THE ENGINEERING AND MINING JOURNAL AND COAL

(Published Every Saturday at 253 Broadway New York.
Entered at the Post Office of New York, N. Y., as Second Class Mail Matter.

VOL. LXXII. JULY 27, 1901. No. 4.

EDITED FOR 28 YEARS BY R. P. ROTHWELL.
THE SCIENTIFIC PUBLISHING CO., Publishers.
ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.
FREDERICK HOBART, Associate Editor.

SUBSCRIPTIONS ARE PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.

REMITTANCES should be made by bank drafts, post-office orders or express money orders on New York, payable to the Scientific Publishing Co.

When change of address is desired, both old and new address should be sent.

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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,085 Cortlandt.

New York Cable Address—"ROTHWELL." (Use McNeill's or A B C 4th Edition Code.)
London Cable Address—"PULCINETTO." " " " "

Branch Offices:
Chicago, Ill., 737 Monadnock Building, Phone 73 Harrison.
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English subscriptions to the JOURNAL may be paid at the London Office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar net.

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Very little change is to be reported in the strike of the Amalgamated Association of Iron and Steel Workers. There is no present prospect of a settlement by negotiation. President Shaffer seems to be making the mistake of trying to bring politics into the strike and making appeals to the party leaders to aid in a settlement. The strike so far appeals very little to public sympathy, and thus lacks one very important element of success.

It is proposed to hold an exposition at Bendigo in Victoria, Australia, near the close of the present year, to celebrate the fiftieth anniversary of the discovery of gold in Australia, in 1851. Preparations are being made to interest all of the States of the new Commonwealth of Australia, and the exposition will be on a very considerable scale. While all the industries of the Commonwealth will be represented, mining will naturally have a prominent place. Our manufacturers are already well known in Australia, but this will present an opportunity for them to extend their business which ought not to be neglected. Further particulars will be found on another page; and we believe that makers of mining machinery and supplies will do well to make inquiries and to secure a proper representation.

After long consideration the Russian Government has at last decided to build a pipe line from the oil-fields of Baku to Batum, on the Black Sea. The transportation of oil over this distance of 550 miles has been by the railroad, and the quantity which could be carried has been limited by the capacity of the line to a degree which has frequently been embarrassing to producers. They have urged the building of the pipeline upon the government from time to time, but have always met with delays, though the necessity of the line was admitted. Even now it is expected that two years—possibly three—will pass before the completion of the line, as the Imperial decree directs that all the pipes and pumping machinery must be of Russian manufacture. The line when completed will enable the Baku producers and refiners to increase their trade with European countries to a considerable extent.

The strike of the firemen in the anthracite coal region lasted only a few days and was unsuccessful. It failed because the support of the United Mine Workers was not given to it, and the officers of that association tendered the services of their men to take the places of the firemen so far as was necessary to keep the pumps going and the mines free from water. This action was taken in pursuance of the promises made on behalf of the United Mine Workers at the time of the settlement of the general strike last fall, that the union would prevent any unnecessary and vexatious strikes. In this case the agreement has been kept; and the action taken has certainly been judicious. It is not only the carrying out of an implied contract, but it also goes to show that the United Mine Workers control the situation and can command consideration for the claims which they may make hereafter.

We have now the returns of silver experts to the East for the half year ending June 30th, and the figures are given below, the English returns being reduced to American currency:

	1901. London.	1901. San Francisco.	1901. Total.	1900. Total.
British East Indies	$20,181,657	$30,000	$20,211,657	$15,822,416
China	1,993,554	2,504,720	4,498,274	11,391,604
Japan	97,333	2,280	99,613	63,530
Totals	$22,272,544	$2,537,000	$24,809,544	$27,277,550
Approximate oz	36,812,905	4,193,250	41,006,155	45,606,920

These exports continue to show the same features as in the earlier months of the year. The large increase in silver purchases for the British East Indies was not sufficient to balance the loss due to the collapse of trade in China. The total decrease in Eastern purchases of silver for the six months was about 4,600,000 ounces, or a little over 10 per cent.

The recent retirement of Dr. C. Le Neve Foster from the position of Inspector of Mines of Great Britain merits more than a passing notice. He had held his position since 1873, a period of 28 years, or almost from the time the mine inspection laws were put into their present form. In addition to the excellent work he has done as inspector, Dr. Foster has left a monument in the admirable series of reports compiled and issued under his dictation. They contain full statistics of the mineral production of the United Kingdom, and the sections relating to mine accidents are more nearly complete and more carefully arranged than any which had preceded them. The fullness of these statements and the careful analysis of causes of accidents have been of great service to mining men everywhere. Dr. Foster, moreover, has never been satisfied with the bare routine of official work. He has carefully studied mining appliances in use in all parts of the world,

and has taken pains to bring to the notice of British mine operators whatever he believed would help to increase economy and safety in mines.

Dr. Foster has been also a frequent and most acceptable lecturer in the Royal School of Mines. He expects to devote a large part of his time hereafter to educational and literary work.

Commenting upon the note in the "Engineering and Mining Journal" July 20th in relation to the valuation of the Trinity Copper Company's property in California, the Boston "Herald" says:

"The 'Engineering and Mining Journal' is right in principle, but a little astray in fact. The company is supposed to have a considerable asset in cash and mining equipment and development, say $1,000,000, mostly in cash. This asset and the mining properties are capitalized for $6,000,000, but only $4,000,000 of it is on the stock exchange list. The balance is somewhere, address not stated, but where it cannot get into the market. The $4,000,000 or 160,000 shares on the market are selling at rising $5,600,000. The difference between this and the tangible assets represents what? Prospective earning power or premium on a personality?"

This is an explanation which does not explain. The company is supposed to have "say $1,000,000, mostly cash." Why "supposed"? The buyers and holders of the company's stock surely ought to know something, not be obliged to suppose merely. The balance, according to our Boston contemporary, is "somewhere." But where? Surely again the stockholders ought to know something about that somewhere.

The fact is that the present selling price of Trinity stock has not the remotest relation to real values; it simply expresses the belief held by a number of persons that the promoters of the company can and will maintain the price so that at some turn of the market it can be sold at a profit.

We are still of the opinion that a capital stock of $6,000,000 as authorized—or even of $4,000,000 as issued—on the basis of the Shasta County properties, is "pretty steep—even for Boston."

JAMES F. LEWIS.

The death of James F. Lewis, which occurred at Boston on Tuesday last, in the 61st year of his age, will shadow with sorrow a wide circle of personal friends and professional colleagues. Although he had been far from well for many months, and had lately suffered a long illness which had brought him near to death, the news of his death comes nevertheless with a shock of surprise to those who had felt the relief of hearing, a few weeks ago, that he had safely passed the crisis of the danger. How often, in such cases, the wounded and feeble soldier falls in the very hour of supposed victory—conqueror of all save that "last enemy, Death," whose irresistible attack finds no remaining strength of resistance.

I write these words in the midst of busy and hasty preparations for departure to attend Mr. Lewis' funeral at Meriden, Conn., and I have neither time nor heart to prepare at this time a suitable biographical notice of my dear friend. For the present I can only mourn, not analyze or describe; and I claim the privilege of grief, to be silent for awhile. Next week, I trust, I shall be able to furnish to the "Engineering and Mining Journal" a sketch, at least, of Mr. Lewis' character and career.

R. W. Raymond.

ARSENICAL POISONING AND ITS CURE.

It is remarkable how little injury, relatively speaking, is received by the men who work in mines containing arsenical ores and in reduction works treating these ores. Gold mines in which the ore contains much sulphurets are very apt to yield a considerable proportion of arsenopyrite in association with iron pyrite, marcasite, galena, blende and other minerals of this class. Silver mines, too, of the kind which produce base ores, generally have a good deal of arsenopyrite in association with the minerals just named, with perhaps a little proustite (arsenical light ruby silver), other arsenides and arseniates, together with the regular silver minerals. There are many deposits of both classes in this country, Canada, Mexico, Germany, Austria-Hungary and other countries. If such mines are dry a great deal of dust containing arsenic is formed in the usual course of working, in blasting, breaking and transporting the ores. It is breathed by the men, it adheres to their clothes and persons, and it cannot be completely ascaped by any use of inhalers or ventilating systems. Yet there is probably more trouble from lead poisoning in dry carbonate mines than is given by arsenic, and this is no doubt due to the fact that arsenic is not a cumulative poison like lead, but quickly disappears from the vital organs of the body, while lead remains and its effect is increased by each small addition of the poison. In dry-crushing stamp mills the danger would seem greater. To dry the ore (if it needs drying) means making a good deal of dust; the breaker makes some, the stamps make a great deal more, and the furnaces add their contribution of fumes. Some of the operations must be carried on in the open air (that is, of the building), and where it is attempted to shut the dust in, as in the battery mortars, troughs, launders, elevators, bins, chutes and hoppers, the confinement cannot be made complete. The furnace connections are made as close as possible and the dust and fume chambers, flues and stacks are carefully looked after; but still it is unexpectedly seldom that serious illness or fatality is reported. A small quantity of arsenical dust must even find its way into the men's dinner pails. The comparative immunity from illness probably comes from a sort of inoculation and the otherwise healthful influences under which the men work, and perhaps to other causes. Still, it is somewhat mysterious.

It is true that in the practice of medicine a great deal of arsenic is administered in the form of Fowler's solution, etc., the doses being gradually increased to an amount which would certainly kill if given at the beginning of the treatment. But this does not seem equivalent to the exposure which is safely borne in working in arsenical ores.

Turning now to the therapeutic effects and the delicacy of the tests—and some are entirely too delicate, since they prove too much sometimes, in criminal cases—we may call attention to a paper on "Poisoning by Arsenic," read before the International Congress of Medicine recently held in Paris. In this Dr. Brouardel stated that the deadly drug could be administered as a slow poison and death might occur six weeks after it had ceased to be taken. In regard to the detection of arsenical poisoning, he said that while the victim is living arsenic is easily detected in the water or linen, and especially in the hair. At Havre the hair of a Mme. Decamp, who was poisoned, was cut and analyzed; and 100 grammes of her hair yielded 1 milligramme of arsenic. M. Pouchet's experiments had proved that long after all trace of arsenic had disappeared in the viscera, it could easily be found in the spongy tissue of the bones. Being thus preserved, its presence could be proved long after burial. It is especially the arsenic given in small doses that locates itself in the bones. By analyzing the bones , the Congress was of opinion there should be no difficulty in detecting arsenical poisoning.

THE CHEMICAL TRADE IN GREAT BRITAIN.

While less is said about it in public than of the iron and other trades, there is no important branch of industry in Great Britain which has suffered so much from foreign competition as the chemical manufacture. Not very many years ago Great Britain held an unquestioned superiority in the manufacture of alkalies and what are generally known as heavy chemicals. In those days the industry was a profitable one and a number of manufacturers engaged in it with much profit to themselves. The later consolidations, which brought the trade under the control of a few large companies, were made on a basis of high profits which proved deceiving in several cases. While some concerns—such as Brunner, Mond & Company—which are working on the latest processes, are paying good dividends, others—such as the United Alkali Company—present balance sheets which are rather dismal reading for the stockholders. The last-named company, it may be mentioned, in its hurry to control the trade, loaded itself at high prices with plants now obsolete or nearly so—in the usual combination style.

The chief cause of the decline of the chemical trade is that several of Great Britain's old customers, especially Germany, the United States and Russia, are now largely supplying their own wants, while Germany also exports largely, and the United States will shortly be in a position to do so. The world's consumption of alkalies and other chemicals is increasing largely, but the British exports are decreasing. A natural consequence is a heavy fall in prices, so that large profits are no longer to be expected. Moreover, costs of manufacture have increased, chiefly owing to the higher price of fuel. This is especially the case in the electrolytic processes, in which the production of electric power is the chief element of cost. In this respect the German makers have very little advantage over the British; but they have attained a large part of their progress by very close attention to details and constant improvement of processes. In the United States we nave the great advantage of cheap power, whether water or steam; and are likely to have cheap coal for a long time to come. The British manufacturers, with good reason, look upon the Americans as their most dangerous rivals for the future.

Some temporary expedients are being tried to help the British trade, though they are not likely to be of permanent benefit. Chief among these is a further consolidation. Thus one authority on the trade says: "The rumors of a great chemical combine which were current some time ago have not yet taken any definite form, though it must be confessed that the large corporations have been exceptionally energetic of late in making it difficult for outsiders to interfere with their interests. The small alkali manufacturers are being absorbed, and the middleman who is in a small way of business, buying his alkali either to use himself or to sell again, is being subjected to all sorts of inquisitive questions as to the destination of his purchases. The signs and portents of the times are certainly all against the middleman continuing in a state of prosperity."

No consolidation or combination of manufacturers can maintain prices, however, in the face of rapidly increasing foreign production. It is quite possible that in a few years American and German makers may not only supply their own markets but export to Great Britain itself. It is only by constant improvements and by lowering the cost of production—if that is possible—that British manufacturers can hold their own.

There is one point in chemical manufacture to which attention was called by the chairman at the last meeting of the United Alkali Company. He spoke of the continual alertness which was necessary in the chemical manufacture to keep abreast of the times; the frequent necessity of reconstructing plant, the realization of the fact that certain processes are obsolete, the sudden cessation of demand for chemicals on which great outlay has been made, and the continual necessity of taking up the manufacture of new articles if dividends are to be maintained. These are points which are essential, and they show that cheap raw materials and fuel are not the only necessities. If we expect in the United States to lead in the chemical trade we must follow the German plan of continual investigation and improvement. Without these we are liable to be passed at any time by our competitors.

NEW PUBLICATIONS.

"Transactions of the Association of Civil Engineers of Cornell University, 1901." Ithaca, N. Y.; published by the Association. Pages, 148; illustrated.

The present volume, the ninth issued in the series, contains some interesting papers by resident and graduate members. A majority of these are on bridge construction and related topics, though one paper is on Tunnel Lining, and two others respectively on dam and breakwater construction.

"Gas and Oil Engines in Foreign Countries." Part I, Volume 23, "Special Consular Reports." Prepared in the Bureau of Foreign Commerce, Department of State. Washington; Government Printing Office. Pages, 192; illustrated.

This is one of the excellent series of special reports on topics of interest to manufacturers and others, which have been prepared by the Bureau of Foreign Commerce. It contains a large amount of information in relation to the use of gas and oil engines in European and other countries. The statistical information is accompanied by notes on types of engines in use, the openings for American engines and other matters which will be of value to manufacturers.

"The Michigan Engineer. Proceedings of the Michigan Engineering Society for 1901." Climax, Mich.; published for the Society, F. Hodgman, Secretary. Pages, 224; illustrated.

The present volume contains the record of the twenty-second annual meeting of the Michigan Engineering Society, which was held at Ann Arbor in January last. At that meeting a number of interesting papers were presented, covering a wide range of subjects. These included civil and municipal engineering, road-making, paving, water-works, sewerage, wells, etc. Two papers—one on the Portland Cement Industry and one on Clays and Marls of Michigan—related to an industry of the State which is growing rapidly. Another paper called attention to the Water-powers of Michigan and their possible development and utilization. Some attention was also given to Forestry, which ought to be a very important question in Michigan. The volume shows that the society is active and doing good work.

"The Metallurgy of Gold." By M. Eissler. Fifth Edition, 1900. London; Crosby Lockwood & Son. New York; the D. Van Nostrand Company. Pages, 640; illustrated. Price, $7.50.

It is to be regretted that in preparing the new edition an opportunity was not taken to bring this book more fully up to date, especially in the important matter of American practice; and to free it from descriptions of obsolete processes and of experimental processes which have not proved successful. We regret to say that the needed revision has not been made, or at least completed, and that the volume is not what so pretentious and costly a book ought to be. In fact, it is not too much to say that it is from five to twenty years behind the present time. This is especially the case with American practice. We have the satisfaction of knowing that mining engineers in other countries have taken occasion to praise our metallurgists and to copy their methods extensively. In this book, however, very little practical and successful American practice is cited, and in several cases where it is referred to, the descriptions are so involved and so mixed up with useless data as to be of very little value.

Thus in the section on chlorination we find that the descriptions of American plants date back to 1890 and 1892, while the data in relation to the important chlorination works at the Mount Morgan Mine in Queensland seem to run up only to 1893, though the Mount Morgan Company has built new and extensive works since that date. Under this head also we find descriptions of processes abandoned long ago, and of others which never passed the experimental stage. This is the case also in other sections of the book. In the very brief chapter on electrolytic parting and refining the latest reference is to Mr. Titus Ulke's paper in "The Mineral Industry" of 1896. Four years is a long time in the life of a process which is growing and developing so rapidly as the electrolytic treatment of metals.

We regret to find also that many of the descriptions of machinery—which are taken, as a rule, from manufacturers' catalogues—are old and out of date. The practical mill-man will understand this, but the student is likely to be deceived.

There is much in the book that is of value; and for this reason we must again express the regret that a thorough revision has not been given. It ought to be brought up to date and cleared of obsolete matter to make all parts of the work of equal value.

"Smokeless Powder, Nitro-cellulose and Theory of the Cellulose Molecule." By Lieutenant John B. Bernadou, U. S. N. New York: John Wiley & Sons. London: Chapman & Hall, Limited. Pages, 208; illustrated. Price, $2.50.

For purposes of comparative study, Lieut. Bernadou has brought together in the present volume a series of papers, by various investigators, upon the composition of cellulose and the properties of explosives prepared therefrom. He has supplemented these with an account of experiments made by himself; and from the whole has drawn certain conclusions as to the possible ultimate chemical composition of cellulose and the nitro-celluloses.

While the general development of war-material from the mechanical and metallurgical standpoints—the production of ordnance and armor—is so largely identified with progress in the useful arts in the United States, yet, until very recently, but little has been accomplished in our country in the way of improvement in explosives. Within the last few years, however, a particular form of smokeless powder has largely supplanted the old black and brown powders for military uses; and the last decade of the past century has witnessed the virtual abandonment of a propellant that has held its place in war, with comparatively little modification, for 400 years.

This new smokeless powder, which is adapted for use in arms of all calibers, is prepared from a particular type of colloid nitro-cellulose. Such an extension of the employment of this latter body from its original use for detonating purposes, to its new use as a progressive explosive, has attracted general attention, and led to a more careful and extended study of the nitro-celluloses in general. It is with the view of further extending such study and of possibly preparing the way for the introduction of future improvements in progressive explosives that this book has been prepared.

The book is divided into four chapters, the first being general and descriptive; the second on earlier views as to nitro-cellulose composition; the third on the progression of conceptions in relation to this composition; and the fourth on nitro-cellulose solutions and the theory of the cellulose molecule. There are four appendices, the first being on the Nitration of Cotton, by M. Vieille. The second is on Pyrocollodion Smokeless Powder, by Prof. Mendeleef. Third is on the Nitration of Cotton, by M. Bruley; while the fourth is on the Development of Smokeless Powder, by Lieut. Bernadou.

"The Clays and Clay Industries of Wisconsin." By Ernest Robertson Buckley. Being "Bulletin No. 7, Part I" of the Wisconsin Geological and Natural History Survey. Madison, Wis.; published by the State. Pages, 304; illustrated.

The present volume opens with a discussion on the origin, composition, classification and properties of clays, and then proceeds to consider the clay deposits of Wisconsin and the various uses to which they may be applied. The clay manufactures of the State are then taken up and their present condition is described. As Dr. Buckley remarks in his introduction, the extent of the clay resources of Wisconsin and the nature of the clays which are being mined have been but vaguely comprehended by the citizens of the State. This report will certainly help the public to better understand the brick and drain tile industry of Wisconsin and appreciate, in part at least, the possibilities for its future development. The investigation thus far conducted shows that the State contains unlimited quantities of clay suitable for the manufacture of common building brick, terra cotta, fireproofing, drain tile and earthenware. There are also less extensive deposits of clay which give evidence of being admirably adapted to the manufacture of ornamental building brick. It is also believed that further examination will reveal limited deposits that can be advantageously utilized for the manufacture of paving brick and other vitrified wares. The most refractory clay or shale yet examined is suitable for the manufacture of fire brick having a moderate fire-resisting capacity. The very plastic white kaolin which occurs in Dunn and St. Croix counties is admirably adapted to the manufacture of the highest grades of porcelain. At the present time it is being used almost exclusively in the manufacture of paper, for which purpose it is sold to the pulp and paper manufacturers of Minnesota, Wisconsin and Michigan. It is thought that this kaolin might be successfully combined with the marl which occurs so abundantly in northeastern Wisconsin, for the manufacture of portland cement. Many of the low-grade clays such as occur in the vicinity of the Great Lakes and in the Fox, Rock and other river valleys, are suitable for the manufacture of vessels which do not need to be vitrified.

With the decreased output of lumber in Wisconsin and the consequent rise in price, the people will eventually be forced to use brick, stone or concrete as substitutes for wood in building construction. The constant demand for a cheap and durable material will call into use enormous quantities of these materials. Clay must be used in the manufacture of brick and terra cotta in this State, and will probably also be used in the manufacture of portland cement. Everywhere the industrial and economic conditions point to a rapid development of the clay manufacturing industry. The average annual output of the brick yards in Wisconsin during 1897, 1898 and 1899 was in the neighborhood of 150,000,000 common and pressed brick. During 1900 the output was almost 50 per cent. greater. This shows the growing importance of the clay industry and justifies the expenditure of time and labor required for this excellent report.

BOOKS RECEIVED.

In sending books for notices, 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.

"Massachusetts Statistics of Manufactures, 1899, 1900." Horace G. Wadlin, Chief of Bureau of Statistics of Labor. Boston; State Printers. Pages, 96.

"Boletin Demografico de la Republica Mexicana. 1899." Compiled by Dr. Antonio Peñafiel. Mexico: Printing Office of the Secretaria del Fomento. Pages, 408.

"Notes on Thermodynamics." Part I. Second Edition. By H. W. Spangler. New York; John Wiley & Sons. London; Chapman & Hall, Limited. Pages, 72; illustrated. **Price, $1.**

"Hungarian Statistical Yearbook. 1899." Volume VII., New Series. Prepared in the Royal Statistical Office. Budapest, Hungary: Printed for the Ministry of Commerce. **Pages, 444.**

"Theoretical Elements of Electrical Engineering." By Charles Proteus Steinmetz. New York; the "Electrical World and Engineer," Incorporated. Pages, 328; illustrated. Price, $2.50.

"Anuario de la Mineria, Metalurgia y Electricidad de España." Eighth year. 1901. Prepared under the direction of Don Adriano Contreras. Madrid, Spain: the "Revista Minera." Pages 590. Price (in New York), $2.50.

"Smokeless Powder, Nitrocellulose and Theory of the Cellulose Molecule." By Lieutenant John B. Bernadou, U. S. N. New York; John Wiley & Sons. London: Chapman & Hall, Limited. Pages, 208; illustrated. Price, $2.50.

"United States Geological Survey. Report on the Geology of the Philippine Islands." By George F. Becker. With "Tertiary Fossils in the Philippines." By K. Martin. Washington: Government Printing Office. Pages, 140; illustrated.

"Commerce and Navigation of the United States for the Year Ending June 30th, 1900." Prepared by the Bureau of Statistics, Treasury Department; O. P. Austin, Chief of Bureau. Washington: Government Printing Office. Pages, 1,172.

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.

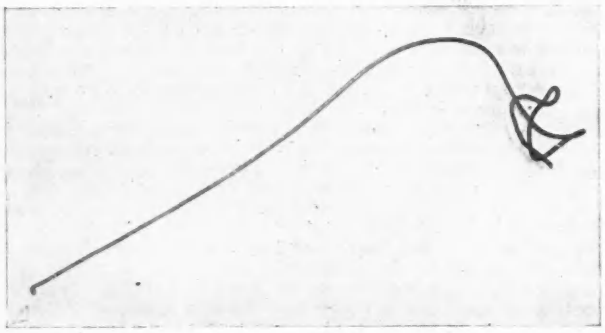
An Opportunity for American Contractors in Tasmania.

Sir: Your readers may be interested in knowing that the Great Western Railway Company, an English corporation, is going to build a railway from a point near Hobart, Tasmania, to the Mount Lyell region. It will be about 135 miles in length, running through exceedingly rough country, and will be a very expensive road to build. It will be an excellent opportunity for some American contractors, as the methods of the Colonial contractors are very primitive. The road will run through very heavily timbered country, and there will be deep and massive cuts and tunnels through the whole distance. The road will cost somewhere from $3,000,000 to $5,000,000, and is well worth while for an enterprising contractor to look into. The contract will probably be let in London. Mr. D. J. Mackay, 138 Leadenhall street, London, E. C., has all the particulars, and it is my opinion that the contract will be let before very long. Tasmania.

Hobart, Tasmania, June 6, 1901.

A Curious Result of an Explosion.

Sir:—The enclosed is a photograph of a bar of iron used in mining and technically known as a scraper. It is made of ½ in. round wire with the end turned up and flattened as shown at A. Its purpose is to clean out drill-holes; to remove the dirt and pulverized rock that accumulates in drilling. Originally this scraper was straight and about



A CURIOUSLY TWISTED BAR.

8 ft. long. Now it is barely 5 ft., having been bent in this peculiar fashion by a premature explosion. The strange feature is that the explosion tied a complete knot in the one end as can be seen.

The miner was using the scraper to tamp home a charge of dynamite—a dangerous practice and one which cost him his life—when the iron struck a spark from the flinty rock in which the hole was drilled, and the spark exploded the charge. M. C. L.

Clearfield, Pa., July 20, 1901.

PIG IRON IMPORTS OF GREAT BRITAIN.—Imports of pig iron into Great Britain for the six months ending June 30th were 62,010 tons, of which 27,267 tons were from the United States. These figures compare with a total of 51,324 tons, 21,097 tons from the United States, in the first half of 1900.

THE IRON ORES OF EAST TEXAS.

By E. T. Dumble.

Very few have any conception of the real extent and value of the iron ore deposits of East Texas. In the "Second Annual Report" of the Geological Survey we gave as full an account of them as was possible, and a map showing their location and areal extent. These deposits extend over 13 counties of Eastern Texas, and occupy an area of more than 1,000 square miles. By counties the areas are as follows: Smith, 44 square miles; San Augustine, 8; Marion, 25; Shelby, 13; Gregg, 25; Cherokee, 101; Sabine, 10; Anderson, 71; Nacogdoches, 30; Panola, 23; Harrison, 250; Rusk, 64; Cass, 350; total, 1,014 square miles. Of this considerably more than one-half (550 to 600 square miles) is of workable thickness and quality.

The ores are of two classes, the nodular and laminated, their names being sufficiently descriptive to indicate their character. While the two classes frequently occur together, the laminated ores cover the greater portion of the field, the larger deposits of nodular ores being in Cass and Marion counties (whose ores are all of this class), Morris and Upshur, and parts of Harrison, Panola and Shelby.

The deposits of nodular ores occur in pockets of irregular, variable extent, having a thickness of 1 to 5 ft., or even more. The laminated ores are more regular in distribution, and over a considerable area they will probably average 2 ft. in thickness, and occasionally this will increase to as much as 10 ft.

If we take into consideration that a square mile of deposit of this character contains nearly 3,000,000 tons of ore for each foot of its thickness, it will be seen that the total workable ore in this region must amount to thousands of millions of tons.

The quality of these iron ores has been proven by many hundreds of analyses, and by actual work, to be equal to the average of any other similar ores. They are high in metallic iron and low in sulphur and phosphorous, producing a high grade of neutral iron, much of which is within the bessemer limit.

The difficulty, as regards the development of these beds, has always been the fuel. The long haul necessary to get coke to this field, and the cost of making charcoal, have all been against the success of furnaces in the region, while the value of the raw ore would not permit its being shipped to outside markets.

The possibilities for suitable fuel for such purpose lie principally in the lignite deposits. As stated in my report on the subject I say brown coal, of similar character to that accompanying these iron ores, used in Austria in connection with coke for smelting iron ore. It has been found practicable to use as much as two-thirds lignite and one-third coke. A similar mixture of lignite and charcoal will also prove effective.

On account of its friable character, lignite, to be used alone, must either be coked or briquetted, and experiments in both directions are well worth trying. Coking experiments made by myself several years ago, using lignite mixed with coal tar pitch, or asphaltum, gave favorable results in a small way, and others of similar character by Prof. von Streeruwitz were equally favorable. The oil may be of service in furnishing a cheap material for mixing with the lignite for this purpose. If a coke can be prepared from lignite, of sufficient strength to permit its use in the iron furnace mixed with raw lignite, we will have a fuel of exceptional cheapness. Pitch can be made from the oil which will answer perfectly for a bond for making briquettes from lignite, and lignite so briquetted will act in the blast furnace similarly to raw bituminous coal, and can be used for making pig iron just as coal is used in Scotland.

In the manufacture of pig iron with raw bituminous coal the gases which arise from combustion are collected, refrigerated, and the tarry matter condensed. From this is manufactured much of the pitch which is used in briquetting. It will be practicable when smelting with lignite briquettes to collect the gases in a similar way, and from them secure at least a part of the supply of pitch necessary to briquette other lignite at a very reasonable figure.

Once in a metallic state, either the lignite or oil will furnish satisfactory fuel for rolling, converting into steel, or other manufacturing purposes. The result of practical tests made with Texas lignites in the manufacture of producer gas is evidence of its value for this purpose. In Austria it has been found practicable to import pig iron from England and, with the cheap supply of lignite as fuel, in the shape of producer gas, to convert the pig iron into steel, roll it into structural material, and sell it back to England at a profit.

The whole development, therefore, hinges on a suitable blast furnace fuel. Can we not get it from the lignite? I believe that we can, and that, sooner or later, some one will have the courage to have such investigations made, under competent supervision, as will prove the availability of the lignites for this purpose.

COAL EXPORTS OF GREAT BRITAIN.—The total exports of coal, coke and briquettes from Great Britain for the six months ending June 30th were 20,970,047 long tons. In the first half of 1900 the exports were 22,063,206 tons, showing a decrease of 1,093,159 tons this year. The total coal shipped abroad for the use of steamers engaged in foreign trade was 6,424,699 tons, which compares with 5,782,485 tons in 1900; showing an increase of 642,212 tons this year.

IRON AND STEEL EXPORTS OF GREAT BRITAIN.—The value of the iron and steel exports of Great Britain for the six months ending June 30th is given by the Board of Trade returns as below:

	1900.	1901.		Changes.
Iron and steel	£17,352,533	£12,764,861	D.	£4,587,672
Machinery	9,846,105	9,054,073	D.	792,032
New ships	3,940,113	4,973,570	I.	1,033,457
Totals	£31,138,751	£26,792,504	D.	£4,346,247

Lower prices contributed somewhat to the decrease, though there was a heavy falling off in quantities of many descriptions of iron and steel.

THE SILVERTON MINING DISTRICT, SNOHOMISH COUNTY, WASHINGTON.

Written for the Engineering and Mining Journal by R. H. Stretch.

This mining camp is taking on new life, since the reconstruction of the Everett & Monte Cristo Railroad, which was so badly demoralized by the washout in 1897. Since that date the little town was practically cut off from the commercial world until the present season, which has seen extensive repairs on the railroad and excellent protection to the road-bed at all the weak points in the canyon. The town of Silverton itself lies at an altitude of about 1,500 ft. above the sea, and the surrounding mountains rise to an altitude of from 4,000 to 5,000 ft., the general slopes being exceedingly abrupt, with deep canyons which offer excellent chances for the development of the mines in the neighborhood, without hoisting machinery. The broad mineral belt which forms the basis of Silverton's claims to notice, extend southerly some 18 miles in an air line to Index, and beyond; and also about the same distance northerly towards Darrington on the Sank River, which latter camp has just been connected by rail with the Northern Pacific system.

