julia, Nev	100													
Justice, Nev														
King & Pembr, Ont.														
Lacrosse, Colo.	10								.05					400
Mexican, Nev.	100	.95					.88							200
Nevada Queen, Nev	100													
N. Standard, Cal.	100													
N. Commonw'th, Nev	100													
Overman, Nev.	100													
Oriental & Miller, Nev.	10													
Phœnix of Ariz.	100													
Potosi, Nev.	100			.60										100
Scorpion, Nev														
Seg. Belcher, Nev.														
Union Cons., Nev.	100													
Utah, Nev.	100													

*Ex-Dividend. †Dealt in at New York Stock Ex. Unlisted securities. ‡Assessment paid. §Assessment unpaid. Dividend shares sold, 2,991. Non-dividend, 2,100. Total, 5,091.

BOSTON MINING STOCK QUOTATIONS.

Name of Company.	Par val.	Nov. 23.	Nov. 24.	Nov. 26.	Nov. 27.	Nov. 28.	Nov. 29.	Sales.
Atlantic, Mich.	25							
Breece, Colo	25							
Bost. & Mont., Mont.	25	29.75	29.60	30.00	30.38	30.25	30.75	30.13	20.50	29.75			2,957
Calumet & Hecla, Mich.	25	283		283		284½							13
Catalpa, Colo.	10												
Coeur d Alene, Id.	10												
Franklin, Mich.	25				12.50		12 50						30
Honorine, Utah.	2												
Horn Silver, Utah.	25												
Kearsarge, Mich.	25				7.50								25
Lake Superior, Iron.				21.63									100
Minnesota Iron, Minn.													
Napa, Cal.	2												
Ontario, Utah.	100												
Osceola, Mich.	25				22 50	21.75	22 75		22.00				459
Quincy, Mich.	25	94.00			94.00		95.00	94.50	95.00				249
" script.		34.50	34.00						35 00				29
Silver King, Ariz.	100												
Tamarack, Mich.	25	150			150				154	153			76
Tecumseh, Mich.													

Name of Company.	Par val.	Nov. 23	Nov. 24.	Nov. 26.	Nov. 27.	Nov. 28.	Nov. 29.	Sales
Alloues, Mich.	25							
Arnold, Mich.	25							
Astec, Mich.	25							
Brunswick, Cal.	5							
Butte & Boston, Mont	25	10 63	10 25	10.75	10 63	10 88	10.75	10.88		10.63	10.50			1,865
Catalpa, Colo.	10													
Centennial, Mich.	25													
Copper Falls, Mich.	25													
Hanover, Mich.														
Humboldt, Mich.	25													
Huron, Mich.	25													
Mesnard, Mich.	25													
National, Mich.	25													
Native, Mich.	25													
Phœnix, Ariz.	100													
Pontiac, Mich.	25													
Tamarack, Jr., Mich.	25							11 00		11.00	10 50			230
Washington, Mich.	25													
Wolverine, Mich.	25	2 75				3.00								110

Dividend shares sold, 4,938. Non-dividend shares sold, 2,205. Total shares sold, 7,143.

COAL AND COAL RAILROAD STOCKS.

Name of Company.	Par value.	Nov. 24. H.	Nov. 24. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27. H.	Nov. 27. L.	Nov. 28. H.	Nov. 28. L.	Nov. 29. H.	Nov. 29. L.	Nov. 30. H.	Nov. 30. L.	Sales
Am. Coal.														
Balt. & Ohio.						67⅛								160
do. pref.														
Buff., R. & P.														
do. pref.														
Ches. & Ohio.		18¾		18		17⅞	17¾	18	17¾			17¾	17⅝	1,394
do. 1st pref.														
Col. C. & I.				9		10			8½					257
Col. Coal.														
Col. Fuel.				26½	26	25		26						530
do. pref.														
Col., H.V. & Tol		17¼	17	17										900
do. pfd														
Col. & H. Coal				5¾										200
do. pfd.														
Cons. Coal.														
Del. & Hud. C		125½	125¾	127¼	126¾	129¾	127½	128¾	128⅝			125¾	125¼	5,327
Del., L. & W		157½		158		160⅜	159	160	159⅜			159⅜		1,840
Hunt. & Er. T.		34						34⅞	34¾					440
do. pref.								53						155
Lake Erie & W				16½		16¼						16⅛		275
do. pref.												70½		200
Lehigh C. & N.		47		46¾	46⅛			46¾						31
Lehigh Val.		33	32⅝	33¼	33¾			33⅛	33¼					665
Lehigh & W. B														
Mahon'g C. R.														
Morris & Ess.														
New Ct. Coal.														
N. J. Central.		95¼	93⅛	95¼	93¼	95¾	94⅛	96	93⅜			94	92⅛	19,231
N. Y., L. & W.														
N. Y., L. E. & W		13⅜		13⅛	12¾	12½	10¾	11⅜	11			11⅜	11¼	28,008
do. pref.														
N. Y., Susq. & W		14¾	14¼	15								15¼		620
do. pref.				42	41¾			42¼				42		4 0
N. & West.						6⅜		7⅝	6					3-0
do. pref.														
Penn. Coal.														
Penn. R. R.				50⅜	50⅛			50⅜	50⅛					1,467
Phil. & Read.		16½	15⅜	16¼	15¼	16¼	15⅜	16	15¼			15⅛	15⅜	29, 30
Tenn. C. & I.		15¾	15	15⅞		15½	15					15	14⅝	1,700
do. pref.														
Wheel. & L. E		12		12⅜	12	12⅜	12¼	12⅜	12¼			12⅛	11⅞	3,000
do. pref.		43¼						43⅜	43¾					435

Total shares sold, 96,645.

INDUSTRIAL AND TRUST STOCKS.

Name of Company.	Par value.	Nov. 24. H.	Nov. 24. L.	Nov. 26. H.	Nov. 26. L.	Nov. 27. H.	Nov. 27. L.	Nov. 28. H.	Nov. 28. L.	Nov. 29 H.	Nov. 29 L.	Nov. 30. H.	Nov. 30. L.	Sales.
Adams Exp.														
Am. Cot Oil.		27¾		28	27½	27⅜		72				27½		540
do. pref.				72¾										130
Am. Expr.														
Am. Sug. Rf.		89¾	87⅛	88¼	87¾	89⅝	87¾	89¾	86¾			85	93½	241,272
do. pref.				94	93	9 3/4		94	93¾			93	91⅜	1,486
Edis. E. I. Co.						100	99							63
Edis Gen. El		35½	34⅝	35	34⅜	35⅛	34⅛	35¼	34⅞			35	34⅜	6,337
Nat. Lead Co		41	40	40⅜	40	40	39¾	40	38⅝			38¾	38	11,000
do. pref.		85½		86¼	86	85½		84½				84¼	84	1,125
Nat. Lins. Oil.												20½		100
U. S. Cord. Co.		9		9⅛	8¾	9	8¾	8⅝	8			8⅝	8¼	3,422
do. pref.		16½	16¼	15⅝	15¼	15¼	15	15	14			14⅛	14	2,380
do. gtd.		25	22	25	23	23½	25	25						23,407
U. S. Exp'ss						46	44							1,332
U. S. Rubber		41		41¾	41			41¾						55
do. pref.				96		96		96½						525
Wells, Fa. & Ex.														
West. Union		88¼	87¾	89¼	87½	87⅛	87⅜	87¾	87					203
*Westingh'se Brake Co		235		235										
*Westingh'se Air Brake														

* Pittsburg quotations. † Bid. ‡ Asked. Total shares sold, 293,577.

San Francisco, Cal.

Name of Company.	Par value.	Closing Quotations. Nov. 23.	Nov. 24.	Nov. 26	Nov. 27.	Nov. 28	Nov. 29.
Alpha.							
Alta.		.19	.25		.23	.18	
Belcher.		.75	.75		.74	.75	
Belle Isle.							
B. & Belch		.84	.81		.75	.76	
Bodie.		.86	.90		.89	.86	
Bulwer		.08	.06		.08	.08	
Challar.		.57	.58		.60	.53	
Com'w'lth							
Con. C. & V.		3.80	3.70		3.60	3.60	
Con. Pac.							
Crown Pt.		.47	.53		.51	.55	
Del Monte							
E'rekaCon							
G'ld & C'y		.53	.47		.45	.50	
Hale & N.		.94	.90		1.05	1.10	
M. White.							
Mexican.		.86	.80		.76	.77	
Mono.		.06	.05		.05	.06	
Mt. Diablo							
Navajo.							
Nev. Qu'n.							
N. B'lleisle							
N. Co'w'th							
Ophir.		2.75	2.50		2.15	2.20	
Potosi.		.50	.50		.50	.51	
Savage.		.43	.41		.50	.44	
Sierra Nev		.68	.66		.65	.69	
Uni'n Con		.43	.40		.39	.40	
Utah		.05	.06		.05	.08	
Yel. Jack.		.51	.51		.50	.50	

Baltimore, Md. Nov. 29.

	Par val.	Latest actual selling price.	Bid.	Asked.
Atl. Coal, W. Va.	$10	....	....	$0.80
Blt. & N. C., N.C.	5	$0.02	....	.02
B'lt. M. & S., N.C.		....	....	.02
Big Vein C., Md.	10	1.00	....	....
Conr. Hill, N.C.	5	.04	....	.04
Con. G. & C., N.C.	5		....	02
Cons. Coal, Md.	100	30.00	$30.00	32.00
Ga. C. Coal, Md.	100	106.00	104.00	105.00
Gt. Rep'b., Colo.	5	.02	....	.02
How. C. & C., Md.	5	1.15	....	1.20
Lake Chr., Md.	5	.05	....	.10
Newb. O. C'l, Md.	25	....	....	....
N. State (Balt.), N. C.	5	.05	....	.10
Ore Knob, Md.	10	.02	....	.05
Silv. Val., N. C.	5	.25	....	.20
Ver. M. Co., Md.	5	....	....	.10

Philadelphia, Pa. Nov. 29.

	Par val.	Bid.	Asked.
Blooming. C. & C. Co.	$50	....	.....
Cambria Iron Co	50	$49	$55
Connellsville Gas Co.	10	....	.....
Central C. & C. Co	100	....	.....
do. pref.	100	....	85
Locust Mt. C. & I. Co.	50	....	.....
North Liberties Gas.	25	....	35
Penn. Nat. Gas.		*12	*11½
Penn. Salt Co.	50	95	100½
Penn. Steel Co.	100	*23	.....
Penn. Gas Coal Co.	50	....	42½
Westmoreland Coal.	50	49	50
Wyoming Valley Co.	100	...	.....

*Actual selling price.

Pittsburg, Pa. Nov. 27

Name and Location of Company.	Par val.	Actual selling price.	Bid.	Asked.
Gas Stocks:				
Allegheny	$100	$48½	$49	$50
Bridgewater.	10	....	....	....
Chartiers Val.	100	....	9	....
Ohio Valley.	50	35½	....	....
People's Nat.	50	....	33¼	....
" N. G. & P.	25	....	14½	14⅝
Pennsylvania.	50	....	9	....
Phila. Co.	50	19¾	20	20¼
Union	50	....	....	....
West. & Cam.	50	....	....	....
Wheeling	50	....	20	22
Coal Stocks.				
N.Y. & Cl. G.C.	50	....	....	46
Mining Stocks:				
Lustre	10	....	....	14½
Oil Co. Stocks:				
Washington.	50	....	....	50

Denver, Colo.

Prices and sales for week ending November 26th.

	Par value.	High.	Low.	Sales.
Amity	....	.01¼	.01½	15,000
Anaconda.	....	.26½	.25¼	4,700
Bangkok.	....	.30	.21½	14,000
Big Six.	....	.18	.15	3,000
Boston-Id.	....	.15¼	.14	3,700
Gold & Globe.	....	.05	.04¼	20,900
Gold S.	....	.04¾	.04⅝	27,500
Justice.	....	.02½	.02⅜	33,800
Mollie Gibson	....	2.60	2.10	2,800
Mt. Rosa.	....	.04⅜	.04⅛	14,200
Pharma.	....	.06¾	.06⅜	6,700
Work.	....	.03¾	.03½	43,000

Total shares sold.....194,800

London, England.

(From our Special Correspondent.)

	Par value. £ s. d.	Nov. 21, 1894. Buyer. £ s. d.	Seller. £ s. d.
Al'skaMex., Al.	1 0 0	1 6 3	1 8 9
Al'ka-Tr'dwell, Alaska.	5 0 0	3 10 0	3 15 0
Alma, & T., Mex	2 6	1½	7½
Am. Belle, Col.	1 0 0	1 0	1 6
De Lamar, Id.	1 0 0	1 3 6	1 4 0
E. K'tenay Ex., B. C.		12 6	15 0
Elkhorn, Mont	1 0 0	11 6	12 0
Emma, Utah.	5 0	3	6
G. Feather, Cal	1 0 0	3 6	4 6
Golden G., Cal.	1 0 0	2 6	3 6
G Leaf, Mont. & N. M.	1 0 0	3 9	4 3
Harqua H., Ari	1 0 0	5 0	6 0
Hole'b Val., Cal	5 0	9	1 0
Jay H'k & Lone Pine, Mont.	1 0 0	3 6	4 6
La Yesca, Mex	1 0 0	6	1 0
N. Guston, Col	1 0 0	13 9	16 3
N. Mont., Mont	1 0 0	13 0	13 6
Palm'rejo, Mex	1 0 0	1 3	1 6
Pin. Alt., Mex.	1 0 0	6 0	7 0
Pl. Alt., Mex., P	1 0 0	12 6	17 6
Pl. Eureka, Cal		11 3	13 9
Poorman C., Id	5 0	1 6	1 9
Rich. C., Nev.	5 0 0	10 0	12 0
Sier. But., Cal	2 0 0	8 0	10 0
Springd. G., Col	4 0	1 3	1 9
Un. Mex., Mex.	1 0 0	1	