The characteristic ore of this belt is chalcopyrite, associated with some bornito in the Index region, but with more arsenical pyrite and pyrrohotite in the vicinity of Silverton. Not a few claims, however, show more or less galena, with occasional ruby silver. Such a variety of ores might naturally be expected, as the Silverton region shows a diverse rock series, each to some extent specializing the ores in the included veins. A few miles east of town, the overlying sedimentary rocks contain thin beds of coal, apparently semibituminous, and in all probability belonging to the same age as the coal-fields south of Hamilton in Skagit County, but on the eastern slope of a broad anticline along the crest of which the mineral zone has been developed. It is not unlikely that the general strike of one system of lodes—northwest—is in some way, not yet worked out, connected with the southeast course of Deer Creek, which is continued in the bed of the Stillaguamish River, from the mouth of Deer Creek to the summit of Barlin Pass. To this system belong such mines as the Forty-five and Bonanza Queen, to the south and north of Silverton respectively, the fissure in each case having been traced through many contiguous claims. The other system has a course somewhat west of south, with equally persistent fissures, but whether they fault each other is not yet known, as the whole region is densely timbered, and developments have not yet developed any of the intersections.

In 1897 there was a particularly good exhibit at Silverton of ores from 20 or more eligible prospects, and there seemed a chance to vitalize the camp after the hard times, but it suffered a violent death in the fall of the same year, when the railroad broke down, and it may be interesting to note some of the evidences of a probable reincarnation under better auspices.

The Forty-five Mine naturally claims first notice. In 1897 this mine was shipping high grade ore by pack train to Silverton, and was sufficiently developed to justify the building of a cable tramway to Silverton, with a length of 2½ miles, over a summit which was 1,400 ft. higher than the mine bunkers, and 2,600 ft. above Silverton. The railroad collapsed just as the tram was completed, and it became useless. They are now engaged in putting the tramway into good shape. The failure of the railway did not, however, prevent the shipment of ore to the extent of 800 tons, worth more than $100,000, but it was done at great expense,and involved the accumulation of from 10,000 to 15,000 tons of second class ore at the mine. This ore is largely galena, pyrite and ruby silver in slates.

The St. Louis Mine, connected with the railroad by a good wagon road, 4 miles long up Deer Creek, also shipped considerable copper pyrite of a 20 to 25 per cent. tenor, but realized the difficulty attending an attempt to open a large mine by small shipments of high grade ore, backed up by the small amount of money realized from the sale of treasury stock at small figures. It is now in the hands of parties who understand the situation and are able to wait until the mine is in a position to do business on a reasonable scale. The drift in the vein is being pushed ahead and is now between 500 and 600 ft. in length and is turning out some beautiful compact chalcopyrite, running 22 per cent. copper with fair silver values, some assays showing as much as 36 oz.

About 1 mile to the north, at an altitude of about 4,000 ft., the owners of the Helena group are doing their assessment work. This compact body of locations covers both system of veins, and is well worth attention, as numerous good bodies of ore outcrop on the broad open hillside which rises to an elevation of some 800 ft. above the company's cabins. Several small shipments were made from this property, but it is still in want of an extension of the wagon road to the St. Louis.

Just at the mouth of Deer Creek and west of the same is the Bonanza Queen group, still in the hands of the original locators, with an aggregate of something like 1,300 ft. of development tunnels. There are three locations on the main fissure—northwest—with ore outcrops extending for 2,000 ft. along this line, according to reliable authorities. In the principal tunnel, 500 ft. long on the vein, there is said to be 15 ft. of ore with a wide band of clean chalcopyrite associated with a soft black oxide. Parallel and to the east is a lode of arsenical pyrite carrying gold values and still further to the east 2 veins on the southwest system of the same character. This ground is well located for extensive work, it being feasible to get a depth of 1,000 ft. by short cross-cuts, as the Deer Creek slopes are very abrupt and in some places inaccessible.

On the south side of the river and about half a mile from town we find the Independent Tunnel, some 500 ft. in length on a strong fissure, carrying ordinary iron pyrites with mispickel, the characteristic gold values being greatest where the latter mineral is most abundant. The pyrites are disseminated through the entire quartz gangue and much of the slaty filling, so that the ore will require moderately fine crushing and concentration. The lode being softer than the enclosing slates (silicious) is found in the bottom of a gorge with exceedingly abrupt walls, the slope of the ravine being fully 40°, so that great depth is easily obtainable on the 3,000 ft. or upwards owned by the company which is now operating the mine. While this mine shipped a few tons of very good ore, the bulk was only suitable for concentration and there was no inducement to continue development when the railroad broke dwn, and the power plant and air compressor were dismantled. At the present time it is taking on new life. The improvements at the tunnel mouth have been put into good shape, an air plant installed, and preparation made to upraise from the lower to the upper tunnel, a distance of some 120 to 130 ft., preparatory to stoping. The end of the tunnel is some 250 ft. beyond this upraise and probably 400 ft. or more beyond the bed of the gorge.

On the Fraction Mine, lying southwest of and parallel to the Independent, but at a much greater altitude, the owners are working a 20-in. vein of ore, containing galena and iron pyrite. This has been lowered by an aerial tram from the mine to the end of the pack trail, where they have a carload of ore ready for shipment. The pack train is now engaged in transferring it to the railroad.

On the Four Brothers group, which lies north of the Bonanza Queen and west of the Helena series, it is proposed to extend the cross-cut tunnel, now in about 110 ft., until it cuts the vein—estimated at 20 ft.—which has been opened on the surface by two open cuts, in which the ore is said to look very promising for a width of several feet.

Just in sight of town on the Iroquois, an undeveloped claim, there is a very wide outcrop of pyrrhotite carrying more or less copper. This pyrrhotite is present in many of the ores, but whether it is associated with nickel and cobalt does not appear to have been ascertained, although it is probable, as the ores of the Little Chief, to the south of the Forty-five in the Sultan Basin are reported to be rich in cobalt.

Assessment work is in progress on many other locations, such as the Cleveland, Imperial, Hoodoo By Twelve, New Seattle and others too numerous to mention, but enough has been said to show that the camp is resuming its old-time activity under much more favorable conditions than formerly, and the owners are becoming willing to meet capital for development on more reasonable terms.

It may be noted that almost all of the properties mentioned (by no means all) consist of numerous locations and have abundant ground; and that all of them have excellent surface showings. The underground work has demonstrated the continuity of the fissures in length, and the Forty-five has proved their continuance in depth. The timber is abundant, and the country is well watered; and contracts for steady delivery of ores to the Everett Smelter (48 miles) from Silverton can be made at probably $2.50 or even less per ton.

THE BELLE ELLEN COAL MINE, ALABAMA.*

By William M. Given.

The Belle Ellen Coal Mine, owned and operated by the Bessemer Land and Improvement Company, is situated about 35 miles southwest of Birmingham in Bibb County, Ala., and upon the northeast slope of the Blocton Basin of the great Cahaba Coal-fields. This company has a large area of property, which is underlaid by four workable seams of coal: The Conglomerate Seam, from 4 to 7 ft. thick; the Woodstock Seam, from 3 to 3½ ft. thick; the Gholson Seam, from 2½ to 4 ft. thick, and the Coke Seam, 4 ft. thick. The present openings of this company are on the Conglomerate Seam, though it is likely that the next seam below (the Woodstock) will be developed at no distant day.

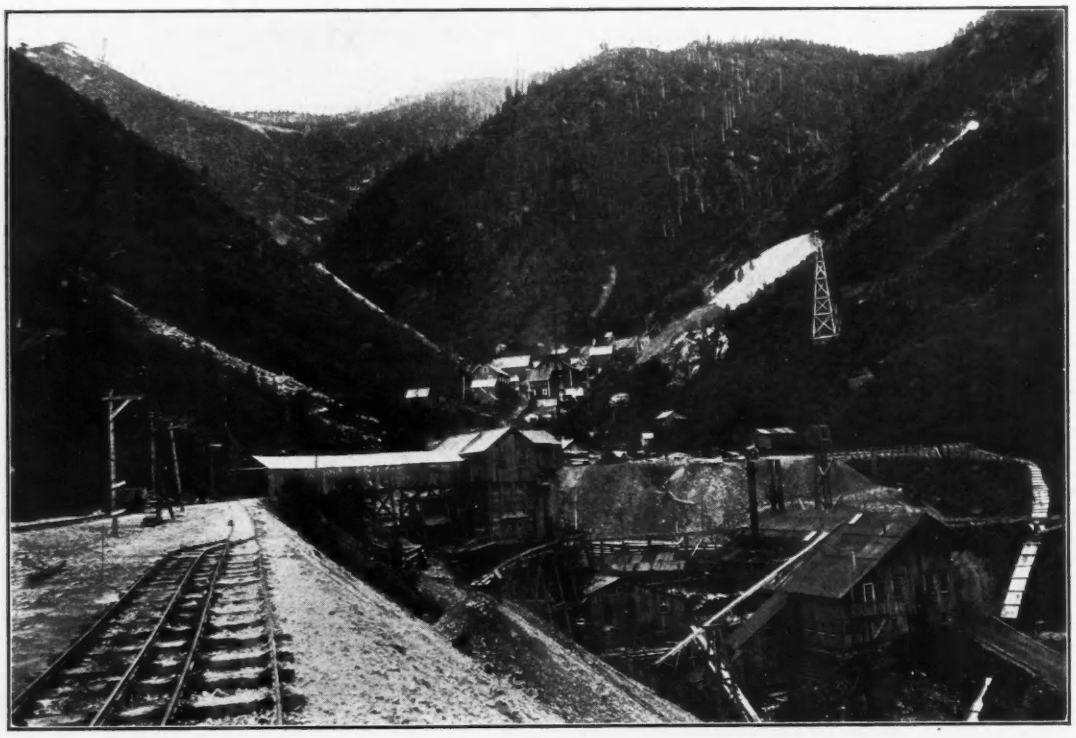
Belle Ellen is one of the most important, as well as one of the most prosperous, coal mines in the Birmingham District, and bears the distinction of having broken the record for output in the district from a single track slope. It has also made a record of its own for the rapidity of development of new workings.

This mine consists of two slopes and three drifts, of which one slope and the drifts are new openings, they having been started within the last few months. Belle Ellen was first opened in 1894, under the management of Mr. L. W. Johns and Mr. H. F. De Bardeleben, who was president of the Bessemer Land and Improvement Company at that time. It was thought by them that electric haulage could be successfully operated here, and a well-appointed electric plant was installed. The dip was found to be too great, however, and, after a time, the electric haulage was discontinued and the No. 1 slope was sunk. The electric workings are to the right of the slope, and to secure a grade sufficiently light the workings were thrown too near the outcrop. The coal is now drawn from the slope by a steel cable, the drum power being furnished by a 10 by 22 in. double engine, steam for which is supplied by six boilers, 60 H. P. each. The boilers also furnish steam for the mine pumps. The pumping plant consists of one No. 11 Cameron pump and one smaller pump as a relay. The mine is ventilated by means of a fan 18 ft. in diameter, which is driven by a 10 by 20 engine. The air way for the return current is on the right of the slope, and the current is conducted across the slope by overcasts. Overcasts are also used across the entries on the right of the slope. The coal, after being drawn from the mine, is hauled between a quarter and one-half a mile over a narrow-gauge road to the tipples, where it is weighed and loaded for shipment. For this purpose a 10 by 14 H. K. Porter locomotive is used.

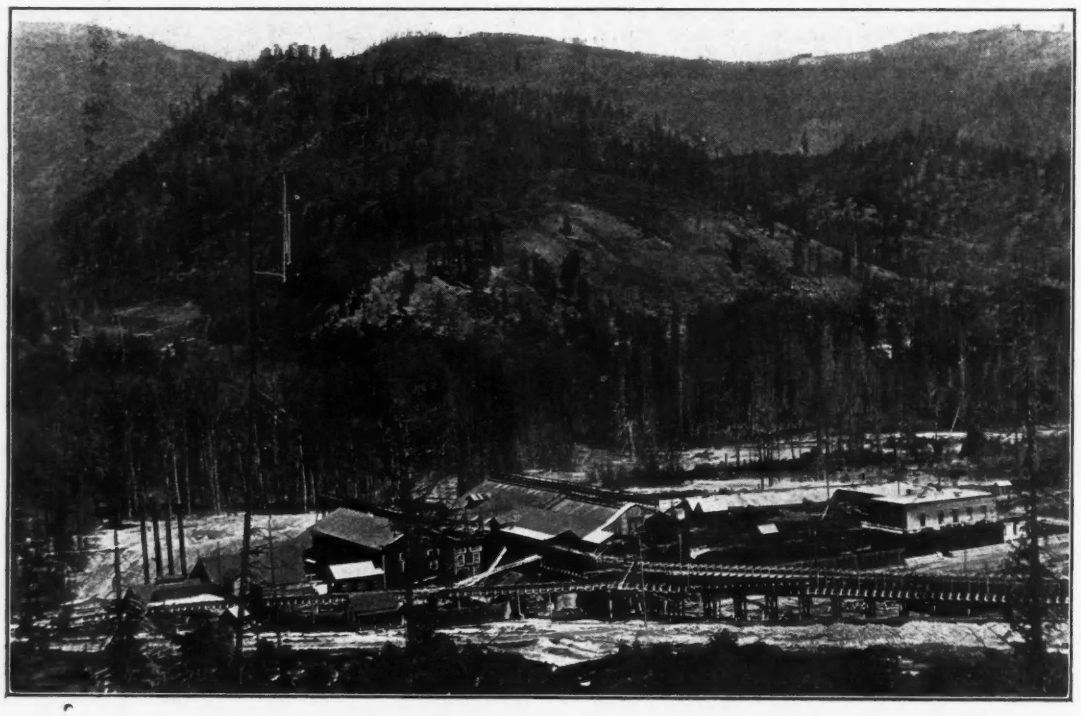
Mr. L. E. Bruns succeeded Mr. De Bardeleben as president of the company, and was in turn succeeded by Mr. H. L. Badham, who is the present chief executive of the company. Mr. Herbert, the present superintendent and manager, succeeded Mr. L. W. Johns in September, 1898. When he assumed charge of the operations the great financial depression was passing away, and the demand for coal was growing daily. During the depression there was little or no margin to be spent in improvements of any kind; the vital issue was to be able to keep running at all, rather than the attainment of a large output. The great and unprecedented demand for coal in this district found this mine, as well as many others, in a state of unpreparedness, which it was necessary to overcome in order to handle the contracts that were coming in. When the present management took hold of the mine its

*Abstract of paper head before the Engineering Association of the South, May, 1901.

capacity was about 750 tons per day, 930 tons having been the largest tonnage for any one day. It was necessary to increase this output in order to handle the business that was being offered, as well as to hold down the cost per ton, which, with the fixed charges and incidental expenses entailed by the extra haulage of the product from the slope to the tipples, was necessarily high and could only be reduced by bringing up the tonnage. It was realized very wisely that the first step in this direction should be the thorough overhauling and renovating of all the appurtenances and equipment, so that the entire plant in all of its details would be in condition to work smoothly and yield a maximum service wherever called upon. Acting upon this idea, the landing at the top of the slope was made larger, so as to allow more cars to be handled per trip. The slope track, which is laid with 60-lb. rails, was put in thorough alignment and well ballasted, all loose and hanging rock along the slope was brushed down, the waterways and roadways in the entries were improved, and every detail of the mine was brought up to the same high standard of excellence. Then the pressure was applied; all narrow work was double shifted and pushed and ground and rapidly opened up. The beneficent results of this policy soon became apparent; there were no delays on the slope or at the turn-outs on account of cars getting off the track, no muddy roadways to hinder the quick handling of cars in the entries, and no complaint of bad or insufficient air. The output steadily grew until it reached 1,570 tons, delivered at the head of the slope in 9 hours and 40 minutes. This is the greatest tonnage ever attained by a single track slope in the Birmingham District, and this could have been attained only by the perfect condition of the equipment and the excellent system observed in operating. This slope was until recently the only opening worked by this company. Last fall work was begun upon the new openings, which consist of one slope and three main drifts. The writer, who is consulting engineer, took measurements of there works on February 21st, 1901, as follows: Slope, 675 ft.; A drift, 900 ft.; right crosscuts from A, 1,368 ft.; B drift, 1,040 ft.; C drift, 928 ft.; crosscuts to left from C, 300 ft., yielding an output of from 700 to 800 tons of coal per day at the last-named date. This comes almost entirely from the drift workings, as at that time no rooms or entries were working from the slope. Since then, however, these workings have yielded over 900 tons in one day. The method of mining the coal at Belle Ellen is by the pillar and stall system, the room being driven up to its limit and the pillar drawn back to within 50 ft. of the entry below, the rest being left to support the entry.



BUNKER HILL & SULLIVAN MINES, NEAR KELLOGG, IDAHO.



BUNKER HILL & SULLIVAN PLANT, KELLOGG, IDAHO.

This underground development has been accompanied by much improvement on the outside in the shape of houses for employees, bored wells, etc., 100 new houses having been built. The tipple arrangement at the new openings handles all the output of the slope and two upper drifts at the same place, and is a model of convenience. The lower drift has a tipple of its own. The output of Belle Ellen for 1900 was 313,000 tons, giving an average of 1,185 tons for each day worked.

THE PAN-AMERICAN EXPOSITION AT BUFFALO.—V. THE IDAHO EXHIBIT.

Written for the Engineering and Mining Journal by Mrs. Harriet Connor Brown.

Idaho is well represented at the Pan-American Exposition. With a State appropriation of only $15,000 it has yet succeeded in making a most creditable showing in the department of horticulture, agriculture, forestry and mining. L. C. Rice, of St. Anthony, as executive commissioner for the Pan-American Commission, has had charge of the work, and has been ably assisted in arranging the mining exhibit by J. T. McDuffie, of Greensville.

Fully 85 per cent. of the land in Idaho still belongs to the United States, according to Mr. Rice's statement, and is open to the public under government laws. It is a soil rich in mineral wealth. Not a single prospect has ever been discovered in the Coeur d'Alene District but has turned out a valuable one. Within the last year Idaho has attracted a much larger share of outside capital than ever before. In the Warrens District, about $250,000 has been expended in the last two years, large sums in the Elk District, in Dixie, in the Newson Creek District, in Florence, in the Salmon River and in the Buffalo Hump District. Even at the present stage of development between 90 and 95 per cent. of the money invested has yielded a return beyond all expectation.

IDAHO MINES EXHIBIT AT THE PAN-AMERICAN EXPOSITION.

Idaho has set up her exhibit in a corner of the veranda in front of the Mines Building. The wall decoration at the back of the exhibit consists of a legend, which runs thus:

"Idaho, the Gem of the Mountains, has contributed to the wealth of the nation, since 1860, $250,000,000 in metals.

"Output for 1900: Gold, $2,076,036; silver, $8,468,839; lead, $7,689,974; copper, $2,124,603; miscellaneous, $499,760; total, $20,859,212.

"Idaho has 1,250,000 acres of rich mineral lands, the greater part of which is unexplored or unclaimed."

As warranted by the production of the State, silver and lead are naturally the most prominent features of the exhibit. The lead mines of Idaho are the most productive in the world, Idaho supplying even now 53 per cent. of all the lead used in the United States. Among the notable specimens is one of gold, silver, and lead ore from the Sunday Mine, Blaine County, which runs 65 oz. of silver to the ton, and contains 55 per cent. lead. A specimen of native silver from the Montezuma Mine at Harley contains 2,000 oz. of silver to the ton. A particularly fine specimen of silver ore in a quartz setting comes from the Big Eye Mine in Owyhee County. Still more remarkable is a piece of argentite or silver sulphide from the De La Mar Mine in Owyhee County. From Owyhee County also come fine specimens of silver amalgam and wire silver. The Democrat Mine sends some specimens of ore which run 100 oz. of silver to the ton and are 85 per cent. lead. From the Mammoth Mine come specimens that carry 100 oz. of silver to the ton and are 75 per cent. lead. Particularly fine are some carbonates of lead and silver from the Bunker Hill & Sullivan Mining Company of Wardner, one of the best-known properties of the Coeur d'Alenes. The Bunker Hill & Sullivan Mine boasts of a vein of this ore 18 ft. wide, and yielded in the year 1900 about 24,000 tons of concentrates.

In a separate case in the exhibit are bottles containing samples of the product of various concentrating mills of Idaho.

Another case is devoted to Idaho's gold and copper specimens. One very small piece of gold quartz from the placer claims of Murray is valued at $100. Other fine specimens of placer gold come from Idaho County. Specimens of placer gold exhibited in small bottles from Snake River are interesting, because fine flour gold, which has not so far been successfully saved, is known to exist in the great Snake River bars.

Idaho's gold-fields are being rapidly developed. There has been unusual activity of late in the placer mines of Boise River and the region which it drains. Numerous gold-bearing quartz veins are also being exploited in this district. Some fine specimens of gold-silver bearing ores have been picked up, within the year, by people who have prospected near the head waters of the Middle Fork of the Salmon River in central Idaho. Several new companies have been formed to develop the work on the ores in the Camas gold belt near Hailey. A large amount of gold has been taken from the placer deposits of Idaho since 1860, when the first mineral discoveries were made, and the end is not yet.

The copper deposits of Idaho, although but slightly developed as yet, are known to be extensive. Particularly worthy of mention are specimens of copper from the Seven Devils District in the western part of the State. Copper ore from the Brown Bear Mine in the Blackbird District appeals to many of those who visit the exhibit, as a large part of the stock in the mine is owned by Buffalo investors.

A prominent feature of Idaho's exhibit is its building stones, of which it exhibits 17 varieties. In Boise City, the capital of the State, many of the finest buildings are constructed of stone quarried near the city. Among the samples exhibited must be mentioned the yellow and black sandstones, which are very rare. The yellow comes from a single deposit on the Blackfoot Reservation, and the black is taken from the crater of an extinct volcano in the same neighborhood. Specimens of lava rock are also of interest as curios.

Bear Lake and Cassia counties hold marble among their assets. Specimens of it are in the exhibit. The marble of Cassia County is found in considerable quantity, and the quality is excellent.

Kaolin of the finest quality is one of the exhibits. Deposits of it are found along the banks of Snake River. This kaolin is put up in small pieces as a polishing substance, but is not otherwise utilized.

The clay of Shoshone County is sent to the potteries. A line of flower pots and earthen jars is exhibited by the Shelley Pottery Works of Shelley.

Mica from Latah County, yellow ocher from Nez Perce County, obsidian from Fremont County, asbestos from Boise County, and alum are in the exhibit.

Opalized woods of great beauty are found throughout Idaho, and some of them have a place in the exhibit. Most of them are yellow in color, but one piece on exhibit contains 14 different colors. Some fine specimens of red and yellow onyx are also exhibited from Ada County.

Owyhee County has some of the best opal fields in the United States. Some of the best of these fields are now being developed by an eastern syndicate.

There are only 160,000 people in Idaho, and the State is twice the size of New York. The person who studies Idaho's mining exhibit and then remembers that the one county of Fremont is larger than the State of Massachusetts realizes that a few people have managed to cover a large extent of territory with a vast amount of energy.

THE MINES JURY AT THE PAN-AMERICAN EXPOSITION.

Dr. Pritchett, superintendent of awards, has announced the names of the jury on mines and metallurgy for the Pan-American Exposition. They are as follows:

Chairman, John Birkinbine, president of Franklin Institute of Philadelphia; Prof. J. A. Holmes, State geologist of North Carolina; Dr. Heinrich Ries, professor of economic geology at Cornell University; Jefferson Middleton, of the United States Geological Survey and expert in clays; Señor L. Fleury, mining engineer of the Mexican Commission.

VICTORIAN GOLD JUBILEE EXHIBITION.

It is proposed to hold an exhibition on an extensive scale at Bendigo at the end of 1901, under the auspices of the Government of Victoria, to commemorate the discovery of gold in 1851, and to celebrate the Jubilee in a manner that will rank as a fitting memorial of the first anniversary of the Australian Commonwealth.

The exhibition will be not only Inter-State, but international in scope and character, and will comprise a vast exposition of the world's progress in the arts, sciences, manufactures, products, inventions, discoveries and industries. Fitting prominence will be given to the gold mining and other mineral resources, and phases of mining in Victoria, and the other States of Australia, Great Britain, Canada, America and all parts of the old world from their earliest stages to the present time, while special courts will be erected for the display of manufactures and industries, wool, agriculture, dairying and machinery, etc. The art section will be one of the largest and best gathered together since the Melbourne Centennial Exhibition.

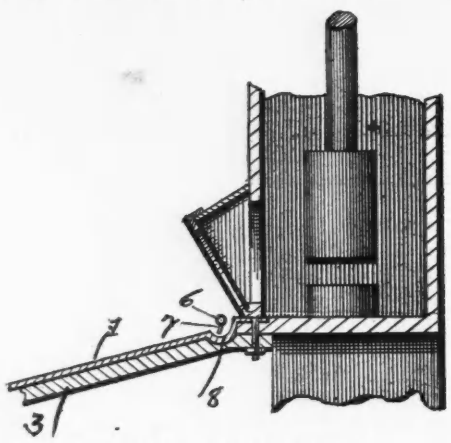
The site of the exhibition will be Market Square, comprising an area of over 4 acres, in the center of which stands the Bendigo town-hall, a magnificent pile of buildings which will be devoted to the display of the art loan collections, competitive and other pictures, applied art and music. Special provision is made in connection with the wine and other States industries. Estimates of large expenditure have been adopted by the executive committee, and the scheme is now being activly carried out.

Applications for space and other information should be addressed to Geo. V. Allen, General Secretary, whose address is Market Square, Bendigo, Victoria, Australia.

AN IMPROVED AMALGAMATION PROCESS.

Written for the Engineering and Mining Journal by A. Chester Beatty.

This process is covered by United States patent No. 671,389, April 2d, 1901, granted to Morris Seligsohn of Denver, Colorado. The object of the process is to increase the percentage of extraction of gold by amalgamation, and it claims to do this by passing ammoniated air, mixed



SELIGSOHN AMALGAMATOR.

with either chlorine or bromine into wet ore pulp. These gases are introduced into the wet ore pulp as it issues from a stamp battery, Huntington mill or other crushing machinery. The method of introducing the gases is shown in Fig. 1. Referring to this illustration, 1, is a sheet-iron or steel apron with a small trough near the upper part of the apron, 8. The pulp, as it issues from the battery passes over the apron and into the trough 8, and thence over the lower part of apron, 1, and over the amalgamating plate, 3. The gas is introduced into the pulp as it passes through 8 by means of the pipe, 6, and a series of jets, 7. By this means the pulp is thoroughly impregnated by the gases, as the jets which discharge the gas lie some distance below the surface pulp. The pipe, 6, is connected with a small tank, partially filled with ammonia, through which air is forced by means of a small positive blower. This small tank is partially filled with ammonia, to which is added a small quantity of chlorine or bromine gas. The chemistry of this process is somewhat obscure, but the results obtained by introducing this gas, have in nearly all cases affected a marked increase in the percentage of gold extracted by amalgamation. The effect of this introduction of the gas is at once apparent in the appearance of the plates. The mercury is kept brighter, and if these jets be directed upon a portion of the plate that has become fouled, the discoloration of the plate disappears and it becomes bright again.

In the testing works of Henry E. Wood, located in Denver, Colorado, a number of ores have been tested by this process and the ores so far experimented upon have yielded very satisfactory results, in all cases showing an increase in the amount of gold extracted by amalgamation. A marked improvement in the condition of the amalgamating plates was also observed, the plates to which the apparatus was attached remaining bright and clean while the adjoining plate often became more or less fouled. The apparatus was also installed for the purpose of a test in the Anderson Mill at Idaho Springs, Colorado, this test being conducted by Mr. R. F. Hill, of New York. Samples were taken of the pulp after passing over the amalgamating plates at regular intervals and samples were also taken of the pulp issuing from the stamp battery. The average value of the ore was $10 in gold. The result of the test was as follows: Pulp after passing over the amalgamating plates, apparatus attached, gold value $2.20; silver, trace. Pulp after passing over the amalgamating plates, without apparatus, value of tailings $4 gold; silver, trace. Increased saving on the plate with apparatus attached, $1.80. The gold is figured at $20 per oz.

The superintendent of the mill, commenting on the process, says that the apparatus has been tried during six different runs, and has proved a success upon this class of ore. He also states: "It keeps the plates in the best condition all the time, prevents flouring of the mercury and increases the amalgamation from 10 to 25 per cent." The process is now being installed in several mills, and the results, so far obtained, show that the process is applicable and advantageous to quite a variety and range of ores.

EXPOSITION IN JAPAN.—The following is extracted from a letter by United States Consul Lyon, of Hiogo, dated June 5th, 1901: "The proposed exposition in Japan will be held at Osaka from March 1st to July 31st, 1903. The articles to be exhibited include agricultural, horticultural, forestry and water products; mining, industrial and mechanical exhibits; and those pertaining to education, science, sanitation, economy and the fine arts. The articles shall be those collected, produced or manufactured by the subjects of the Empire, or by foreigners residing in Japan. The cost of the exposition is to be paid by the Imperial Treasury, except the expenses of exhibiting, which will be borne by the exhibitors."

MINERAL IMPORTS AND EXPORTS OF SPAIN.—Imports of fuel into Spain for the five months ending May 31st were 905,537 metric tons of coal and 63,258 tons of coke. Imports of metals included 3,529 tons pig iron, 2,722 tons wrought iron, 16,702 tons steel and 1,231 tons tinplates. Exports of minerals for the five months are reported by the "Revista Minera" as below, in metric tons:

	1900.	1901.	Changes.
Iron ore	3,409,059	2,770,267	D. 638,792
Copper ore	460,508	434,641	D. 25,867
Zinc ore	29,088	31,733	I. 2,645
Lead ore	1,344	1,278	D. 66
Salt	86,587	153,446	I. 66,859

Exports of metals included 4,488 tons of pig iron (13,570 tons, 1900); 9,080 tons copper (11,815 tons, 1900); 59,155 tons lead, against 65,391 tons in the corresponding period last year.

TELEPHONES FOR COAL MINES.—The "Electrical World and Engineer" reports that the coal mining companies of Scranton, Pa., propose putting telephones in the mines. Such an improvement would be a great boon to the mine-workers, and its general introduction is regarded as a proximate possibility. Having some means of communication with those who are entombed in the depths of the mine would greatly assist in the work of their rescue. It has often happened in the history of mine accidents that the efforts of rescuers were put forward in a direction entirely different from that in which the men were imprisoned, and thus valuable time and energy were wasted. With a system of mine telephoning in operation this would be averted. The plan suggested by those who are friendly to the proposed improvement is to locate telephones at regular intervals along the workings, so that they may be protected as well as possible from accident, and be of easy access to the miners in case of danger. Some of the miners in attendance at the district convention, in session in Scanton recently, said that they knew of certain mines where the telephone is already used to a limited extent, but they thought it should be introduced generally, as it would be a great benefit to the underground workers.

A REMARKABLE COAL MINE.—Mr. R. M. Haseltine, consulting mining engineer of Columbus, O., recently returned from making an examination of some coal fields which lay along the eastern portion of the Appalachian Basin. While making these inspections he met a farmer who took him in his carriage, and after driving some distance down a very rocky and precipitous hill, in which it was with difficulty that a person could remain in the buggy, they came to a very high bluff, at the foot of which some miners were engaged in mining coal for the local trade. The farmer drove the horse and buggy into the mine, where he hitched the horse to a mine prop.

They then lighted their lamps and proceeded to examine the mine, after which they re-entered the carriage and drove through some breakthroughs into another entry and emerged through another opening. It is said to be the common practice for the farmers to drive their teams into this mine, back up to a pile of coal, and when loaded drive out by another route. Ex-Mine Inspector Haseltine says that for nearly half a century he has been about mines; two-thirds of this time he has been actively engaged either in operating, engineering, developing or inspecting active mines, but this is the first instance in which he ever resorted to the use of a horse and carriage while inspecting a coal mine.

MINING NOTES FROM SINALOA, MEXICO.

Written for the Engineering and Mining Journal by Winthrop W. Fisk.

The mining interests in this section of the State of Sinaloa are developing slowly but surely, and particularly in regard to the copper mines. This development will be greatly stimulated in another year, when the Kansas City, Mexico & Orient Railroad, which is now being built, is finished from the port of Topolobampo to the mining districts. At present it is necessary to ship all the rich smelting ores from 120 to 200 miles on mules to the coast; but with the railroad to bring in coke there will be an opportunity to erect smelting works near the mines and treat the ores at a good profit to the smelter and a large saving over present shipping expenses to the mine-owner. This will also enable the miners to sell much of the lower grade ore which it is now necessary to put on the dump, as nothing under 15 per cent. copper will pay to ship. Most of the ore shipped has over 20 per cent. copper with some silver and a little gold, and gives very little profits.