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Par	Assessments. Total Levied	Assessments. Date and amount of last.			Dividends. Total paid.	Dividends. Date & amount of last.		
1	Adams, s. l. c.	Colo.	$1,500,000	150,000	$10	*				$637,500	Jan.	1892	.05
2	Alaska-Treadwell, g.	Al'ska	5,000,000	200,000	25					2,050,000	July.	1894	.75
3	Alice, s.	Mont.	10,000,000	400,000	25	*				975,000	Nov.	1891	.06¼
4	Amador, g.	Cal.	1,250,000	250,000	5	*				31,250	Aug.	1890	.12½
5	American, g.	Colo.	3,000,000	300,000	10	*				225,000	Mar.	1892	.05
6	American Belle, s. g. c	Colo.	2,000,000	400,000	5	*				50,000	April	1891	.12½
7	Americ'n & Nettie, g. s	Colo.		300,000						175,000	Mar.	1892	.05
8	Atlantic, c.	Mich.	1,000,000	40,000	25	280,000	April	1875	$1.00	700,000	Feb.	1891	.00
9	Argyle, g.	Colo.	1,000,000	1,000,000	1	*				20,000	Mar	1892	.01
10	Aspen Mg. & S., s. l.	Colo.	2,000,000	200,000	10	*				900,000	July.	1894	.10
11	Aurora, i.	Mich.	2,500,000	100,000	25					650,000	Feb.	1893	2.00
12	Badger, s	Ont.	250,000	50,000	5					37,500	Mar.	1890	.25
13	Bald Butte	Mont.	250,000	250,000	1	*				295,000	Oct.	1894	.05
14	Bates Hunter, s. g.	Colo.	1,000,000	1,000,000	1					67,500	Dec.	1891	.00¾
15	Belle Isle, s.	Nev.	10,000,000	100,000	100	280,271	Sept	1893	.10	300,000	Dec.	1879	.25
16	Belcher, s. g.	Nev.	10,400,000	104,000	100	3,262,900	Nov.	1893	.20	15,397,000	April	1876	1.00
17	Bellevue, Idaho, s. l.	Idaho	1,250,000	125,000	10	120,000	Dec.	1889	.25	200,000	Jan.	1890	.10
18	Best Friend	Colo.	1,000,000	1,000,000	1	*				90,000	Feb.	1892	.01
19	Bi-Metallic, s.	Mont.	5,000,000	200,000	25					1,630,000	June	1893	.10
20	Bodie Con., g. i.	Cal.	10,000,000	100,000	100	714,990	July	1893	.15	1,652,572	Nov.	1894	.25
21	Boston & Mont., g.	Mont.	2,500,000	250,000	10	*				520,000	June	1886	.15
22	Boston & Mont., c. s.	Mont.	3,125,000	125,000	25	*				2,075,000	Nov.	1891	1.00
23	Brotherton, i.	Mich	2,000,000	80,000	25	*				120,000	Mar.	1893	.50
24	Bulwer, g.	Cal.	10,000,000	100,000	10	155,000	July	1893	.15	190,000	Oct.	1892	.05
25	Bunker Hill & S. s. l.	Idaho	3,000,000	300,000	10	*				150,000	Oct.	1888	.06
26	Caledonia, g.	Dak.	10,000,000	100,000	100	505,000	May.	1885	.15	192,000	Oct.	1890	.08⅓
27	Calumet & Hecla c	Mich.	2,500,000	100,000	25	1,200,000				40,850,000	Aug.	1894	5.00
28	Centen'l-Eureka, s. l.	Utah.	1,500,000	30,000	50	30,000	Mar.	1888	1.00	870,000	Oct	1894	.50
29	Central, c.	Mich.	500,000	20,000	25	100,000	Oct.	1861	.65	1,970,000	Feb.	1891	1.00
30	Champion, g	Cal.	340,000	34,000	10	150,000				183,900	July.	1894	.10
31	Chrysolite, s. l.	Colo.	10,000,000	200,000	50	*				1,650,000	Dec.	1884	.25
32	Cœur D'Alene, s. l.	Idaho	5,000,000	500,000	10					340,000	June	1893	.03
33	Colorado Central, s. l.	Colo.	2,750,000	275,000	10	*				502,661	April	1893	.05
34	Commonwealth, s.	Nev.	10,000,000	100,000	100	200,000	Nov.	1893	.10	20,000	Nov.	1890	.20
35	Confidence, s. l.	Nev.	2,496,000	24,960	100	1,589,550	Aug.	1892	.50	199,680	April	1889	1.00
36	‡Cons. Cal. & Va., s. g	Nev.	21,600,000	216,000	100	216,000	Dec.	1892	.50	3,682,800	Aug.	1891	.50
37	Contention, s.	Ariz.	12,500,000	250,000	50					2,687,500	Aug.	1892	.20
38	Cook's Peak, s.	N. M.	2,000,000	200,000	10					119,532	Nov	1892	.05
39	‖Cop. Queen Con., c.	Ariz.	2,000,000	200,000	10					1,710,000	Aug.	1894	.25
40	Coptis	Nev.	10,000,000	100,000	100					67,000	July.	1892	.12
41	Cortes, s.	Nev.	1,500,000	300,000	05	*				687,000	Mar.	1892	.50
42	Crescent, s. l. g.	Utah.	15,000,000	600,000	25	60,000	Oct	1892	.10	238,000	Oct.	1888	.03
43	Crown Point, g. s.	Nev.	10,000,000	100,000	100	2,750,000	June	1893	.25	11,898,000	Jan.	1875	.00
44	Daly, s. l	Utah.	3,000,000	150,000	20					2,850,000	May.	1893	.25
45	†Deadwood-Terra, g.	Dak.	5,000,000	200,000	25	*				1,140,000	Sept	1892	.05
46	DeLamar, g. s	Idaho	2,000,000	400,000	25					1,450,000	July.	1894	.25
47	Derbec B. Grav., g.	Cal.	10,000,000	100,000	100	100,000	Sept.	1892	.10	265,000	Mar	1894	.05
48	Dexter, g. s	Nev.	1,000,000	100,000	10					105,000	July	1893	.25
49	Elkhorn, s.	Mont.	1,000,000	200,000	5	*				1,337,363	Sept.	1894	.25
50	Elkton	Colo.	500,000	500,000	1					40,000	Aug.	1894	.01
51	Enterprise, s.	Colo.	2,500,000	500,000	5	*				850,000	June.	1893	.25
52	Eureka Con., s. l. g.	Nev.	1,000,000	50,000	100	550,000	June	1889	.50	5,112,500	Jan	1892	.25
53	Evening Star, s. l.	Colo.	500,000	50,000	10	*				1,437,500	Dec.	1889	.25
54	Father de Smet, g.	Dak.	10,000,000	100,000	100	200,000	Nov.	1878	1.00	1,125,000	Dec.	1885	.20
55	Franklin, c.	Mich.	1,000,000	40,000	25	220,000	June	1871		1,240,000	Dec.	1893	2.00
56	Glengarry	Mont.	1,000,000	100,000	10					10,000	June.	1891	.10
57	Golden Reward	S.Dak	1,250,000	250,000	5					100,000	July.	1894	.05
58	Gould & Curry, s. g.	Nev.	10,800,000	108,000	100	4,688,400	Oct.	1893	.10	3,826,800	Oct.	1870	10.00
59	Grand Prize, s.	Nev.	10,000,000	100,000	100	785,000	Jan.	1890	.30	495,000	Mar.	1884	.25
60	Granite Mountain, s.	Mont.	10,000,000	400,000	25					12,120,000	July.	1892	.20
61	Great Western, l. q.	Cal.	5,000,000	50,000	100					388,366	Nov.	1893	.25
62	Hale & Norcross, g. s.	Nev.	11,200,000	112,000	100	5,646,800	June	1893	.50	1,822,000	Aug	1888	.50
63	Hecla Con., s. g. l. c.	Mont.	1,500,000	30,000	50					1,950,000	Oct	1894	.01
64	Hel'a Mg. & Red, s. l. g.	Mont.	3,315,000	663,000	5	*				197,970	July.	1886	.06
65	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5					170,000	July.	1891	.02
66	Helena & Victor	Mont.	1,000,000	200,000	5					80,000	May.	1892	.05
67	¶Holmes, s.	Nev.	10,000,000	100,000	100	345,000	Mar.	1890	.25	75,000	Apr.	1892	.25
68	Homestake, g.	Dak.	12,500,000	125,000	100	200,000	July.	1878	1.00	5,237,500	Aug.	1894	.20
69	Hope, s.	Mont.	1,000,000	100,000	10	*				583,250	Oct.	1894	.25
70	Horn-Silver, s. l.	Utah.	10,000,000	400,000	25	*				4,930,000	July.	1894	.12½
71	Idaho, g.	Cal.	310,000	3,100	100					5,489,000	Sept.	1893	2.50
72	Illinois, s.	N. M.	100,000	100,000	1	*				45,000	April	1889	.20
73	Iron Mountain, s.	Mont.	5,000,000	500,000	10	*				265,000	Feb.	1894	.02
74	Iron-Silver, s. l.	Colo.	10,000,000	500,000	20	*				2,500,000	April	1889	.20
75	Jackson, g. s.	Nev.	5,000,000	50,000	100	247,500	Mar.	1893	.20	60,000	Jan.	1891	.10
76	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	80,000	Jan	1890	2.00
77	Kennedy	Cal.	10,000,000	100,000	100					1,410,000	July.	1894	.45
78	Kentuck, s. g.	Nev.	3,000,000	30,000	100	454,180	Oct.	1891	.15	1,350,000	Dec.	1886	.10
79	Leadville Con., s. l.	Colo.	4,000,000	400,000	10	*				316,000	Feb.	1893	.03
80	Lexington, g. s.	Mont.	4,000,000	40,000	100	*				652,200	July.	1893	.90
81	Little Chief, s. l.	Colo.	10,000,000	200,000	50	*				820,000	Dec.	1890	.05
82	Maid of Erin	Colo.	3,000,000	600,000	5					708,900	April	1893	.25
83	Mammoth, s. l. c.	Utah	10,000,000	400,000	25	110,000		1882	.25	1,040,000	Dec.	1891	.10
84	Maxfield	Utah	3,000,000	300,000	10					117,000	April	1892	.03
85	Mayflower, D. gravel	Cal.	1,200,000	60,000	20					208,000	July.	1894	.10
86	Minas Prietas, g. s.	Mex.	1,000,000	100,000	10					350,000	Dec.	1890	.50
87	Minnesota, c.	Mich.	1,000,000	40,000	25	420,000	April	1886	1.00	1,820,000	Mar	1876	
88	Minnesota Iron, i.	Minn.	16,500,000	165,000	100					2,745,000	April.	1892	1.50
89	Mollie Gibson, s.	Colo.	5,000,000	1,000,000	5	*				3,930,000	Dec.	1893	.05
90	Monitor, g.	S.Dak	2,500,000	250,000	10					45,000	Oct.	1890	.03
91	Mono, g.	Cal.	5,000,000	50,000	100	797,500	Feb.	1893	.25	12,500	Mar	1886	.25
92	Montana, Lt., g. s.	Mont.	3,300,000	660,000	5	*				2,619,075	June.	1891	12½
93	Moose	Colo.	600,000	600,000	1					48,000	July.	1894	.02
94	Morning Star, s. l.	Colo.	1,000,000	100,000	10					1,025,000	Dec.	1891	.25
95	Morning Star Drift, g	Cal.	240,000	2,400	100					242,400	July.	1894	4.00
96	Moulton, s. g.	Mont.	2,000,000	400,000	5	*				410,000	Nov.	1892	.07½
97	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	187,500	June	1880	2.00	225,000	Nov	1893	.30
98	Napa, q.	Cal.	700,000	100,000	7					630,000	July.	1894	.10
99	Navajo, g. s.	Nev.	10,000,000	100,000	100	588,714	Sept.	1893	.10	226,111	April	1889	.10
100	New Guston, s.	Colo.	550,000	110,000	5					1,877,500	April	1892	.75
101	North Banner Con.	Cal.	1,000,000	100,000	10					20,000	July.	1891	.05
102	North Commonw'th	Nev.	10,000,000	100,000	10	90,000	Jan.	1893	.10	25,000	June.	1891	.25
103	N. Hoover Hill, g. s.	N. C.	300,000	120,000	2½	*				30,000	Dec.	1885	.06¼
104	North Belle Isle, s.	Nev.	10,000,000	100,000	100	513,075	April	1893	.10	230,000	May.	1888	.50
105	North Star, g.	Cal.	1,000,000	100,000	10	20,000		1885	.02	450,000	June	1893	.50
106	Omaha Cons., g.	Cal.	2,400,000	24,000	100					97,200	July.	1894	.15
107	Ontario, s. l.	Utah	15,000,000	150,000	100					13,175,000	Oct.	1892	.50
108	Ophir, g. s.	Nev.	10,000,000	100,000	100	4,391,040	July.	1893	.25	1,595,800	Jan.	1880	1.00
109	Osceola, c.	Mich.	1,250,000	50,000	25	480,000	April	1876	1.60	1,847,500	Dec.	1893	1.00
110	Pacific Coast, b.	Cal.	1,500,000	15,000	100					422,500	July.	1893	1.00
111	Parrot, c.	Mont.	1,800,000	180,000	10					1,569,000	June	1893	.10
112	Petro	Utah.	10,000,000	10,025	100					17,500	July.	1891	.75
113	Plumas Eureka, g.	Cal.	1,406,250	140,600	10					2,696,295	Oct.	1893	.18
114	Plymouth Con., g.	Cal.	5,000,000	100,000	50	*				2,280,000	Feb.	1888	.40
115	Poorman, g. s.	Idaho	375,000	300,000	125	*				68,260	Sept.	1892	
116	Portland	Colo.	3,000,000	3,000,000	1					90,000	July.	1894	.03
117	Quicksilver, pref., q.	Cal.	4,300,000	43,000	100					1,823,911	June	1891	1.25
118	" com., q	Cal.	5,700,000	57,000	100					643,867	July	1882	.40
119	Quincy, c.	Mich.	1,250,000	50,000	25	200,000	Dec.	1862		7,070,000	Aug.	1894	4.00
120	Red Cloud	Idaho	1,000,000	200,000	5					153,000	Dec	1892	.10
121	Retriever, l.	S.Dak	1,250,000	250,000	5					20,000	Aug.	1891	.03
122	Rialto, g.	Colo.	300,000	300,000	1	*				50,250	April	1892	.01½
123	Richmond, s. l.	Nev.	1,350,000	54,000	25	*				4,359,887	Oct.	1893	.25
124	Rico-Aspen	Colo.	5,000,000	1,000,000	5					325,000	Nov.	1894	.02½
125	Ridge, c.	Mich.	1,250,000	50,000	25	219,939	Mar.	1886	.50	99,785	Feb.	1880	.50
126	Robinson Con., s. l.	Colo.	10,000,000	200,000	50	*				585,000	Mar	1886	.05
127	Savage, s.	Nev.	11,200,000	112,000	100	6,966,000	June	1893	.25	4,460,000	June	1869	3.00
128	Sierra Buttes, g.	Cal.	2,225,000	122,500	10					1,559,933	Oct.	1893	.12½
129	Sierra Nevada, s. g.	Nev.	10,000,000	100,000	100	6,521,910	Aug	1893	.20	102,000	Jan.	1871	1.00
130	Silver Cord, s. l. g.	Colo.	4,500,000	450,000	10					265,000	April	1889	.10
131	Silver King, s.	Ariz.	10,000,000	100,000	100	97,479	Aug.	1892	.25	1,950,000	July	1887	.25
132	Silver Mg. of L.V., s. l.	N. M.	500,000	500,000	1					300,000	Dec.	1891	4.05
133	Small Hopes Con., s.	Colo.	5,000,000	250,000	20	*				3,225,000	Oct.	1893	.10
134	Standard, g. s.	Cal.	10,000,000	100,000	100	100,000	June	1890	.50	3,741,159	July	1894	.10
135	Swansea, g. s.	Colo.	600,000	60,000	10					39,000	Sept.	1893	.10
136	Tamarack, c.	Mich.	1,250,000	50,000	25	520,000	April	1885	3.00	3,870,000	June	1894	4.00
137	Trinity Riv'r Hydr., g	Colo.	500,000	500,000	1	*				37,500	Apr.	1894	.00½
138	Union	Colo.	1,250,000	1,250,000	1					25,000	Aug.	1894	.00½
139	United Verde, c.	Ariz.	3,000,000	300,000	10	*				207,500	Jan.	1892	.10
140	Victor, g	Colo.	1,000,000	200,000	5					170,000	Sept.	1894	.10
141	Ward Con., s.	Colo.	2,000,000	200,000	10					20,000	Dec.	1889	.05
142	W. Y. O. D.	Cal.	60,000	30,000	2	22,500	May.	1891	.10	78,000	July.	1894	.10
143	Yankee Girl, s	Colo.	1,800,000	260,000	5					1,405,000	Sept.	1893	1.50
144	Yellow Jacket, g. s.	Nev.	12,000,000	120,000	100	5,556,000	July.	1893	.25	2,184,000	Aug.	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par	Assessments. Total levied	Assessments. Date and am't of last		
1	Alliance, s. g.	Utah	$100,000	100,000	$1	$120,000	Feb.	1891	.10
2	Allouez, c.	Mich.	2,000,000	80,000	25	1,424,937	Oct.	1891	.10
3	Alpha Con., g. s.	Nev.	3,000,000	30,000	100	209,000	Sept.	1892	
4	Alta, s.	Nev.	10,080,000	100,800	100	3,369,880	Jan.	1892	.10
5	American Flag, s.	Colo.	1,250,000	125,000	1	300,000	June	1887	
6	Anchor, s. l. g.	Utah.	3,000,000	150,000	5	560,000	July.	1893	.2
7	Barcelona, g.	Nev.	5,000,000	200,000	5	*			
8	Belmont, g.	Cal.	500,000	500,000	100	*			
9	Belmont, s.	Nev.	5,000,000	50,000	100	735,000	April	1886	.10
10	Best & Belcher, s. g.	Nev.	10,080,000	100,800	10	2,405,275	Aug.	1892	.25
11	Black Oak, g.	Cal.	3,000,000	300,000	100	*			
12	Brownlow, g.	Colo.	250,000	250,000	5				
13	Brunswick, g.	Cal.	2,000,000	400,000	2				
14	Bullion, s. g.	Nev.	10,000,000	100,000	100	2,890,000	Aug.	1892	.25
15	Butte & Boston, c. s.	Mont.	5,000,000	200,000	10				
16	Butte Queen, g.	Cal.	1,000,000	100,000	1	6,000	Jan.	1892	
17	Calaveras, g.	Cal.	500,000	500,000	5				
18	Calaveras Con., g.	Cal.	800,000	160,000	10				
19	California, g.	Cal.	1,000,000	100,000	5	9,000	Mar.	1892	
20	California Con. l. q.	Cal.	2,250,000	450,000	10				
21	Challenge Con., g. s.	Nev.	5,000,000	50,000	10				
22	Chollar, s. g.	Nev.	11,200,000	112,000	2	1,820,000	May.	1892	.50
23	Colchis, s. g.	N. M.	500,000	150,000	5				
24	Colorado, s.	Colo.	1,625,000	325,000	1				
25	Comstock, s.	Utah.	1,250,000	250,000	100				
26	Comstock Tun.	Nev.	10,000,000	100,000	100	35,000	Mar	1887	.10
27	Con. Imperial, g. s	Nev.	5,000,000	50,000	50	2,062,500	Jan.	1892	.25
28	Con. New York, s. g.	Nev.	5,000,000	100,000	100	110,000	Mar.	1892	.10
29	Con. Pacific, g.	Cal.	6,000,000	60,000	10	198,000	June	1890	.10
30	Crescent, s. l.	Colo.	3,000,000	300,000	100	*			
31	Crocker, s.	Ariz.	10,000,000	100,000	1	165,000	Aug	1892	.05
32	Crowell, g.	N. C.	500,000	500,000	1				
33	Dahlonega, g	Ga.	250,000	250,000	10	*			
34	Decatur, s	Colo.	1,500,000	300,000					
35	Denver City, s.	Colo.	5,000,000	500,000	11	*			
36	Denver Gold, g.	Colo.	300,000	60,000	5				
37	Dickens-Custer, s.	Idaho	2,100,000	420,000	5				
38	Durango, g.	Colo.	500,000	500,000	1	*			
39	El Dorado, g.	Cal.	1,000,000	250,000	4	*			
40	Emma, s	Utah.	625,000	500,000	125				
41	Emmons, s. l.	Colo.	2,000,000	2,000,000	1				
42	Empire, s.	Utah.	10,000,000	100,000	100				
43	Eureka Tunnel, s. l.	Nev.	10,000,000	100,000	100	*			
44	Exchequer, s. g.	Nev.	10,000,000	100,000	100	940,000	Jan.	1892	.25
45	Found Treasure, g. s.	Nev.	10,000,000	100,000	100	130,500	Jan.	1892	.50
46	Gogebic I. Syn., i.	Wis.	5,600,000	200,000	25				
47	Gold Cup, s.	Colo.	500,000	500,000	1	*			
48	Golden Era, s.	Mont.	1,000,000	200,000	10	*			
49	Gold Flat, g.	Cal.	1,000,000	100,000	10	5,000	Mar.	1892	.05
50	Gold Rock, g.	Cal.	1,000,000	500,000	2				
51	Golden Feather Co., g	Cal.	900,000	180,000	5				
52	Goodyear, g. s. l.	Mont.	1,000,000	200,000	5	13,000	Feb.	1892	.01
53	Grand Duke, s.	Colo.	800,000	80,000	10				
54	Gregory Con., g.	Mont.	3,000,000	300,000	10				
55	Harlem M. & M. Co., g.	Cal.	1,000,000	200,000	5				
56	Hartery Con., g.	Cal.	1,000,000	100,000	10	22,000	Oct.	1890	.05
57	Hartshorn, g. s. l.	S.Dak	1,250,000	250,000	5	8,750	Sept.	1891	.00½
58	Head Cent. & Tr., s. g	Ariz.	10,000,000	100,000	100	16,981	Mar.	1892	.03
59	Hector, g.	Cal.	1,500,000	300,000	5	45,000	Jan.	1889	.15
60	Himalaya, g. s. l.	Utah.	1,800,000	80,000	10	12,800	Oct.	1892	.00½
61	Holywood	Cal.	200,000	100,000	2				
62	Huron, c.	Mich.	1,000,000	40,000	25	280,000	May.	1887	3.00
63	Idaho, g. s	Idaho	1,250,000	250,000	5				
64	Ingalls, g	Colo.	100,000	20,000	5				
65	Ironton, i.	Wis.	1,000,000	40,000	25				
66	Iroquois, c.	Mich.	1,250,000	50,000	25				
67	Kentuck Con.	Nev.	10,500,000	105,000	00	57,750	July	1892	.10
68	Julia Con., g. s.	Nev.	11,000,000	110,000	100	1,463,000	Jan.	1889	.10
69	Justice, g. s. c.	Colo.	500,000	500,000	1	*			
70	Lacrosse, g.	Colo.	1,000,000	100,000	10	*			
71	Little Josephine, s.	Colo.	250,000	50,000	5				
72	Lone Star Cons., g.	Cal.	500,000	500,000	1	10,000	April	1892	.00½
73	Madeleine, g. s. l.	Colo.	750,000	50,000	1	4,500	Feb.	1892	.00½
74	Mammoth Gold, g.	Ariz.	2,500,000	500,000	5	*			
75	Mayflower Gravel, g	Cal.	1,000,000	100,000	10	*			
76	Mexican, g. s.	Nev.	10,000,000	100,000	100	2,917,560	Oct.	1892	.50
77	Michigan, g. s	Mich.	2,500,000	100,000	25	40,000	Mar.	1892	
78	Mike & Starr, s. c.	Colo.	1,000,000	200,000	5	*			
79	Milwaukee, s.	Mont.	500,000	500,000	1	*			
80	Modoc Chief, l. s. g.	Idaho	1,000,000	200,000	5	5,000	Jan.	1892	.00½
81	Monitor, g.	Colo.	100,000	100,000	1	12,500	May.	1891	.01
82	Montreal, g. s. l.	Utah.	750,000	150,000	5	4,500	Feb.	1892	.00½
83	Mutual Mg. & Sm.	W'sh.	100,000	100,000	1	*			
84	Neath, g.	Colo.	1,000,000	100,000	10				
85	Nelson	Cal.	50,000	10,000	5				
86	Nevada Queen, s.	Nev.	10,000,000	100,000	100	200,000	Oct.	1889	.25
87	New Gold Hill	N. C.	1,750,000	350,000	5				
88	New Pittsburg, s. l.	Colo.	2,000,000	200,000	10	*			
89	North Standard, g.	Cal.	10,000,000	100,000	100	20,000	Nov.		
90	Occidental Con., g. s		10,000,000	100,000	100	245,000	April	1892	.25
91	Oneida Chief, g.	Cal.	500,000	125,000	100	*			
92	Oriental & Miller, s.	Nev.	10,000,000	400,000	100				
93	Original Keystone, s.	Nev.	10,000,000	100,000	100	250,000	Mar.	1892	.10
94	Osceola, g.	Nev.	5,000,000	500,000	10	*			
95	Overman, g. s.	Nev.	11,520,000	115,200	100	4,001,840	May.	1892	.10
96	Pay Rock, s.	Colo.	1,000,000	200,000	5				
97	Peer, s.	Ariz.	10,000,000	100,000	100	190,000	Feb.	1892	.10
98	Peerless, s.	Ariz.	10,000,000	100,000	100	405,000	Oct.	1890	.15
99	Pennsylva's Cons., g	Cal.	5,150,000	515,000	10	36,050	Feb.	1892	.10
100	Phœnix, g.	Ariz.	500,000	500,000	1	*			
101	Phœnix Lead, s. l.	Colo.	100,000	100,000	1	*			
102	Pilgrim, g	Cal.	600,000	300,000	2	*			
103	Pioche M. & R., s. g. l.	Utah.	20,000,000	000,000	10				
104	Poorman, Ltd., s. l.	Idaho	250,000	50,000	5				
105	Potosi, s.	Nev.	11,200,000	112,000	100	1,573,000	Mar.	1890	.50
106	Proustite, s.	Idaho	250,000	250,000	1	*			
107	Puritan, s. g.	Colo.	1,500,000	150,000	10	*			
108	Quincy, c	Colo.	3,000,000	300,000	10				
109	Rainbow, g.	S.Dak	1,250,000	250,000	5	4,250	July.	1892	.00½
110	Rappahannock, g. s.	[illegible]	250,000	250,000	1	*			
111	Red Mountain, s.	Colo.	300,000	60,000	5				
112	Ropes, g. s.	Mich.	2,000,000	80,000	25	167,200	Feb.		.50
113	Ruby & Dun., s. l. g.	Nev.	25,300	506	50				
114	Russell, g.	N. C.	1,500,000	300,000	5				
115	Sampson, g. s. l.	Utah.	10,000,000	100,000	100	288,15[illegible]	July	1888	1.08
116	Silver Age, s. l. g.	Colo.	2,000,000	200,000	10	*			
117	Silver Bell, s.	Ariz.	850,000	170,000	5				
118	Silver King, s.	Cal.	2,000,000	400,000	5				
119	Silver Queen, c.	Ariz.	5,000,000	200,000	25	*			
120	Silverton, s	Colo.	300,000	60,000	5				
121	Siskiyou Con., l.	Cal.	2,000,000	200,000	10	13,000	May.	1892	.01½
122	South Bulwer, g	Cal.	10,000,000	100,000	100	100,000	May.	1881	.25
123	South Hite, g.	Cal.	10,000,000	100,000	100	195,000	Jan.	1883	.05
124	Stanislaus, g.	Cal.	2,000,000	200,000	10				
125	St. Kevin, s. g.	Colo.	100,000	100,000	1	*			
126	St. Louis & Mex., s.	Mex.	000,000	500,000	10	*			
127	St. Louis & St. Elmo	Colo.	000,000	200,000	10				
128	St. L. & Sonora, g. s.	Ariz.	3,000,000	300,000	10	*			
129	Stemwinder, l. s.	Idaho	,500,000	500,000	1				
130	Sunday Lake, i.	Mich.	250,000	50,000	25				
131	Sullivan Con., g.	Dak.	600,000	200,000	3	*			
132	Sylvanite, s.	Colo.	5,000,000	500,000	10	*			
133	Taylor-Plumas, g.	Cal.	425,000	65,000	5	3,575	Mar.	1892	.01½
134	Telegraph, g. s.	Cal.	325,000	65,000	5	3,575	Mar.	1892	.01½
135	Telegraph, g. s.	Mex.	100,000	100,000	1	70,000	Feb.	1892	.10
136	Teresa, g. s.	Cal.	1,000,000	200,000	5	10,000	Feb.	1888	.10
137	Tioga Con., g.	Nev.	10,000,00	100,000	10	295,000	May.	1888	25
138	Tornado Con., g. s.	Nev.	100,000	100,000	1	*			
139	Tuscarora, s.	Nev.	10,000,000	500,000	20	385,000	Jan.	1892	25
140	Union Con., g. s.	Nev.	10,000,000	100,000	100	370,000	June	1892	25
141	Utah, s.	Nev.	10,000,000	100,000	100	245,000	Aug.	1890	.25
142	Ute & Ulay, s. l.	Colo.	1,000,000	500,000	2	1,500	Mar.	1892	001
143	Valley, g.	Cal.	575,000	460,000	125				
144	Washington, c.	Mich.	1,000,000	40,000					
145	West Argentine, s.	Colo.	750,000	150,000	5				
146	West Granite Mt., s.	Mont.	500,000	100,000	5				
147	Whale, s.	Mont.	5,000,000	500,000	10	*			
148	Wood River, g.	Idaho	2,000,000	200,000	10	3,000	Aug.	1891	.00½
149	Yuma, c. s. g.	Ariz.	10,000,000	400,000	2				

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 $12,390,000. ‖ Previous to the consolidation of the Copper Queen with the Atlanta August, 1885, the Copper Queen had paid $1,350,000 in dividends. ¶ Previous to this company's acquiring Northern Belle, that mine paid $2,400,000 in dividends against $425,000 in assessments.

COLORADO SPRINGS, COLO., MINING STOCK QUOTATIONS.*

Name of Company.	Par value.	Nov. 19. H.	Nov. 19. L.	Nov. 20. H.	Nov. 20. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Nov. 23. H.	Nov. 23. L	Nov. 24. H.	Nov. 24. L.	Sales.
Alamo....	$1	....	......	...	...	...	.	...	......	...	......	...	.....	....
Anaconda.	5	....	......	.25⅛	25	.25⅛	...	.25	......	.25	...	.24	......	2,629
Argent'm,J	....	1.77½	1 60	1.62½	1.45	1 40	1.35	1.42	1 35	1.40	1.37½	1 40	1 37½	21,462
Bob Lee	....	.006¼	......	.006⅛		.006⅛		.007⅛	.006⅛	.008	.007⅛	.0078	007⅜	126,800
Cr. & C. C.	1	.01⅞	...	.01⅞	......	.01⅜	.01⅛	.01⅛	....	.01⅜	.01⅝	.01⅝	..	83,850
CrippleC.C	1	.02	.01⅞	.01⅛	......	.01⅞	.....	.01¾	.01⅝	.01⅞	......	.01⅜	.01⅜	24,900
Fanny R...	1	.06⅞	.....	....	.....	.06⅛	....	......	......	.06	......	..	......	1,500
Franklin...	1	..	....	.....	.....	......	......	...	.....	.00⅝	....	.009⅛	....	6,000
Golden Age	1	....	....	.01	.00⅞	.01⅛	.01	.01⅛	.01	.01⅛	.01⅛	.01⅛	.....	76,500
Gold & Gl..	1		..	.04⅛	..	.04⅛	......	.04⅛	.....	.....	..	......	......	15,000
Isabella...	1	17	‡.14⅝	.17	.16⅛	18	‡.14	17¾	.....	.18	‡.14	.18	..	45,800
Mollie G....	5	2.87½	2.57½	2.60	2.27½	2.40	2.22½	2.40	2.30	2.34½	2.29	2.27½	2.17½	16,240
Mt. Rosa...	1	.04⅛	......	..	..	..	.....	.04	......	..	......	.16	......	5,500
Pharma...	1	.06⅛	.06⅝	.06⅞	.06⅛	.06⅛	.06¼	.06¾	.06⅛	.06¼	..	.06⅛	.....	27,300
Portland...	1	31	.30	.32½	.31	.42	40	.40⅜	.38	.40	.37½	.39	.38	9,950
Specimen..	1	..	.....	....	......	......	..	.01⅞	..	..	.....	....	.....	5,000
Summit....	1	.12¼	...	.12⅛	.....	.....	.....	.13	.12¼	12¾	...	.....	.....	4,000
Work.....	1	.03¼	.03	.03⅛	......	.03⅛	....	.03⅛	.	.03⅛	.03	.03⅛	......	79,200

* Official quotations of Colorado Mining Stock Asso. ‡ Stamped. Total shares sold, 554,731.

MONTANA MINING STOCKS.—QUOTATIONS.

(Special Report by Samuel K. Davis.)

Helena, Nov. 24, 1894.

Stocks.	Location	Par val.	Bid.	Asked.	Shrs. sold.	Price	Date.	Co.'s office.
Alice........	Butte, Mont.....	$25	....	....	......	......	....	Butte, Mont.
Am. Dvp. Co..	Marysville. Mont..	1	$2.50	$3.00	......	......	......	Butte, "
Bald Butte.....	" "	1	3.75	4.00	200	$4.00	Oct. 15	Helena "
Benton Group..	Neihart "	5	.12⅛	.17	......	.....	......	W.Sph. S.Mont.
Bi-Metalic..	Granite Co. "	25	2.25	3.50	......	......	......	St. Louis, Mo.
Combination...	" " "	10	.60	.75	.....	.....	......	Helena, Mont.
D. Eagle (S. H.)	Maiden, Mont.	..	.95	1.00	......	......	......	Chicago, Ill.
Elizabeth....	Granite Co. "	10	.15	.20	......	......	......	St. Louis, Mo.
Granite Mt......	" " "	25	1.25	1.75	......	......	......	" " "
Hope......	" " "	10	....	2.50	......	......	......	" " "
Hope....	B.JeffersonCo "	....	....	....	......	......	......	Helena, Mont.
Hel'a & Frisco.	Cœur d'Alene, Id..	....	1.00	1.10	2,750	1.00	Nov. 3	" "
Iron Mountain..	Missoula Co.,Mont.	10	.47⅛	.52⅛	1,000	.45	" 16	" "
Ontario.	DeerLodgeCo. "	1	.95	1.00	......	......	......	Helena, Mont.
Poorm'n (Cœur d'Alene)......	Cœur d'Alene, Id..	10	.35	50	......	......	......	Butte "

Aspen, Colo.

(Per Telegraphic Dispatch, Nov. 22.)

	Par val.	Clos'g.
Argentum-Juniata, Colo...	$2.00	$1.12
Aspen Contact, Colo........	5.00	.35
Aspen Deep Mining, Colo..	...	.05
Best Friend, Colo ...	....	.05
Bi-Metallic, Colo..	1.00	.04
Bushwhacker, Colo........	1.00	.07
Caverhill Cons., Colo	....	.10
Della S., Colo.........	....	....
Gold Valley Placer, Colo..		.10
Little Annie, Colo	1.00	.04
Mollie Gibson Colo.. ..	5.00	2.10
Old Colony, Colo..	....	.75
Pontiac, Colo	..	.04
Sheep Mt.T. & M.Co.,Colo.	....	.25
Smuggler, Colo..	5.00	2.10
St. Joe & Min. Farm, Colo.	....	.04
West Aspen Mount, Colo.	....	.10

Salt Lake City, Utah.

Nov. 17.

Special Report by James A. Pollock.*

	Par val.	Bid.	Asked.	Actual selling price.
Ajax.......	$5	....	$2.50	....
Alliance....	1	$0.75	2.00	$1.00
Anchor.....	20	3.60	4.10	4.00
Apex.......	10	....	0.10	....
Bogaw.....	1	....	1.00	1.00
Bull.-B. and Champ'n.	10	8	10	9.50
Cent.E'reka	50	39	42⅛	42½
Cleve., Con.	1	. ..	0.50	0.50
Comstock ..	25	....	0.25	0.20
Crescent....	25	....	....	....
Dalton......	5	0.02	0.04	0.03
Daly	20	5.50	7.25	7 00
Daly West.	20	5	6.50	6.00
Elko	2⅛	....	.25	.25
Eureka Hill	100	....	125.00	....
Gemini.....	100	....	....	....
Horn Silver	25	2⅛	3	3.00
Little Pittsb	5	....	0.25	....
Lucky Bill..	10	....	0.50	...
Mammoth..	25	1	1¼	1.15
Meears.....	25	.50	1	.75
Mercur.....	25	2.75	3.25	3.00
New Tintic.	5	....	3.00	....
Niagara....	10	....	3.00	....
No.Eureka.	1	....	0.10	0.10
Ontario....	100	7.50	8.75	8.50
Silver King	20	12⅛	14	14.00
Silver Spar.	5	....	1	1
Tetro.. . .	1	....	0.25	.25
Utah.......	1	.50	1	1.00

* All the above companies are located in Utah.

Duluth, Minn. Nov. 22.

	Par val.	Latest actual sell'g price.	Bid.	Ask'd.
Adams Iron Co..	10	....	$2.00	$2.50
Ashland Iron Co.	25	....	....	....
Biwabik M.I.Co.	100	17.00	17.00	18.00
Chandler Ir. Co.	25	....	....	...
Clev. Cliffs I.Co.	100	....	25.00	32.00
Gr't No. M. Co..	100	....	1.75	2.00
Gr't West.M. Co.	100	....	1.00	1.50
Jackson Iron Co.	25	....	....	60.00
L. Sup. C. Ir. M.	100	8.35	8.25	8.75
L. Sup. (Marq'te)	25	....	17.00	19.00
Mes.C.,L.&E.Co.	10	5.00	....	4.00
Mes. Chief I.Co.	100	1.25	1.00	1.50
Mes. Mt. Ir. Co..	100	14.25	14.00	16 00
Met. L. & I. Co..	25	....	..	60.00
Mountain Ir. Co.	100	41.00	40.00	45.00
Ohio Mining Co.	100	4.00	4.00	5.00
Pioneer Iron Co.	25	...	.25	1.00
Pitts. & L.A. Co.	100	..	55.00	62.00
Sec'ty L.& E.Co.	10	15.00	15.00	18.00

FOREIGN QUOTATIONS.

Paris, France. Nov. 19.

	Par val.	Fr'cs.
Acieries de Firminy.......	500	1,685.00
" de France........	500	600.00
" de la Marine	500	849.00
" de St. Etienne...	1,000	1,146.00
Anzin (coal)...........	......	4,350.00
Boleo..............	......	500.00
Callao..............	125	10.00
Cape Copper..........	50	40.00
Carmaux.............	1,000	1,210.00
Champ d'Or..........	......	73.00
De Beers Consolidated....	125	447.50
Dombrowa...........	500	415 00
Dynamite Centrale.........	......	540.00
" Francaise.......	......	735 00
Huanchaca..........	......	202.50
Jerez-Lanteira......	......	7.00
" " parts	......	3.00
Laurium, Greece.........	500	570.00
Lexington, Mont..	......	27.00
" parts.........		0.75
Malfidano (new shares). ..	500	760 00
Mines et Usines de Borax.	......	472.50
Mokta-el-Hadid	500	790.00
Nickel, New Caledonia...	......	375.00
Pontgibaud..........	......	240.00
Rio Tinto, Spain.......	250	375.00
Robinson (Transvaal.)....	125	150.00
Sud-Africaine..........	......	17.00
Tharsis, Spain..........	......	118.75
Uruguay	......	24.00
Vieille-Montagne, Belg'm.	80	491.50

ASSESSMENTS.