There are a large number of prospects now opened up waiting for the railroad and local smelters. The chances are that at least one large smelter will be built this coming season as the railroad grade is nearly completed for the first section—100 kilometers—and the surveys made for the second section. Some of the ties are on the ground and the balance for the first section are expected to arrive in a short time. A large corps of engineers is in the field and about every available workman and team used to hurrying up the grading—that is, if anything can be imagined as "hurrying" in Mexico.

The copper deposits in this section are mostly found in the contact between a lime rock and porphyritic granite and show considerable size on the surface, with good indications of depth and permanency as far as the development work has been carried. Thus far, however, very little depth has been reached in any of the mines.

Los Platinos Mine has been the most extensively worked, having been shipping ore continuously since last October and has reached a depth of about 100 ft. During the early winter when the feed was good along the trails for the mules there were plenty of mules to pack ore at a reasonable rate, and then this mine was shipping 10 to 15 tons of 20 to 25 per cent ore per day; but now very little ore can be shipped, as the natives are in the mountains eating wild fruits, which is their principal food at this time of the year, and the mules are trying to exist without food, waiting for the rainy season, which is due the latter part of June, to give them good pastures again.

New sampling works have recently been established in Choix, the nearest town to the mines, and there is a prospect that this new company will put on a lot of ore teams to haul the ore from Choix to Agiabampa, 100 miles. A large amount of work has been done on the wagon road the past two months and it is now in good condition to haul heavy loads.

The copper ores are sulphides and oxides with a large amount of iron, the iron giving place to copper in the richer ores. There is also some native copper and some carbonates. Most of the ores carry a small amount of silver and some run up into the hundreds of ounces per ton.

Los Platinos Mine has shipped in the neighborhood of $100,000 worth of ore already and preparations are being made to work it on a larger scale. Ore cars and track have been ordered, a tunnel has been opened into the lower works and a little timber is being put into the mine to put it in better shape. Several contracts for development work in the Madoriles and Papas districts have been let for this summer. Work is also going ahead in Cerro Colorado, Toros, Minitas and San Blas districts. A New York company is also doing a large amount of development in Las Higueras, but work has been practically suspended for the rainy season in the Reforma, Molinas and Colmoa districts. Some of the richest ore thus far produced has come from the Reforma district, samples assaying 47 per cent. copper, 600 oz. silver and $44 gold per ton. Immense veins of iron show on the surface in this section and development work is being done to determine if the iron gives place to copper in depth.

MINING IN AUSTRIA.

By H. R. Jastrow.

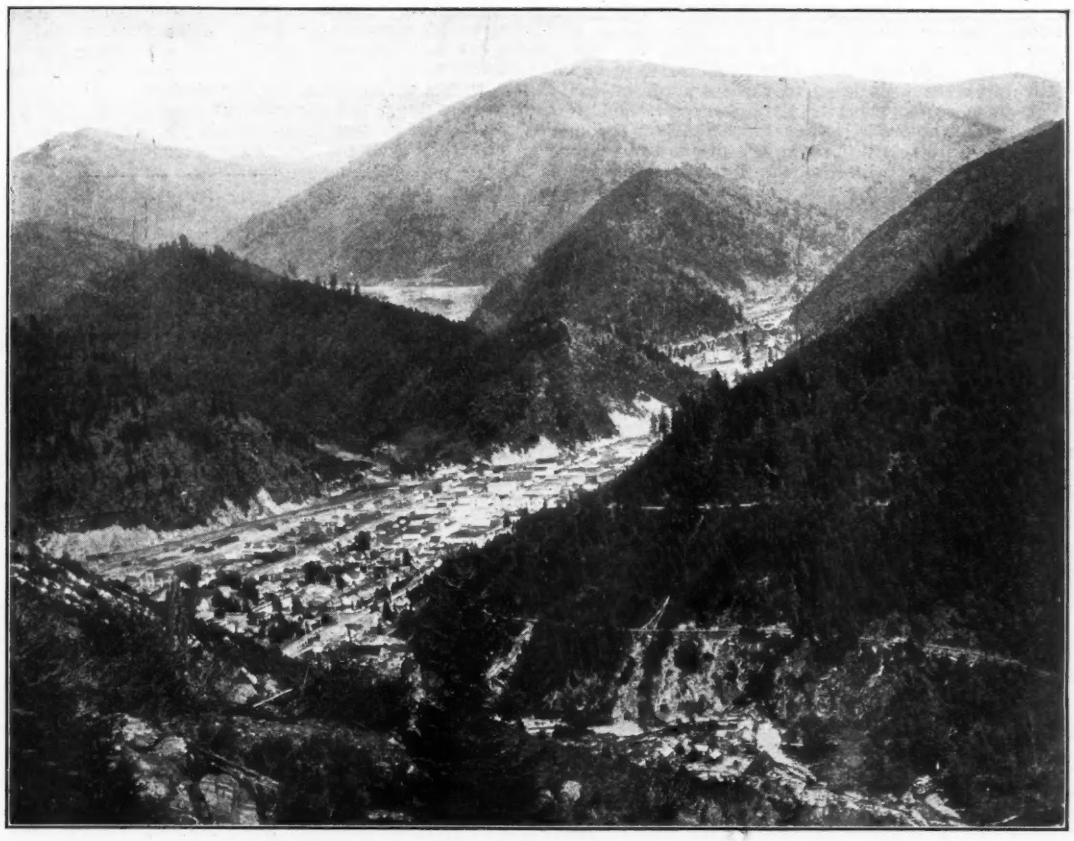
Out of a total production of minerals in Austria amounting to 199,200,000 gulden ($79,680,000) per annum, only about 8 per cent. actually represents mines other than coal, iron, salt, petroleum and ozokerite. The exploitation of such minerals as copper, lead, gold, silver, antimony, etc., forms therefore but a small part of the mining interests of the Austrian Empire.

Notwithstanding their comparative smallness, however, Austria's mining industries are noteworthy from many points of view. In the first place, many of them are of long standing, as witnessed by the salt mines, the development of which has existed for centuries. Secondly, the bulk of them are under government control, being operated and managed by the Imperial-Royal Ministry of Agriculture and Mines, in Vienna. In Europe the various governments have seen fit to identify themselves with so many phases of industrial affairs that it is instructive as well as interesting to observe the progress made in the different departments under their control.

Gold, for example, is found in government mines. The production of this mineral is very small, only about 135 lbs. yearly. Silver makes a better showing with 80,052 lbs., valued at $800,000. Practically this entire amount is found in the old silver mine at Pribram. Quicksilver, produced in Austria to the extent of $480,000, is mined in two districts, principally in the famous Idria Mine and to a smaller degree in Neumarktl, Carinthia. The total annual output approximates 10,634 flasks.

The production of copper in Austria has increased since the year 1848 from 7,348 to 21,660 lbs. In the whole Empire there are only two copper mines, that at Mitterberg in Salzburg, and the Government mine at Brixlegg, in the Tyrol. Recently copper has also been produced in Witkowitz by electrolytical methods. The supply is, however, not by any means sufficient to meet the demand, and an annual importation is consequently necessary. This importation amounted in 1898 to $4,720,000. The imports came principally from the United States, Germany, Great Britain and Japan.

An important position is occupied in Austria by the lead production, which exceeds yearly $720,000. This quantity is distributed among a number of companies, notably the Bleiberger Bergwerksverein, the



TOWN AND MILLS AT WALLACE, IDAHO.

Aerarische Bergwerk in Pribram, the Bleihutte Littai, in Carinthia, and smaller mines in Mies (Bohemia) and Windisch-Bleiberg, in Carinthia. The increased consumption of lead also necessitates a large import, exceeding at present $736,000, the bulk of which comes from Germany and the United States.

Tin was once a flourishing industry in Austria; but of late years it has steadily receded in importance until it is now regarded as comparatively insignificant. In consequence, imports have now to be made in excess of $1,360,000 from Germany and British India. Zinc ores are found in various sections and are both exported (to Silesia and Westphalia, in Germany) and consumed in Austria. Of the quantity used at home, the bulk goes to the works in Cilli and Sagor and to the three Galician works Krze, Trzebinia and Niedzieliska. According to the latest available statistics, the present production is valued at $480,000; 43 per cent. of this amount is furnished by Galicia; 41 per cent. by Styria and the balance by Carinthia. Zinc is also imported largely, as shown by the amount of $1,720,000 listed in the import statistics. Under sources of supply Germany is given as the chief origin.

The largest mine in Austria producing minerals belonging to the foregoing category is the Imperial-Royal mine in Pribram, Bohemia. This property employs altogether 4,784 workmen. It is well equipped mechanically, having nine hoisting shafts, 10 plants for the preparation of the ores, foundries, a machine shop, wire cable factory, chemical laboratory and lead and silver works. The principal products taken out of this mine include antimony ores, sulphide of zinc, silver, green and red ocher, soft lead, copper and nickel. The antimony-lead ore is shipped to Germany, the ocher to Germany, Switzerland and Italy, and the zinc sulphide to Germany and Belgium. Next in importance to this property is the Idria Mine, situated in the town of the same name in Carinthia. It gives employment to 1,178 workmen, and produces principally quicksilver. The ore is brought to the surface through four hoisting shafts and passes directly into the ore preparation plant.

Another extensive mine is situated in Klausen, Tyrol, and produces sulphide of zinc, sulphide of lead, copper and iron pyrites. This mine employs altogether 406 workmen. It is equipped with 6 water wheels, 5 turbines, 1 hydraulic column engine, 2 stamp mills, 2 picking tables, 7 crushing cylinders, 35 sieve jigs, 14 Salzburger washing tables, 5 electro-magnetic ore separators, two dynamo engines, an electric lighting plant, 9,300 m. of underground and 9,170 m. of surface track, 3 self-acting inclined planes and elevators, altogether 410 m. long, and 2 wire cable tramways, in all 630 m. long. All of the ores produced here are consumed in the various mineral works of the country.

Gold and silver, copper-vitriol, electrolytic copper, refined copper, etc., are produced in the government mine at Brixlegg in the Tyrol. This mine has about 150 employes. It is fitted with hoisting apparatus, windlasses, ventilators and plants for the preparation of the ores. The plant comprises two blast furnaces, two copper refining ovens, one electrolytical separating plants with two dynamos for 20 volts and 224 amperes each, 60 baths, an electric lighting plant and copper-vitriol works with one boiler, crystallizing implements, etc. The power is supplied by five turbines of 184 H. P.

One of the principal copper mines in Austria is located at Kitzbühel, in the Tyrol. It employs 218 workmen, and is equipped with a hoist worked by water-power, an inclined plane, two crushing cylinders, three stamp mills, three washers, two sawmills, two foundries and a machine shop. The ores mined are used in the Empire.

Other works of importance are located in Mitterberg (490 employes) and Raibl, in Carinthia, St. Anna (Post Neumarktl) in Carinthia, and Mies in Bohemia. The mine at Mitterberg is operated by the Mitterberger Kupfer Gesellschaft, while that at St. Anna is known as the Illyrische Quecksilberwerke Gesellschaft, and that in Raibl, Carinthia, is under government control.

AN OLD LOCOMOTIVE.—The London "Engineer" notes that a locomotive, which is believed to be the oldest in active service, has just been taken off the lines of the Furness Company, and will be preserved at the Central Station, Barrow-in-Furness. It is one of the historic type known as "Coppernobs," and was built in 1846 by Messrs. Bury, Curtis & Kennedy. It has run on the Furness railways for 55 years, first with passenger trains, then in the goods department, and latterly at Barrow Docks.

WATER-POWERS ON THE RHONE.—The London "Engineer" says that in the course of the next three years it is proposed to erect extensive plants between Pyrmont and the Swiss frontier for the development of power from the river Rhone. Malpertuis, 2½ miles below Bellegarde, is the first point at which work will be commenced. There the river falls 30 ft. to 35 ft., with perpendicular banks only 160 ft. apart. It is estimated that by building a tunnel half a mile long a total fall of 51 ft. to 55 ft. can be obtained, equivalent to 25,000 H. P. at low water. Near Bellegarde another tunnel would secure a fall of 80 ft. to 85 ft, developing 30,000 H. P. Some eight miles from the Swiss frontier there is a narrow gorge only 80 ft. wide, and a dam built at this place, it is said, would give a fall of 65 ft., securing 30,000 H. P. at low water.

BLOWING GLASS BY COMPRESSED AIR IN GERMANY.—A process for producing glass vessels of an unusually large size, says Consul Hughes, of Coburg, has been discovered by Paul Sievert, of Dresden. The liquid glass metal is poured upon a cast-iron plate, and runs as far as the over-reaching edge of the plate, where it hardens. The still refractory glass metal frees itself from the plate—the hardened edge remaining fast—and forms an elongated sack, the bottom of which rests upon a table. By means of a hollow cylinder and a plate pierced with holes, compressed air is conveyed to the sack, which, the table being lowered, is blown to the required size. The upper glass edge is then freed by the removal of the over-reaching edge of the plate and the table continues to sink. The finished vessel is then allowed to cool. Previous to this time, the consul adds, concave glass could be blown to a size of only 1 hectoliter (26.417 gal.), but with the above method, bath tubs and large glass kettles can be made.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

DUTY ON OCHERS CONTAINING LEAD.—A recent circular from the Treasury Department says that ocher and ochery earths, washed and powdered, are assessed for duty at 0⅝c. per lb. under paragraph 49 of the tariff act of July 24th, 1897; but that in most cases samples of merchandise are sent to the chemical laboratory for analysis, and if it is found that the article contains lead it is assessed for duty at 30 per cent. ad valorem as a color, under paragraph 58 of said act.

RIGHT TO MINING CLAIMS IN NEVADA.—Act of Congress, June 16th, 1880 (21 Statutes, 287), granting certain lands to the State of Nevada, authorized the State to dispose of them under such regulations as the legislature should prescribe. Act of March 5th, 1887, after providing for the sale of such lands, provided that nothing in the act should be construed to prevent any person entering on the lands to prospect for minerals, or to prevent the economical working of any mine which might be discovered in same. Statute 1887, page 192, provided that any citizen might enter on any mineral lands in the State, notwithstanding the State's selection of it, under grants, and explore the minerals, and on discovery mine the same, except that improvements made by persons purchasing the land from the State should not be taken without compensation, and that thereafter all patents made by the State should reserve all mines that might exist on the land. It was held that one taking a patent to such lands, with such reservation, acquired no interest to a mine located after his application was filed, but before patent issued, notwithstanding that the selection by the State under the grant from the government determined that the lands were agricultural and non-mineral, within the meaning of the grant.—Stanley v. Mineral Union (63 Pacific Reporter, 59); Supreme Court of Nevada.

THE PRIDE OF THE WEST MILL AND SMELTER, WASHINGTON CAMP, ARIZONA.

Written for the Engineering and Mining Journal, by Jesse Scobey.

After leaving, at Benson, the sandy wastes followed by the main line of the Southern Pacific Railroad, in its course across lower Arizona, for the southern line of the New Mexico, Arizona & Pacific Railroad, running into Guaymas on the Gulf of California, one can go either to Patagonia or Nogales. From Patagonia there is a daily stage to Washington Camp and Duquesne, while from Nogales the stage runs tri-weekly to Washington Camp and on into the Cananeas. From either it is about 20 miles over the range into the garden spot of Arizona. Washington Camp is in Santa Cruz County, of which Nogales is the county seat, and is about 5,500 ft. above sea level. The country is well timbered and has sufficient rainfall to preserve the refreshing greenness of a thriving vegetation. The most important property of the group of mines around this camp is the Pride of the West, which was acquired about 1899 by A. R. Wilfley, John Cary, Frank Smith and others, who incorporated the Pride of the West Mining & Milling Company, and started milling operations that are unique in their method and success.

The plan is mainly due to Mr. A. R. Wilfley, president of the company, better known as the inventor and owner of the Wilfley table, who detailed the complete installation of the present mill and smelter. Mr. Emerson Gee is general manager of the property and is the resident head of the company. The ore milled is of a complex nature, carrying on an average 17.33 per cent. chalcopyrite, 8.80 pyrite, 19.53 zinc blende, 4.83 galena, 34.68 garnet, 18.30 quartz, 3.53 per cent. limestone and calcite.

In operation the ore is conveyed 1,400 ft. from the mine to the mill, by a three-rail switchback gravity tram, operating on practically a 15 per cent. grade, carrying one car per trip with 1,800 lbs. of ore. The cars are tripped upon reaching the head of the mill, their contents falling into an open storage bin of about 100 tons capacity, from which the ore is shoveled by Mexican labor to a 15 by 9 in. Blake crusher. The crushed ore falls to the foot of a 12-in. elevator and is raised and stored in a bin of about 100 tons capacity from which it is fed to the mill proper. The mill building is 119 by 60 ft. and contains the crushing room, the roasting room, the magnetic separators, the concentrating tables and the power plant.

The crushing room is fed from the crushed ore bin through a Challenge ore feeder to an inclined screen grizzley of 1½ in. mesh, passing probably a ½-in. product, the over-size of which goes direct to a 10 by 7 in. Blake crusher equipped with jaws specially designed for fine work. The standard jaw-plates are replaced by false plates having their upper half recessed to receive the wearing plates of smooth manganese steel, which are about 1½ in. thick, about 6 in. wide and 10 in. long, to take the full width of the jaw. These plates are symmetrical and can be reversed, so that the proportion of lost metal is about 10 per cent. of what is lost in the standard jaw. The crusher is set with these false plates at ½ in. opening and as the discharge is now raised one-half, the leverage is doubled and the travel of the jaw at the opening is reduced by half. This gives a much finer product with less strain on the machine.

The discharge from this Blake falls with the undersizes from the grizzley to the foot of an 8-in. elevator, which at the same time elevates the discharge from the coarse rolls to a 4-mesh reel 36 by 60 in.; the oversizes from this reel go to the coarse rolls and back to the elevator, the undersizes to a second Challenge feeder and on by the way of an 8-in. elevator to two 8-mesh 36 by 60 in. reels; the oversize from these trommels falls to the one fine roll and back to the elevator, the undersize to a storage bin of 100 tons capacity. The coarse and fine rolls are both 14 by 27 Davis high speed belted rolls for dry crushing.

The roasting and cooling department contains two 3 by 30 ft. revolving drum continuous discharge roasters. These when lined with fire brick are 2 ft. 2 in., inside dimensions; they are unique in that they are fed from the fire-box end for the essential purpose of giving the fine and

coarse ore an equal roast, the fines roasting quickly are carried through by the draft. The roasters are fed from the storage bin of 8-mesh sands through a Challenge feeder into an 8-in. elevator that elevates the ore into the roasters.

The roasters are fired by wood and run about 3½ revolutions per minute. The ore is discharged at a dark red heat, which gives but a superficial roast for the purpose of forming a coating of magnetic oxide upon the particles of chalcopyrite that renders them sensitive to a magnetic field.

The material falls from the drums into a blast of cool air, contained in two 12-in. pipes running at the side of each roaster, that immediately stops the roast and cools the ore, while at the same time the force of the blast is sufficient to blow the sand to the settling chamber outside the mill proper. This novel cooling and conveying scheme is maintained by one No. 8 Buffalo fan running at 1,800 revolutions per minute and working at about 6 oz. pressure.

A Wilfley conveyor returns the cooled sands to the mill. The conveyor is a sheet iron trough 8 in. wide by 4 in. deep about 40 ft. long, which is suspended by 1 by 6 in. pine hangers and given a progressive reciprocating motion by a standard Wilfley table movement. The ore discharges from this conveyor into the boot of a short 8-in. elevator, which lifts the stream into two short 8-mesh reels, that insure the material being free from any furnace accretions and deposit the ore into two small bins; from which it is delivered by automatic feeders to the belts of the magnetic separators. These are 2 four-pole Wetherill machines, each working at 110 volts and from 3 to 4½ amperes, each delivering four copper products into spouts from which are suspended sacks, which when full are tied and set aside, being replaced by empties. The tailings from the magnets carry about 1 per cent. copper and the remaining constituent minerals and silica; these are dropped into a second Wilfley conveyor and delivered into the boot of an 8-in. elevator that discharges into a stream of water at its head, which carries the stock of three Wilfley tables. Upon these tables the zinc, garnet and silica are washed out, leaving a lead-silver concentrate.

The concentrates are sacked and shipped to El Paso, the tailings are settled into shallow tanks from which the water overflows into a slimes tank and on to a No. 3 centrifugal pump that elevates it for re-use to the storage tank from which the tables are fed.

The tailings are shoveled out by Mexicans into wheelbarrows and carried to the dump. The sacked copper concentrates are wheeled to the smelter and stored above the roasting hearth, into which they are intermittently charged when a previous charge is withdrawn. This hearth is 36 ft. by 16 ft. in side, with 5 doors to a side, fired by wood; the partially roasted ore is drawn from the hearth at a full red heat only when required to charge the reverbatory matting furnace.

The first has sufficient elevation above the last to enable the Mexican carretillas to wheel the hot ore from the hearth and drop it into the charging hoppers of the furnace; the matting furnace is 10 ft. by 16 ft. inside, with a 6 by 4 by 4 ft. fire-box fired by wood. The building enclosing both furnace and roaster is 140 by 50 ft. The charge to the furnace is reduced in about 2½ hours making matte of the following composition: Cu., 42.0; Zn., 5.0; Fe., 20.0; SbO, 2.0; S, etc., 31.0; Ag., 20 oz.; and slag running: Cu., 0.4; Zn., 9.0; FeO., 31.0; CaO., 15.0; SiO., 45.0. The matte is run into pigs broken and shipped to Silver City.

The power is generated from two 75-H. P. tubular boilers, wood fired, supplying steam to one 10 by 14 in. Atlas engine operating the main line shaft and crushing department; also one 10 by 12 in. Atlas engine running the concentrator line shaft and the 15-H. P. Westinghouse dynamo, the latter supplying current for 100 lights and the magnetic separators. The engine room is nicely fitted with volt-meter and amp-meter and is designed to be dust-proof.

As water is an important item, it was impossible to provide water for condensation; accordingly both engines exhaust into 12 pipes each 10 in. diameter by 160 ft. long, arranged in groups of 5 and 7 which are laid on the hill side, where they may be fully exposed to air currents; the condensed steam is returned to the boilers.

One 30 ft. diameter sheet iron tank of 7,000 gals. capacity, one 12-ft. sheet iron tank and 4 smaller wooden tanks store the water supply that is pumped to the mill through a 2-in. pipe line 5,000 ft. long from the pumping plant, which is equipped with one 7-H. P. upright boiler and Snow 5¼ by 3½ by 5 in. duplex pump moving daily about 6,000 gals.

A fully equipped laboratory is convenient to the mill and smelter, as is also the office of the general manager, with the latter is tne drafting room and bookkeeper. The office is connected with Nogales by telephone. Across the arroyo is the manager's residence and in the settlement proper is the fully stocked company's store.

PRIDE OF THE WEST MINE, WASHINGTON CAMP, ARIZONA.

IRON ORE IMPORTS OF GREAT BRITAIN.—Imports of iron ore into Great Britain for the six months ending June 30th are given by the Board of Trade returns as follows, in long tons:

	1900.	1901.	Changes.
From Spain	2,967,236	2,183,004	D. 784,232
From other countries	383,341	386,360	I. 3,019
Totals	3,350,577	2,569,364	D. 781,213

The increase from other countries was chiefly in the imports from Sweden and Norway.

PRODUCTION OF HYDROGEN AND OXYGEN FOR INDUSTRIAL PURPOSES BY ELECTROLYSIS.*

It will surprise many to learn that the electrolysis of water—which all students of chemistry have seen carried out as a lecture experiment for the production of detonating gas, and re-formation of the original H_2O—is now in operation at several places in Europe upon an industrial scale, and that the economic prospects of this new electro-chemical industry are encouraging.

In a memoir entitled "L'Electrolyse Industrielle de l'Eau et ses Applications," Buffa has recently presented to the Association des Ingenieurs Electriciens, of Liege, a very full account of the theory and practice of this new industry, and the reprint of this memoir in the "Bulletin" of this Society for September, 1900, has been used in preparation of the following description of the process and apparatus used for the production of oxygen and hydrogen by electrolysis.

The passage of an electric current through absolutely pure water is impossible, but if the water be rendered conducting—i. e., ionized—by the addition of small amounts of alkali or of acid, a large current can be passed with moderate E. M. F., and hydrogen and oxygen gases are liberated at the cathode and anode respectively. Carlisle first carried out this method of decomposing water as a laboratory experiment in the year 1800, but it was not until practically 100 years later that this method found industrial application in Enrope, and no installation of this kind yet exists in the United Kingdom. The difficulty that meets the inventor when attempting to carry out this simple laboratory method of decomposing water upon an industrial scale, is that due to the necessity for diaphragms between the anodic and cathodic compartments of the cell, in order to prevent formation of detonating gas. The earlier cells designed for the industrial electrolysis of water were provided with the usual porous cement diaphragms, but these proved unsatisfactory, and the cells now employed are provided with metallic diaphragms of thin sheet steel, an alkaline electrolyte being used.

When the electromotive force at the terminals of the cell is above three volts, these metallic sheets form secondary or double-poled electrodes; that is to say, one face acts as cathode, and the other as anode. Below three volts, however, they simply act as diaphragms, and no liberation of gases occurs at either surface of the metallic sheet. The Garuti and Del Proposto cells are the best known of this type; the former is in actual use at the electrolytic works in Rome.

These works were constructed in 1898, under the direction of two officers of the Italian army, for production of the hydrogen gas required to inflate military balloons. The electrical energy used is generated at the Tivoli generating station, 27 kms. distant, and is received at the works as monophase current at 2,000 volts pressure. This is transformed down to 50 volts current by means of three transformers supplied by Ganz & Company, of Buda Pesth, and three motors coupled direct to Thury dynamos, each yielding 400 amperes at 50 volts.

The current is then made use of in 51 Garuti cells, connected in three groups of 17 each, each group utilizing 400 to 500 amperes at 45 to 50 volts. Figs. 1 and 2 show the cell in side and end sectional elevation. The cell consists of a large rectangular iron vessel, A, containing the electrolyte, a 14 per cent. solution of sodium hydrate in rain water.

In this rectangular tank is placed a second smaller inverted tank, also constructed of iron, B, divided by cross divisions of thin sheet steel into a large number of separate cells, each open below and closed above. These small cells contain alternately anodes and cathodes of iron, connected by insulated conductors, C and D, to the two main leads of the works. The electrodes in a single cell are thus all connected in parallel, but the successive cells are connected in series. The whole structure of B is supported in the outer tank, A, by four insulating blocks, E. E. In the upper portion of each anode and cathode compartment there is a small outlet hole which leads into one or other of the two inverted funnels, G, that carry the oxygen and hydrogen produced to the respective gasholders.

Precautions are necessary to prevent the current from travelling by the ironwork of the cells, rather than through the electrolyte, and the gas pipes that lead from the cells are broken by glass connections in places, in order to hinder any escape of current in this direction. Hydraulic pressure regulators, K, are also necessary to control the pressure of gas inside the cells, which, if it rises too high, may drive back the electrolyte, and lead to the production of detonating gas.

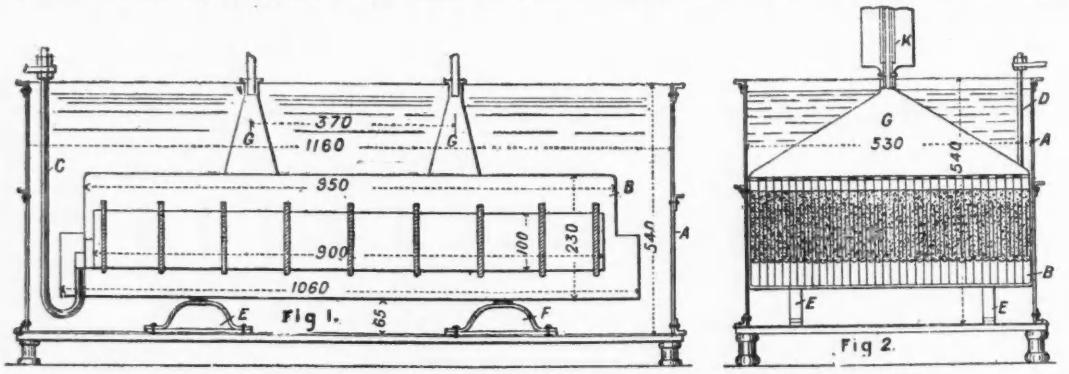
The hydrogen and oxygen obtained from the Garuti cells, after freeing from the moisture and other mechanically held impurities, if not utilized at once, are compressed by specially designed pumps, and stored in steel cylinders until required for use.

Fig. 3 is a sectional elevation of the pump used at Rome for compressing hydrogen. When oxygen is compressed, water must be used for lubrication, as compressed oxygen attacks all oils with explosive violence.

The actual yields of hydrogen obtained with the plant at Rome are stated to be 7.62 grammes, or 0.086 cu. m. per E. H. P. hour, measured at the terminals of the primary circuit of the transformer. Taking the combined efficiency of the transformer and motor generators at 80 per cent., this equals 9.52 grammes hydrogen per E. H. P. hour measured at the terminals of the cell. The theoretical yield of hydrogen—taking the decomposition value of water at 1.50 volts—is 18.30 grammes, and the energy efficiency of the cell is seen to be $9.52/18.30 = 52$ per cent. As the E. M. F. used for the Garuti cell is 2.45 volts the current efficiency of the cell is 87 per cent.

Electrical power at Rome costs 96.6fr. per kilowatt year, and the cost of producing 1 cu. m. of hydrogen, and ½ cu. m. of oxygen, neglecting interest and depreciation charges, is only 20 centimes, or slightly under 4c.

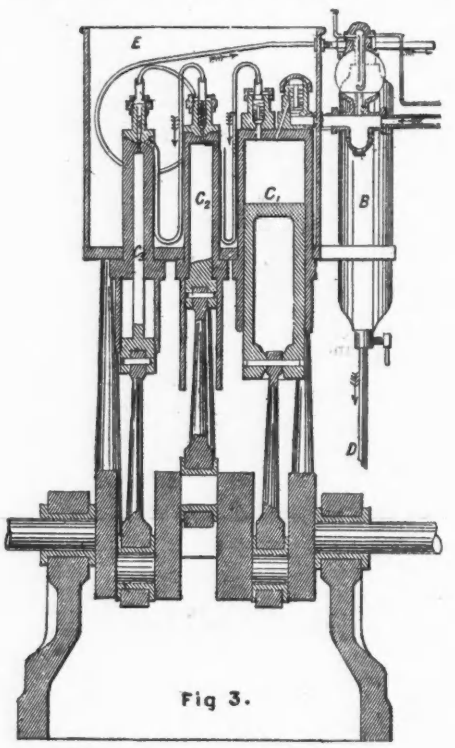
The capital outlay upon works utilizing 100 H. P. in this manufacture is given at 110,000fr., or $22,000, it being assumed that alternating current at a low voltage can be obtained from some neighboring supply station.



GARUTI CELL FOR THE PRODUCTION OF HYDROGEN AND OXYGEN BY ELECTROLYSIS.

The gases produced by this method are each slightly contaminated with the other, the hydrogen containing usually 1.5 per cent. oxygen, and the oxygen 3 per cent. hydrogen. By passing each gas through a heated coil one can reduce this impurity, since water forms and condenses on cooling.

Oxygen and hydrogen are now being produced by similar methods to the above at Brussels, Lucerne, Oloron Sainte Marie, Hanau, and at Terni, and the gases are finding applications in the minor industrial arts.



HYDROGEN COMPRESSION PUMP.

Limits of space forbid any detailed reference to these various uses, but the following are the chief: (1) Use of the oxyhydrogen blow-pipe flame for jointing—(a) aluminum, (b) frames of accumulator plates, (c) trolley wires, (d) tubes of water-tube boiler—Brussels. (2) Use of hydrogen for inflating military balloons—Rome. (3) Use of oxygen in therapeutics—Tivoli. (4) Use of the oxyhydrogen blow-pipe flame for repairing damaged castings—Brussels. (5) Use of hydrogen for illuminating purposes, either alone or with oxygen. In the latter case, zirconium is used as refractory incandescence material. (6) Use of the oxyhydrogen flame for furnace operations with platinum—Hanau; and (7) Use of hydrogen for the motors of automobiles.