Company.	No.	Dlnqt. in office.	Day of sale.	Amt. per sh're
Alpha Cons., Nev.........	13	Dec. 2	Dec. 21	.10
Best &B., Nev	57	Dec. 18	Jan. 8	.25
Black Hills Coal Co. Wyo.	1	....	....	......
Chall'ge Cons., Nev.....	17	Dec. 4	Dec. 27	.05
GrayEagle,Cal	38	Dec. 14	Jan. 11	.05
Grizzley, Utah.	....	Dec. 17	....	.11
Justice, Nev...	57	Dec. 6	Dec. 27	.05
Kentuck Con., Nev....	10	Dec. 20	Jan. 10	.05
N. Basil Con., Cal.........	27	Nov. 19	Dec. 10	.05
Occid'l Cons., Nev..........	18	Dec. 4	Dec. 27	.05
Overman, Nev	72	Dec. 19	Jan. 9	.10
SilverHill,Nev.	34	Dec. 23	Jan. 16	.05
Starlight Mg. Co., Cal...	3	Nov. 19	Dec. 10	.10
Transit Mg. Co.	....	Nov. 27	Dec. 11	......
Welcome, So. Dak.........	2	Nov. 19	Dec. 8	.50

CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

Acid—Acetic, chem. pure..........17@.19
Commercial, in bbls. and cbys...01¾@.02
Carbonic, liquefied, ⅌ ℔...........18@.25
Chromic, chem. pure, ⅌ ℔ 1.00
for batteries.............. .40
Hydrobromic, dilute, U. S. P....25@.30
Hydrocyanic, U. S. P ....45@.50
Hydrofluoric..................20@.30
Alcohol—95%, ⅌ gall..........$2.30@$2.40
Absolute..........................$3.80
Ammoniated......................$2.80
Alum—Lump, ⅌ cwt..........$1.75@$1.85
Ground, ⅌ cwt.............$1.85@$1.90
Powdered, ⅌ ℔.............04½@.05
Lump ⅌ ton, Liverpool............£5
Aluminum Chloride—Pure, ⅌ ℔.$1.25
Amalgamating solution, ⅌ ℔......... .60
Sulphate, ⅌ cwt ....$1.90@$2.50
Ammonia—Sal., in bbl. lots, ⅌ ℔..............................07½@.08
Carbonate, ⅌ ℔., English and German, 07½@.08
Muriate, white, in bbls., ⅌ ℔........08½
Aqua Ammonia—(in cbys) 18° ⅌ ℔.03@.04
20°, ⅌ ℔..........................04@.05
26°, ⅌ ℔ ....04¾@.05
Antimony—Oxymur, ⅌ ℔....... .04@.06
Regulus, ⅌ ℔..................10@.11½
Argols—Red, powdered, ⅌ lb......... .15
Arsenic—White, powdered ⅌ ℔.03@.03¾
Red ⅌ ℔.........................065@.07
Yellow..............................08@.09
White at Plymouth, ⅌ ton.........£12 2 6
Asbestos—Canadian, ⅌ ton.....$15@$120
Italian, ⅌ ton, c. i. f. L'pool....£18@£60
Ashes—Pot, 1st sorts, ⅌ ℔..........4.75@5
Pearl ....05¾@.06¼
Asphaltum—
Prime Cuban, ⅌ ℔............... .04@.05
Hard Cuban, ⅌ ton.........$28.00@$30.00
Trinidad, refined, ⅌ ton...$30.00@$35.00
Egyptian and Syrian, ⅌ ℔.......05@.07½
Californian, at mine, ⅌ ton$12.00@$26.00
at San Francisco, ⅌ ton.$15.00@$29.00
Barium—Carbonate, pure, ⅌ ℔....... .45
Carbonate, commercial. ⅌ ℔.... .05@.10
Chlorate, crystal, ⅌ ℔................. .75
Chloride, commercial, ⅌ ℔....... .05@.10
pure, ⅌ ℔.......................16
Iodide, ⅌ oz.................................40
Nitrate, ⅌ ℔.......................06½@.07
Sulph., Am. prime white, ⅌ ton$17.50@$19
Sulph., foreign, floated, ⅌ ton.......$21@$24
Sulph., off color, ⅌ ton.... .$11.50@$15.00
Carb., lump, f. o. b. L'pool, ⅌ ton.....£6
No. 1, Casks, Runcorn, " " .. £4 10 0
No. 2, bags. Runcorn, " " . £3 15 0
Bauxite—⅌ ton.....................$5 @ $6
Bichromate of Potash—Scotch, ⅌ ℔.................................11@.12
American, ⅌ ℔......................11@.12
Bichromate of Soda—⅌ ℔....09½@.10
Borax—Refined. ⅌ ℔., in car lots.08@.09
San Francisco.........................08@.08½
Concentrated, in car lots ..... .07½@.08
Refined, Liverpool ⅌ ton..............22
Bromine—⅌ lb.........................25@.35
Cadmium Minion—⅌ lb................$2.00
Cadmium Iodide—⅌ lb............ $5

Chalk—⅌ ton .... $1.50@$2.2
Precipitated, ⅌ ℔.................04@.06
China Clay—English, ⅌ ton..$13@$18.00
Domestic, ⅌ ton...................$9@$11
Chlorine Water—⅌ ℔............. .10
Chrome Yellow—⅌ ℔......... .10@.25
Chrome Iron Ore—⅌ ton, San Francisco..................................$10.00
Chromalum—Pure, ⅌ lb..........35@.40
Commercial, ⅌ lb...................02½
Cobalt—Oxide, ⅌ ℔ .... $1.60@$1.70
Copper—Sulph. English Wks. ton£20@£21
Vitriol (blue), ordinary, ⅌ ℔. 03¼@.03¾
" extra.................04½
Nitrate, ⅌ ℔...................................40
Copperas—Common, ⅌ 100 lbs.. .85@.95
Best, ⅌ 100 lbs................$1.35@$1.50
Liverpool, ⅌ ton, in casks....£2@£2 10s.
Corundum—Powdered, ⅌ ℔.. .04½@.09
Flour, ⅌ lb..03
Cryolite—Pow., ⅌ ℔., bbl. lots....07@.08
Cyanide, Potassium—85 to 90%, ⅌ ℔. .50
No. 0, 67%, ⅌ ℔........................... .40
No. 1, 52 to 55%, ⅌ ℔...................... .36
No. 2, 40 to 45%, " .... .30
No. 3, Mining cyanide, per ℔ .... .28
No. 4, " " 30 to 35%, ⅌ ℔. .22
Emery—Grain, ⅌ ℔. (⅌ kg.).... .04½@.05
Flour, ⅌ ℔...........................02½@.04
Epsom Salt—⅌ ℔.................01@.01½
Feldspar—Ground, ⅌ ton..$6.00@$10.00
Crude..........................$2.00@$3.00
Fluorspar—Powdrd, No.1, ⅌ ton.$20@$30
Lump, at mine ....$6@$8
French Chalk—
Fuller's Earth—Lump, ⅌ ton. $16@$20
Glauber's Salt—in bbls., ⅌ ℔...01@.01¼
Glass—Ground, ⅌ ℔ ....09@.10
Gold—Chloride, pure, crystals, ⅌ oz. $12.00
pure, 15 gr., c.v., ⅌ doz. $5.40
liquid, 15 gr., g. a. v., ⅌ doz............................ $5.50
Chloride and sodium, ⅌ oz $6.00
15 gr., c.v., ⅌ doz. $2.75
Oxide, ⅌ oz...................................$27.25
Gypsum—Calcined, ⅌ bbl... $1.25@$1.50
Land Plaster.......................
Iodine—Resublimed, ⅌ oz....... .30@.33
Iridium—Oxide ⅌ ℔......................$90
Iron—Nitrate, 40°, ⅌ ℔ ....01@.01½
47°, ⅌ ℔.............02@.02½
Kaolin—*See China Clay.*
Kieserite—⅌ ton........................$9@$10
Lead—Red, American, ⅌ ℔ ...06¾@.07½
White, American, in oil, ⅌ ℔. .06½@.07½
White, English, ⅌ ℔., in oil...08½@.08¾
Acetate, or sugar of, white.....06@.06½
Granulated.........................
Nitrate..09@.12
Lime Acetate—Am. Brown.......90@.95
" Gray.$1.75@$1.87½
Litharge—Powdered, ⅌ ℔.. .05½@.07½
English flake, ⅌ ℔...................06@.09½
Magnesite—Crude, ⅌ ton of 1,015 kilos...$14.75
Calcined, ⅌ ton of 2,240 lbs...........$22.00
Brick, ⅌ ton of 2,240 lbs...............$47.50
Manganese—Ore, per unit..........23@.28
Oxide, ground, ⅌ ℔ ....02½@.06½
Mercuric Chloride—(*Corrosive Sublimate*) ⅌ ℔.......................62@.64
Powdered ⅌ q.. 5
Marble Dust—⅌ bbl.................$1.25@$1.50

Metallic Paint—Brown ⅌ ton. $20@$25
Red............. $20@$25
Mica—In sheets according to size.
1st quality. ⅌ ℔......................25@$6.00
Mineral Wool—Ordinary slag... .01½
Ordinary rock........................ .02½
Ground, ⅌ ton...........................
Naphtha—Black.........................
Nitre Cake—⅌ ton....................$10.00
Ochre—Rochelle, ⅌ ℔......... .01¼@.01¾
Washed Nat Oxf'rd, Lump, ⅌ ℔.06½@.06¾
Washed Nat Oxf'rd, Powder, ⅌ ℔.07@.07½
Golden, ⅌ ℔ .... .03@.05
Domestic, ⅌ ton.. .... $12@$20
Oils, Mineral—
Cylinder, light filtered, ⅌ gal... .14@.16
Dark filtered, ⅌ gal..... .10@.13
Extra cold test, ⅌ gal. .20@.24
Dark steam refined, ⅌ gal., .07½@.12
Phosphorus—⅌ ℔......................50@.55
Precip., red, ⅌ ℔.........................80@.85
white, ⅌ ℔..................85@.90
Platinic Chloride—Dry, ⅌ oz $7
Plumbago—Ceylon, ⅌ ℔......... .04@.06
American, ⅌ ℔.......................05@.07
Potassium—Cyanide, ⅌ lb., C. P. .52
67%, ⅌ ℔.... .40
mining... .28@.30
Bromide, domestic, ⅌ lb......... .28@.32
Chlorate, English, ⅌ lb.. ..... .18@.18¼
Chlorate, powdered, English, ⅌ ℔.. .18½@.19
Carbonate, ⅌ lb., by casks, 82% .04½@.05
Caustic, ⅌ lb., pure slick..... .05½@.06
Iodide, ⅌ ℔.........................$2.58@$2.80
Nitrate, refined, ⅌ lb............ .06@.08
Bichromate, ⅌ lb..... .... .10@.11½
Yellow Prussiate, ⅌ ℔., 24½c. contr., 25c. single casks.
Red Prussiate, ⅌ ℔................ .39@.45
Pumice Stone—Select lumps, ℔ .03½@.15
Original cks., ⅌ ℔.... .... .01½@.02
Powdered, pure, ⅌ ℔......... .01½@.01¾
Pyrites—Non-cupreous, p. units. 10@.11
Quartz—Ground, ⅌ ton..... .$6.00@$10.00
Rotten Stone, Powdered, ⅌ ℔.03¼@.03⅜
Lump, ⅌ ℔.......... .... .06@.07
Original cks, ⅌ ℔............... .04½@.05½
Rubbing stone, ⅌ ℔..............03½@.04
Sal Ammoniac—lump, in bbls., ⅌ ℔.80½
Salt—Liverpool, ground, ⅌ sack..... .700
Domestic, fine, ⅌ ton......................$7@$7.5
Common, fine, ⅌ ton..............$4.50@$5
Turk's Island, ⅌ bush............. .26@.28
Salt Cake—⅌ ton.... ......$10.00@$15.00
Saltpeter—Crude, ⅌ ℔......... .03½@.04
Soapstone—Ground, ⅌ ton....... $6@$8
Block and slab according to size.
Sodium—Prussiate, ⅌ ℔......... .22@.24
Phosphate, ⅌ ℔.... .... .04@.05
Stannate, ⅌ ℔....................... .06@.12
Tungstate, ⅌ ℔.... .... .30@.35
Hyposulphite, ⅌ cwt., in casks$1.70@$1.80
Strontium—Nitrate, ⅌ ℔.... . .08½@.06
Sulphur—Roll, ⅌ ℔............ .01½@.02¼
Flour. ⅌ ℔........ ....01¾@.02
Sylvinit, 27@35%, S.O.P., per unit, 3.75
Talc—Ground French, ⅌ ℔....01¼@.01½
American No. 1, ⅌ ℔......... .01¼@.01½
American No. 2....................... .008

Terra Alba—French, ⅌ ℔......... .65@.80
English. ⅌ ℔.............................65@.80
American, No. 1, ⅌ ℔...................60@.80
American, No. 2, ⅌ ℔...................40@.60
Tin—Crystals, in kegs or bbls..... .14@.15
feathered or flossed. .20
Muriate, single.........................07@.12
Double or strong, 54° B.......... .10@.15
Oxymur, or nitro............................19
Vermilion—Imp. English, ⅌ ℔. .80
Am. quicksilver, bulk...........57 @.59
Am. quicksilver, bags..........58 @ .60
Chinese......................... .85 @$1.00
Trieste............................90 @ .95
American........................11½@ .12
Zinc White—Am., Dry, ⅌ ℔.. 04½@ .05
Antwerp, Red Seal, ⅌ ℔.......06¼@.07
Paris, Red Seal, ⅌ ℔......... .07⅝@.08
Muriate solution....................... .06
Sulphate crystals in bbls.. ⅌ ℔.03@.03¾

THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

Arsenic (metallic), per kilo.........$0.25
Barium (ex amalgam)............. 2.12
" (per electrol.).............. 7.75
Bismuth (metallic), per kilo....... 6.25
Cadmium (metallic), " 2.75
Calcium (per electrol.)............. 5.25
Cerium (pulv.)........................... 2.25
" (fusum in globulis).......... 5.50
Chromium (fus.)..................... .40
" (cryst.)......................... .75
Cobalt (metallic), per kilo..........10.00
" (pure), per kilo..............40.00
Didymium (pulv.)...................... 5.50
Erbium-Yttrium (oxydat.).......10.00
Gallium (cryst.).........................100.00
Germanium (fus.).......................37.50
" (pulv.).........................35.00
Glucinum (pulv.)....................... 7.00
" (cryst)...........................10.75
Indium.. 5.00
Iridium (fusum)........................ 1.25
Lanthanum (pulv.)..................... 6.00
" (per electrol.)..........11.00
Lithium (in glob.)......................... 5.00
" (wire).......................... 6.25
Manganese (fusum)...................... .25
Molybdenum (pulv.)..................... .12½
Niobium (pulv.)........................... 4.25
Osmium 1.00
Palladium (wire)........................... .06
" (pulv.) 1.00
Potassium (metal), per kilo.........27.50
Rhodium................................. 1.63
Ruthenium............................... 2.50
Rubidium................................. 6.25
Selenium (cryst.)........................ .50
" (precipitates)................. .62½
Strontium (per electrol.).............. 7.25
" (ex amalgam)............ 3.25
Tantalum................................. 4.75
Tellurium (fusum)......................... .50
" (precipitates).............. .22½
Thallium................................... .03¾
Titanium................................... 1.13
Tungsten (pure)........................... .05
Uranium 1.00
Vanadium 4.00

RAILROAD MATTERS.

Mr. Walter T. Rupert, heretofore foreman of locomotive repairs of the Detroit, Lansing & Northern, has been appointed acting master mechanic, with headquarters at Ionia, Mich. He succeeds George A. O'Keefe, resigned.

Mr. James Meehan, who was for many years superintendent of machinery on the Queen & Crescent lines, has been appointed superintendent of motive power and machinery on the South Carolina & Georgia Railroad. Mr. Meehan resigned from the Queen & Crescent about two years ago.

On November 17th the Lexington Passenger & Belt Railway was sold to President M. E. Ingalls for the Chesapeake & Ohio Railroad for $175,000. The road is 4½ miles long, and gives the Vanderbilts a connection between the Chesapeake & Ohio and Louisville station, and relieves them of heavy transfer charges by the Louisville & Nashville which heretofore handled their cars through Lexington.

Mr. Charles F. Mayer, president of the Baltimore & Ohio Railroad Company, has notified the committee of bondholders of the Valley Railroad of Ohio that was appointed at the meeting held at the offices of the Home Insurance Company, that a plan of reorganization of the Valley Railroad is being prepared, and will soon be announced, which he believes will favorably commend itself to all classes of security-holders.

Mr. George Van Keuren has been appointed superintendent of transportation of the New York, Lake Erie & Western Railroad, succeeding Mr. C. R. Fitch, the present general superintendent, who has been acting superintendent of transportation for some time. Mr. L. C. Smith, superintendent of the Tioga Division of the Erie Railroad, has been transferred to the superintendency of the Jefferson Division, succeeding Mr. Van Keuran.

William T. Thelin, general auditor of the Baltimore & Ohio Railroad, died suddenly of apoplexy at his home in Mount Washington, Md., on Nov. 17th. He was 59 years old. Mr. Thelin served in the Second Maryland Confederate Infantry during the war. He subsequently went into business in New York, and entered the service of the the Baltimore & Ohio road 22 years ago. Mr. Thelin was considered one of the best railroad accountants in the country.

Mr. M. E. Wallace, who has for the past two and a half years held the position of chief draughtsman with the Chicago, Burlington & Quincy Railroad, at Aurora, has recently resigned and accepted a similar position with the Westinghouse Air-Brake Company, at Wilmerding, Pa. Mr. F. H. Clark takes the position vacated by Mr. Wallace. Mr. Clark has been for the last four years associated with Mr. D. L. Barnes in engineering work in Chicago, and for a year and a half has been a regular and frequent writer for the "Railroad Gazette."

DIRECTORY OF EXPLOSIVE MANUFACTURERS.

ALPHABETICAL INDEX TO ADVERTISERS.

(—) Indicates every other week or monthly advertisements.

CLASSIFIED LIST OF ADVERTISERS.

Air Compressors and Rock Drills
Bostelmann, Louis F.
Bullock, M. C., Mfg. Co.
Burleigh Rock Drill Co
Clayton Air Compressor Works.
Fraser & Chalmers.
Hasenzahl, W.
Ingersoll-Sergeant Rock Drill Co
McKiernan, S. G. & Co
Norwalk Iron Works Co.
Rand Drill Co.
(See Diamond Drills.)

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

Anti-Friction Metals
Hiertz T & Son.
National Lead Co.

Architects and Builders
Berlin Iron Bridge Co.
Holton Ir. & Steel Co.
Pencoyd Bridge & Construct. Co.
Pittsburg Bridge Co.
Pollock, Wm. B. & Co.
Scaife, Wm. B. & Son.

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Baker & Co.
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Bullock & Crenshaw.
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Overbrook Chem. Co
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Troemner, Henry.

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Epping, Carpenter & Co.
National Lead Co.

Band Wheels
Poole, R., & Son Co.

Bankers and Brokers
Amer. Devel. & Mg. Co.
Bandell, E.
Bieber & Sohne.
Cohen, H., & Co.
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McDonnell, A. B.
New Mexico M. Ex'ge.
Smith, C. H.
Welles & Kane.

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Carp'ter, Geo. B., & Co
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Hendrie & Bolthoff Mfg Co.
Jaffery Mfg. Co
Mineralized Rub. Co.
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Shultz Belting Co.

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Macbeth James, & Co.
Nassau Electrical Co.

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

Blowers
Garden City Sand Co.

Boilers
Fraser & Chalmers.
Pollock, Wm. B., & Co.
Scaife, Wm. B. & Sons.
Stilwell-Bierce & Smith-Vaile Co.
Tudor Boiler Mfg. Co.
(See Machinery.)

Brass Castings
Epping, Carpenter & Co.

Brass Rolling Machinery
Poole, R., & Son Co.

Brattice Cloth
Mineralized Rubber Co.

Brick Machinery
Freese, E M., & Co.

Bridges
Berlin Bridge Co.
Pittsburg Bridge Co.
Scaife, W. B & Sons.
Youngsto'n Bridge Co.

Buckets
Scaife, Wm. B. & Sons. (See Machinery.)

Cable Railways
Fraser & Chalmers.
Poole, R., & Son Co.

Carbons
Bishop, Victor, & Co.
Bostelmann, Louis F.
Lexow, Theodore.

Cement
Atlas Cement Co.

Chain and Link Belting (See Belting.)

Chemicals
Baker & Adamson.
Bullock & Crenshaw.
Eimer & Amend
Henry Heil Chem. Co.
Overbrook Chem. Co.
Penn. Salt Mfg. Co.
Roessler & Hasslacher Chemical Co.
Solvay Process Co.

Chlorine Liquid
Pickhardt, Wm., & Kuttroff.

Clutches, Friction
Poole, R., & Son Co.

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Berwind-White Coal Mg. Co.
Castner & Curran
Consolidation Coal Co.
Coxe Bros. & Co.
Haddock, Shonk & Co.
Maryland Coal Co.
Newell Coal Co.
Potts, F. A., & Co.
Stickney, Conyngham & Co.
Ward & Olyphant.

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

Coal Tipples.
Youngstown Bridge Co.

Coke Ovens
Sheffield Car Co.

Concentrators, Crushers, Pulverizers, Separators, Etc.
Allis, Ed P. & Co.
Beckett Foundry & Machine Co.
Blake, Theo. A.
Boston Ore Machinery Co.
Colorado Iron Works
Fraser & Chalmers.
Frisbee-Lucop Mill Co.
Frue Vanner Concentrator.
Gates Iron Works.
Hendrie & Bolthoff Mfg. Co.
Joplin Mach. Co.
Krom, S. R.
Krupp, F.
Midland Foundry & Machine Works.
Raymond Bros. Imp. Pulv. Co.
Schellenbach, J., & Sons.
Stedman Foundry & Mach. Co.
Walburn-Swenson Mfg. Co. (See Machinery)

Conduit, Fibre Fibre Conduit Co.

Contractors and Miners' Supplies
Bucyrus Steam Shovel and Dredge Co.
Fraser & Chalmers.
Pollock, Wm. B., & Co.
Pratt & Whitney Co (See Machinery.)

Copper Dealers and Producers
Abbott, Wheelock & Co
American Metal Co.
Atlantic Mining Co.
Balbach S. & Ref. Co.
Baltimore Cop. W'ks.
Bath, H., & Son
Boston & Mont M. Co
Butte & Boston M. Co.
Canadian Copper Co.
Central Mining Co
Copper Queen Mg. Co.
Detroit Copper Mg. Co.
James & Shakspeare.
Kearsarge Mg. Co.
Lewisohn Bros.
Orford Copper Co.
Osceola Con. Mg. Co.
Penn. Salt Co.
Phelps, Dodge & Co.
Quebr'da R. R. L. & C. Co.
Tamarack Mg. Co
Tamarack, Jr., Mg. Co.

Copper Rolling Machinery
Poole, R., & Son Co.

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Berlin Iron Bridge Co
Scaife, W B. & Sons.

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Tanite Co.

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

Crushed Quartz. Garden City Sand Co.

Cupola
Garden City Sand Co.

Diamonds
Bishop, Victor, & Co
Bostelmann, L. F.
Lexow, Theodore.

Diamond Drills
Bishop, Victor, & Co.
Bostelman, L. F.
Bullock Mfg. Co., M.C.
Hasenzahl, W.
Lexow, Theodore.
Stearns Bros.
Sullivan Machin'y Co.
(See Air Compressors and Rock Drills.)

Drawing Materials
Brandis' Sons.
Queen & Co.

Dredges
Bucyrus Steam Shovel & Dredge Co.
Souther & Co.
Vulcan Iron Works.

Dredging Machines
Poole, R., & Son Co.

Dump Cars
Donaldson, A. M., & Co.
Hendrie & Bolthoff Mfg. Co.
Hunt Co., C. W.
Fraser & Chalmers.
Truax Mfg. Co.
Wright & Adams Co.

Educational Institutions
Columbian University.
Correspondence School of Mines.
Harvard University.
Mass. Inst. of Technology.
Michigan Mining School.
Pennsylvania Military College.

Electrical Batteries
Macbeth, James, & Co.
Nassau Electrical Co.

Electrical Machinery and Supplies
General Electric Co.
Jeffrey Mfg. Co.
Nassau Electrical Co.
Okonite Co., Ltd.
Repauno Chem Co.
Stiles, Geo.

Elevators, Conveyors and Hoisting Machines
Brown Hoist & Conv. Mach. Co.
California Wire Wks.
Cooper, Hewitt & Co.
Fraser & Chalmers.
Hunt, C. W., Co.
Jeffrey Mfg. Co.
Joplin Machine Wks
Scaife, Wm B., & Sons
Union Wire Rope Tramway Co.
Vulcan Iron Works.
(See Wire Rope Tramway and Machinery.)

Elevator, Grain, Machinery
Poole, R., & Son Co.

Emery Wheels
New York Belting & Packing Co., Ltd.
Tanite Co.

Engineers, Chemists, Metallurgists
Adams, W. H.
Baker & Co.
Benjamin, J E.
Blandy, John F.
Blauvelt, Harrington
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Boss, Clarence M.
Boss, M. P.
Bradley, Fred. W.
Braschi, Victor M.
Brodie, Walter M.
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Browne, Ross E.
Burlingame, E. E.
Butters, Charles.
Campbell-Johnston R. C
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Collins, J. H. & Sons.
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Ede & Burwell.
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Fearn, Percy L.
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Froehling, Dr. Henry.
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Halse, E
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Hastings, John B.
Hedburg, Eric.
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Jones & Jones.
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Kerr, Mark B.
Keyes, W S.
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Lavagnino, G.
Ledoux & Co.
Leggett, Thomas H.
Loring, Frank C.
Lowell S. J.
Luckraft & Countryman.
MacFarlane, Jas.
Maltman, Albert.
Mariner & Hoskins.
Martinez, Dion.
Maynard, George W.
McDermott & Duffield.
Merwin & Richardson
Milner & Brown.
Minger, W. C.
Mixer & DuBois.
Moore, Gideon E.
Newberry W. E.
Nicholls, W. J.
Nicholson, Frank.
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Pearse, A. L.
Peters, Edward D.
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Poole, Robt., & Son Co.
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Pratt, N. P., L'borat'y.
Pushie, J. A.
Randolph, John, C. F.
Raymond Rossiter W.
Raymond, R. M.
Rickard, T. A.
Ricketts & Banks.
Robinson, G H.
Rolker, Chas. M
Rothwell, John E.
Rothwell, Richard P.
Schwarz, Theodore E.
Seamon, W. H.
Shapleigh, W
Sharpless & Winchell.
Shields & Middleton.
Skewes, Edward.
Stiles, Geo.
Stolber, G. G.
Taylor & Brunton.
Terhune, Richard H.
Tales, A.
Thompson, Samuel C.
Trent, L. C.
Tuttle, Edgar G.
Unzicker, H.
Van Slooten, Wm.
Walter Bros
Williams, John.
Wilts, J ainson.
Wuensch, A. F.
Wyatt & Saarbach.
Young & Park.

Engineers' Instruments
Brandis' Sons.
Bullock & Crenshaw.
Fauth & Co.
Gurley, W. & L. E.
Knight, F. C.
Keuffel & Esser Co.
Queen & Co.