*From the London "Engineer," April 26th, 1901.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals, and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets, and the like, will be reproduced whenever possible. Specimens should be of moderate size, and should be sent prepaid. We cannot undertake to return them. If analyses are wanted, we will turn specimens over to a competent assayer, should our correspondent instruct us to do so, and send the necessary money.—Editor E. & M. J.)

384.—Torrensite.—Viellaurite.—These supposed new minerals, consisting of the carbonate and silicate of manganese, are mentioned in the "American Journal of Science" as described by Lienau. Torrensite occurring in gray to brown masses at the Torrens Mine, Haute Pyrenees, is shown by Lacroix to be a mixture of rhodonite and rhodochrosite. The same author also shows that the viellaurite is a mixture of rhodochrosite with a silicate, probably tephroite, and small quantities of alabandite.

385.—Hussakite.—This mineral occurring in tetragonal crystals and in crystal fragments at Dattas near Diamantina, Minas Geraes, Brazil, is described in the "Zeitschrift der Krystallographie." The form is identical with that of xenotime, but analysis showed the presence of 6 per cent. SO_3. Analysis shows: SO_3, 6.13; P_2O_5, 33.51; $(Y, Er, Gd)_2O_3$, 60.24; Fe_2O_3, 0.20 = 100.08. The hardness is 5; specific gravity, 4.587; the color, yellowish white to honey-yellow and brown. The authors, Kraus and Reitinger, suggest that the xenotime hitherto analyzed may have been altered from hussakite, the SO_3 having been removed; they regard Gorceix's earlier analysis of the Brazilian mineral, which showed no SO_3, as incorrect.

386.—Ceruleite.—This mineral is described in the "Bulletin de la Societe Minerale" by H. Dufet as an arsenate of aluminum and copper from the gold mines in Huanaco, Chili. It occurs in clay-like masses of a turquoise-blue color; these masses consist of very minute crystals. The specific gracity is 2.803. An analysis gave the following results: As_2O_5, 34.56; Al_2O_3, 31.26; CuO, 11.80; H_2O, 22.32 = 99.94. This corresponds approximately to the formula $CuO \cdot 2Al_2O_3 \cdot As_2O_5 + 8H_2O$.

387.—Ores from Texas.—J. W. C.—No. 1 is mostly quartz—a fine-grained pegmatite vein. No. 2 is a fine-grained granite. We should not advise deep sinking in the hope of finding high-grade ore—rather cross-cut the ledge along the outcrop in search of a pay shoot. No. 3 is mostly iron oxide. It is decomposed material, the "iron hat" of a vein. No. 4 is a mica schist. The percentage of copper in the sample is very low indeed.

388.—Agate.—R. B. T.—The banded mineral is a variety of agate. Were the bands black and white, or black and gray, it would be classified as onyx. The specimen shows nice banding but is probably of small value. Similar rock is sometimes artificially colored.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Platinum.—Can you name any place in the United States where platinum is found?—S. R. M.

Answer.—A small quantity of platinum has been found in connection with gold in Trinity and Shasta counties in California. All the platinum obtained in the United States for several years has been secured in the San Francisco Mint, by parting from gold from those counties. A little platinum has been found in the beach sands in certain parts of California and Oregon; but none of those placers are now worked. The latest and most promising discovery of platinum is in the Copper River District in Alaska. The value of this is still to be proved.

The Sinclair Process for Treating Ores.—Can you give any information as to an electrical process for extracting precious metals from ores known as the Sinclair process, for which extraordinary claims are made. —J. W. M.

Can you inform me of the practical value of the Sinclair process of extracting gold? If not, perhaps you can tell me where I can get the desired information.—A. S.

Answer.—The Sinclair process is one of the tribe of "secret" processes, with which we are only too familiar. The representatives in New York, who are selling the stock, venture only the rather vague assertion that it is an "electric process." It is not possible for us, therefore, to give any details concerning it. The prospectus and other literature furnished by the company are sufficient to characterize the process. Thus from one of these documents we take the following extract:

"First: The Sinclair Reduction Process is the only process which treats all ores indiscriminately, and without crushing, and whereby all metals are recovered in a marketable condition, in one operation, without refining, and where the cost of treatment per ton, as well as the cost of erection of a plant, is comparatively small.

"Second: This process extracts all the metals such as gold, silver, copper, zinc and lead from ores, and, what is more, from all kinds of ores without exception, and recovers these metals separately in a chemically pure state, and consequently marketable condition in one operation and without crushing the ore, at a cost not to exceed 75c. per ton of ore treated, a complete extraction of 98 per cent. of the assay value of any ore, in all metals, being guaranteed."

Anyone with any knowledge at all of metallurgy will know that the statements made are absurd. No possible process could treat "all ores indiscriminately," nor recover all metals in "a chemically pure state" at one operation. On their own showing the promoters are claiming to do the impossible.

Opals.—Can you tell me where opals are found, their value and any other particulars in relation to them?—Gem-finder.

Answer.—Opals come from Mexico and Australia chiefly. Mr. John Plummer, a good Australian authority, says: "Considerable quantities of opal are found in Queensland and New South Wales. In the latter State the commoner kinds are found in many localities, especially in the neighborhood of Orange, but they possess little or no commercial value. Precious or noble opal is obtained principally at White Cliffs, in the dry western country, about 780 miles from Sydney, and 65 miles from Wilcannia. . . . Since that time mining operations have been carried on continuously, though sometimes under great difficulties, as in time of drought the locality is very badly provided with water; opal mining has, however, now become a settled industry, and a thriving township has been established at White Cliffs. The area within which the mineral has been found in the district is about 15 miles long by about 2 miles wide. Prospecting for precious opal is a decidedly hazardous business, because, as a rule, there are no indications whatever on the surface of the occurrence of the mineral below. It is only in very rare instances that an outcrop of the gem can be seen, and the usual procedure is to dig a trench or pit in such a position as fancy may dictate, and trust to luck. Fortunately, sinking is easy, as the rock is of a soft nature, and, in a fair number of instances, the opal has been met with at a very short distance from the surface, though a large majority of the pits are unsuccessful. For several years the belief existed among the miners that it was useless to prospect for precious opal at a greater depth than 12 ft. from the surface, but of late the incorrectness of this view has been proved, and the stones have been discovered at a depth of nearly 50 ft. There is a wonderful variety of opal found on the field, and the prices paid locally run from zero to $125 per oz., the ounce being the unit for purchasing in the rough. It is rarely that the price paid exceeds $100 per oz. In valuing opal a good many points have to be taken into account. Color is the first, red fire, or red in combination with yellow, blue and green being the best. . . . The direction of the pattern has also to be considered. Often a stone that shows a very good edge pattern will not look nearly so well on the face, while a stone which shows somewhat streaky in the shorter direction on the edge will sometimes given a fine harlequin pattern on the face. On this account the shape of the stone comes into the reckoning. Thus, a thick stone, with a good edge pattern, may often be cut up, so as to use that pattern as a face to all the stones cut from it; while a thin stone, though of equally good edge pattern, which could only be cut with the natural face, would probably not be worth nearly as much, weight for weight. . . . Again, the ground or body of the opal must be taken into accoun.. This is not a constant quantity, as the various patterns require slightly different ground. It should neither be too transparent nor too opaque, almost clear, with a slight milky tinge, translucent being about the best ground in general. Some of the opal is more brittle than other. Of course, the harder and tougher the stone the better it is, when cut, it is less likely to be injured, and retains the polish better."

PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

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

Week Ending July 9th, 1901.

677,853. MANUFACTURE OF ARTIFICIAL STONE. Prosper Cabrie, New York, N. Y. An artificial-stone composition consisting in the combination of dry sand, slaked lime, plaster-of-paris and powdered alum with yellow ocher, red ocher and lampblack.

677,861. MACHINE FOR THE MANUFACTURE OF HOLLOW TERRA-COTTA AND CLAY WARE. Edward G. Durant, Pasadena, Cal. In combination with a clay-working machine; a vertically-disposed forming-die; and a separate and independent finishing-die located in a plane below the forming-die, and arranged to receive the material being operated upon directly from the forming-die and to act upon all of the faces of said material.

677,865. GAS-WASHER. Olaf N. Guldlin, Fort Wayne, Ind. The combination with inverted gas-channels, of perforated detachable extension-plates, extending into the washing liquor and clamping devices for holding them against the lower edges of said channels.

677,874. HOISTING-CRANE. James Macbeth, Buffalo, N. Y. The combination of a car, a rotatable platform supported thereon, a boom-support fixed to said platform, an inclined boom supported intermediately of its extremities upon said support, the lower end of said boom secured to said platform, a fluid-pressure cylinder secured to said car and provided with a piston operatively connected with said platform whereby the latter may be rotated thereby, and means for supplying pressure to said cylinder.

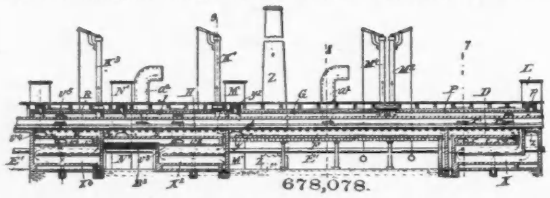
677,880. PROCESS OF MINING COAL. Edmund C. Morgan, Chicago, Ill. The process of mining coal, consisting in forming a kerf under the coal, laying a track in said kerf, running a movable platform or car into said kerf, on said track, loosening the coal and letting it down directly into said movable platform or car.

677,906. PROCESS OF MANUFACTURING ALKALI SILICATES. Frank P. Van Denbergh, Buffalo, N. Y. The process consists in subjecting a substance containing an alkali-metal base, and a silicious substance in the presence of oxygen, to heat and electrolysis, to fuse the mass and drive off the acidulous elements or oxides, and combine the base and silica to form an alkali-metal silicate.

678,041. STADIA-ROD. George L. Sanderson, Antesfort, Pa. In a stadia-rod having two adjustable portions, one of said portions having a graduated outer face, two targets both facing in the same direction disposed in front of said face and supported respectively by said rods.

678,078. APPARATUS FOR DESULPHURIZING ORES OR OTHER SUBSTANCES. John P. Wetherill, South Bethlehem, Pa. The method of roasting by furnace heat a progressively moving or advancing charge of ore containing sulphur, which consists in excluding therefrom the products of combustion of the heating-furnace, admitting air at an initial portion of the ore and partially oxidizing the sul-

phur thereby, maintaining the roasting temperature along an advanced portion of the charge by the combustion of the sulphur, withdrawing the sulphur fumes at said advanced portion so as to



678,078.

prevent them from passing on over the remainder of the ore, and finally admitting quantities of air to oxidize the sulphur in portions of the charge still further advanced.

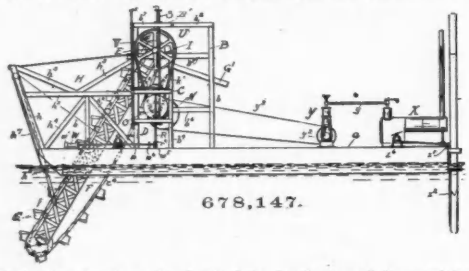
678,105. DAM. Joseph F. Dlidden, Dekalb, Ill. A dam construction comprising a body or bed of short wire laid with the wires parallel with the stream, combined with a backing or abutment of masonry directly behind said wire bed.

678,108. UNLOADING DEVICE. Frank P. Johnson, Waltham, Mass. The combination with a vessel of a removable bottomless shaft adapted to rest on the flooring of the vessel, so that the cargo may be placed about it, and provided with openings in its sides and gates for said openings, said shaft being adapted to be removed when the cargo is broken out above said openings.

678,124. MOLD-FACING. Marshall B. Owen, Granite City, Ill. A herein-described mold-facing comprising sixteen parts by volume of black sand, four parts of white sand, two parts of fire-clay, and one part of sal-ammoniac, the last-mentioned ingredient being dissolved in water to form a solution of a chloride employed for moistening other ingredients, said solution of a chloride being capable of evolving chlorine when in contact with molten metal.

678,141. STORAGE OF MECHANICAL ENERGY. Charles Steiner, Sault Ste. Marie, Mich. In a hydraulic power-accumulator with air-cushion, the chamber of which is to be built under ground, within a solid bank of natural rock, the construction of the walls of said chamber, relying for strength against interior pressure not on the tensile resistance of the steel and masonry in said wall, but on the compressive strength of the natural rock alone and such walls to consist of a number of thin, metallic mantles, a number of layers of concrete and pressure-water, alternately filling interspaces between said mantles.

678,147. MINING-DREDGE. William T. Urie, Kansas City, Mo. A dredge-boat, and alternating cable winding and unwinding drums thereon, and separate cables having their free ends extending in opposite directios and laterally from the forward end of said dredge-boat, and connected with suitable, fixed points, separate vertically-movable boat-anchoring spuds or spars connected with the rear end of



678,147.

said dredge-boat and adapted to be lowered in position alternately, a main power-shaft, and an engine and its driving-shaft, power-conveying devices conected with the driving-shaft of said engine and the main power-shaft, a separate, horizontal shaft upon said boat, actuated by the main power-shaft and a vertical power-transmitting shaft connected with and actuating the drums carrying said cables, and suitable friction-gearing connecting said horizontal and said vertical power-transmitting shafts.

678,154 and 678,215. GAS-ANALYSIS APPARATUS. Max Arndt, Aix-la-Chapelle, Germany. The combination with a gas-chamber, of means for conducting gas into the same from a source of supply, a gas-cut-off device interposed between the source of supply and the gas-chamber and an indicating and a co-operating float-actuated recording device both operated by a variation of pressure caused by the action of the chemical on the gas in said chamber.

678,179. PROCESS OF RECOVERING SULPHUROUS ACID. Nelson C. Hodgkins, Augusta, Me., assignor of one-half to Lewis H. Sanford, same place. The method of reclaiming sulphurous acid and gas blown off from a digester during the cooking process, consisting in reducing the temperature and pressure of the liquor initially vented and collecting the same, and separating the gas from the liquor of the lower grades subsequently blown off by reducing the pressure and lowering the temperature thereof.

678,183. AMALGAMATING APPARATUS. Albert H. Jocelyn, Brooklyn, N. Y.; Albert H. Jocelyn, executor of said Albert H. Jocelyn, deceased. The combination, with frame-work, of a rotary drum having a differential-mesh screen periphery with the larger mesh located on the exterior, and also having a plurality of interiorly-located radially-extending bars, each provided with one or more openings, and a shiftable device located below said drum for deflecting the material receiced therefrom in different directions.

678,198 and 678,199. CENTRIFUGAL PUMP. John Richards, San Francisco, Cal. An annular discharge-chamber, an uninclosed rotary disk impeller mounted-concentrically therein, divergent vanes within said impeller forming between them passages expanding toward the periphery in the plane of rotation, said vanes terminating a short distance within the periphery of the impeller to form an annular continuous discharge-way at the margin thereof, and a continuous annular throatway on the surrounding discharge-chamber co-operating with said discharge-way.

678,210. PROCESS OF TREATING COMPLEX ORES. James W. Worsey, St. Helen's, England, assignor of two-thirds to Joseph Henry Lancashire, Streatham, England. A process comprising first the reduction of the combined sulphur below 15 per cent by calcination, secondly finely powdering the calcined ore, thirdly adding sodium nitrate, fourthly boiling the mixed ore and nitrate in dilute sulphuric acid, fifthly roasting the semi solid mass in a closed furnace, sixthly dissolving out zinc, copper and other soluble salts from the mass by weak sodium-sulphate solution, seventhly removing any copper from the solution, eighthly precipitating the zinc and other metals from the solution and ninthly separating the zinc.

678,223. CENTRIFUGAL PUMP. Robert W. Christian, Bannack, Mont. The combination with a pair of relatively movable interfitting members defining an intermediate packing-chamber open at both ends and wholly unobstructed, of means for supplying a fluid under pressure to the packing-chamber at a point intermediate of its ends to compel the fluid to circulate within the chamber and to escape into the casing.

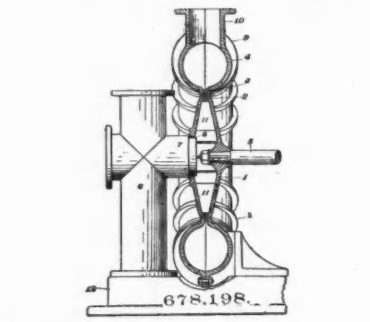
678,259. BRICK-MACHINE. Howard K. King, Philadelphia, and Cyrus Chambers, Jr., Overbrook, Pa., assignors to Chambers Brothers Company, Philadelphia, Pa. The combination of clay-expressing mechanism, a suitable support for the bar of clay expressed from the die of the machine, a cut-off wire and a suitable carrier.

678,281 and 678,282. PUDDLING MACHINE AND FURNACE. James P. Roe, Pottstown, Pa. In a machine for puddling and balling or massing iron, the combination of a hearth, means for movably supporting the hearth, means for imparting a rocking motion to the hearth means for delivering products of combustion to the hearth, and means for conveying away from the hearth said products of combustion, said delivery and conveying means being located one at the middle and the other at the ends of the hearth.

678,291. FORGING-PRESS. Elmer P. Alexander, Yeagertown, Pa. A drop-base for a forge-press having a seat for the lower die-block and a seat for the header-arm, the latter being contained within the said seat, whereby the stress occasioned by the thrust of the header-arm is borne by an integral portion of the drop-base at the outer end of the said header-arm.

678,296. PROCESS OF THE MANUFACTURE OF BRIQUETTE MATERIAL. Richard C. Hills, Denver, Colo. A process for manufacturing fuel briquettes from coal, anthracite, coke, lignite or the cinder from the distillation of lignitic coals which may be used in the process, consisting of the distillation of coal or lignite, passing the tarry distillate immediately from the coal into and through the moving material intended to be manufactured into briquettes, then heating this material to expel objectionable volatile products, and finally pressing it into blocks or briquettes.

678,300. STAMP-MACHINE. Charles H. Krause, South Lake Linden, Mich. In a stamp mill, two differential cylinders arranged one above the other, a piston operating in the smaller cylinder, a stamping de-



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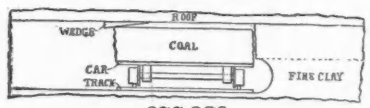

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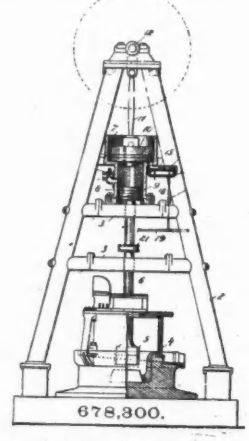

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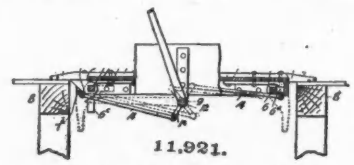
vice carried by said piston, a valve for controlling the exhaust from the smaller cylinder, a piston in the larger cylinder and unconnected with the smaller piston, means for operating the piston in the larger cylinder, a valve-casing communicating with both the cylinders, an inlet-controlling valve in said casing, a lever with which said valve connects, a tappet carried by the stem of the smaller piston for engaging with said lever to open the valve, and an air-pressure-actuated valve also in said casing.

678,312. ELECTRIC CONVEYOR. John G. Gilmer, St. Petersburg, Fla. The combination with a motor for electric conveyors provided on both its upper and lower sides with antifriction-rollers arranged in pairs; of a car or carrier coupled to said motor; carrying-wheels; and guard-wheels.

Reissue No. 11,921. SAFETY CAGE-CHAIR. Matthias W. Jelinek, Black hawk, Colo. Original No. 667,780, dated February 12th, 1901. In a



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safety-cage-chair construction, the combination with a cage, of dogs pivotally mounted thereon and arranged to be thrown to a position to form chairs adapted to engage the wall-plates at the various levels, the floor of the cage being provided with rails with which the dogs are in line, whereby the cars from a tunnel or drift are guided by the dogs to the rails of the cage.

GREAT BRITAIN.

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

Week Ending June 15th, 1901.

9,710 of 1900. MAKING CYANOGEN BROMIDE. H. F. K. Picard, London. Process for manufacturing cyanogen bromide from bromide of soda and sulpho-cyanide of soda.

10,915 of 1900. ZINC SMELTING. J. L. Babe, Paris, France. Smelting zinc ores with carbonate of soda, to reduce the time occupied in the operation.

11,301 of 1900. SMELTING FURNACE. A. Gibb, Liverpool. A gas-fired smelting furnace in which the atmosphere may be easily changed from oxidizing to reducing or neutral.

13,263 of 1900. SULPHIDE ORE TREATMENT. A. Gutensohn and H. H. Price, London. Process for removing sulphur from sulphides by roasting with carbon and sodium sulphide.

13,299 of 1900. OPEN-HEARTH FURNACE. J. L. Smith and R. Bedford, Stockton-on-Tees. An open-hearth furnace divided into separate sections to enable several successive processes to be conducted in one furnace.

6,900 of 1901. ACETYLENE LAMP FOR MINERS. F. D. Little, Cumberland, B. B. A miner's acetylene safety lamp.

8,153 of 1901. ALUMINUM REFINING. The Pittsburg Reduction Company, Pittsburg, Pa., U. S. A. Refining aluminum in an electrolyte consisting of fluorides of aluminum and of a metal more electro positive.

8,175 of 1901. ZINC REFINING FURNACE. E. Herter, Beuthen, Silesia, Austria. An improved furnace for refining and casting zinc in one operation.

PERSONAL.

Mr. F. L. Garrison, who was in Boise, Idaho, for some time, recently returned to Philadelphia, Pa.

Mr. Percy B. McCoy, of Kempton & McCoy, New York City, has returned from a trip to Nome, Alaska.

Mr. E. P. Jennings of Salt Lake City, Utah, was recently in Canada examining a large mining proposition.

Mr. E. Dwight Kendall, chemical engineer and metallurgist, of New York, is now visiting some mines in Nevada.

Mr. C. S. Herzig, of New York City, has returned from the South and has gone to Mexico on a 2 months' professional trip.

Prof. William Esty, of the University of Illinois, has been appointed assistant professor of electrical engineering in Lehigh University.

Mr. H. F. Poland, manager of the Utah Consolidated Gold Mines, of Bingham, Utah, has gone on a short vacation to the Pacific Coast.

Mr. J. T. Wyatt, mining prospector and contractor, of Faith, N. C., has recently located a promising copper vein for some South Carolina men.

Mr. John M. Vrochta, of La Crosse, Wis., was appointed a delegate to the International Mining Congress at Boise, Idaho, by Gov. La Follette.

Mr. R. B. Harper, mining engineer of San Francisco, is en route for Sonora, Mex., to inspect several copper properties for an English syndicate.

Mr. J. V. Kunze, New York manager of the Pelton Wheel Company, has just returned to New York from San Francisco, and the factory of his concern.

Mr. Pedro Martino, late of the export sales department of the Babcock & Wilcox Company of New York City, has left for South America to open an office at Lima, Peru.

Mr. E. O. Hopkins, president of the Sloss-Sheffield Steel and Iron Company, with headquarters at Birmingham, Ala., has been visiting the New York office and taking a short vacation.

Mr. S. Taylor Wilson, who has been in charge of the engineering department of Tippett & Wood for a number of years, has been elected a director, and made vice-president of the company.

Prof. S. F. Emmons, of the United States Geological Survey, is sojourning at Leadville, Colo., where he is securing important new data. He spent a week on the ground of the new strike on Prospect Mountain.

Mr. Frank C. Loring, mining engineer of New York City, has gone to Spain on railroad and mining business and will remain there until September 1st. His European address will be Hotel Roma, Malaga, Spain.

Dr. Paul C. Freer, professor of chemistry in the University of Michigan, has received a year's leave of absence to go to the Philippines, where he will organize the laboratories recently established by the civil government.

Mr. C. J. Moore, formerly a leading mining engineer of Leadville, Colo., but now residing at Cripple Creek, is spending a few weeks in Leadville, at which place he has the Clear Grit and several other mining propositions.

Mr. J. E. Gaylord, who for many years managed the business of the Parrot Mining Company in Butte, Mont., giving way to Mr. Robert D. Grant, his son-in-law, about 6 years ago and going South, is paying Butte a visit.

Mr. F. C. Fenner recently retired from the management of the Lowell & Arizona Copper Mining and Smelting Company mines at Bisbee, Ariz., with the transfer of the properties of that company to the Copper Queen Mining Company.

Mr. G. B. McCormick, formerly general manager of the Tennessee Coal, Iron and Railroad Company, has returned to the Birmingham District after a trip to Hot Springs, Ark. He was accompanied by Mr. Erskine Ramsey, chief engineer of the Tennessee Company.

The chair of geology and natural history in the University of California, held by the late Professor Joseph Le Conte, will, it is understood, be divided, Prof. Andrew C. Lawson being placed in charge of the geology and Associate Professor William E. Ritter in charge of the department of zoology.

Mr. S. J. Sullivan of Leadville, Colo., has gone to Deadwood, S. D., to look after mining interests and from there goes to Mexico, where he, with New York parties, recently purchased over 200 acres of ground adjoining the San Domingo Group, which Mr. Sullivan is operating. The new mine is known as the El Potosi.

The commission appointed by Governor Durbin of Indiana to codify the mining laws of the State consists of Messrs. W. H. Zimmerman, of Brazil and Jacob Kilsem, of Terre Haute, both coal operators, and James Cantwell, of Carbon, and James Heenan, of Linton, both coal miners. The commission is to report at the next General Assembly.

The Wisconsin delegates to the Mining Congress at Boise, as appointed by Gov. La Follette, were: Thomas Bardon, Ashland; Richard Kennedy, Highland; Jefferson Crawford, Hazel Green; Henry Ragge, Benton; J. W. McLaughlin, Benton; Thomas Williams, Hazel Green; R. B. Luckey, Cuba City; James McCormick, Cuba City; James W. Murphy, Platteville; J. J. Williams, Platteville; Calvert Spensley, Mineral Point; James Hoskins, Darlington; T. B. Ennor, Potosi; Thomas J. Law, Shullsburg; George W. Watson, New Diggings; M. J. Regan, Madison; Frank J. Kipp and W. J. Morgan, Milwaukee; Martin Pattison, Kirby Thomas, J. B. Arnold, Walter Fowler, Superior; Mathew Richards, Platteville; J. E. Malone and John Thauer, Juneau; O. C. Davidson, Commonwealth; H. D. Fisher, Florence; Prof. J. W. Clements, Madison; John W. Groves, Madison; M. D. Kelley, Milwaukee.

Governor Herreid of South Dakota appointed the following delegates to the International Mining Congress at Boise City, Idaho: Congressman E. W. Martin, Deadwood; Prof. James E. Todd, Vermillion; Thomas Gregory, Lead; Walter E. Smead, Lead; Ernest May, Lead; J. C. McLemore, Lead; K. G. Phillips, Deadwood; N. E. Franklin, Deadwood; W. H. Bonham, Deadwood; Otto P. Grantz, Deadwood; R. L. Billings, Deadwood; G. C. Dennis, Deadwood; J. M. Bentley, Deadwood; George Hendy, Terry; Thomas J. Kean, Terry; James Scrivner, Spearfish; R. B. Hughes, Spearfish; John Gray, Terraville; Titus Corkhill, Central City; Nick Treweek, Terry; C. B. Harris, Galena; George L. Griggs, Galena; H. E. Perkins, Sturgis; W. F. Hanley, Custer City; A. T. Feay, Custer City; Charles Caton, Hill City; Charles Baldwin, Keystone; Prof. R. E. Slagle, Rapid City; J. B. Gossage, Rapid City, and George Atwater, Yankton.

OBITUARY.

James F. Lewis, well known to the mining industry, died in Boston, Mass., on July 23d, aged 61 years. He was connected with the Rand Drill Company since 1884, and at the time of his death held the presidency of the Canadian Rand Drill Company of Sherbrooke, Que. He was also a member of numerous technical and scientific societies, including the American Institute of Mining Engineers, the American Society of Civil Engineers, and the Engineers' Club. Mr. Lewis had endeared himself to many by his kindly treatment of those under him and by his natural taste for work. In the next issue of the "Journal" we hope to publish a fitting notice of his career.

SOCIETIES AND TECHNICAL SCHOOLS.

Ohio Institute of Mining Engineers.—The Institute will make its summer excursion this year to the Pan-American Exposition. The excursion will start from Columbus on August 5th on a train to which a sleeper will be attached. A boat will be taken at Cleveland, arriving in Buffalo on the evening of August 6th. Headquarters in Buffalo will be at Statler's Hotel. The main party will return August 11th or 12th. The estimated cost of the trip is $26.85.

National Marble and Granite Dealers' Association.—This organization, which met in Des Moines, Ia., recently, indorsed the movement inaugurated by the Iowa association to secure lower freight rates on marble and granite, and named H. D. Pierce, of Chicago, and Edward MacLane, of Rutland, Vt., as a committee to confer with railroad managers. This committee is authorized to increase its size by the addition of one member from each State represented in the association except Iowa. Officers were elected as follows: President, J. M. Graham, of Des Moines; vice-president, J. F. Manning, of Rutland, Vt.; secretary, C. J. Field, of Creston, Ia.; treasurer, T. H. Pritchard, of Watertown, S. D. Executive committee, L. W. alBlard, of Sioux Falls, S. D.; E. H. Pryor, of Pottsville, Ia., and F. D. Aderman, of West Point, Neb.

International Mining Congress.—This organization opened its session at Boise, Ida., on July 23rd. While the delegates to the congress strongly represent gold mining, and next to that silver, copper, lead and zinc, the deliberations of the body were to deal with every important form of mineral industry. The classified collection of ores, concentrates and various minerals were a remarkable exposition of the treasures of the United States and especially of the Rocky Mountains and the Sierras.

The following gentlemen had stated they would be present and read papers: Joseph Hutchinson, Silver City, Ida., "Mining in Idaho;" Prof. S. W. McCalla, Atlanta, Ga., "Mineral Resources of Georgia;" Prof. N. H. Winchell, Minnesota, "Geology of Minnesota;" Earl Sloan, South Carolina, "Geology of South Carolina;" Prof. E. A. Babcock, North Dakota, "Geology and Mineralogy in the Educational System;" Dr. James Talmage, Salt Lake City, "Geology of Utah;" Mrs. Mary Arkwright Hutton, Wallace, Ida., "Some of the Ethical Aspects of Mining;" Prof. Samuel Calvin, Iowa, "Geology of Iowa;" Prof. J. A. Holmes, N. C., "Geology of North Carolina;" Prof. John C. Smock, N. J., "Geology of New Jersey;" Prof. E. W. Hall, Minn., "Iron Zone of Minnesota;" Mr. Fred C. Semmic, Duluth, Minn., "Mining as a Business Compared with Commercial and Manufacturing Enterprises;" Dr. George D. Louderback, Nev., "Geology of Nevada;" A. P. Swineford, "Alaska, Its Climate, Resources, etc.;" W. B. Heyburn, Ida., "Revision of Our Mining Laws."

A detailed account of the meeting by a special correspondent is to appear in the "Engineering and Mining Journal" next week.

INDUSTRIAL NOTES.

The Baldwin Locomotive Works, of Philadelphia, is about to ship 2 locomotives to Kobe for utilization on the Japanese railways.

J. M. Reidy, general agent of the Sullivan Machinery Company at Spokane, Wash., recently sold Patrick Clark, of Spokane, a diamond drill, which has been shipped to Alaska.

H. A. Rogers, of New York City, recently secured a contract for the shipment of various contractors' supplies, including picks, shovels, etc., to Siberia for mining operations there. The value of the contract is said to be close to $15,000.

The Pride of the West Mining and Milling Company at Patagonia, Ariz., has placed an order with the Allis-Chalmers Company, through the Denver office, for a Holthoff-Wethey roasting furnace 121 ft. by 12 ft., with cooling floor; also one tandem compound Reynolds Corliss engine.