Engines
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Buckeye Engine Co.
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Wright & Adams Co.
(See Machinery.)

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Bucyrus Steam Shovel & Dredge Co.
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Chur, A. T.
Denver Fire Clay Co.
Garden City Sand Co.

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Poole, R., & Son Co.

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Moore, S.L., & Son Co.
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Sheffield Car Co,
(See Machinery.)

Fuses, Powder
Climax Fuse Co.

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Weber Gas & Gasoline Engine Co.

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Wood, R D. & Co.

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Bristol Mfg. Co.

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Poole, R., & Son Co.

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Hangers
Poole, R., & Son Co.

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Fraser & Chalmers.
Poole, R., & Son Co.

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Mueller Mfg. Co.

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Mineralized Rubber Co.
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Okonite Co., Ltd., The

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Stieren, Wm. E.

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Poole, R., & Son Co.

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General Electric Co.
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Porter, H. K., & Co

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Poole, R., & Son Co.

Machinery.

Dealers in Mining, Milling, and Other Machinery
Ætna Fdy. & Mach. Co.
Allis, Edw. P., & Co.
Armstrong Brothers.
Beckett Fdy. & Mch. Co.
Bostelman, L. F.
Boston Ore Mach'y Co.
Buckeye Engine Co.
Bullock, M. C., Mfg. Co.
Carp'ter, Geo. B., & Co.
Colorado Iron Works.
Exeter Mach. Wks. Co.
Fraser & Chalmers.
Freeman Fdy. & M Wk
Frisbee-Lucop Mill Co.
Hendrie & Bolthoff Mfg. Co.
Jeffrey Mfg. Co.
Jessop, W., & Sons, Ltd.
Joplin Machine Wks.
Krupp, F.
McKiernan, S. G. & Co.
Mech'l Gold Extr. Co.
Mecklenburg Ir. Wks.
Moore, Sam. L., & Son.
Overland Mach. Co.
Pollock, Wm. B., & Co.
Poole Robt. Son & Co.
Raymond Bros. Imp. Pulv Co
Riverside Iron Wks.
Scaife, W. B., & Sons.
Schellenbach, J., & Sons
Stedman Fdy. & M. Co.
Sullivan Mach'ry Co.
Trenton Iron Co.
Truax Mfg Co.
Union Iron Works.
Vulcan Iron Works.
Walb'rn-Swens'n Mfg. Co.
Webster, Camp & Lane Mach. Co.
Wright & Adam Co.
Youngsto'n Bridge Co.

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Abbott, Wheelock & Co.
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Sheffield Car Co.
Truax Mfg. Co.

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Boston & Mont. Co.
Butte & Boston Mg. Co.
Copper Queen Mg. Co.
Detroit Copper Mg. Co.
Eureka Co.
Kearsarge Mg. Co.
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Tamarack Mg. Co.
Tamarack, Jr., Mg. Co.

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Hunt, C. W., Co.

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Hunt & Robertson.
Ledoux & Co.
Ricketts & Banks.
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Hine & Robertson.
Jenkins Bros
Keasbey & Mattison Co.
Mineralized Rub. Co
New York Belting & Packing Co., Ltd.
Wyckoff & Son, A.

Perforated Metals
Aitcheson, R., Perf. Metal Co.
Fraser & Chalmers.
Harrington & King Perforating Co
Hendrick Mfg. Co.

Periodicals
Arms and Explosives.
Austral'n Mg Stand'd
Bullionist.
El Minero Mexicano.
Electrical Plant & Electrical Industry.
Financial Times.
Iron & Coal Trades Review.
Indian Engineering.
Jour. of Assoc. of Engineering Societies.
Mining Journal.
Zeitschrift fur Praktische Geologie.

Phosphates
Trenholm, Paul C.

Phosphor-Bronze
Phosphor-Bronze Smelting Co.

Pile Drivers
Bucyrus Steam Shovel and Dredge Co.

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Pollock, Wm. B. & Co.
Wyckoff, A., & Sons.

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Poole, R., & Son Co

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Ætna Powder Co.
Laflin & Rand Powder Co.
Lau, J. H., & Co.
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Arms & Explosives.
Australian Mining Standard.
Bullionist.
El Minero Mexicano.
Electrical Plant & Electrical Industry
Financial Times
Ir'n & Coal Trades Rev.
Jour. of Assoc of Engineering Societies.
Mining Journal.
Poor, H. V & H. W.
Zeitschrift fur Praktische Geologie.

Pulleys
Poole, R., & Son Co.

Pumps
Ætna Fdy & Mach. Co.
Allen, Chas. A.
Blake, Geo. F., Mfg. Co.
Cameron A. S., Steam Pump Works.
Epping, Carp'ter & Co.
Fraser & Chalmers.
Goulds Mfg. Co.
Groetzinger, A., & Sons
Jeanesville Iron Wks.
Knowles Steam Pump Works.
McGowan, John H. & Co.
Pulsometer Steam Pump Co.
Quad'ple Steam Pump Co
Stilwell-Bierce & Smith-Vaile Co.
Worthington, Henry.

Quarrying Machines
Bostleman, L. F.
Ingersoll-Sergeant Rock Drill Co.
Rand Drill Co.
Sullivan Machinery Co.
Union Wire Rope Tramway Co.

Quicksilver Eureka Co.

Railroads
Denv. & Rio Gr. R. R.
Midland R. R. of Ky.

Railroad Supplies and Equipment
Carp'ter, Geo. B., & Co.
Garden City Sand Co.
Hunt C. W., Co.
Porter H. K, & Co.
Robinson & Orr
(See Machinery.)

Regulators, Damper, Heat, Etc.
De Este & Seeley Co.
Eddy Valve Co.
Hine & Robertson.
Jenkins Bros.
Lunkenheimer Co.
Mason Regulator Co.

Rock Drills. (See Air Compressor.)

Rolling Mill Machinery
Poole, R., & Son Co.

Roofing
Berlin Iron Bridge Co.
Pencoyd Bridge and Const. Co
Phelps, Dodge & Co.
Pittsburg Bridge Co.
Scaife, Wm. B., & Sons
Youngsto'n Bridge Co.

Rope Wheels
Poole, R., & Son Co

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

Safety Lamps
Wm. E. Stieren

Screens
Aitcheson, R., Perf. Metal Co.
Exeter Machine Works Co.
Fraser & Chalmers.
Harrington & King Perforating Co.
Hendrick Mfg. Co.
(See Machinery.)

Screen Plates
Harrington & King Perforating Co.
Hendrick Mfg. Co.

Second Hand Machinery
Cook & Co.
Robinson & Orr.
Toomey, Frank.

Separators
D'Este & Seeley Co.
Harrison Safety Boiler Works.

Shafting
Poole, R., & Son Co.

Shoes and Dies
Chrome Steel Works.
Fraser & Chalmers,
Crescent Steel Co.

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

Smelting and Refining Works
Balbach S & Ref. Co.
Baltimore Cop'r Wks
Donaldson, A. M., & Co.
Kan. City Sm. & Ref. Co.
Mathison Smelting Co.
Orford Copper Co.
Penna. Salt Mfg. Co.
Penn Smelting and Refining Works.
Phosphor-Bronze Smelt. Co.

Steam Fans
Cole, Wm E.

Steel Rails, Castings, Rolls, Drill Steel
Abbott, Wheelock & Co.
Bethlehem Iron Co.
Chester Steel Cast Co.
Chrome Steel Works.
Crescent Steel Co
Exeter Machine W. Co.
Garrison, A., Fdry. Co.
Jessop Wm., & Sons Ltd.
Moore S. L., & Sons Co
Roberts, A. & P., & Co.
Robinson & Orr.
Whitney, A. & Sons.
(See Metal Dealers.)

Tanks
Pollock, Wm B. & Co
Scaife, Wm. B. & Sons.
Williams Mfg. Co.

Tapping Machine, Gas Main, Etc.
Mueller Mfg. Co.

Telegraph Wires and Cables
Okonite Co., Ltd., The.

Testing Batteries Nassau Elec. Co.

Tin Plate Rolling Machinery
Poole, R., & Son Co.

Tools Pratt & Whitney Co.

Traps, Steam
De Este & Seeley Co.

Tubes
Pollock, Wm. B. & Co.
Williams Bros.

Tubing-Rubber
New York Belting and Packing Co., Ltd.

Turbines
James Leffel & Co., The.
Poole, Robt. & Son Co
Stilwell-Bierce & Smith-Vaile Co.

Turbine Water-Wheels
Poole, R., & Son Co.
Stilwell-Bierce & Smith Vaile Co.

Valves
De Este & Seeley Co.
Eddy Valve Co.
Jenkins Bros.
Lunkenheimer Co.
Mason Regulator Co.
Powell, Wm, Co.

Ventilators
Bullock M. C. Mfg. Co
Fraser & Chalmers.

Vulcanite Emery Wheels
New York Belting and Packing Co., Ltd.

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Cooper, Hewitt & Co
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Leschen, A., & Sons Rope Co.
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FREE ADVERTISING.

Inquiries from employers in want of Superintendents Engineers, Metallurgists, Chemists, Mine or Furnace Foremen, or other assistance of this character, will be inserted in this column WITHOUT CHARGE, whether subscribers or not.

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

☞ Applicants should inclose the necessary postage to insure the forwarding of their letters.

Positions Vacant.

1365 WANTED—SUPERINTENDENT IN New York City—A bright, energetic, all round man; must be familiar with fixing buildings for gas, water, etc., and capable of handling men, pay rolls, etc. A permanent position to the right sort of man. Address C. J. W., ENGINEERING AND MINING JOURNAL.

1368 WANTED—A MAN THOROUGHLY experienced in erecting and operating amalgamators. Preference given to one having had practical supervision of Bennett or Bucyrus apparatus. Permanent position assured a first-class man. Address, in fullest confidence, stating experience, PLACER, ENGINEERING AND MINING JOURNAL.

1369 WANTED—FOREMAN TO TAKE charge of yardmen and look after blast furnace during day, also a night foreman for blast furnace. German preferred and one who has had experience with 200-ton blast furnace Address NEW YORK, ENGINEERING AND MINING JOURNAL.

Situations Wanted.

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

WANTED.—A METALLURGICAL CHEMist of 13 years' experience desires a position as superintendent or assistant with copper or lead and silver reduction works. Best of references furnished. Address H. S., ENGINEERING AND MINING JOURNAL. No. 17,017, Dec. 29.

A GRADUATE OF THE COLUMBIA COLlege School of Mines would like position as assistant to superintendent in charge of mines or reduction works. Address MINING, ENGINEERING AND MINING JOURNAL. No. 17,033. Dec. 29.

A CIVIL AND MINING ENGINEER FROM the Royal Military College of Canada, and of six years' practical experience in railroad, city and mining work, would like to get any kind of position that would pay decently. Mexico or Central America preferred. Address M., ENGINEERING AND MINING JOURNAL. No. 17,037, tf.

MINING ENGINEER AND SUPERINTENdent, 20 years' experience in gold, silver, copper and coal, is open to engagement. Address INTEGRITY, ENGINEERING AND MINING JOURNAL. No. 17,026 tf.

METALLURGIST AND CHEMIST, WITH eight years' practical experience in designing, constructing and operating works for the treatment of copper, lead, gold and silver ores, will be at liberty January 1st, and seeks new engagement for the ensuing year. Plans furnished for copper, lead and pyritic smelting plants, copper, lead and silver refineries, bessemerizing and electrolytic works, concentration works, gold mills, etc. Correspondence solicited with company requiring scientific help in working out ore propositions and in need of capable assistance in planning and erecting new works. Address METALLURGICAL, care ENGINEERING AND MINING JOURNAL. No. 17,031-tf.

MINING FOREMAN, GERMAN, UP IN construction, wants situation; thorough technical training, and 30 years' experience in Germany and United States. Address A. KLEEMANN, 423 East Ninth street, New York. No. 17,042, Dec. 8.

A SMELTING SUPERINTENDENT, LEAD and copper; 10 years' experience; open to engagement January 1st. Address METAL, ENGINEERING AND MINING JOURNAL. No 17,041, Feb. 11.

A YOUNG MAN DESIRES A POSITION AS assistant mining engineer; can assay, analyze and survey, besides making himself generally useful about mine, etc.; understands Spanish. Address E. PANOL, ENGINEERING AND MINING JOURNAL. No. 17044, Dec. 29.

MINING ENGINEER, NOW EMPLOYED IN Mexico, will go to Central America, preferably Honduras, with New York company as mining engineer or first assistant. Knows thoroughly, language, customs and people of Spanish America. Salary to begin, no object; permanent position wanted. Address HONDURAS, ENGINEERING AND MINING JOURNAL. No. 17,005, e. o. w., Dec. 15.

MILLMAN AND CHEMIST, SEVEN YEARS in free and refractory gold and silver mills. Familiar with all meritorous methods, amalgamation or leaching. Fluent in Spanish. Address A. B., ENGINEERING AND MINING JOURNAL. No. 17,045, Dec. 22.

CHEMIST AND METALLURGIST. GRADUate, with two years' experience in iron blast furnace work and three years' in copper and nickel smelting works, is open for engagement January 1st. Can furnish first-class recommendations from former and also from present employers. Address T., care ENGINEERING AND MINING JOURNAL. No. 17043. Dec. 15.

EXPERIENCED ASSAYER AND ENGIneer, best references from superintendents of large gold and silver mines in the West, wishes position in either line of work. Owns excellent surveying outfit. Mining college graduate. Seven years' experience. Familiar with gold milling and leaching. Address EXPERIENCE, ENGINEERING AND MINING JOURNAL. No. 17,047. Dec. 8 and 22.

A POSITION IN CONNECTION WITH mining by a graduate of a technical school; good assayer, draftsman and surveyor. Address T O. R., ENGINEERING AND MINING JOURNAL. No. 17,048. Dec. 22.

Contracts Open.

MINERAL OIL.—Armv Building, Whithall street, New York City—Sealed proposals, in triplicate will be received here until December 3d, 1894, and then opened for supplying about 22,000 gallons of mineral oil as per specifications and schedule, which will be furnished on application to the undersigned. Preference will be given to articles of domestic production or manufacture, conditions of quality and price (including in the price of foreign productions or manufactures the duty thereon) being equal. The Government reserves the right to reject any or all proposals. Envelopes containing proposals should be marked "Proposals for Mineral Oil," and addressed to JAMES MOORE, D. Q M. General, U. S. Army.

LIGHTING.—The City of Millville, N. J., will entertain sealed proposals until December 10th, 1894, for lighting the city with electricity for a period of five years. Address L. H. HOGATE, City Recorder.

BRIDGE —Rome, N. Y.—Proposals are wanted until December 3d for thn construction of a swing bridge over the Black River Canal on Garden street, this city. Address K. S. PUTNAM, Chamberlain.

ENGINE, PUMP, Etc.—Key West, Fla.—Proposals are wan'ed until December 29th for furnishing scow, vertical engine, iron pumps, boiler, piping and repairing tank at Key West Quarantine for the use of the Marine Hospital. Address H. R. CARTER, Surgeon, M. H. S., in command of station at Key West Quarantine, Dry Tortugas, Fla.

PIPE COVERINGS.—TREASURY DEPARTment, Office of the Supervising Architect, Washington, D. C.—Sealed proposals will be received at this office until the 11th day of December, 1894, and opened immediately thereafter, for all the labor and material required for covering steam pipes, etc., in the U. S. Government buildings at Brooklyn, N. Y., Bay City, Mich., Denver, Colo., Hoboken, N. J., Kalamazoo, Mich., Louisville, Ky., New Bedford, Mass., and Rochester, N. Y., in accordance with the specifications, copies of which may be had at this office or the office of the custodian. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. 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. Proposals must be inclosed in envelopes, sealed and marked "Proposals for Covering Steam Pipes, Etc., in the U. S Government Building at Brooklyn, N. Y., Bay City, Mich., Denver, Colo., Hoboken, N. J., Kalamazoo, Mich., Louisville, Ky., New Bedford, Mass., and Rochester, N. Y. (as the case may be), and addressed to CHARLES E. KEMPER, Acting Supervising Architect.

WATER-WORKS.—Sealed proposals will be received until December 13th, 1894, by the Water Commissioners of the village of Monroe, Orange County, N. Y., for furnishing material and performing the labor necessary to construct complete, according to the plan and specification, the village water-works. The work includes the furnishing of 630 tons of cast iron pipe, 16 in. to 4 in. diam.; 7 tons of special castings; 5,600 ft. of terra cotta pipe, 15 in. diam.; 40 fire hydrants and 40 valves and valve boxes, and a 10-in. water meter; also the laying of 5,600 ft. terra cotta pipe, 15 in diam.; 36,360 ft. of cast iron pipe and setting necessary hydrants and valves. Also the construction of Gate House and intake. Bids shall be received separately for material and construction. A certified check for 3 per cent. of the amount of bid must accompany each proposal. Plans can be seen and specifications secured on and after December 1st at the office of the Water Commissioners or the offices of the engineers, 127 Broadway, New York, or 700 and 701 Lewis Block, Pittsburg. POTTER & FOLWELL, Engineers. GILBERT CARPENTER, Pres,, GEORGE R. CONKIN, Secy, Board of Water Comm.

SURVEY.—Sealed proposals will be received by the trustees of the village of Flemington, N. J., until December 15th, 1894, for a survey of about five miles of streets of said village, and the superintendence of the placing of monuments thereon for the purpose of establishing a street grade and curb line. Specifications supplied on application. The right to reject any and all bids reserved. S. M. COOLEY, Village Clerk.

STONE.—U. S. Engineer's Office, Nashville, Tenn.—Sealed proposals for supplying stone for building lock No. 5, Cumberland River, will be received here until December 5th, 1894, and then publicly opened. All information furnished on application. JOHN BIDDLE, Captain of Engineers.

BRIDGE.—Scranton, Pa.—Proposals are wanted until December 13th for constructing the superstructure for Spruce street bridge over the Roaring Brook Address M. T. LAVELLE, City Clerk.

WATER-WORKS. — SEALED PROPOSALS will be received by the Water Commissioners of the town of Newton, N. J., until December 3d, 1894, for furnishing materials, and until December 18th, 1894, for the construction of water-works. Summary of work: Wrought iron intake tower, 3½ ft. diameter by 38 ft. height: 2,000 ft. 12-in. wrought iron pipe for laying under water; eight miles 10-in. cast iron delivery main; six miles 4 to 10-in. cast iron distribute mains, with valves, boxes, specials and hydrants; erection of a masonry dam, clearing lands to be overflowed, excavation of one-half mile of small canal, etc. Bids will be received for different portions of the work. A certified check must be sent with each bid. Bonds and sureties will be required of those to whom contracts are awarded. All bids must be upon forms to be obtained from the commission, sealed and indorsed "Proposals for Materials" or "Proposals for Construction," and addressed to Alex Craig, Secretary Board of Water Commissioners, Newton, N. J. Plans and specifications can be seen after November 16, 1894, at the office of the commission in Newton or at the office of the chief engineer, 84 Warren street, New York. LOUIS L. TRIBUS, Chief Engineer; HIRAM C. CLARK, President; H. J. VAN BLARCOM, Treasurer; ALEXANDER CRAIG, Secretary, Commissioners.

U. S. ENGINEER OFFICE, Nashville, Tenn.—Sealed proposals for supplying stone for building Lock No. 5, Cumberland River, will be received here until December 5th, 1894, and then publicly opened. All information furnished on application. JOHN BIDDLE, Captain Engineers.

U. S. ENGINEER OFFICE, 121 FRANKLIN street, Buffalo, N. Y.—Sealed proposals for extension of brakewater at Dunkirk Harbor, N. Y., will be received here until December 10th, 1894, and then publicly opened. Information furnished on application to MAJOR E. H. RUFFNER, Engineers.

PROPOSALS FOR CONSTRUCTION OF Works of Improvement at U. S. Navy Yard, Brooklyn, N. Y.—Bureau of Yards and Docks, Navy Department, Washington, D. C., November 24th, 1894.—Separate sealed proposals, in duplicate, for the following objects, indorsed proposals for "Constructing Quay Wall, foot of Main Street;" "Reconstructing Building No. 6;" "Bending Shop, Building No. 114;" "Extension of Boiler Shop, Building No. 28;" "Construction of Causeway Across Wallabout Channel;" "Construction of Quay Wall Inside of Whitney Basin;" and "Construction of Garbage and Refuse Crematory," respectively, at Navy Yard, Brooklyn, N. Y., will be received at this Bureau until 1 o'clock p. m. on Monday, December 24th, 1894, and publicly opened immediately thereafter. Specifications and blank forms of proposal will be forwarded upon application to this Bureau or the Commandant of the Navy Yard, Brooklyn, N. Y. Bidders are expected to fully inform themselves of the character of the work required by visiting the Yard, where plans may be examined and if necessary obtained. A bond of one thousand (1,000) dollars must accompany each bid for the respective objects, as a guarantee that the bidder will execute the required contract after his bid has been accepted. Awards will be made for each object of improvement separately. Responsible security will be required for the faithful performance of the contracts, and the right is reserved to reject any or all proposals not deemed advantageous to the Government, and to waive defects. E. O. MATTHEWS, Chief of Bureau. Orig.

PIER WORK.—U. S. Engineer Office, Duluth, Minn.—Sealed proposals for repair of pier at Superior, Wis., will be received here until December 10th, 1894, and then publicly opened. Further information given on application. CLINTON B. SEARS, Major Engrs

BRIDGE —Scranton, Pa.—Proposals are wanted until December 6th, for constructing the superstructure of the Linden street bridge over the Lackawanna River. Address M. T. LAVELLE, City Clerk.

BOILER-HOUSE, ETC.—Phillipsburg, Pa.—Proposals are wanted until December 4th, for furnishing all material and erecting a boiler-house, engine-house, car barn, and office building at this place. Address JOHN G. PLATT, Engineer Clearfield Traction Company.

BRIDGE.—Warren, O.—Proposals are wanted until December 10th, for superstructure of a steel girder bridge across the Mahoning River. Address ALBERT E. ANDREWS, City Clerk.

BRIDGE.—Buffalo, N. Y.—Plans are invited for a bridge across the Erie canal on the line of Porter avenue, Buffalo, N. Y., in accordance with general specifications on file in the office of the park commissioners, Room 5 City and County Hall, to be submitted on or before noon, Jan. 8, 1895. WM. McMILLAN, Superintendent.

TREASURY DEPARTMENT.—Office Supervising Architect, Washington, D. C., December 5th, 1894.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 27th day of December, 1894, and opened immediately thereafter, for all the labor and materials required to furnish and erect complete two passenger elevators in the U. S. Custom-house, New York, N. Y., in accordance with drawing and specification, copies of which may be had at this office or the office of the Superintendent of Repairs, New York, N. Y. Each bid must be accompanied by a certified check for a sum not less than 2 per cent. 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 bids received after the time stated will be returned to the bidders. Proposals must be inclosed in envelopes, sealed and marked "Proposal for Two Passenger Elevators for the U. S. Custom-house at New York, N. Y.," and addressed to CHAS. E. KEMPER, Acting Supervising Architect.

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These Selected Second-hand T Rails in good condition to relay:
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Planer, 28 in. × 24 in. × 7 ft., new; Drill Press, 40 in. swing, new; Engine Lathe, 24 in. × 25 ft. bed, second-hand; Root's Blowers, Nos. 1, 2, 5 and 6, second-hand; Haskin Vertical Engine, 9 × 9, second-hand; Vertical Boiler, 40 H. P., second-hand; Open-die Bolt Cutter, ¼ to 1¼, second-hand; Improved Band Saw, 36 in., new.
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THE FOLLOWING MACHINERY IS ALL NEW, and was displayed at the World's Columbian Exposition by the Chicago Iron Works. It is now offered for sale by order of the Superior Court. Full details and prices can be obtained on application to **ROCKWELL KING, Receiver, Estate Chicago Iron Works, Chicago, Ill.**

	Weight.
1 Sectional 10 in. x 24 in. Retort complete,	**2,500 lbs.**
1 Sectional 14 in. x 36 in. Corliss Engine,	**30,000 lbs.**
2 Sectional 44 in. x 14 ft. Boilers,	**22,500 lbs.**
8″ × 12″ Hoisting Engine—two cylinders, single drum, 42″ × 40″ grooved for holding 500 ft. ⅞″ rope in single coil	8,000 lbs.
33″ × 84″ Galena Silver Furnace—Steel Jackets and Curb, Ball Joint Tuyères, Corner Discharge Boxes, Spouts, Leadwell, Binder, Stack, etc	20,000 lbs.
2 Collom Jigs, complete.	
1 Slide Motion Jig, 2 compartments.	
1 Brunton Sampler No. 2.	
Rotary Screens—One train of three. Each 36″ diameter, 96″ long, complete with perforated iron coverings and Steel housings	7,500 lbs.
2 Silver and Gold Mortars.	
2 Slag Pots and 1 Scoop Car.	
2 Tulloch Feeder and 2 Bullion Molds.	
1 Sectional 4 × 6″ Dodge Crusher	1,200 lbs.

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THIRTY-EIGHT THOUSAND (38,000) FEET of Spiral Weld Steel Pipe (new) with cast iron couplings, weight 8 lbs. per foot, guaranteed pressure 300 lbs. per square inch, for sale at a LOW PRICE.

The above is the remainder of 15 miles, 4½ miles having been used by KILPATRICK BROS. & COLLINS, at NEW CASTLE, WYO., and the EAST CHICAGO WATER WORKS used 3½ miles at EAST CHICAGO, ILL., to both of whom I refer.

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F. EUGENE BELDEN,
Treasurer.

RICO-ASPEN CONSOLIDATED MINING COMPANY,
DENVER, Colo., December 1st, 1894.

The regular monthly dividend of twenty-five thousand dollars ($25,000), being two and one-half (2½) cents per share, has been declared for November, payable on December 10th.

Transfer books close December 5th, and reopen December 11th.

A. B. ROEDER, Secretary.

STANDARD CONSOLIDATED MINING COMPANY OF BODIE
SAN FRANCISCO, Cal., November 17th, 1894.

DIVIDEND NO. 86,

of ten cents a share, is payable here and at Farmers' Loan and Trust Company, New York, on December 20th. Transfer books close December 10th.

J. W. PEW,
Secretary.

Contracts Open.

Continued from page 18.

IRON BRIDGE.—Menominee, Mich.—The city councils of Marinette, Wis., and Menominee, Mich., will receive estimate, until Dec. 11th for the construction of an iron bridge which will cost about $75,000. The whole length of the new bridge will be nearly 1,700 feet. The first span will be 500 feet and second 1,100 feet with an allowance of 100 ft. for the approaches. Address City Engineer HASLEY, of Menominee, Mich., or City Engineer SHAW, of Marinette, Wis.

ATTORNEYS AT LAW.

ALBERT E. PATTISON, THOMAS H. EDSALL, HENRY W. HOBSON. Colorado Springs.
PATTISON, EDSALL & HOBSON,
Attorneys and Counselors at Law,
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