The Jeffrey Manufacturing Company of Columbus, O., has secured a contract through its English agents, Russel & Duncan, Limited, of London, for an electric coal cutting plant to be utilized at the Serampore Colliery, of the East Indian Railway Company. The value of the contract exceeds $35,000.

The export sales department of the Bullock Electric Manufacturing Company of Cincinnati, O., and the Wagner Electric Manufacturing Company of St. Louis, Mo., is now under the charge of Robert T. Lozier, manager of the New York office. The Bullock Company is to erect a plant in England for the purpose of manufacturing its specialties for the British market.

The D. M. Steward Company of Chattanooga, Tenn., manufacturer of crayons, foundry facings, talc powder, etc., has sold its entire plant and effects to D. M. Steward, who for 25 years has been president and manager as well as majority stockholder in the concern. The State Line Manufacturing Company, owned by D. M. Steward and run as a separate concern, has now established a New York office.

The Jeanesvi le Iron Works, of Jeanesville, Pa., has sold through its Denver office a 15 and 32 by 8 by 18-in. pump to the Gold King Mine at Cripple Creek for a lift of 800 ft.; a 16 by 7 by 12-in. pump to the Greenback Mine at Leadville. The Jeanesville Works has also in hand a triple-expansion pump 16 and 27 in. and 44 by 9 by 36 in., which is to deliver 1,000 gals. per minute against a head of 1,600 ft.; a 16 and 32 by 10 by 18-in. steam pump is being built for the Isoquah Coal Company of Seattle, Washington.

At the annual meeting of the Virginia-Carolina Chemical Company, on July 17th, Samuel Spencer, president of the Southern Railway Company, was elected a director. The former officers were re-elected. The proposition to increase the authorized capital stock of $50,000,000, by the issuance of $26,000,000 new common stock, was approved by the stockholders. It is understood that the company will take over the United Cotton Oil Company, a $12,000,000 corporation, now being organized to consolidate various cotton oil plants in the South purchased by the Virginia-Carolina Chemical Company.

Charles H. Besly & Company, of Chicago, Ill., report receiving many orders for chucks, vises, power hack saws and general supplies from many manufacturing concerns that are closing down for annual repairs. The company is still working overtime at its factory at Beloit, Wis., and has added many new machines to the equipment. It has never sold as many Gardner grinders and Besly band machines as at present, recent shipments having been made to New York, Pennsylvania, New Jersey, Massachusetts and Rhode Island. The new spiral paper circles to be used on Gardner grinders are suitable for work on

cast iron, drop forgings, malleable iron, aluminum and alloy, gutta percha and wood. Samples of these new circles are sent for trial to users of the machine without charge.

TRADE CATALOGUES.

Hydraulic rivetters of 10-ft. 6-in. gap and 25, 50 and 75 tons capacity, also of 17-ft. gap and 35 to 125 tons capacity are built by R. D. Wood & Company, of Philadelphia, and are described in the July number of "The Boiler Maker."

Owners of boiler plants will find useful information in a 96-page pamphlet describing the special machinery made by the Stilwell-Bierce & Smith-Vaile Company of Dayton, O., for purifying feed water. The pamphlet describes the damage done by impure feed water, and the construction of the Stilwell lime extracting heater and filter and of other steam and feed water purifiers made by the Company. The pamphlet contains many testimonials and a long list of users.

Catalogue No. 115, published by the B. F. Sturtevant Company, of Boston, Mass., describes Sturtevant blowers, engines, motors, generating sets, forges, steam heating apparatus and other products of the company. The catalogue gives brief descriptions with tables of dimensions, weight, capacity, etc., and is, the company states, a "condensed catalogue" giving the essential types in compact form. It is intended for desk use and should be found convenient and useful.

C. O. Bartlett & Company, of Cleveland, O., have issued catalogue No. 3, describing the paint machinery they manufacture. The company makes cement mills, fertilizer plants, carbon mills, steam and direct-heat dryers, salt mills, and conveying and mining machinery. Its paint mill machinery comprises "Triumph" paint mixers, for pigments in a liquid or dry form, putty chasers, wood tanks, "Triumph" paint mills and combined mills and coolers; also "Triumph" triple mills and French buhr mills. The company makes also a special mill for wet grinding mica and the "Triumph" crusher.

Catalogue No. 46, issued by the Sullivan Machinery Company of Chicago, Ill., describes Bullock diamond drills. The drills are well known to mining men and have been used for prospecting coal and iron lands and mineral deposits in many parts of the world. They have the swivel head by which a drill can be placed rigidly on its foundations when starting a hole, and kept there until the hole is completed. Two types of feeds are used, the differential-gear positive screw feed and the hydraulic. The pamphlet contains descriptions of the various styles and sizes of drills, suggestions for selecting a drill, directions for setting diamonds and estimates of costs of drilling, based on actual results in different fields.

"Brownhoist" cranes are fully described in a cloth-bound 240-page volume published by the Brown Hoisting Machinery Company, of Cleveland, O. The book is printed on plate paper and illustrated by many excellent half-tone cuts, which show the company's standard designs. The company states that it covers the crane field fully and is therefore prepared to submit designs and prices on any changes from its standards or on special cranes for any particular work. The company also states that its cranes are equipped with the Weston patent safety lowering device, which renders impossible the dropping of a suspended load through use, misuse, carelessness or neglect, or in the case of the company's hand-operated cranes, the injuring of workmen by flying handles in lowering a load. The cranes described in the catalogue comprise steam locomotive and wrecking cranes, electric traveling cranes, high-speed balanced cantilever cranes, high-speed gantry cranes, hand traveling cranes, power jib cranes, floating cranes, stationary hand bridge cranes, standard pillar cranes, hand wrecking cranes and overhead tramrails and trolleys. The company's cranes are in use in large industrial establishments in many parts of the world. In the United States it is only necessary to mention the great ore docks, furnace yards and mill buildings of the United States Steel Corporation, the plants of the Westinghouse companies and the Cramp and the Newport News shipyards.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" 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 of any kind, and shall be pleased to furnish them information, catalogues, etc.

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, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

ALASKA.

Douglas Island.

Alaska-Treadwell Mining Company.—At the annual meeting on July 15th the following were chosen directors: William Alvord, E. W. Hopkins, R. D. Fry, H. H. Taylor and F. W. Bradley. Mr. Alvord was re-elected president, A. T. Corbus secretary and the Bank of California bankers. The directors declared the usual quarterly dividend of 37½c. per share, amounting to $75,000, payable on July 29th.

ARIZONA.

Graham County.

(From Our Special Correspondent.)

Arizona Copper Company, Limited.—This company, whose business office is in Edinburg, Scotland, mines and smelters at Clifton, has always been more or less worried by complicated arrangements of its capital and shares. This is due to the fact that additional capital has been raised from time to time, under circumstances which render it necessary, grant special terms to those who found the money. Two or three years ago, when the company arrived at full prosperity, steps were taken to rearrange the capital on a more satisfactory basis, but owing to certain shareholders not falling in with the directors' views the new scheme has only just been finally agreed on. In fact, it was necessary to obtain the consent of Parliament to the rearrangement, and considerable legal expense must have been incurred in arriving at this satisfactory conclusion. Dividends which have been suspended during the litigation are now being distributed among the various classes of shareholders. It has also been decided to offer for subscription 31,653 deferred ordinary shares, of par value £5, at £8 each, and it is likely that they will be all subscribed for by present shareholders. This large sum of money thus raised is to be spent on extending the operations and smelting works at Clifton. The company now appears to be in an excellent position with a long period of prosperity in view.

CALIFORNIA.

Alpine County.

(From Our Special Correspondent.)

Lewis.—Capt. P. Curtz has finished a test run of 500 tons of ore from this mine, otherwise known as the Boulder, and it is said the milling capacity will be increased. A contract for wood has been let.

Amador County.

(From Our Special Correspondent.)

Central Eureka.—This mine south of Sutter Creek is working 75 men under the superintendency of W. R. Thomas. The 5th dividend of $10,000 has been declared.

Strickland.—This gravel mine on Rancheria Creek about 7 miles east of Sutter Creek is worked by E. Kuchenbecker, who is cleaning up about $50 per day with very little expense. He has 75 in. of free water and uses a "self shooter," a self acting gate which turns on and shuts off the water. The reservoir fills in 2 hours and when the water rises to a certain point the gates open and the water is let loose.

Kern County.

(From Our Special Correspondent.)

Buckeye.—A rich strike is reported in this mine at Ludlow. In an upraise from the 200-ft. level a body of ore 9 ft. thick has been struck, with a prospect of its running farther.

Columbian Oil Company.—This Bakersfield company, on section 29, T. 28, R. 28, in the Kern River fields, has 2 wells finished and expects to begin the third within 10 days. Well No. 2 has pumped 250 bbls. a day for the past month. The company contemplates putting in an air compressor of about 20-well capacity to pump oil by the pneumatic method.

Dixon.—A strike of great importance has recently been made by this oil company, operating in the Midway District on section 23, T. 32, R. 23, the well being situated near the center of the section.

Globe.—The air compressor plant on this property, about 1,000 ft. from the well, forces the oil on the surface at the rate of 300 or more barrels per day. The Moneta Oil Company, of Bakersfield, is the owner.

Prosperity.—This oil company, on section 6, T 28, R. 28, in the Kern River fields, has a hole down 1,585 ft. and a string of tools is stuck in the casing. The company intends to sink at least 400 ft. deeper in the hope of finding oil in this section, where there are a number of abandoned wells.

Randsburg Sampling Works.—This company is doing a good business, buying and shipping ore to the 40-stamp mill at Barstow. Recently it shipped 60 tons from the Baltic Mine, 35 tons from the Old Success Mine and smaller lots from mines in the vicinity.

Trilby.—Rich ore has been struck in this mine of the Yellow Aster Group at Randsburg at a depth of 1,120 ft.

Wisconsin Oil Company.—This Bakersfield company has oil in a well 1,370 ft. deep, which taps an unusual depth of rich sand.

Yellow Aster Mill.—This 30-stamp mill at Randsburg, which has been shut down for repairs, has started up again, and with the 100-stamp mill which is running will require at least 500 tons of dirt per day.

Nevada County.

(From Our Special Correspondent.)

Gray Eagle Gold Mining Company.—This company has been incorporated to develop the Gray Eagle Claim and erect a 10-stamp mill on the property. The directors are: Charles Richards, J. J. Ott, William Fiernan, Frank Percival and Henry Diener.

Riverside County.

(From Our Special Correspondent.)

Red Cloud Mining Company.—This company is working a group of 16 gold claims in the Chuckawalla Mountains, about 30 miles northeast from Salton. The buildings are now completed. The plant comprises a 125-H. P. engine, a rock-breaker, concentrators, Cornish rolls, etc. Much development work has been done. The shaft on the White Wings is down 110 ft. in ore said to average $18 free milling. The Great Western shaft is down 340 ft. and drifting is going on on the 100, 150, 200 and 250 ft. levels. Besides this a tunnel has been run 264 ft. Ore from this claim averages $10 per ton. On the Alabama Claim high-grade ore is said to have been found in the drifts on the 50-ft. The shaft is down 100 ft. At the Sunnyside 2 shafts down 100 and 80 ft. respectively have been connected and show gold ore carrying 15% lead and about 10 oz silver. The Corn Springs Claim has a shaft down 80 ft., drifts run 50 and 100 ft. and a tunnel in 260 ft. The ore taken from this claim is said to average $12 per ton. Recent reports from Superintendent E. H. Gould state that on the White Wings Claim at a depth of 115 ft. a large body of rich ore has been encountered.

Sacramento County.

(From Our Special Correspondent.)

A meeting and conference of the trustees of 8 of the big reclamation districts along the lower Sacramento River, with representatives of 3 oil-producing and supply companies, was held at Courtland, July 15th, at which the reclamation districts voted to substitute oil for coal as fuel for the pumping plants and dredgers. Oil tanks and burners will be put in as rapidly as possible. It was voted to invite bids for fuel oil, to be opened at a general meeting to be held at Courtland, July 27th.

San Luis Obispo County.

(From Our Special Correspondent.)

Rinconada.—In this old quicksilver mine east from Santa Margarita, a ledge of cinnabar about 20 ft. wide has been developed. The furnace now on the property only handles one ton of ore per day.

Shasta County.

(From Our Special Correspondent.)

Keswick Electric Power Company.—The first shipment of electrical machinery has arrived and 2 larger generators are on the way from the manufacturers.

McCloud Electric Power Company.—Nine carloads of electrical machinery have been delivered to this company, and it is reported that 60 tons of copper wire have been contracted for. The machinery comes from the Bullock Electric Manufacturing Company of Cincinnati, O., and the Wagner Electric Manufacturing Company of St. Louis, Mo.

Siskiyou County.

(From Our Special Correspondent.)

King Solomon.—This mine on the South Fork of Salmon River, worked by J. A. Thompson, is running day and night with satisfactory results. Extensive improvements are contemplated and machinery is being shipped in.

Trinity County.

(From Our Special Correspondent.)

A San Francisco company has located about 1,300 acres of placer land between Rush and Brown Creeks and in addition has purchased 320 acres of adjoining land. All this land is known to carry gold, but is difficult to work. The company has located a water right which will furnish about 5,000 in. from Stuart's Fork. A ditch, flume and tunnel, in all about 13 miles long, will bring the water to the mine. A large force of men will be put on at once.

Sweepstake.—The material for the pipe line is arriving on this property and arrangements are being made to rivet the steel sheets for pipe down the canyon wall, a distance of 1,000 ft. Work has also started on the flumes and ditches. Several thousand acres of land have been bonded in this vicinity.

Tuolumne County.

(From Our Special Correspondent.)

Densmore.—The capacity of the milling plant at this mine near Columbia has been increased to 14 stamps. Forty men are employed under Superintendent A. W. Thorn.

Golden West.—The new mill at this mine near Soulsbyville is completed and a boiler and hoist are contracted for. The mill will soon be running day and night on ore from the 1,000-ft. tunnel. The face of the tunnel is now 250 ft. below the surface. The vein is over 6 ft. wide. F. R. Restano is superintendent.

Mohican Mining Company.—This company has contracted for a 5-stamp mill to be run by a gasoline engine. Other improvements are to be made. The property is located on the main Tuolumne River. L. Chappelle is superintendent.

COLORADO.

Chaffee County.

Sedalia Mining Company.—It is stated that reduction works will be built at Sedalia to treat ores not adapted for reduction at Canon City. D. A. Freeman is manager for the Boston Company.

Clear Creek County.

General Hooker Tunnel and Mining Company.—John Carozza, William T. Jacoby, Henry Kneisel, of Georgetown, and R. M. Stearns and Robert M. Richardson, of Syracuse, N. Y., have organized this company with a capital stock of $1,000,000, in $10 shares, to work the Pickwick properties on Saxon Mountain. The Pickwick in early days produced a large amount of high-grade ore, the first class running as high as 1,700 oz. silver, and the second class from 400 to 500 oz. per ton. The Hooker Tunnel is now in 800 ft. and the upper level is in 400 ft., the ground above this level being stoped out to the surface.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—Marie Mining and Milling Company to Rose M. Benoit, the Palace Group of 5 claims in Silver Lake District; E. C. Hughes, 33 1-3 ft. east on the Peck Lode in Russell District; R. St. John Cleary to F. D. Carper, the Arrighi mill site on North Clear Creek; Helen M. Black to James P. Speer, 1-10 interest in portion of Waugauga Lode; J. H. Campbell to Samuel Morse, 1-8 interest in Carrie Bell Lode in Russell District; Lorenz Muther to Old Town Mining and Milling Company, the Old Town Lode and portion of Pewabic Lode in Russell District; John Charles Thompson to Philip Jordan, the Arizona Lode in Pleasant Valley District.

Machinery Receipts.—A 25-H. P. hoist and 30-H. P. boiler for Senator Mine; a 50-H. P. hoist and 80-H. P. boiler for Jelmonico Mining Company; a 16 by 17 Leyner compressor, air receiver and fittings, and 100-H. P. boiler for Carr Mine and Colorado Company, Limited; a 80-H. P. boiler for the Boodle Mine; a 5-H. P. gasoline engine for Chicago-Carr, a Bell gyrating engine for O'Neill Mine and an 80-H. P. boiler for the Avon Mill in Nevada Gulch.

Increased Rates on Concentrates and Tailings.—The Boston & Colorado Smelting Company has sent out notice that after July 15th the rates on all shipments of concentrates and tailings will be $3.50 per ton on a 10% silica basis. This new schedule increases the price $1.50 per ton, and brings it back to the prices of less than a year ago. The Carpenter Smelter, just started up at Golden, which is independent of the trust, will, it is believed, pay assay values for all such mineral as above, as the tailings and concentrates carry a high percentage of sulphur.

Blue Grass Gold Mining and Milling Company.—A. 25-H. P. hoist and 40-H. P. boiler have been put up on the Champion Group, and the shaft will be sunk 200 ft. deeper at once. A 20 by 40 shaft building has been erected. Iowa parties are interested and W. H. Nott, Rollinsville, is manager.

California.—The water is down to the 220-ft. level. Pat McCann, Central City, is in charge for the Patch Gold Mining Company.

Grinnel Gold Mining and Milling Company.—Employment is furnished to nearly 150 men and a heavy ore tonnage is taken out, mostly milling. It is treated at the mills owned by the company. Sinking goes on both at the Grand Army and Grinnell Mines 1,100 and 1,300 ft. deep. Frank C. Young, Central City, is manager.

Hall.—Isaac Hall of Russell Gulch has opened a promising claim. A shipment of 10 tons of surface ore ran $115 per ton.

Hamlet.—The Hillside Gold Mining Company is going to erect a 20 by 40 ft. shaft building and install a 12-H. P. Fairbanks, Morse & Company engine. C. E. Nicolls, Central City, is manager and Missourians and Nebraskans are interested.

Hampton.—A hoisting plant will be put up soon. A 21-ton lot of concentrates this week gave values of nearly $50 per ton. Nathaniel C. Hughes, Central City, is manager.

Old Town Mining and Milling Company.—This new concern has a capital stock of $50,000. Incorporators are L. Muther, J. Muther and G. K. Kimball, Jr.

Sampling Works Consolidation.—There is a rumor which seems well founded that the sampling works in Clear Creek, Boulder and Gilpin Counties will be operated under one head. If arrangements go through the Chamberlains Sampling Works will supersede the State Ore Sampling Works at Black Hawk.

Senator.—A new building 22 by 50 ft. is to be erected and machinery installed. Denver parties are interested, with J. Martin, Black Hawk, in charge.

Gunnison County.

Ashland Mining Company.—This company, formed by the Carter Brothers, is opening a group of 21 claims near Ohio City. A tunnel has been driven 750 ft. It is 5½ by 7½ ft. Machine drills are used.

Chloride.—This mine, in Jones Gulch, is worked by Minneapolis, Minn., people, with J. H. Sinclair, a Cripple Creek mining man, in charge. The company has equipped the mine with machinery and done much work since taking hold. The main shaft is down 250 ft. and will be sunk to 300 ft., when another level will be run. It is the intention of the company to eventually sink to 500 ft. The mine ships about 80 tons per month, which is reported to average $58 to the ton, chiefly gold.

Cortland.—This mine in McIntyre Gulch, near Ohio City, is a regular shipper. It is owned by the Cortland Gold and Silver Mining Company, representing Denver men. H. S. Roe, of Ohio City, is the superintendent, and largest stockholder.

Jersey Blue Milling and Gold Mining Company.—This company, of which W. L. Reed, of Des Moines, Ia., is principal promoter, is building a 25-ton pneumatic cyanide plant on Ohio Creek about 1 mile above Ohio City. The plant will do custom work. W. H. Wickham will have charge.

Lamphier.—J. J. Murphy, representing Pittsburg men, has secured a bond on this group, about 100 miles above Ohio City, and has men at work.

Lake County—Leadville.

(From Our Special Correspondent.)

Arizona Placer.—A company is being formed to work this ground, 6 miles southeast of Leadville. Some copper assays running as high as 40% copper have been found.

Cloud City Mining Company.—Arrangements are being made to resume work in the 500 ft. shaft. A big pump is being put in and drifting will start for an iron ore shoot.

Evelyn Mining Company.—In order to develop the new sulphide body at 930 ft. recently opened, the shaft is to be sunk and new machinery installed.

French Mountain.—J. W. Bailey, representing himself and other New York men, is arranging for a resumption of work on a large acreage in this part of the Holy Cross country. A large amount of work was done in the early days, but the property has long lain idle. Suitable machinery is to be purchased and work resumed.

Garbutt.—Lessees are opening a well defined vein and making regular shipments of gold-copper ore.

Home Mining Company.—Shipments are curtailed from the Penrose as the shaft is being sunk to a lift of 50 ft. This will give a depth of 640 ft. where the third contact will be developed. The company has paid the regular monthly dividend.

Homestake.—J. H. Weddle and Geo. Campion are at the head of the new lease on the old Homestake Mine. Some very rich silver ore bodies are being opened and the stuff sacked.

Inez Mining Company.—The Dinero Leasing Company, working the old Dinero Mine, has ore in the 3 new drifts. Machinery is to be put in and the new strike developed. It averages high in silver and is the main Dinero vein.

Louise.—Lessees headed by Frymire & Douglass have reported an important strike on this South Evans Gulch gold proposition. New work through a winze running toward the South Winnie shows 3 to 4 ft. of 30-oz. silver, 30% lead and .2 oz. gold ore. It is the intention to sink the 300-ft. shaft deeper and then drift.

Mammoth Group.—This group lies close to the Ibex on Breece Hill and arrangements are under way to start up work in the old shaft, which has long been idle. A new company is being organized.

Niles-Augusta.—Lessees have found a nice ore body which is being opened at the 225-ft. level and are shipping 20 tons a day. It is a good grade iron and shows for a thickness of 20 ft. The stuff runs from 5 to 18 oz. silver to the ton.

Prospect Mountain.—Hundreds of Leadville people have visited this new district, 4 miles northeast of the city, and about all of the territory is taken up. The strike consists of a large amount of magnetic iron and some honeycombed quartz. While everything is very low-grade it is evident that ore will be found in large quantities and the vein is being proven up for a long distance. The hill is dotted with prospectors making good their locations.

Reno Mining Company.—This Iowa Gulch proposition operating through the Fisk-Julia Claims has uncovered an excellent contact.

Resurrection Gold Mining Company.—Shipments are curtailed to 75 tons a day while repairs are being made on No. 2 shaft and an ore body is being developed on No. 1. The entire territory on Little Ellen Hill from the New Monarch to the Resurrection is believed to be underlaid with a great sulphide vein at a depth of 700 to 1,400 ft.

South Winnie Mining Company.—A dividend of 1c. a share on 250,000 shares has been paid. Several large ore reserves are being opened from which 10 tons of $30 ore are shipped. Values are run up, through occasional streaks of rich ore showing as high as 21 oz. gold, 28% lead and 30 oz. silver.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Alert Gold Mining Company.—This company has granted Wells & Ryan an 18 months' lease on the Little Joe Claim on Bull Hill. The claim had good showings at a depth of 25 ft. and the location is excellent.

Ben Hur Mining and Milling Company.—At a meeting of the directors it was decided to call a special meeting to consider increasing the capitalization from $900,000 to $1,250,000. It is thought to be advisable to develop the Little King and Queen claims on Gold Hill.

Bostwick Gold Mining Company.—This company has let a contract for 100 ft. of sinking on its property, adjoining the Elkton. The shaft is now down 125 ft. and cross-cuts are being run east and west at the 100-ft. level.

Cripple Creek-Columbia.—This property is shipping about 65 tons of ore per week with values of from $65 to $75 per ton. Sinking will soon be resumed.

Drainage Tunnel.—There is some talk of holding a meeting to plan for a drainage tunnel for the District, as the cost of handling heavy flows of water in the deep mines is growing more and more serious.

Goldstone Mining and Milling Company.—The two committees appointed by genuine and spurious stockholders have sent out a circular advising a reorganization of the company with a capitalization of 1,250,000 shares of a par value of 5c. per share and each 5 shares of the old stock (both spurious and genuine) to be exchanged for one share in the new company. If some such arrangement is not made the difficulty will have to be settled by the courts, which may mean years of serious litigation.

Key West Gold Mining Company.—At the annual meeting in Colorado Springs on July 15th, reports from the president and secretary were adopted. The president's included transactions since the company's organization, including the sale to W. S. Stratton of a small portion of the Key West Claim and the purchase of a considerable area of good ground. The secretary's report shows about $600 in the treasury. One set of lessees is at work on Key West ground and the company's policy is to obtain desirable lessees of the rest of the territory which is well situated on Gold Hill. Directors elected for the year are: R. P. Davie, J. H. House, F. W. Stehr, J. I. Franklin and L. L. Aitken.

Lexington Gold Mining Company.—The officers have mailed a circular to the stockholders setting forth the advantages of a consolidation of the Clara D Group with the Good Will Tunnel and other properties, stating that the group can be worked much more economically through the tunnel and that in the consolidation there will be less danger of litigation. The company will retain the Jeff Davis Claims.

M. J. T. Gold Mining Company.—The annual meeting was held on July 16th. The following directors were elected for the ensuing year: R. P. Davie, J. E. Collier, T. P. Day, A. J. Bendle and J. H. House. Not much work has been done on this property of 18 acres on Gold Hill, but it is the opinion of the stockholders that the ground should be developed.

Red Spruce Gold Mining Company.—A strike of rich silver ore is reported. The property adjoins the Pointer on Gold Hill.

Weld County.

Lister Coal Company.—This company is opening a new mine near Erie. Three drill holes and one prospect hole have been sunk. At 71 ft. a seam of lignite 5 ft. 4 in. thick was encountered in the prospect hole, and in the drill holes a seam was struck at 145 ft. ranging from 4 ft. 8 in. to 6 ft. thick. The officers are Alfred Stevens, president, Albert Mason, secretary and treasurer. When in full blast the mines will give employment to from 75 to 80 men, and the output will be 150 to 200 tons of lignite per day. Arrangements are being made with the Union

Pacific Railroad Company to put in 500 ft. of track to reach the new workings.

IDAHO.

Blaine County.

Minnie Moore.—The London, Eng., owners of this group of mines agreed to transfer it to Edward A. King, of Chicago, and Robert T. Tustin, of Kansas City, Mo., for the sum of $30,500, of which $2,000 is paid, $9,500 is to be paid within 12 months from March 31st, 1900; $9,000 within 15 months of said date; $9,000 within 18 months from said date. The deed of transfer has been filed recently.

Idaho County.

Newsome & Leggett Creek Hydraulic Mining Company.—This company owns about 1,200 acres of placer ground on Newsome and Leggett creeks. Francis Jenkins, formerly manager of the Cumberland Mines at Silver City, is a member of the corporation.

(From Our Special Correspondent.)

Dixie Queen Mining Company.—The new 10-stamp mill is being erected and the management expects to have it running by September 1st. It will be equipped with 2 Wilfley tables, the ore being about 60% free and the balance iron sulphurets.

Great Eastern Mining Company.—The company has leased the Idaho Comstock Mill, near Dixie, pending the litigation of that company. The last run of Great Eastern ore proved very satisfactory, and the company intends to continue milling.

Midas Gold Mining Company.—This Spokane company expects to begin the erection of its mill on the Ajax Mine at Dixie by August 1st. The company has 2,200 ft. of development work done.

Sixty-four Mining Company.—The company intends to begin work upon its claim by August 1st. It has sunk 2 shafts about 100 ft. each, exposing a ledge with a pay streak of about 2 ft. The shut-down was due to the bad condition of the roads in the spring.

Shoshone County.

Coeur d'Alene Mining Company.—This company near Murray has about completed the work of controlling the water supply at the head of Pritchard Creek. Three 8-hour shifts are working at the hydraulic elevator under John F. Murphy. The pit has been extended 360 ft. up the creek. It is now 150 ft. wide and about 30 ft. deep. Additional machinery is to be installed. About 30 men are employed. L. A. Doherty is resident agent.

Snowstorm.—This copper property, 3 or 4 miles above Wallace, has shipped another car-load of ore to the Tacoma Smelter. A tunnel is being run into the vein and shipments are expected to increase.

Skookum.—W. C. Murphy, of Missoula, Mont., has brought suit against Clark & Sweeny and the Empire State-Idaho Mining and Development Company to recover an eighth interest in this claim, which plaintiff alleges was purchased by Mr. Sweeny by fraudulent misrepresentation for $2,000, while it was worth really many hundreds of thousands of dollars. The plaintiff further alleges that defendants had for a long time been taking ore out of the claim through the Last Chance Mine; that they refused to allow anyone to enter the Skookum claim, and that after ascertaining the value of the claim, Mr. Sweeny made a trip to Missoula and induced plaintiff to sell his eighth interest for the sum mentioned.

ILLINOIS.

Sangamon County.

(From Our Special Correspondent.)

Mr. John W. Everett, of Chicago, Ill., organizer of the Springfield Fuel, Light and Power Company, who held options on most of the coal properties in the Springfield District, notified all the owners on July 15th to turn over their papers, and if the same were satisfactory the money would be forthcoming. Most of the operators are preparing their papers, but James Walsh, manager of the Starn Coal Company, states that he will not tender his papers, as the option on his property expired on the 15th and the money was not tendered.

Republic Iron and Steel Company.—This company is cleaning up the bottom and retimbering the shaft at the coal mine at Springfield which caved in a few weeks ago, but does not expect to hoist any coal before September, by which time the tail-rope haulage system will be in. The mules came out through the mine of the Springfield Co-operative Coal Company.

MICHIGAN.

Copper—Houghton County.

(From Our Special Correspondent.)

Atlantic.—The water is out of the shaft on section 16 and a temporary surface equipment has been fitted up.

Champion.—An amygdaloid lode 15 ft. wide has been encountered east of the Baltic.

Hancock & Calumet.—This railroad, holding the rock-hauling contracts of the Tamarack and Osceola mines, is widening its 60 miles of track to accommodate the standard-guage 45-ton steel hopper cars which are being purchased.

Oneco.—Exploratory work has been resumed, the property having lain idle since 1900. About $50,000 have been spent, but nothing of great promise has been found.

Torch Lake.—A cross-section of the 1,280 acres of this company is being made with a diamond drill. The lands are on the eastern side of the range, between Calumet and Lake Linden.

Winona.—A fair-sized force is employed.

Wyandot.—A diamond drill is to be set up on section 28.

Copper—Keweenaw County.

(From Our Special Correspondent.)

Allouez.—The only work is on the shaft on the Osceola amygdaloid.

Mohawk.—Work on the new dock and breakwater at the stamp-mill site has started. The structure is 300 ft. long and 30 ft. wide. The steel work on the mill will be under way soon.

Norwich.—Neil J. Ferguson, caretaker, has received orders to unwater the mine.

Copper.—Ontonagon County.

(From Our Special Correspondent.)

Belt.—Considerable progress has been made cleaning up and extending the old workings; 10 drills are in use.

Mass Consolidated.—A 200-H. P. McIntosh & Seymore high-speed engine has been taken to the mine. The new shaft house at No. 3 is practically completed, and the new mill is expected to go into commission any day. Rock from the mine has gone to the rock bins.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—Following is the output by camps of the Joplin District for the week ending July 13th:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	2,544,320	472,750	$45,586
Carterville	1,015,870	830,970	31,922
Galena-Empire	1,255,070	196,240	19,404
Granby	476,000	124,000	8,655
Oronogo	555,340	33,500	7,303
Webb City	516,660	24,780	6,778
Aurora	495,420	27,500	5,671
Neck City	495,520	.....	6,442
Zincite	427,410	1,430	5,804
Carl Junction	320,850	.....	4,171
Duenweg	206,570	46,730	3,578
Spurgeon	141,220	73,800	3,377
Sherwood	181,410	.....	2,360
Roaring Springs	112,940	16,680	1,611
Central City	73,150	12,170	1,148
Cave Springs	56,450	6,580	843
Carthage	59,090	.....	768
District total	9,033,240	1,863,130	$155,421
Total 28 weeks	284,503,760	36,853,020	$4,295,545

Zinc value for week, $110,923; lead, $44,498. Zinc value 28 weeks, $3,445,853; lead, $484,685.

MONTANA.

Jefferson County.

The new $1,000,000 smelter which the Parrot Company started to build a few years ago has been dismantled. About the only valuable part of it left is the long water ditch.

Mayflower.—This company has sunk the shaft on the Mayflower Claim 1,000 ft., or several hundred feet below the bed of the river. The mine is located about 5 miles from Whitehall. The larger portion of the stock is held by Senator W. A. Clark, who bought the mine for $150,000 about 4 years ago. Since then it is reported to have paid over $600,000 in dividends. A short time ago a new strike was made about 200 ft. from the tunnel which is said to have averaged $200 per ton. The ore is shipped to the Butte Reduction Works. It carries about 80 or 90% silica and a little iron, yet most of it shows no gold by the usual pan test.

Ruby Mining Company.—The stamp mill, 8 miles from Bernice, which stopped work about a year ago, has started up for a run on tailings.

Lewis & Clarke County.

East Helena Smelter.—The American Smelting and Refining Company is to erect a new furnace at its plant at East Helena. It will have the same capacity as the present one, about 170 tons of charge per day. This, with the other 4, will enable the company to put through about 850 tons of charge, or 625 tons of ore per day. The notable improvements at this plant which have been under way for the past year, are the 3 great bag houses and the large horizontal steel flue extending ¾ of the way around the plant, through which the fumes will be conducted to the bag houses.

Empire.—Work has started on a 500-ton cyanide plant for this mine near Marysville. The contract calls for the completion of the plant by August 15th. The plant will be built by Owen Byrnes, of Marquette, Mich., and will treat first 150,000 tons of tailings that have accumulated from the previous milling operations of the Empire Mill. The Empire is credited with having produced over $1,500,000 in gold under the previous ownerships. The old workings have been cleaned out, much of it retimbered, and additional development work done.

Piegan Consolidated Mining Company.—The old Piegan Mine, 2½ miles from Marysville, is to be worked by this company. The incorporators are Dr. O. M. Lanstrum, of Marysville, John Larson, of Marysville, Norman B. Holter, James A. Walsh and Cephas C. Newman, of Helena. The capital is $250,000, in $1 shares. The property consists of the Piegan, the Ophir Fraction, which lies between the Piegan and the old Gloster Mine, the Larson Fraction, the Piegan Fraction and the Rabbit. The Piegan is opened by 2 tunnels, the upper 650 ft. and the lower 1,200 ft. long, both driven on the vein, which is 10 ft. wide. At a point 850 ft. from the mouth of the lower tunnel a winze has been sunk 100 ft., where a level shows 10 ft. of pay ore between granite walls. The vein is said to average $10 in gold, with a little silver, and to be free milling and cyaniding. The mine has produced about $75,000 from the 2 tunnels. The machinery consists of a 40-H. P. boiler, a No. 7 Knowles pump, a hoist capable of sinking 500 ft., and the necessary piping. The mine has not been worked for 5 years. The new company will take in additional capital for development and continue blocking out ore by sinking the winze 200 or 300 ft. deeper.

Meagher County.

Copperopolis District.—The work at Copper on the Calumet by Spencer, Mayn & Heitman, E. M. Edwards and A. M. Holter has reached a depth of 100 ft., and a contract has been let for 16 ft. more for a station, set and pump and a crosscut to the lead on the south of the shaft. The English company that has a bond on the Nagues property has started work.

Silver Bow County.

Amalgamated Copper Company.—The long-threatened suit to have the Amalgamated Copper Company declared a trust and monopoly, aimed to defeat the absorption of the Boston & Montana Company by the Amalgamated Company, has been started by John MacGinnis, vice-president of the Montana Ore Purchasing Company, who says he owns 100 shares of Boston & Montana stock. The action is brought under what is alleged to be an anti-trust provision on the Montana statutes, and it is alleged that the Amalgamated Company was formed for the purpose of getting around a decision of the Montana courts in the Boston & Montana receivership made several years ago, and to control the output, sale and price of copper. It is then alleged that the companies have violated the Constitution and penal code of Montana and that the property of the Boston & Montana Company is liable to be forfeited to the State. That company's property, according to the complaint, is valued at $56,000,000. The court is therefore asked to appoint a receiver for the whole of the company's property and to enjoin the Amalgamated Company from exercising any control over the property or stock of the Boston & Montana Company, and to prevent the stock acquired by the Amalgamated Company from being transferred on the books. Finally the court is asked to declare the Amalgamated Company to be a trust and monopoly on the ground that it is working in violation of the laws of the State and has no right to hold property in Montana nor to do business of any kind in the State. The case is pending in Judge Clancy's department of the District Court, but Judge E. W. Harney issued a temporary restraining order and an order to show cause why a receiver should not be appointed.

Butte Mining and Development Company.—The shaft from the Emma is down 350 ft. Machine drills are used. The company recently bonded the Olive Branch Claim, south of Silver Bow Creek, and about ½ mile west of the Colorado Smelter, and will sink the 80-ft. shaft 100 ft. deeper. The shaft on the Pacific Claim is down 110 ft.

Colorado Smelting Company.—The strike of the smeltermen is settled, the men agreeing to return to work on the same basis as before the strike was declared, 3 months ago. It is stated that the Mill and Smeltermen's Union has assured the company that there will be no more agitation over the 8-hour day proposition for all employees.

Minnie Healey.—F. A. Heinze has taken possession of this mine under the decision of Judge Harney, and 60 men have been put to work today. He has given bond to the amount of $75,000 to protect the Boston & Montana during the pendency of an appeal to the Supreme Court. Heinze will increase the working force to 300 men and work the mine for all it is worth while the appeal is pending.

National Gold and Copper Mining Company.—This company, working the Blackwell and other gold properties in the Homestake District, 8 miles southeast of Butte, is adding a 30-ton cyanide plant to its 10-stamp mill. The mill has been running steadily since it resumed work about 3 months ago. The Blackwell shaft is

down 250 ft. and from the bottom a drift has been run 100 ft. east. The last 50 ft. of the vein is 2½ ft. wide and is said to average $10 per ton. Herman Guntsch will have charge of the cyanide plant.

Sinbad.—Arrangements are being made by the Largey estate and Meyer Genzberger, who are operating this mine, to sink the shaft 1,000 ft. The property is situated across and east of the Meaderville flat, near where Franklin Farrell is conducting extensive operations. The shaft is already down 480 ft., and the showing made is said to be very favorable indeed. Considerable new machinery will have to be installed to permit more extensive operations.

NEVADA.

Storey County—Comstock Lode.

Overman Mining Company.—At the annual meeting about 78,000 of the 112,000 shares of capital stock were represented and the following directors were elected: W. G. Morrow, J. P. Martin, W. E. Sharon, A. S. Groth and George D. Edwards. W. G. Morrow was elected president, J. P. Martin vice-president, George D. Edwards secretary and A. Lackey superintendent.

Union Consolidated Mining Company.—At the annual meeting of the Union Consolidated Mining Company, 95,719 shares were represented and the following directors were elected: C. H. Fish, Charles Hirshfeld, A. G. Gurnett, William Bannan and A. F. Coffin. Charles H. Fish was elected president, Charles Hirshfeld vice-president, A. P. Swain secretary and A. J. McDonnell superintendent.

Lander County.

New Pass.—Willard F. Snyder, of Salt Lake, has secured possession of this group of mines, at New Pass. The purchase price is said to be $250,000, of which $30,000 was paid in cash, balance to be paid in instalments before January 1, 1902. There are reported to be about 30,000 tons of ore on the dump, which has been thoroughly sampled by J. E. Beveraige. The group has long been owned by Philo T. Farnsworth and Fred C. Mitchell. It is stated that a 50-ton combination mill will be erected as soon as bids are secured and material delivered.

Storey County—Comstock Lode.

Savage Mining Company.—At the annual meeting in San Francisco 100,000 of 112,000 shares of capital stock were represented and the following directors were elected: George R. Wells, Charles H. Fish, William Bannan, Herman Zadig and George C. Sneider. George R. Wells was elected president; Charles H. Fish, vice-president; John W. Twiggs, secretary, and Harry M. Gorham, superintendent.

White Pine County.

Canton Mining Company.—Suit has been started in the United States Court at Carson by Mrs. Ida McKinley and Mrs. Mary B. Barber against John Steele, William Hayes and others to recover possession of the Elijah Mine, one of the patented claims of this company, on which, it is charged, the defendants are operating, and also for $10,000 damages for ore taken out and shipped by the defendants. Steele is owner of the Macon City Mine, adjoining the Elijah, and denies that he has extracted ore from the patented claim.

OREGON.

Baker County.

Baby McKee.—At this group near Sumpter, a 50-in. blower and 3,000 ft. of pipe are being installed. The cross-cut tunnel is in over 830 ft. Drifting will soon start on the rich blind ledge, recently encountered, and the ore will be sacked for shipment. At the Last Chance the tunnel is now in some 80 ft. The hoist will be installed on the Last Chance as soon as it arrives and the shaft sunk 500 ft.

Big Hump.—This group in Virtue District was sold recently for a reported price of $20,000.

Fidelity Gold Mining Company.—At the annual meeting at Sumpter of the stockholders the following officers were elected: President, Anthony Mohr; vice-president, Charles B. Hecht; secretary-treasurer, T. D. Bellinger. These gentlemen, with R. W. Buffum, E. L. Comstock and A. P. Goss, of Sumpter, and J. D. Trandt, of Milwaukee, will constitute the directorate for the ensuing year.

Kenyon & Brown.—This hydraulic property in Stice's Gulch, 15 miles southwest of Baker City, is at present being worked with one giant. Samuel Kenyon is one of the owners.

Quebec.—At this claim, near Sumpter, the Oregon-Colorado Gold Mining Company expects to have a 20-stamp mill running in August. Steam will be used as motive power at first. Tunnel No. 1 is in 225 ft.; Tunnel No. 2 in 750 ft. and Tunnel No. 3 200 ft. Between Tunnels 1 and 2 an upraise has been made 128 ft. in ore, and an upraise is being made between Tunnels 2 and 3 of 188 ft. This upraise is made at a point 400 ft. from the mouth of Tunnel No. 2, which has a total depth of about 350 ft. Tunnel No. 3 will be driven 1,800 ft. to get beneath the apex of the mountain. The average width of the ledge is 8 ft., and ore is being blocked out in all 3 tunnels. The ore is deposited in bins at the mouth of Tunnel No. 2, from where wagons will haul it to the mill. The ore is said to average $12 to $15 gold per ton. The group comprises the Quebec and High Ore, and is equipped with tools, buildings, etc., and employs 35 men. J. W. Carr is president, E. P. Gilson, vice-president, and J. E. Farris, secretary. The company is capitalized for $2,000,000, par value of stock $1.

Uncle Dan.—This claim in Virtue District has been bonded for $30,000.

Josephine County.

Gypsy Queen.—Herman Luethye owns this claim near Grant's Pass. A quartz vein carries narrow stringers of gold ore, and is opened by a cut 20 ft. long and 3 ft. wide. A 1-stamp mill, built by John Taylor & Son, of San Francisco, crushes about 700 lbs. of rock in 10 hours.

Lucky Boy.—At this mine, at Lucky Boy, the 15-stamp mill is running steadily.

Lane County.

Bohemia Gold Mining Company.—This company, under the management of Geo. W. Lloyd, has made a second payment on the Gold Cross and Bohemia Girl claims, recently purchased. The company has a crew busy in development work, and the shaft is down 180 ft. The ore is free milling and gives returns of $12 and $14 to the ton.

PENNSYLVANIA.

Anthracite Coal.

A serious defect, it is stated, has been discovered in the Garner law, passed by the last legislature, increasing the number of mine inspectors in the anthracite region from 8 to 16 and providing for their election by popular vote. The bill makes no provision for Dauphin, Sullivan and Wayne Counties, which have coal interests, and the miners in these counties will be given no voice in the election of inspectors.

Colliery Firemen's Strike.—The firemen's strike which had stopped work at a large number of collieries in the Wyoming and Lackawanna regions ended virtually on July 22d when the strikers after an all night session declared the strike off and ordered the men back to work. This action was due to the stand of the United Mine Workers who had ordered members to remain and work and even take the places of members of the Firemen's Union who had gone out. The companies took back practically all the men who struck; a few refused to reinstate engineers who had refused to take the places of firemen during the strike.

Seneca Coal Company.—This company's properties at Pittston have been transferred to the Lehigh Valley Coal Company. The Seneca Coal Company owned the Twin, Phoenix, Columbia, Coxey and Seneca properties near Pittston and the Sioux Colliery at Mt. Carmel. The Lehigh Valley Coal Company, by securing the control, is to work properties adjoining the Seneca. The coal mined in these properties all goes for preparation to the Seneca breaker, which is an unusually large one. The coal from the Twin and Coxey shafts is hauled overland to the breaker, while the coal from the Duryea Mine is hauled underground by electric motor to the Twin shaft and thence hoisted. The old breaker at the Columbia shaft has been remodeled and is now used as a washery. The properties transferred were owned and operated by the Newton Coal Mining Company up to several months ago, when they were sold to E. L. Fuller, of Scranton, who had held a considerable interest in them. They were then reorganized and operated under the title of the Seneca Coal Company. Before this the Ravine Shaft was sold to the Pennsylvania Coal Company.

Bituminous Coal.

(From Our Special Correspondent.)

Cambria Steel Company.—The stockholders have decided by a unanimous vote to sell their shares to the Conemaugh Steel Company, which has recently been formed. There were 233,894 shares voted.

Dilworth Coal Company.—This is a new company, organized by H. P. Dilworth, George M. Dilworth, Henry Buhl, Frank Richardson, Charles B. McLean, George A. McLean, Calvin Wells, J. Marshall Lockhart, Pennock Hart and Newton Hemphill. The capital of the company is $600,000. It will open and operate a large tract of coal land near Rice's Landing on the Monongahela River.

Jamison Coal and Coke Company.—This company now owns the largest body of coal owned by any independent company in western Pennsylvania. By a recent purchase it acquired 2,300 acres of coal land in Salem and Hempfield Townships, Westmoreland County, the consideration being $1,118,000. A modern plant with steel tipple, shaft, railroad siding, etc., will be built at once, and 1,500 men employed. This company now owns 40,500 acres of coal and already has two large plants in operation.

Kingwood Coal and Coke Company.—This company has been incorporated with a capital of $100,000, by J. S. Parker, J. R. Smith, G. F. Kelly and A. S. Walker, of Scottdale, Pa.

Lebanon County.

Cornwall Iron Mines.—The Lackawanna Iron and Steel Company has recently renewed a lease for 20 years with the owners of the two Bird Coleman furnaces and the North Cornwall furnaces and allied interests in the Cornwall ore hills and the Cornwall Railroad Company, all located in the Lebanon, Pa., District. The lease commences on December 1st, 1902, when the present 5-year lease expires. The royalty is fixed at 3½% of the average selling price per ton for finished steel rails manufactured by the Lackawanna Iron and Steel Company. It is further provided that the entire amount of this royalty, to be paid as rental, shall not be less than $25,000 per year during the life of the lease. The lease includes the Cornwall Railroad from Mt. Hope to Lebanon, at a rental of $96,000 per year. The road is to be double tracked and other improvements are to be made, for which the Lackawanna Iron and Steel Company is to pay 8% per annum on the amount expended for improvements. The leasing of the entire property, it is stated, will cost about $150,000 per year.

TEXAS.

El Paso County.

El Paso Smelter.—This smelter of the American Smelting and Refining Company, recently damaged by fire, will, it is thought, be in commission again in 4 months. The company is putting a large force of men on to rush rebuilding. The plant will have the same number of furnaces as before the fire, but they will be better and of larger capacity. The plant will be able to start partially in about 4 weeks from now.

Federal Copper Company.—This company has announced its intention to buy ore or smelt on the custom plan at its plant at El Paso. At first the company intended to rely for ore supply almost wholly on its mines. The company has prepared to erect another furnace, and work will begin at once.

UTAH.

Box Elder County.

(From Our Special Correspondent.)

Horn Silver.—An option on this group has been secured by J. E. Kingsbury of Stockton.

Mayflower Gold Mining Company.—This company, with a capitalization of 300,000 shares, par value 25c. each, was organized July 17th. Col. G. W. E. Dorsey is named as president, J. G. Jacobs, vice-president; C. E. Hudson, treasurer, and Wm. W. Brown, secretary. These, with E. B. Chritchlow, are the directors. The property consists of 7 claims between the Century and El Amigo properties in Park Valley, and was known as the Daisy May Group. It was acquired by Col. Dorsey recently.

Cache County.

(From Our Special Correspondent.)

Lucky Star Mining Company.—The Sunshine and 4 other claims in Blacksmith Fork Canyon were recently incorporated with a capital stock of 60,000 shares, par value of 10c. per share. John H. Anderson is president, Lester A. Herrick vice-president, Leo P. A. Neilson secretary and G. Lundstrom treasurer. These with Willard W. Maughan form the directorate.

Juab County.

Mammoth No. 2.—At a recent special meeting of the stockholders the following officers and directors were elected: William McIntyre, president; Samuel McIntyre, vice-president; Isaac Jennings, secretary. These, with Edward Richards and Patrick Condon, constitute the board.

(From Our Special Correspondent.)

Buckeye.—An order was granted James Sharp, receiver, permitting him to sell the company's 6 unpatented mining claims at Eureka, together with all its personal property, to the highest bidder, the proceeds to be used in paying off the judgments and other indebtedness against the property. The sale is to take place August 10th.

Centennial-Eureka.—A dividend of 50c. per share has been announced.

Grand Central Mining Company.—At the regular meeting in Provo, Clarence McCornick was elected to fill the vacancy caused by the death of Geo. Q. Cannon.

Galena King.—A bond calling for $100,000, maturing in April next, has been secured by Messrs. Knight, Vilas & Wing, of Wisconsin, and Col. Dorsey and Duncan McVichie of Salt Lake City. Work will be resumed at once.

Tesora Mining Company.—With the machinery of the mill running smoothly about 35 to 40 tons of crude ore are being treated daily with satisfactory results.

Uncle Sam Consolidated.—An important strike of high-grade ore is reported in a winze from the main level in South Humbug ground. It is at greater depth than ore yet found in this property.

United Sunbeam.—With the proceeds of the recent assessment of $15,000 in the treasury,

work towards making connection with the main shoot of the Sunbeam is under way.

Salt Lake County.

Ben Butler Mining Company.—This company is defendant in a suit for damages to the amount of $17,500 brought by H. A. Kee and others in the name of the Chicago & Bingham Mining Company, who state they are the owners of the Liberal Claim which adjoins the Ben Butler on the west and that defendants have trespassed on their ground through underground workings and removed ore to the value above. An injunction is asked.

(From Our Special Correspondent.)

Albion.—A full breast of galena ore has been encountered in new ground while driving the vein to the south. It is reported to assay 50 to 110 oz. silver, 40 to 52% lead and $4 to $15 gold per ton. The real extent of the strike has not been determined.

Annie Laurie.—Manager Filer has awarded to Dederich & Burke a contract for additional leaching tanks. The average output is said to be about $2,000 per day from about 150 tons ore.

Ben Butler Mining Company.—An order was granted by the court permitting an underground survey to be made July 25th of the Liberal Mining Claim, owned by plaintiffs, and the Eighty-seven and B. F. Butler No. 1, owned by defendants, to determine if trespass has been committed.

Fortune Mining Company.—A judgment for $33,000 and $700 attorney's fees has been obtained against this company by Simon Bamberger, of Salt Lake.

Shawmut.—Preparations are in progress to start the Shawmut Mill in a few days after its long idleness. It will at first run on ore from the upper level of the U & I Mine, where a large area of good milling ore is said to be blocked out. The Telluride Power Company has all connections made to furnish power as soon as the electric motor is placed. A 100-ton ore bin has been built.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—During the week ending July 20th there were marketed through the McIntosh Sampler ore and concentrates as follows: Daly-West, 900,660 lbs. crude ore and 442,090 lbs. concentrates; Quincy, 1,632,320 lbs. crude ore; Daly lease, 63,950 lbs. crude ore; Ontario, 961,340 lbs. crude ore; Anchor, 352,750 lbs. concentrates; Silver King, 272,850 lbs. concentrates.

California Mining Company.—It is reported that a 7-ft. body of galena ore has been opened on this property. The new Huntington mill is expected daily.

Ontario Mining Company.—The payment of the 10c. dividend is the result of a compromise effected a few days ago with the Crown Point.

Quincy Mining Company.—This company has declared a dividend of 50c. per share. The company is shipping about 3,000 tons of ore monthly and the outlook seems flattering.

Utah County.

(From Our Special Correspondent.)

Consolidated Mercur Mining Company.—At the recent annual meeting the old directorate was re-elected as follows: H. A. Cohen, president and general manager; John Dern, vice-president; W. H. Cunningham, secretary, and Geo. H. Dern, treasurer and assistant general manager. A financial statement at the meeting shows a surplus of $240,000 to remain in the treasury after the disbursement of the coming dividend.

Ophir Gold and Silver Mining Company.—At the annual meeting the following officers and directors were elected: Hamilton Carhartt, president; Geo. L. Maltz, of Michigan, vice-president; M. L. Effinger, secretary; Frank C. Andrews, treasurer, and C. D. Waterman and J. B. Book, directors. The capital stock is $1,250,000, the controlling interest being held by Detroit men. A mill to cost $75,000 is being erected.

Overland Mining Company.—The collapse of this mining company is not a surprise to many conversant with the condition of affairs. Backed by Boston talent to the extent of a bond sale from which $150,000 was derived, and with the proceeds of the sale of the treasury stock, the company was not only unable to pay expenses, but is delinquent in pay-roll about $11,000. Manager Duncan states that the company was heavily in debt from the start, and the hoisting plant was inadequate. Some of the miners are willing to put in the balance of the month working up the ore already mined, reimbursing themselves and those laid off from whatever is produced.

FOREIGN MINING NEWS.

AFRICA.

Algeria.

During 1900 there were produced in Algeria 273,500 tons of phosphates; 604,053 tons iron ore; 30,250 tons zinc ore, 2,084 tons lead ore and 24 tons of copper. On the whole there was less activity than the previous year, but it is expected 1901 will show a material improvement. New capital is being invested in mining operations, and with the completion of the projected railways numerous rich mineral deposits will be worked.

Natal.

The Mines Department reports that in May 48,740 long tons of coal were mined. There were 136 Europeans, 2,211 natives and 1,100 East Indian coolies employed; a total of 3,447 persons, 2,413 underground and 1,034 on the surface. The coal exported or sold to steamships at Durban was 26,511 tons.

Transvaal.

Robinson Gold Mining Company, Limited.—This company informs us that a cablegram has been received from Johannesburg advising the following results for the month of June: Tons ore crushed, 6,489; yield from mill, 4,250 oz. gold; yield from tailings by cyanide, 1,649 oz.; total, 5,899 oz. This is an average of 0.91 oz. per ton. The net profit was £11,000.

AUSTRALIA.

Queensland.

Mount Morgan Gold Mining Company.—This company reports for June 16,954 tons ore chlorinated, the yield being 14,010 oz. gold; an average of 0.83 oz. to the ton. The work as been seriously reduced by the lack of water at the mine.

Tasmania.

Mount Lyell Mining Company.—This company reports for the four weks ending June 26th 20,364 tons of ore smelted. The yield was 750 tons blister copper, containing 741 tons fine copper, 44,525 oz. silver and 1,453 oz. gold. The average result was 3.64% copper, 2.19 oz. silver and 0.07 oz. gold to the ton.

Western Australia.

The gold production reported in June was 161,967 oz. crude, the largest monthly output this year. For the half-year ending June 30th the total was 858,112 oz. crude, against 758,305 oz. for the first half of 1899. The total this year were equal to 769,485 oz. fine gold, or $15,905,659.

(From Our Special Correspondent.)

The report of the Great Boulder Perseverance illustrates very clearly that the difficulties of working the sulphide ores are not at an end. The report for the year ended December 31st last has only just made its appearance. The gross receipts from the sale of gold produced were £160,000, and the net profit £53,000. Almost the whole of this sum has, however, been spent in development as well as £77,000 which was carried forward from the previous year. It appears also that most of the profit made since the period covered by the report has also gone to developments. This mine is chiefly owned by the promoter, Frank Gardner, who has never cared to part with his shares in the way usually pursued by promoters, but he has even bought out many holders who were dissatisfied at the turn things have taken. Mr. Gardner evidently has considerable faith in the property and in time, when suitable plant has been designed, the yield should be satisfactory. He estimates that there is in sight 250,000 tons of ore averaging 1¼ oz. in sulphides and the lodes show no sign of exhaustion. It is probable also that the plant may be extended so as to purchase and treat ores from other properties that have not been so successful in their experimental researches on the sulphide problem. Incidentally it may be mentioned that Mr. Gardner intends to dissolve his promoting company, the British Westralia Syndicate. He contemplates no more mining promotions as his hands are full, so it is unnecessary to carry on the syndicate. He is owner of nine-tenths of the shares, so he intends to distribute the assets among shareholders and wind up.

CANADA.

British Columbia—Boundary District.

(From Our Special Correspondent.)

The Jewel, Long Lake Camp, is working 30 men. Gilbert Mahon, the manager, recently returned from England. The R. Bell, in Summit Camp, lately sent 6 cars of ore to the Granby Smelter, described as the best yet sent out in bulk from the district. The Granby syndicate holds the largest interest in the R. Bell. The Blue Bell, in the same camp, has temporarily suspended work. It has been sold to Eastern men. The Morrison, near the Mother Lode, in Deadwood Camp, is opening up a big shoot of ore on its 200-ft. level. The management is negotiating with the smelters with the object of making a contract to ship continuously. The Winnipeg, in Wellington Camp, is cross-cutting north and south at the 400-ft. level to cut 2 veins that nearer the surface are very promising. The placers up the North Fork of Kettle River have turned out to be unimportant and the rush to them has died out. Placer mining by "booming" is in progress on Rock Creek, which for nearly 40 years has yielded gold. Fifteen men are prospecting some of the Rathmullen Group, in Summit Camp.

B. C. Chartered Company.—A new stope has been opened in the B. C. Mine in Summit Camp, giving 75 ft. of marketable ore between the 325 and 250-ft. levels. The diamond drill is being freely used in prospecting.

Ontario—Lake of the Woods.

(From Our Special Correspondent.)

Mikado.—A very fine body of ore is being opened up in the 8th level, No. 1 Mine. No. 2 Mine is also looking well. The long drifts between the wings and main shaft in No. 2 will be cut through to-day, leaving a block of about 3,000 tons of good ore ready for stoping. The mill has started up again and will run full time.

Sultana.—The diamond drill has located a body of quartz 14 ft. thick, 800 ft. north of the present workings. It is hoped that this is the large body or vein of rich ore which during exploitation came abruptly to an end, apparently being cut off by a fault. The boring was made from the 7th level. A boring will now be made from the surface. There are no indications of a vein at the surface.

Ontario—Michipicoten District.

Helen.—This famous iron mine of the Clergue Syndicate, according to a press despatch, was last week jumped by Julius George, a prospector. The mining laws of Ontario, however, contain specifications which make claim-jumping difficult and the rights acquired by Mr. George would be very flimsy.

Ontario—Rainy Lake District.

Orion Mining Company.—This company was incorporated in May, 1899, to work a group of locations in the Manitou District, and sank a shaft nearly 100 ft. on a continuation of the Independence Vein. The company suffered from differences in the management and a lawsuit followed, and work was suspended. Otto Taubert, of St. Paul, who had previously advanced a considerable amount of cash under the old management, reorganized the company, and mining is to be resumed at once. The Orion Group consists of 7 locations. A convenient mill site is on the group, on the edge of a small lake.

SOUTH AMERICA.

Ecuador.

A company, to be known as the Mines of Ecuador, Limited, capital $5,000,000, has been incorporated to develop the mines of Ecuador. Among the New York interests are ex-Mayor Abram S. Hewitt, Erskine Hewitt, ex-Governor George Hoadley, Robert M. Thompson, president of the Orford Copper Company; T. H. P.

COAL TRADE REVIEW.

New York. July 26.

Anthracite.

The hard coal trade is inclined to be quiet. With the predicted collapse of the firemen's strike due to the action taken by the United Mine Workers, most of the collieries that were closed down are now working again and production is as active as the companies care to have it. Trade statistics indicate a tolerably good supply of coal at eastern points, but a great deficiency in the West. Production during the next two months will be determined largely by the size of the western market.

In Lake Superior territory there is some improvement in demand and the movement from docks is increasing, though cargoes from Buffalo are arriving little, if any, faster. In Chicago territory receipts to date are reported far below last year's figures and stocks on the docks are very small for July. The extreme hot weather that has prevailed in the Central West has reduced retail demand to a minimum. Most dealers have fairly good supplies and will not buy more till retail demand improves. At lower lake ports conditions show some improvement. In the East there is still some demand, enough in the aggregate to move a lot of coal, but the trade is falling back into dullness after last week's flurry. Egg coal is the size most wanted.

The July prices for free burning white ash f.o.b. New York Harbor ports are: Broken, $3.80; egg, $4.05; nut and stove, $4.30.

Bituminous.

The Atlantic seaboard soft coal trade continues dull and the anticipated improvement is not yet manifest. The market is quiet. Standard grades are in more demand than the lower grades, but only special grades are in full demand. The slackening in industrial activity and plentiful water supply for plants using water supply are given as reason for the lessened activity in the trade as compared with last year.

In the far East trade remains quiet. A fair amount of coal is going forward on regular contracts, but there is very little transient business. Coastwise freights continue low tending to induce shipments; still there is little stocking up going on. Coal is in plentiful supply down East,

but there is no overstock. Trade along Long Island Sound calls for considerable supplies of the better grades and coal is taken more abundantly than a few weeks ago on account of the collapse of the machinists' strike. At New York Harbor ports trade is dull and low prices are named. All rail demand is fairly good and is taking considerable coal.

Transportation from mines to tide water is now very good and fully up to schedule. Car supply at the mines is equal to all demands. In the coastwise vessel market vessels have been in a little better supply than during the two weeks previous, but just now are in short supply. Freight rates remain unchanged. We quote current rates as follows: Providence, New Bedford and the Sound, 60c.; Boston, Salem and Portland, 70c.; Wareham, Newburyport and Bangor, 85c.; Gardiner, 85c. and towages; Saco, $1 and towages; Dover, $1.15 and towages. Rates from the further lower ports are 10@15c. higher.

Birmingham, Ala. July 22

(From Our Special Correspondent.)

There is not much change in the coal market, though there is better work at the coal mines. With one or two exceptions all labor troubles are at an end and contracts have been signed between the miners and operators. During the past week the Corona Coal and Iron Company, the Pennsylvania concern which acquired several mines in Walker County and which ships most of the product down the Mississippi River, signed a contract with its miners and work is going on there uninterruptedly.

The production of coke in this State is keeping up well and a good price is being obtained for it.

Cleveland, O. July 24.

(From Our Special Correspondent.)

The shipment of coal up the lakes has now started in at a pace such as the shippers have been striving after since the lakes were opened to the passage of boats. One thing or another has hampered the movement of the vessels ever since the season opened and in consequence they have bene far behind their contracts. First it was a lack of desire on the part of the receiving docks and then a car shortage which was quite serious. Now the coal is coming from all of the steam coal mines very freely and the boats are in excess of the cargoes which are offered. The situation therefore is very satisfactory to the coal shippers. The movement has not been hampered yet by delays either at the loading or the unloading ports. Shippers admit, however, that the relief came none too soon, for they were getting farther and farther behind with their orders and even now it will take quick and steady work to ship the season's coal in the part of the season which is left. The rates are holding firm at 35c. to Lake Superior and 40c. to Lake Michigan.

Pittsburg. July 24.

(From Our Special Correspondent.)

Coal.—There is no change in the situation this week. The mines are all busy and trade is as active as it was before the strike of the steel and tin plate works. There has been no change in prices. Cars are more easily obtained now and the Pittsburg Coal Company is making some heavy shipments to Cleveland for the Northwest. It is now expected that this company will be able to fill all its northwestern contracts. Last season it was about 400,000 tons short in its deliveries. The Monongahela River Consolidated Coal and Coke Company now has about 12,000,000 bush. of coal loaded ready for shipment on the next rise in the rivers. The company has plenty of empty craft and will be able to keep the mines in operation for several months.

Connellsville Coke.—The production was increased last week by over 35,000 tons and there was also a gain in the shipments. Prices remain unchanged, furnace coke being quoted at $2 and foundry at $2.50. Of the 21,747 ovens in the region, 19,882 are active and 1,865 are idle. The production was 236,831 tons, a gain of 35,381 tons. The shipments for the week aggregated 11,414 cars distributed as follows: To Pittsburg and river tipples, 3,819 cars; to points west of Pittsburg, 5,407 cars; to points east of Connellsville, 2,098 cars. This was an increase of 1,791 cars.

Shanghai, China. June 26.

(Special Report of Wheelock & Co.)

Coal.—Japan coal is fairly active. Nothing of moment has transpired in Cardiff coal. Two settlements for Sydney Wollongong cargoes to arrive have been made at the enhanced rate of 13 taels ($8.71). Arrivals of all kinds of coal during the fortnight ended June 26th amounted to 35,006 tons. We quote, per ton, as follows: Welsh Cardiff, 20.50 taels ($13.74); Australian Wollongong, 12.50 taels nominal ($8.38), and other sorts, 6@7 taels ($4.02@$4.69); Chinese Kaiping, Linsi lump, 9 taels ($6.03), and mixed, 7.50 taels ($5.03); Tongshan No. 9 lump, 10 taels ($6.70); dust, 6 taels ($4.02), and mixed, 8 taels ($5.36). Japan, all contracted for.

Kerosene Oil.—Quiet. With arrivals, stocks amount to 771,550 cases American, 1,059,650 cases Russian, and 28,350 cases Dutch; total, 1,859,550 cases. We quote, per case, as follows: American Devoes, 1.60 taels ($1.07); Russian, Anchor and Ram Chops, 1.49 taels ($1); Star & Crescent Chop, 1.48½ (99c.), and bulk oil, loose, 1.03 taels (69c.), and in 2 tins, 1.41 taels (94c.); Sumatra, Langkat, loose, 1.03 taels (69c.), and in 2 tins, 1.41 taels (94c.).

Foreign Coal Trade. July 26.

Charters for August sailing to the Mediterranean are a little firmer, and from Virginia ports 12s. 9d. ($3.06) has been booked.

The German coal trade continues in difficulties. The demand for metallurgical and steam coal has fallen off heavily, notwithstanding the concessions in price made by the syndicates.

Messrs. Hull, Blyth & Company of London and Cardiff, report under date of July 13th that at Cardiff tonnage has been more plentiful this week and prices of coal continue to be steady with a firm tendency. Some prices are: Best Welsh steam coal, $5.04@$5.16; seconds, $4.56; thirds, $4.32; dry coals, $3.72@$3.84; best Monmouthshire, $4.08@$4.20; seconds, $3.72; best small steam coal, $2.40; seconds, $2.16; other sorts, $1.92.

The above prices for Cardiff coals are all f. o. b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f. o. b. Newport, exclusive of wharfage, and are for cash in 30 days, less 2½% discount.

Tonnage has become much more plentiful, and rates are distinctly weaker. Some rates noted are: Marseilles, $1.75; Genoa, $1.80; Naples, $1.86; Port Said, $1.16; Singapore, $3.60; Las Palmas, $1.62; St. Vincent, $1.74; Rio Janeiro, $3.48; Santos, $3.84; Buenos Aires, $3.48.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 130.)

New York. July 26.

Heavy Chemicals.—Domestic high test alkali is in good request for next fire delivery. Caustic soda shows more 1902 orders at quotations, and it is said a large sale has been made at $1.85 per 100 lbs., f. o. b. works. We quote, per 100 lbs., as follows:

Articles.	Domestic. F.o.b. Works.	Domestic. In New York.	Foreign. In New York.
Alkali, 58%.	80@85	....	85@87½
" 48%.	85@90	....	.....
Caustic Soda, high test..	$1.90@$1.92½	.....	1.35@1.87½
powd. 60%.	.....	2.75	.....
70@71%.	.....	2.85	.....
98%.	....	3 25	3.75@4.00
Sal Soda	.55	.65	67½
" " conc.	1.25@1.50	....	1.75
Bicarb. Soda.	1.05@1.10	.....	1.37½@1.75
" " extra	3.25@3.50	.....	.....
Bleach. Pdr., Eng. prime.	.....	....	2.00@2.10
other br'nds	.....	....	1.80@1.90
Chl. Pot. cryst	....	8.25@8.37½	9.75@10.00
" powd.	..... .	8.37½@8.62½	10.25@10.75

Copperas.—Firmer at 32½c. per 100 lbs. in bulk, and 40c. in bbls., owing to stoppage of work at a few mills.

Acids.—Warmer weather has increased the demand for sulphuric acid. Blue vitriol exports are moderate. In France the consumption of blue vitriol in the treatment of the cryptogamic diseases of the vine, and for preserving railway sleepers, telegraph poles, etc., amounted to about 13,000 tons last year.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified

Acetic, No.8	$1.62½	Nitric, 36°	$3.87½
Blue Vitriol.	4.25@4.50	Nitric, 38°	4.12½
Aqua Fortis, 36°	3 62½	Nitric, 40°	4.37
Aqua Fortis, 38°	3.87½	Nitric, 42°	4.75
Aqua Fortis, 40°	4.12½	Oxalic	5.50@5.75
Aqua Fortis, 42°	4.50	Sulphuric, 66°	1.20
Muriatic, 18°.	1.20	Sulphuric, 60°	1.05
Muriatic, 20°.	1.35	" bulk 50° ton	14.00
Muriatic 22°	1.50		

Brimstone.—Trade is quiet. Best unmixed seconds are worth $22.25@$22.50 per ton to arrive, and $21.50@$21.75 for shipments. In France the imports of brimstone in 1900 amounted to about 3,700 tons at Bordeaux, of which 2,500 tons were transformed into sublimed and ground sulphur for treating vines.

The imports of brimstone into Great Britain in the six months ending June 30th aggregated 9,885 long tons, as against 11,538 tons last year; a decrease of 1,653 tons this year.

Pyrites.—Contract deliveries are the orders being filled. We quote, per ton, as follows: Mineral City, Va., lump ore, all sold, and fines, $4.20 per long ton. Charlemont, Mass., lump, $5, and fines, $4.75. Spanish pyrites, 12c. per unit delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46@51% of sulphur, American from 42@44%.

Great Britain imported in the six months ending June 30th pyrites to the amount of 344,385 long tons, showing a decrease of 22,503 tons as compared with last year.

Sulphate of Ammonia.—Market has strengthened under more inquiry. Spot and early shipment gas-liquor is held at $2.70 per 100 lbs. In June the exports to the United States by Great Britain approximated 708 tons, making 3,424 tons since January 1st, showing a good increase over last year.

Nitrate of Soda.—The market is dull. Consequently the 35,545 bags received by the "Falls of Keltic" have been stored at Baltimore. Spot nitrate of soda is quoted at $1.82½@$1.85 per 100 lbs., and futures $1.90@$1.95.

Concerning the Chilean market we learn from Messrs. Jackson Brothers, of Valparaiso, under date of June 15th, that the past fortnight has been almost devoid of transactions owing to a drop in prices and inanimation prevailing in consuming markets, while the majority of producers have maintained their former limits, some few only giving way to the extent of ¼d. to ¾d. in price. The consumption of the world for the first 5 months reached 20,424,500 qtls., or say 1,261,700 qtls. more than during the same period in 1900. We quote 95%, June-July, 6s. 4½d.; August-December, 6s. 5d., and 96%, July-December, 6s. 6½d. per qtl., all ordinary terms sellers. The price of 6s. 4½d. with an all-round freight of 25s. stands in 8s. 4¼d. per cwt. net cost and freight without purchasing commission. Reported sales for the fortnight ended June 15th were 43,600 qtls., and re-sales 50,000 qtls.

Phosphates.—More foreign inquiries have been received, but actual business has been transacted only moderately. The exports of phosphates from Florida and Tennessee in the six months ended June 30th were as follows:

Destination.	—Florida.— Hard rock.	Pebble.	Tenn. Rock.	Total, Tons.
Austria	2,800	2,200	.....	5,000
Australia	.....	2,200	.....	2,200
Belgium	27,047	.....	6,000	33,047
England	7,150	6,054	4,720	17,924
France	.....	10,878	27,228	38,106
Germany	91,304	15,000	1,919	108,223
Holland	41,008	.....	.....	41,008
Ireland	3,950	6,035	.....	9,985
Italy	2,950	14,000	36,369	53,319
Japan	.....	8,498	.....	8,498
Norway and Sweden	8,660	8,498	.....	17,758
Scotland	2,300	.....	.....	2,300
Totals, tons	187,169	73,963	76,236	337,368

As compared with the corresponding six months last year there is a falling off in rock phosphates, but pebble stuff shows an increase. The largest quantity exported to any one country was 108,223 tons to Germany, equal to 32% of the total. Much of the rock sent to Holland was re-shipped to the interior of Germany. The pebble exports were chiefly land stuff, and of the bulk notable shipments were those to Japan.

The domestic shipments of land pebble during the six months aggregated 88,016 tons, and of Peace River, 15,375 tons, the former showing an increase and the latter a decrease.

Tennessee Mt. Pleasant rock shipments for the half year to June 30th amounted to 196,738 long tons, of which 76,236 tons were exported as detailed above. The aggregate value was about $600,000 to the producers. The cost of mining and loading on cars was $295,106, or about $1.50 per ton.

The coastwise movement of rock from South Carolina is not as large as last year, the quanity reported from Charleston during the six months ended June 30th being only 25,672 tons.

At points of production an effort has been made to keep the output within bounds of the demand and not pile up too much stock in anticipation of better prices. Thus we see in Florida only 37 hard rock plants working out of about 80. In Tennessee labor is not plentiful and so some properties were obliged to curtail operations. South Carolina miners are doing a fair business, and recently one of the largest owners, the Charleston Mining and Manufacturing Company, increased its capital from $1,000,000 to $3,000,000.

Abroad, the Christmas Island phosphates are in more favor, and it is estimated that this year's shipments will be about 175,000 tons. From November, 1899, to October, 1900, the shipments were 28,017 tons. It is also stated that Phosphate Hill, where mining is now carried on, contains about 12,000,000 tons.

Occasional shipments of phosphates from Belgium are still made to America, and this week 3,000 bags were received at New York. This phosphate is rather low-grade and is used as a "filler" in fertilizers. Quotations are as follows:

Phosphates.	Per Ton F. o. b.	C. i. f Un'd Kingdom or European Ports Unit.	Long ton.
*Fla. hard rock (77@80%)	$6.50@7.00	7 @7⅝d	$10.92@11.89
*Fla. land pebble (68@73%)	3 85@4.00	6 @6¼d	8.40@ 8.57
*Fla Peace River (58@63%)	2.50@2.75	6 @6¼d	7.20@ 7 50
†Tenn. rock 78%, export.	3.25@3.50	6¾@7d	10.53@10.92
†Tenn.....78% domestic.	3 00	.....	.....
†Tenn.....75% "	2.75	.....	.....
†Tenn.....70@72% "	2.00@2.25	.....	.....
‡So. Car. rock, crude....	2.50@2.75	.....	.....
§So. Car. rock, dried.....	3.25	.....	.....
Algerian, rock...(63@70%)	.....	6@6½d	8.04@8.71
Algerian, rock...(58@63%)	.....	5½@6d	6.60@7.20
Tunis, Gafsa.....	.....	5½@6d	6.60@7.20

* Fernandina, † Mt Pleasant. ‡ At mines, § On vessels, Ashley River.

Freight rates from Florida ports are about as

follows: To Baltic ports, $5; Continental, $3.84@$4.56; Mediterranean, $5.28; United Kingdom, $4.

From Savannah, Ga., to Continental ports, $3.48.

A charter of 1,406 tons from Fernandina to Rotterdam, Holland, was booked at 16s. 3d. ($3.90), sailing September 25th, and another of 1,249 tons from Savannah to the Continent at 14s. 6d. ($3.48), August sailing.

The imports of phosphates into Great Britain in the six months ending June 30th amounted to 165,328 long tons, or 24,879 tons less than last year.

Liverpool. July 17.

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

The demand for chemicals continues on a limited scale, while quotations show little change.

Soda ash is in moderate request at usual varying prices as to destination. The nearest spot range for tierces is about as follows: Leblanc ash, 48%, £5 15s.@£6; 58%, £6 2s. 6d.@£6 7s. 6d. per ton net cash. Ammonia ash, 48%, £4 10s.@£4 15s.; 58%, £4 15s.@£5 per ton, net cash. Bags, 5s. per ton under price for tierces. Soda crystals are fairly brisk at £3 7s. 6d. per ton, less 5% for barrels, or 7s. less for bags, with special terms for certain export markets. Caustic soda is meeting with less inquiry and is rather easier in tone. We quote spot values as follows: 60%, £9 2s. 6d.@£9 5s.; 70%, £10 2s. 6d. @£10 5s.; 74%, £10 12s. 6d.; 76%, £11 per ton net cash.

Bleaching powder shows no improvement in demand, but prices are nominally unchanged, and for hardwood packages £7 per ton net cash is quoted, with special terms for Continental and certain other export markets.

Chlorate of potash is offering at 3¼@3⅜d. per lb. net cash, but there is little business reported.

Bicarb. soda is selling to a fair extent at £6 15s. per ton, less 2½% for the finest quality in 1 cwt. kegs, with usual allowance for larger packages, also special terms for a few favored markets.

Sulphate of ammonia remains steady at £10 15s. per ton, less 2½% for good gray 24@25% in double bags f. o. b. here, but without much doing.

Nitrate of soda is selling to a limited extent on spot at £9@£9 2s. 6d. per ton, less 2½% for double bags f. o. b. here.

Messina, Sicily. July 1.

(Special Report of Emil Fog & Sons.)

Brimstone advanced still further in June to about 4s. for seconds and 1s. to 2s. only for thirds, which are more plentiful than seconds. Future deliveries have also advanced. Dissidents, who were selling futures freely at 1s. to 2s. below prompt, got frightened and have withdrawn. Although the market is very firm and stocks, especially of seconds, are reduced and in firm hands, still the highest point has probably been reached. The new smelting began at the end of June. The arrivals of new mineral begin in August, and will belong partly to dissidents whose offerings may produce some reaction. The probability of any important decline, however, is excluded for the present. Stocks at Catania remain about 30,000 tons less than last year. Notwithstanding this Catania has not been affected by the rise, and values of refined brimstone remain stationary. We quote per ton, f. o. b., as follows: Best unmixed seconds, 80s. 6d. ($19.32); best thirds, 69s. 6d. ($16.68); refined block, 100%, 82s. 6d. ($19.80); roll, in casks, 90s. ($21.60); sublimed flowers, extra pure, in bags, 99s. 6d. ($23.88); superior, 96s. 6d. ($23.16), and sublimed current, 94s. 6d. ($22.68).

Freights have not improved and are 6s. 6d. ($1.56) to New York, 7s. ($1.68) to Portland, Me.; 9s. ($2.16) to Canadian ports, and 11s. ($2.64) to Baltic ports.

IRON MARKET REVIEW.

NEW YORK, July 26, 1901.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending July 27, 1900. F'ces.	Tons.	Week ending July 26, 1901. F'ces.	Tons.	From Jan., '00. Tons.	From Jan., '01 Tons.
An'racite & Coke.	257	276,875	227	303,975	8,518,324	8,725,067
Charcoal.	22	5,950	22	7,250	215,138	235,249
Totals..	279	282,825	249	311,225	8,733,462	8,960,316

The iron market appears to be in a rather uncertain condition. Of course the Amalgamated strike and possibilities of further labor troubles are blamed for this. They are not altogether responsible for present conditions, however. There is a growing belief that the demand for iron and steel is not going to keep at its present level, and that some decrease in consumption is to be expected. While the damage done to crops in the West has been exaggerated for speculative purposes, there is no doubt that there has been considerable injury to them, and that a reduced buying capacity may be looked for.

Pig iron conditions have already been affected, but furnace-owners have apparently not yet reached the point of reducing production, nor is it certain that they will do so for some time.

In finished material the demand for structural steel, plates and bars continues heavy, and mills have some trouble in keeping up with their orders.

Export trade is very quiet for the present, little inquiry and no new business being reported.

Birmingham, Ala July 22.

(From Our Special Correspondent.)

Alabama pig iron manufacturers are hopeful for the near future. The production of pig iron in Alabama is a little better than it has been. The Sloss-Sheffield Steel and Iron Company has blown out one of its city furnaces, leaving only two in blast in Birmingham and North Birmingham, one at each place. The same company, however, blew in one of its Sheffield furnaces during the past week. One of the Woodstock Iron Company's furnaces at Anniston is now in blast after an idleness of nearly three years. There is talk of two or three other furnaces going into blast in this state during the next four weeks.

There is little new business being transacted. Shipments are quite lively. A prominent furnace manager seen during the past few days said: "There are no doubts but that better times are coming for the iron trade, but the strike of the sheet metal workers is likely to stave off that period a little longer. There can be no bragging on present conditions, though there is no accumulation of any mention to be noticed in this district."

The Sloss-Sheffield Steel and Iron Company intends blowing in its No. 3 furnace at North Birmingham by August 15th, making basic iron. The Republic Iron and Steel Company will shortly have the new furnace at Thomas in shape. This furnace was to have been completed some time since.

The following quotations are given: No. 1 Foundry, $11@$11.50; No. 2 Foundry, $10.25@$11; No. 3 Foundry, $9.75@$10.50; No. 4 Foundry, $9@$9.50; gray forge, $9@$9.50; No. 1 soft, $10.75@$11.50; No. 2 soft, $10.25@$10.75.

The steel production in this State has been improved a little, the Republic Iron and Steel Company starting its two open-hearth furnaces at the Birmingham Rolling Mills. This plant has a daily capacity of about 120 tons of steel and it will be employed for the rolling mills exclusively. The steel plant at Ensley has had 5 of its 10 open-hearth furnaces in blast. The steel rail mill is nearing completion. The machinery has about all been placed and the force of men at work in the mill is putting in piping, expecting to finish within the next few weeks. The plant of the Alabama Steel and Wire Company during the past week lost a day or two because of the bursting of some of its water pipes, but everything there is now in full blast.

The foundry and machine shop trade continues fairly good. C. Moffett and A. Bondholzer have formed a partnership and will open a foundry at East Birmingham. Both of these gentlemen are men of experience in the line.

The cast iron pipe trade is still booming and shipments of pipe are heavy. The announcement is made that the Central Foundry Company, the combine manufacturing soil pipe, will consolidate its Gadsden and Bessemer plants. Citizens in Gadsden have commenced the formation of a company in their city with $150,000 capital stock to construct and operate a soil pipe factory in that place. The plant to be built, if the scheme goes through, will make about 10,000 tons per annum and will give employment to about 200 men and boys.

Work has been started on the new car works for the Southern Car and Foundry Company.

Buffalo. July 24.

(Special Report of Rogers, Brown & Co.)

There is considerable hesitancy in the trade as to the best course to pursue. If it were not for the uncertainty in the air, due to labor conditions, buying would be very large at the present moment. As it is the situation is enlivened by inquiries for iron in quantities ranging from one car to 3,000 tons. All the wavering about buying is accompanied by the regular harmony of continued demand for shipments on old orders. There can be no doubt whatever that consumption is very large. We quote below on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $15.50; No. 2, $15; Southern soft, No. 1, $15.50; No. 2 $15.25; Lake Superior Charcoal, $17.50; coke malleable, $15.

Cleveland, O. July 24.

(From Our Special Correspondent.)

Iron Ore.—Much of the stress has been removed from the shipment of iron ore by the assurance given shippers that they are far enough ahead of their contracts to take things leisurely for the time. Forecasts now being made indicate that the vessel owners will have brought down about all of the wild ore before September 1st, promising that the late fall movement will be entirely by the contract vessels. The movement therefore is devoid of that element of haste which was conspicuous all through the season until now. The rates hold firm at 80c. from Duluth; 70c. from Marquette, and 60c. from Escanaba.

Pig Iron.—Sales of foundry iron have been made this week for deliveries during the remainder of the year. The business for the second half seems just about to start in and the interest is increasing. The prices which have prevailed during the last two weeks or more still hold on the third quarter business, namely, $13.75 on No. 2 and $14 on No. 1, Valley furnace. Not much bessemer is being sold past August 1st, and the producers are on the market looking for business. The strike of the steel workers is affecting this grade considerably. What few sales are reported have been on the basis of $15.25 Valley furnace. Basic is not being sold in large quantities yet for future as the market seems to be holding back a little, though some good business is in sight. The last sales were made at $14.75 at furnace.

Finished Material.—The strike of the Amalgamated Association has caused an advance in the price of light sheets, bars and hoops, with others expected. The advance in sheets is due directly to speculative buying, which has been quite free in the last few days, or since it became known that the production was to be so seriously curtailed as it has been. The presence of a heavy stock in the Cleveland warehouses invited bidders from the West and the supply would have been cleaned out but for a sharp advance in the price ranging from between $2 and $6 a ton of sheets. Blue annealed No. 10 is quoted at 2.50c. Cleveland, and one pass cold rolled No. 20 at 3.55c. f. o. b. Cleveland. The other sizes are graded upward on these basing prices. Bars have also been subject to an advance of from 1.40c. to 1.50c. at mill, with some of the plants making sales at 1.45c. No objection is being made to either quotation. Hoops have advanced 0.05. Aside from these advances the market has been without incident but healthy. The other grades that have not been affected by the strike show that orders have been coming in freely. In fact, the heavy buying noted at the time of the last report, has been continued during this week much to the surprise of some of the mills. Structural shapes seem to be especially in demand, but the specifications are heavier than the new orders. Plates are a strong factor in the market now with plenty of business ahead, especially in the line of ship plate. Some increased interest is being taken in billetes, as inquiries have come in for upwards of 6,000 tons this week with a prospect of the order being closed at once.

Old Iron.—The scrap trade has been brisk this week with some good-sized orders coming in. The prices hold firm at the new figures as follows: No. 1 wrought, $15; wrought turnings, $10; cast borings, $6; steel rails, $15; heavy steel, $15.

Philadelphia, Pa. July 25.

(From Our Special Correspondent.)

The talk in the trade is that there is trouble ahead. Although not over 15% of iron and steel capacity is idle, some say 10%, there is a feeling of apprehension among our local big consumers that the strike may widen and include plants that cannot afford to stop. On the other hand, several officials representing Eastern and Middle Pennsylvania interests take the strike indifferently for it is a western strike, not an eastern one. Our people note the cent a pound advance in steel sheets west and east at retail. If this strike keeps up it will help us to fill up with fall orders a few weeks before the usual time.

Pig Iron.—This branch is dull in the East. Furnace people are shipping every ton they make; consumers are exacting on this point. There is no move among large consumers to order ahead. All our furnaces are well filled up and quotations as published for several weeks are repeated.

Billets.—Those whose purchases are watched are not inclined to do anything. The strike has not affected prices.

Merchant Bars.—Business is particularly good and the smaller buyers are taking more than they need for contracted work. This would indicate that consumers count on a strong market. Steel bars are in better demand and 1.60c. is paid.

Nails.—Both wire and cut nails are selling quite well at full average prices.

Sheets.—The orders for the past two days show a stronger pressure to get sheet. Mill men think their August business will be exceptionally large. Prices are higher than last week on quick deliveries. The strictly local trade is very strong and urgent buyers are bobbing up every day. Corrugated material is urgently wanted.

Pipes and Tubes.—While it is not asserted that a general advance has been made, it is very clear that manufacturers are able to get what they ask from urgent buyers.

Skelp.—Skelp has advanced a trifle on special orders and the developments in correspondence

since Monday have encouraged officials to believe that a general upward move is at hand.

Plates.—More plate capacity is hinted at in eastern territory, but no details are to bo had. The boiler makers and those who use tank are running all their shop capacity and the pressure is such as to make a higher range of prices in September optional with manufacturers.

Structural Material.—More material was asked for since Monday than was booked, because of the difficulty of arranging deliveries. Railroad managers are authorizing extraordinary bridge improvements. The Pennsylvania Steel Company has booked some exceptionally large orders. No change in quotations.

Steel Rails.—Trolley rail orders are the feature at present. A large amount of work of this sort is in sight.

Scrap.—There is no movement in cheap stuff, but for choice railroad and heavy steel scrap it will be impossible to meet all the calls that are coming in.

Pittsburg. July 24.

(From Our Special Correspondent.)

The condition of the iron and steel trade remains unchanged. There is scarcely any demand for pig iron. Prices, however, are firm and no change in former quotations are noted. Bessemer steel billets are quiet. Thomas Furnace at Niles, O., was put in blast after a few weeks' idleness on account of a strike of the metal carriers. Steel bars are active, large contracts having been made this week for delivery during the third quarter. There is a fair amount of business in steel plates, and prices remain unchanged. The demand for sheets is unusually heavy and a premium is paid for early delivery. Local concerns have been forced to turn down some good orders, as they are sold for months ahead.

The second week of the big steel strike opened with more plants idle than last week. The situation is becoming critical and all hopes of a speedy settlement of the difficulties have been abandoned. All the plants of the American Tin Plate Company except the one at Monessen are idle. The American Steel Hoop Company has but one plant in operation, the one at Duncansville, Pa. The American Sheet Steel Company continues to operate its works at Vandergrift, Apollo, Leechburg, Saltsburg and the Scottdale and the Old Meadow Works at Scottdale. An attempt is being made to start the Wellsville Works at Wellsville, O., but to-day only 3 of the 6 mills are on and working but one turn. The strikers are congregated at that place in large numbers and are doing all in their power to prevent the operation of the plant. It is believed that an attempt will be made to start the McKeesport Works, and the strikers are on guard day and night to prevent the importation of new men. The Amalgamated Association has succeeded in organizing a strong lodge at the National Rolling Mill of the National Tube Company at McKeesport, and an organization of the tube-workers is about to be effected. The men seem anxious to join the strikers, although they have just been granted an advance of 10% in wages. The Amalgamated Association officials have not yet decided to call out any other men except those employed by the sheet, hoop and tin-plate combinations.

Pig Iron.—The demand has fallen off, but the furnaces are all busy. No sales of bessemer iron were made this week; the price is firm at $15.25, Valley furnaces. A few small lots of gray forge were sold this week at $14@$14.25, Pittsburg. But little foundry iron was sold. The price for No. 2 remains at $14.50@$14.75, Pittsburg.

Steel.—Bessemer steel billets are still quoted at $24.50, but no sales are recorded this week. About 15,000 tons of steel bars were sold to manufacturers of agricultural implements at 1.40@1.50c. A fair business in plates was done, but there is no change in prices. Tank plates are quoted at 1.60c.

Sheets.—The strike at the union mills of the American Sheet Steel Company has resulted in an advance in prices. No. 28 gauge is being sold at prices ranging from 3.25c. to 3.75c. It is reported that as high as 4c. has been paid for delivery this or next month. The mills in this district are sold up for several months.

Ferro-manganese.—There is no change, 80% domestic being quoted by the leading producer at $54@$55.

New York. July 26.

Pig Iron.—Buying shows little improvement and sales are light. We quote as follows: Northern irons, tidewater delivery: No. 1 X foundry, $15.40@$15.75; No. 2 X, $14.75@$15.25; No. 2, plain, $14.25@$14.75; gray forge, $14@$14.25. For Southern iron on dock, New York, No. 1 foundry, $15@$15.25; No. 2, $14.$14.50; No. 3, $13.50@$14; No. 4, $12.75@$13.25; No. 1, soft, $14.75@$15.25; No. 2, $14.25@$14.75.

Plates.—Mills are still busy and there is a fairly steady local demand for small lots. Some changes in prices are anticipated. We quote for tidewater delivery in car loads: Tank, ¼-in. and heavier, 1.78c.; flange, 1.88c.; marine, 1.98c.; universals, 1.78c.

Bar Iron and Steel.—Demand is lighter. We quote common bars at 1.48c. for large lots on dock; refined bars, 1.58c.; soft steel bars, 1.65c.

Steel Rails and Rail Fastenings.—The market is quiet though the mills are reported busy. Standard sections are quoted at $28 at Eastern mills; light rails at $28@$30, according to weight. Spikes are 1.80c.; splice bars, 1.55c.; bolts, 2.60@2.70c.

Structural Material.—Demand is falling off but prices are unchanged. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

METAL MARKET.

New York. July 26.

Gold and Silver.

Gold and Silver Exports and Imports.
At all United States ports in June and year.

Metal.	June.		Year.	
	1900.	1901.	1900.	1901.
GOLD.				
Exports	$8,093,268	$5,389,187	$30,440,672	$29,536,369
Imports	3,728,576	1,781,408	16,625,867	14,255,153
Excess	E. $4,364,692	E. $3,607,779	E.$13,814,805	E.$15,281,216
SILVER.				
Exports	5,187,920	4,568,905	30,370,486	28,435,252
Imports	4,899,575	1,931,877	18,849,088	15,912,059
Excess	E. $288,345	E. $2,637,028	E.$11,521,398	E.$12,523,941

These figures include the exports and imports at all United States ports, and are furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending July 25th, 1901, and for years from January 1st, 1901, 1900, 1899 and 1898.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	.....	$78,530	$453,555	$86,993	E. $288,032
1901..	25,774,704	1,601,906	18,808,442	2,212,449	E. 40,768,791
1900.	22,216,574	1,579,158	22,236,390	2,420,695	E. 40,453,111
1899..	11,424,967	7,371,726	15,492 017	1,873,452	E. 17,671,806
1898.	4,531,463	69,018,025	18,559,573	1,893,956	I. 47,817,945

There were no exports of gold; imports were from various points. Exports of silver were chiefly to London; imports from Mexico and Central America.

The United States Assay Office in New York reports the total receipts of silver at 21,000 oz. for the week. This makes a total of 1,951,000 oz. from January 1st.

Average Prices of Silver per oz. Troy.

Month.	1901.		1900.		1899.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	28.97	62.82	27.30	59.30	27.42	59.36
February..	28.13	61.06	27.49	59 76	27.44	59.42
March.....	27.94	60.63	27.59	59.81	27.48	59.64
April.....	27.30	59 29	27.41	59.59	27.65	60.10
May.....	27.43	59.61	27.56	59.96	28.15	61.23
June.....	27.42	59.57	27.81	60.42	27.77	60.43
July.....	.....	.....	28.23	61.25	27.71	60.26
August....	.....	.....	28.13	61.14	27.62	60.00
September	.....	.....	28.85	62.63	27.15	58.89
October ..	.....	.....	29.58	63.83	26.70	57.98
November	.....	.....	29.66	64.04	27.02	58.67
December.	.....	.....	29.68	64.14	27.21	58.99
Year.....	.....	.....	28.27	61.33	27.44	59.58

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York.

Month.	COPPER.		TIN.		LEAD.		SPELTER.	
	1901.	1900.	1901.	1900.	1901.	1900.	1901.	1900.
Jan	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
Feb.....	16.38	15.78	26.68	30.58	4.35	4.675	4.01	4.64
March...	16.42	16.29	26.03	32.90	4.35	4.675	3.92	4.60
April....	16.43	16.76	25.93	30.90	4.35	4.675	3.98	4.71
May.....	16.41	16.34	27.12	29.37	4.35	4.181	4.04	4.53
June.....	16.38	15.75	28.60	30.50	4.35	3.901	3.99	4.29
July.....	.....	15.97	.....	33.10	.....	4.030	.....	4.28
August..	.....	16.35	.....	31.28	.....	4.250	.....	4.17
Sept.....	.....	16.44	.....	29.42	.....	4.350	.....	4.11
October..	.....	16.37	.....	28.54	.....	4.350	.....	4.15
Nov.....	.....	16.40	.....	28.25	.....	4.350	.....	4.29
Dec.....	.....	16.31	.....	26.94	.....	4.350	.....	4.25
Year.	.....	16.19	.....	29.90	.....	4.37	.....	4.39

The prices given in the table for copper are the averages for electrolytic copper. The average price for Lake copper for the year 1900 was 16.52c.; for the month of January, 1901, it was 16 77c.; for February, 16 90c; for March, 16.94c.; for April, 16.94c; for May, 16.94c.; for June, 16.90c.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$ .46½	$ .49½
Peruvian soles and Chilean pesos	.44¼	.46¼
Victoria sovereigns	4.86	4.88
Twenty francs	3.86	3.88
Twenty marks	4.76	4.85
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

The feature of the week is the degree of uncertainty and depression caused by the reports of damage to the corn crop in the West. Thus far the effects are more visible in the stock markets than in general trade. No gold exports are reported this week so far. Money is less plentiful, as there has been a considerable demand on New York banks from interior points.

The silver market is quiet and without special feature. The accumulations are sufficient for the present to check any advance.

The statement of the United States Treasury

Imports and Exports of Metals.

Port.	Week, July 24.		Year 1901.	
	Expts.	Impts.	Expts.	Impts.
New York.				
(N. Y. Metal Exchange.)				
Aluminum.....long tons	.....	10	77	95
Antimony ore... " "	.....	458	.....	721
" regulus.. " "	.....	70	19	681
Chrome ore..... " "	.....	50	.....	350
Copper, fine ..... " "	583	709	36,087	9,951
" matte... " "	122	.....	5,440	50
" ore..... " "	.....	.....	.....	24,515
Iron ore..... " "	.....	.....	.....	75
" pig, bar. rod " "	81	261	12,338	3,037
" plates, sheets " "	24	14	641	91
Lead..... " "	1,775	400	43,905	30,715
Manganese, ore. " "	.....	.....	100	6,967
Metals, old, scrap " "	73	111	1,351	1,653
Composition... " "	.....	87	3,722	500
Nails..... " "	208	.....	6,408	.....
Nickel..... " "	10	6	1,183	66
" ore, matte " "	.....	.....	.....	22,249
Pipe, iron & steel " "	949	.....	12,492	.....
Railr'd material. " "	2,819	80	14,634	1,539
Steel bars, plates " "	455	462	31,320	9,294
" rails..... " "	6,203	.....	62,623	.....
" wire..... " "	665	.....	19,168	.....
Tin ..... " "	.....	225	230	16,696
" and black plates " "	.....	101	7	19,490
Zinc..... " "	.....	.....	537	857
" dross..... " "	30	.....	465	.....
" ashes, skim " "	72	.....	807	.....
" ore..... " "	.....	.....	13,871	.....
Baltimore.				
(Special Correspondence).				
Antimony.....long tons	.....	.....	.....	10
Chrome Ore..... " "	.....	2,500	.....	6,536
Copper, fine..... " "	521	121	14,885	4,361
Iron pig, bar. etc. " "	.....	1,981	1,403	4,776
" ore..... " "	.....	14,650	.....	234,330
Manganese ore.. " "	.....	5,375	.....	50,130
Nails ..... " "	.....	.....	376	.....
Pipe, iron & steel " "	.....	.....	2,632	.....
Spiegeleisen..... " "	.....	.....	.....	7,445
Steel, bars, etc.. " "	.....	.....	36,114	137
" wire ..... " "	61	12	813	165
" rails..... " "	6	.....	66,966	.....
Tin..... " "	.....	.....	.....	175
" and blackplates " "	.....	10	.....	441
Philadelphia.				
Antimony.....long tons	.....	.....	.....	7
Chrome ore..... " "	.....	.....	.....	831
Copper, fine..... " "	.....	.....	715	.....
" ore..... " "	.....	.....	.....	20,043
Iron, pig, bar.... " "	6	30	254	4,568
" ore..... " "	.....	8,000	.....	150,730
" pipe ..... " "	.....	.....	1,926	.....
Lead..... " "	.....	.....	200	.....
Manganese ore.. " "	.....	.....	.....	6,819
Metals, old..... " "	.....	.....	39	1,458
Nails ..... " "	.....	.....	112	.....
Pipe, iron & steel " "	.....	.....	3,843	.....
Railroad material " "	.....	.....	557	.....
Steel, bars, etc.. " "	26	.....	5,471	292
" rails ..... " "	.....	.....	9,011	.....
" wire ..... " "	.....	.....	395	.....
Tin ..... " "	.....	.....	.....	466
" and black plates " "	.....	127	.....	1,439
Zinc ore..... " "	.....	.....	2,064	.....
" dross ..... " "	.....	.....	166	.....
" ash ..... " "	.....	.....	32	.....

Total United States.

Articles.	May.		Year, 1901.	
	Expts.	Impts.	Expts.	Impts.
Antimony.....Long tons	.....	151	.....	562
ore.... " "	1	6	22	130
Copper, in all forms..... " "	10,062	8,268	38,185	53,087
Iron, pig & bar.. " "	3,568	5,721	53,518	18,612
" ore..... " "	4,583	100,857	6,239	265,689
Iron & steel plates " "	3,381	136	21,597	710
Iron & steel rails " "	42,543	8	168,780	455
" " wire " "	7,305	174	32,967	2,598
Lead, in all forms " "	7,624	9,232	43,855	50,601
Manganese ore and oxide..... " "	.....	25,640	.....	68,087
Nickel " & matte " "	308	9,959	1,113	23,289
Nails, cut..... " "	1,222	.....	7,426	.....
" wire..... " "	1,882	.....	9,559	.....
Quicksilver..... " "	25	.....	179	.....
Steel billets, rods, etc..... " "	3,367	2,736	31,476	9,587
Tin..... " "	129	3,189	1,568	15,082
" & black plates " "	38	4,932	477	21,418
Zinc ..... " "	317	2	1,887	192
" ore..... " "	2,004	.....	13,909	

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1½c. a lb. on lead in ores; 2½c. a lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. a lb. Quicksilver, 7c. a lb. Spelter or zinc, 1½c. a lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

on Wednesday, July 24th, shows balances in excess of outstanding certificates as below, compared with the corresponding day last week:

	July 17.	July 24.	Changes.
Gold	$100,211,181	$98,142,771	D. $2,068,410
Silver	25,475,960	25,674,428	I. 198,468
Legal tenders	13,897,172	13,722,121	D. 175,051
Treas. notes, etc...	125,959	87,426	D. 38,533
Totals	$139,710,272	$137,626,746	D. $2,083,526

Treasury deposits with national banks amounted to $101,974,747, showing a decrease of $1,129,633 over last week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending July 20th, give the following totals, comparison being made with the corresponding week in 1900 and 1899:

	1899.	1900.	1901.
Loans and discounts.	$767,843,600	$797,853,900	$856,198,500
Deposits	874,882,000	882,174,000	939,145,300
Circulation	13,603,400	24,225,700	30,710,100
Reserve:			
Specie	173,653,800	171,381,700	177,501,800
Legal tenders	57,122,300	73,243,700	78,313,900
Total reserve	$230,776,100	$244,625,400	$255,815,700
Legal requirements..	218,720,500	220,543,500	234,786,325
Balance, surplus ...	$12,055,600	$24,081,900	$21,029,375

Changes for the week, this year, were increases of $80,600 in circulation, $5,189,100 in specie, $918,700 in legal tenders, and $8,220,000 in surplus reserve; decreases of $12,286,900 in loans and discounts and $8,348,800 in deposits.

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

	—1900.—		—1901.—	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Ass'd.	$171,381,700	.....	$177,501,800	.....
England	157,441,875	.....	187,994,825	.....
France	434,631,080	$228,249,535	488,717,030	$223,254,465
Germany ...	146,585,000	75,510,000	155,035,000	79,865,000
Spain	68,445,000	83,885,000	70,015,000	84,870,000
Neth'l'ds ...	24,355,000	29,785,000	31,259,000	28,146,500
Belgium	13,885,000	6,940,000	14,995,000	7,495,000
Italy	77,730,000	8,450,000	75,385,000	9,705,500
Russia	395,930,000	39,555,000	353,170,000	37,885,000

The returns of the Associated Banks of New York are of date July 20th and the others, July 19th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

The foreign merchandise trade of Great Britain for the half-year ending June 30th is valued by the Board of Trade returns as below:

	1900.	1901.
Imports	£255,656,999	£262,506,790
Exports	177,797,785	172,879,024
Excess, imports	£77,859,214	£89,627,766

The increase in imports was £6,849,719, or 2.7%; and the decrease in exports, £4,918,761, or 2.8%. The movement of gold and silver for the half-year was as follows:

	Imports.	Exports.	Excess.
Gold:			
1901	£12,135,767	£4,587,193	Imp. £7,548,574
1900	12,706,842	7,616,225	Imp. 5,090,617
Silver:			
1901	5,980,601	6,027,000	Exp. 46,399
1900	6,145,325	6,351,009	Exp. 205,684

Of the silver imported this year £5,092,928, or 84.5%, came from the United States.

Shipments of silver from London to the East for the year up to July 11th, 1901, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.	Changes.
India	£3,216,362	£4,227,710	I. £1,011,348
China	339,554	339,125	D. 429
The Straits	244,412	79,976	D. 164,436
Totals	£3,800,328	£4,646,811	I. £846,483

Arrivals for the week this year were £87,000 in bar silver from New York. Shipments were £167,500 in bar silver to Bombay and £15,000 to Calcutta; total, £182,500.

Indian exchange has been maintained at 15.9d. per rupee, as the India Council has refused to sell bills at a lower price, though the demand has been light. The small demand for bills is chiefly due to the exceptionally heavy imports of cotton goods into India and the resulting small trade balance in favor of the country. To meet its home charges and to avoid the shipment of gold the Indian Government offers for public subscription a sterling loan of £3,000,000. Of this £1,000,000 is for the purpose of railway construction, £1,000,000 is to replace the sterling bills which were not renewed, and £1,000,000 is to meet the home charges. The instalments on the loan extend over four months. The Government also announces the issue of a rupee loan of 10,000,000 rupees, for which tenders will be received in India on August 14th.

Other Metals.

Daily Prices of Metals in New York.

July.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London. Pence.	Copper. Lake. cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London £ ₱ ton.	Tin. cts. ₱ lb.	Lead cts. ₱ lb.	Spelter. N. Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
20	4.87¼	58⅛	26 1/16	16½ @16⅝	16¼ @16⅜	....	27½	4.32½ @4.37½	3.95	3.80
22	4.87¼	58¼	26⅞	16⅝ @16⅝	16¼ @16⅜	68 3/16	27¼	4.32½ @4.37½	3.97½	3.82½
23	4.87¼	58½	27	16½ @16⅝	16⅜ @16⅜	68⅛	27	4.32½ @4.37½	3.97½	3.82½
24	4.87½	58½	27	16½ @16⅝	16¼ @16⅜	67 11/16	26¾	4.32½ @4.37½	3.97½	3.82½
25	4.87½	58½	27	16½ @16⅝	16¼ @16⅜	67⅝	27⅛	4.32½ @4.37½	3.97½	3.82½
26	4.87	58⅜	26 1/16	16½ @16⅝	16¼ @16⅜	67¾	27½	4.32½ @4.37½	3.97½	3.82½

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures

Copper.—The market has been quiet. There appears to be little business doing. Consumers, generally, are not well supplied, and it is believed that larger orders will soon be forthcoming. With a view to this, some producers are holding firmly for their prices; but others are taking such business as now presents itself. We quote Lake copper at 16½@16⅝c.; electrolytic in cakes, wirebars and ingots at 16¼@16⅜c.; in cathodes at 16@15½c.; casting copper at 16c.

The London market for standard copper has declined somewhat. It closed last week at £68 3s. 9d. for spot, £68 12s. 6d. for three months, and remained at about these figures during the first half of the week. On Wednesday it declined to £67 13s. 9d. for spot, £68 1s. 3d. for three months and closes at £67 15s. for spot, £68 2s. 6d. for three months.

Refined and manufactured sorts we quote: English tough, £72 10s.@£73; best selected, £73 10s.@£74; strong sheets, £84@£85; India sheets, £80; yellow metal, 6¾d.

Imports of copper into Great Britain for the six months ending June 30th were as follows, in long tons, the totals being reduced to terms of fine copper:

	1900.	1901.	Changes.
Copper ore	62,078	45,225	D. 16,853
Matte and precipitate..	43,216	41,728	D. 1,488
Fine copper	37,338	31,842	D. 5,496
Totals, fine copper....	65,154	57,229	D. 7,925

The total decrease was 12.2%. The decrease in copper ore was from Spain, Chile and the Cape of Good Hope. The decrease in fine copper was chiefly from the United States, Chile showing an increase. Of the total imports this year the United States furnished 444 tons of ore, 7,303 tons matte and 9,784 tons fine copper. There was an increase of 3,660 tons matte from the United States, but a decrease of 5,911 tons fine copper.

Tin.—Our market has displayed somewhat more activity. Business, however, is not of large volume. Consumers are not well supplied, and in consequence, when early in the week the London market declined, the orders in our market exercised a sustaining influence here. However, towards the middle of the week prices here also sagged off and spot sold down to 26¾c. At the close we quote spot at 27½c., futures at 26½c.

The London market, which closed last week at £131 for spot, £116 10s. for three months, was £5 lower for spot on Monday and £1 lower for three months. On Tuesday it was down further £4 for spot and £1 10s. for three months, being quoted at £122 and £114 respectively. On Wednesday spot declined £1 more, and at the close the quotations are cabled as £120 10s. for fo rspot, £115 10s. for three months.

Imports of tin into Great Britain for the six months ending June 30th were: Straits Settlements, 11,702 long tons; Australasia, 1,318 tons; other countries, 2,302 tons; total, 15,322 tons. For the first half of 1900 the total was 14,091 tons, showing an increase of 1,231 tons, or 8.8% this year.

Spelter.—The market is quiet but firm. Metal for early deliveries continues to be scarce, and consumption appears to be very good. During the week buyers have shown more inclination than heretofore to cover their future requirements. We quote St. Louis at 3.82½c., New York at 3.97½c.

The foreign market advanced early in the week to £16 15s., but on Wednesday declined to £16 10s., reacting again on Thursday to the former figure; these being the prices for good ordinaries, specials 5s. higher.

Imports of spelter or metallic zinc into Great Britain for the six months ending June 30th were 31,465 long tons. In the first half of 1900 the total was 37,258 tons, showing a decrease of 5,793 tons, or 16.1% this year.

Lead.—The market is firm. There is a good business doing at last prices, 4.27½@4.32½c. St. Louis, 4.32½@4.37½c. New York.

In the foreign market Spanish lead is quoted at £12@£12 1s. 3d., English lead 5s. higher.

Imports of lead into Great Britain for the six months ending June 30th are reported as below, in long tons:

	1900.	1901.	Changes.
Spain	41,869	43,180	I. 1,311
Australasia	30,207	33,863	I. 3,656
United States	18,560	23,505	I. 4,945
Other countries	7,742	6,683	D. 1,059
Totals	98,378	107,231	I. 8,853

The total increase was 9.0%. The large increases from Australasia and the United States are noteworthy. The lead credited to the United States was chiefly Mexican lead, refined here

St. Louis Lead Market.—The John Wahl Commission Company telegraphs as as follows: Lead is steady. Soft Missouri metal is selling at 4.27½ @4.30c. Argentiferous lead is changing hands at 4.32½c., while chemical lead still commands a premium, and is quoted at 4.40c.

Antimony.—There is no change. We quote Cookson's at 10@10¼c.; Hallett's, 8¾c.; Hungarian, Japanese, Italian, U. S. Star, at 8⅝c.

Nickel.—The price continues firm at 50@60c. per lb., according to size and terms of order.

Platinum.—Consumption continues good and prices are strong. Ingot platinum in large lots now commands $20.50 per ounce in New York. In London prices are about on a parity with the New York rate.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 80c. per grain.

Quicksilver.—While the nominal quotation is still $51 in New York, the metal can be had for $48.75@$50 per flask in large quantities, with a slightly higher rate named for small orders. San Francisco prices are $46@$47 per flask for domestic orders and $42@$43 for export. The London price has been reduced 2s. 6d., and is now £9 per flask, with the same figure quoted by second hands.

Quicksilver receipts at San Francisco in June were 1,373 flasks. For the six months ending June 30th they were 10,095 flasks, against 11,211 in the first half of 1900. These receipts do not include shipments from the mines direct to buyers. Shipments from San Francisco by water were 2,681 flasks, against 4,633 last year, a decrease of 1,952 flasks. The shipments this year were divided as follows: Mexico, 1,985; Central America, 602; Korea, 12; British Columbia, 32; New York, 50 flasks.

Imports of quicksilver into Great Britain for the six months ending June 30th were 1,988,544 lbs., against 315,614 lbs. in the first half of 1900. Exports were 1,189,880 lbs., against 932,673 lbs. in 1900; showing a balance of 798,664 lbs. imported this year, against 617,059 lbs. exported in 1900.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as follows:

Aluminum.	Per lb.		Per lb
No. 1, 99% ingots	33@37c.	Ferro-tungsten (37%)	32c.
No. 2, 90% ingots	31@34c.	Magnesium	$2.75@$3
Rolled sheets	42c. up	Manganese (over 99%)	$1.00
Alum.-bronze	20@23c.	Mangan'e Cop (20% Mn)	32c.
Nickel-alum	33@39c.	Mangan's Cop (30% Mn)	38c.
Bismuth	$2.05	Molybdenum (Best)	$1.75
Chromium (over 99%)	1.00	Phosphorus	50c.
Copper red oxide	50c.	American	70c.
Ferro-Molyb'um (50%)	$1.25	Sodium, metal	65c.
Ferro-Titanium (10%)	90c.	Tungsten (Best)	69c.
Ferro-Titanium (20%)	$1.00		

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

LATE NEWS.

The American Iron and Steel Association has received from the manufacturers complete statistics of the production of all kinds of pig iron in the United States in the first half of 1901. The total production of pig iron in the half-year was 7,674,613 gross tons, against 7,642,569 tons in the first half of 1900 and 6,146,673 tons in the second half. The production in the first half of 1899, the boom year, was 6,289,167 tonse, and in the second half it was 7,331,536 tons.

The production of Bessemer pig iron in the first half of 1901 was 4,582,187 gross tons, against 4,461,391 tons in the first half of 1900 and 3,482,061 tons in the second half.

The production of basic pig iron in the first half of 1901 was 645,105 gross tons, against 581,868 tons in the first half of 1900 and 490,508 tons in the second half.

The production of charcoal pig iron in the first half of 1901 was 194,231 gross tons, against 167,146 tons in the first half of 1900 and 172,728 tons in the second half. In addition there were produced in the South in the first six months of this year 17,979 tons of pig iron, with mixed charcoal and coke.

The production of spiegeleisen and ferro-manganese in the first half of 1901 was 135,920 gross tons, all made in New Jersey, Pennsylvania, Alabama, Illinois and Colorado, against 148,102 tons in the first half of 1900 and 107,875 tons in the second half.

SLATE TRADE REVIEW.

New York. July 26.

The list of prices per square for No. 1 slate, standard brand f. o. b. at quarries in car-load lots, is given below:

Size, inches	Monson or Br'nville.	Bangor.	Bangor Ribbon.	Alb'n or Jackson Bangor.	Chap'n Keys ne	Peach Bottom.	Sea Gr'n	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.50	3.50	3.00	3.00	.	5.10	3.00		.....
24 x 12	6.60	3.50	4.00	3.00	3.80	5.25	3.00	3.75	.....
22 x 12	6.60	3.50	3.25	3.00	...	5.25	3.00	3.75	.....
22 x 11	6.50	3.75	3.25	3.00	4.00	5.25	3.00	4.00	.....
20 x 12	6 90	3.75	.....	3 00	...	5.25	3.00	3.75	.....
20 x 11	6.80	.....	.....	3 25		5.25	3.00	.....	.....
20 x 10	6 80	4.25	3.50	3.25	4.00	5.35	3.00	1.25	10.50
18 x 12	6.80	3.75	....	3.00	.....	5.25	3.00	3.50	.....
18 x 11	7.00	....	.		.....	...	3.00	3.75	.....
18 x 10	7.00	4.25	3.50	3.25	4.00	5.35	3.00	4.00	10.50
18 x 9	7.00	4.50	3.50	3.25	4.00	5.35	3.00	4.25	10.50
16 x 12	6.80	3.75	....	3.00	.....	.....	2.90	3.50	....
16 x 10	7.00	4.00	3.50	3.25	4.00	5 25	2.90	4.00	10.50
16 x 9	7.00	4.25	.....	3.25	4 00	5.35	2.90	4.25	10.50
16 x 8	7.00	4.50	3.50	3.25	4.25	5.35	2.90	4.25	10.50
14 x 10	6 60	3.75	3.25	3.00	.....	5 25	2.70	3.75	10.50
14 x 9	6.50	.....	.....	.....	.....	....	2.70	3.75	10.50
14 x 8	6 60	3.75	3.25	3.00	4.00	5.10	2.70	4.25	10.50
14 x 7	6.40	3.75	3.25	3.00	3.75	5.10	2.50	4.25	10.50
12 x 10	5.75	....	.. .	....	... .	...	2.50	3.25	....
12 x 9	5.60	.....	.....	.....	... .	...	2.50	3.25	.....
12 x 8	5.50	3.50	.....	2.85	... .	4 85	2.50	3.50	9.00
12 x 7	5.00	3.25	.....	2.85	3 25	4.85	2.00	3.50	9.00
12 x 6	4.80	3 25	....	2.85	3.25	4.75	2.00	3.50	8.50

A square of slate is 100 sq. ft. as laid on the roof.

The trade is witnessing the usual mid-summer dullness, and so comparatively few new orders are being booked. Shipments on regular contracts, however, continue on a moderate scale as consumers are requesting only enough to satisfy immediate wants. Prices are unchanged.

Abroad consumers are ordering more roofing slate, especially for export to Denmark, where the large sizes are mostly used. A small shipment of school slates has been made to Natal, South Africa—the first in a long time. Freight rates continue easy, but as exporters are not certain of the extent of fall trade few contracts for vessel room are being booked.

MINING STOCKS.

Complete quotations will be found on page 126, 127 and 128 of mining stocks listed and dealt in at:

Boston.	Salt Lake.	Montreal.
Colo. Springs.	San Francisco.	London.
New York.	Spokane.	Mexico.
Philadelphia.	St. Louis.	Paris.
	Toronto.	

New York. July 26.

The market was weak, notwithstanding all efforts to give it support. Sales were moderate, and were principally of a professional character. In the copper list Amalgamated showed smaller sales than last week and at lower prices, which fluctuated between $113½@$110¾. At the same time Anaconda suffered fractional losses, while dealings were considerably less than a week ago. This stock keeps around $45 on which the annual dividend yield is nearly 9%.

A little more has been done in the California gold stocks, though prices sagged. Standard Consolidated on freer offerings declined 30c. to $3.10. An early recovery is looked for as the company has cash enough in its treasury to meet the August quarterly dividend of $17,839, or 10c. per issued share. Since incorporation it has paid $3,999,780 in dividends, equal to nearly 225% on its present issued capital stock of $1,783,940, ranking it among the best paying gold mines in the country. Brunswick is weaker at 15c., as the property is not yet on a paying basis, although the present management is constantly making improvements to facilitate production.

Further sales of Ontario Silver, of Utah, were made at $9.50, but the stock is firmly held and purchases are chiefly for investment, as the property is on a dividend paying basis. The sale of Horn Silver stock at $1.75 this week has brought out some inquiry, but there were no offerings.

The Cripple Creek, Colo., stocks, especially the dividend payers, were firmly held in anticipation of a rise. The frequent new discoveries of late, coupled with the consolidation of many contingent properties, and more systematic work in the older mines, all tend to create more confidence in the dividend paying power of the district. Consequently Eastern investors of late have been buying many of the stocks listed on the Colorado Springs Exchange. Holders of Portland at $3, the latest selling price, will receive 8% per annum on their investment. Isabella, which pays a dividend occasionally, the last being 1c. in March this year, is steadier at 47c., owing to the improved Western market. A better demand is reported for Small Hopes of Leadville, and the price is up 5c. at 65c.

The Comstock shares were more frequently dealt in. The Comstock Tunnel Company's securities were most active, as the revenue from the mines on the lode promises to increase. Tunnel stock sold at 6@7c.. A 5c. gain is noted in Consolidated California & Virginia, which sold at $2.20. Hale & Norcross had few buyers at 25c., as there is a 10c. assessment pending. Ophir made a deal at 70c., which is 5c. less than the last a week ago.

Boston. July 25.

(From Our Special Correspondent.)

We have had so far this week a real hot-weather market. It has been extremely dull and narrow and the sales have been lighter than for any previous three days this year. The only interest was in the rather large buying of Dominion Coal, which was understood to be for Canadian interests.

The coppers showed very light trading and rather weak prices. Little interest was shown, even in the South Range mines, which have been a recent feature in the market. There was some dealing in Amalgamated Copper, but not of an energetic sort.

The new anti-consolidation suit in Montana was not entirely unexpected, and did not cause and excitement. Some anti-trust movement in the Butte courts had been looked for, and it is not thought that this will have any special effect beyond adding one more to the mass of suits already pending. It is impossible for any ordinary man to keep track of all these Butte suits now, and if the business keeps on one may say, as a Boston banker did about the Vermont Central litigation of 30 years ago, that "only one man knew all about it, and he was dead."

The Boston & Montana payment of $10, August 20th, was generally anticipated. It is the same amount as the company declared three months ago, and the same as paid in August last year. This dividend, of course, goes mainly into the treasury of the Amalgamated Copper Company.

There was some trading in United States Oil, and Central Oil made a reappearance in the market. Dominion Coal gained a little, while New England Gas and Coke sold at $6.

There was some trading in industrials, chiefly in United States Steel. This market was a little more active than the mining stocks, but not much.

People are beginning to realize that after all the combinations and consolidations are made there are laws of trade which will finally act on the trusts and combines, and which they cannot in the end evade. We have not yet come to the combination which can control the trade of the world, or regulate supply and demand. That may come in time, but I hardly believe it.

A good deal of nonsense is talked here about the steel strike and its causes. While I do not think the present strike exactly justifiable from one point of view, it is nevertheless a natural one. We were told that the big steel combine was to put an end to strikes of all kinds in the iron and steel trade. This is simply nonsense. When the United States Steel Corporation was organized it was inevitable that labor would try issues with it. At any rate it must be drawn out and tested; it makes little difference which party began the movement, it had to come. As to the result, there are lots of would-be prophets, but their reliability is extremely doubtful.

Colorado Springs. July 20.

(From Our Special Correspondent.)

The state of the stock market has somewhat improved since last week, although there have been some declines, and the sales are lighter. The market, however, generally looks better.

There seems to be some discrepancy between the state of the stock market and the district, for the mines are producing as much as ever and the prospects look as favorable as at any time. Still the prices of stocks are about the lowest that they ever have been for some time.

The principal features of the week are Anaconda, Doctor-Jack Pot, Elkton, El Paso, Gold Dollar, Isabella, Moon Anchor and Pointer in the mines, Bonnie Nell, C. C., Columbia, Eclipse and Rocky Mountain, in the Preferred prospects, Red Spruce in the prospects and Acacia, Gould and Sedan in the unclassified.

Anaconda and Pointer declined, while Elkton and El Paso advanced. Gold Dollar advanced the fore part of the week, at the end declining a little. Isabella advanced first, then declined, though not very much. Moon Anchor was strong and then advanced.

Bonnie Nell remained stationary at first, then declined, but at the end of the week it advanced.

Total sales for the week were 1,308,578 shares, or somewhat less than for the previous week.

San Francisco. July 20.

(From Our Special Correspondent.)

The mining stock market has been rather dull and irregular. The chief demand among the Comstocks has been for the Gold Hill stocks, the shares of the North End companies being rather weaker. Business has been in a small way. The holiday season is on and those who could get away are out of town.

Some quotations noted are: Consolidated California & Virginia, $1.95@$2; Ophir, 68c.; Caledonia, 38c.; Challenge, 24c.; Hale & Norcross, 21c.; Yellow Jacket, 17c.; Mexican, 13c.; Crown Point, 11c.

The annual meeting of the company of Associated Stock Brokers of the San Francisco Stock and Exchange Board has been called for August 1st.

On the Producers' Oil Exchange business continues quiet, and the season is affecting trade. Prices have been rather lower in consequence. Some quotations noted are: Peerless, $5.25; Home Oil, $2; Sterling, $1.25; Reed Crude, 33c.; Oil City, 25c.; Junction, 10c. The heaviest dealings were in Junction and Oil City.

On the San Francisco Oil Exchange little was done this week, the trading being even more dull than at last report. The chief business done was in Occidental around 45c., and in Lion at 9@10c.

In consequence of the dullness and depression in oil stocks the San Francisco Oil Exchange has decided to dispense with the services of a salaried caller and to discontinue the publication of the official list of sales and quotations. Expenses will also be reduced in other departments.

London. July 9.

(From Our Special Correspondent.)

The mining stock market continues to be in very narrow compass. Neither West Africans nor West Australians are showing any life, and it would almost appear that the West African craze has spent itself for the present. Certainly there is no prospect of many more parent companies being formed at present, and it is too early for any of the parent companies to float subsidary companies to acquire proved properties. There are many people sceptical enough to believe that there never will be any proved properties floated, but, of course, it is always possible that one or two properties may be found strong enough to stand the wear and tear of London promotions.

The Whitaker Wright group has not been before the public at all this week and nothing whatever has been heard of the windings up or collapses of any of the group. The American section has, however, been cleared up a little by the announcement that Stratton's Independence has been able to pay a dividend for the past quarter at the rate of 20% per annum, as compared with 15% and 10% during the previous quarters. It is considered an excellent indication that the expenses of development have not been so great as had been expected. It has been felt by those who have intimate knowledge of mine management that this mine had always been expensively managed. When the rock yields 3 or 4 oz. per ton the details of expenses are always neglected. So, naturally when the average contents suddenly drop there is always plenty of scope for economy of administration. It is generally felt that this is the case with Stratton's.

Not very much has been heard recently of the Mount Lyell group of mines, which in earlier days used to be so prominently before the London public. There is now no more room for speculation in Mount Lyell Mining and Railway, as the management has got on a business footing and the contents of the mine are fully understood by the public. The issue of the report for the half-year ended March 31st last has again drawn attention to the company. The average returns from the ore is 2.4% of copper, 2.18 oz. of silver and 0.084 oz. of gold per ton, and during the half year 4,576 tons of blister copper were produced. During the past year or two the policy of the board has been to purchase outlying properties which were poor in metal, but contained silicious material useful as fluxes. Hitherto these fluxes had to be bought and mostly barren fluxes were used. The veins on the adjoining properties are too poor in metals to work by themselves, but they provided useful silicious material and of course it was an advantage to use such material instead of absolutely barren flux. At the time these purchases were made many people interpreted the action of the directors to mean that the main veins were showing signs of exhaustion and that it was necessary to buy new properties. Consequently there was much selling of shares and the quotation fell. Now that the real cause has been explained and the success of the move proved by practice the shares are firm again and the £3 shares are quoted at about £5. The profit for the half

year was £123,000 and out of this dividends amounting to £55,000 were paid. The purchase price of the above-mentioned adjoining properties was also paid out of the profits in cash and a large sum is being kept in hand to provide for additions to plant. It should be mentioned also that large amounts of ore are being purchased from other companies owning properties in the same district for treatment at the smelters.

The investing public have had their attention drawn this week to the preference stock of the Cramp Steel Company, which owns the iron and limestone mines near Collingwood on Georgian Bay, Ontario, and coal lands in Virginia. The amount of stock offered is $1,000,000 and the special object of raising this money is to build and equip blast furnaces and rolling mills at Collingwood. The scheme is, of course, well known in America, as it is being carried through by the Philadelphia Cramps and other influential people, and it is probable that most of the money will be raised in New York. I do not think many shares will be bought in this country as they are not obtainable at any financial house here and applications have to be sent to America. Shares of this class are usually placed by financial houses among their clients and are not subscribed for by the general public; but presumably the organizers in this case consider that the fact that it is a Canadian scheme will be sufficient to attract a few subscribers.

The output of the Witwatersrand mines now working was 19,779 oz. fine gold in June, as compared with 7,478 oz. in May; but the quantity is still too small to arouse any enthusiasm. The Rhodesia output for June was 14,863 oz., figures almost coincident with those of the previous three months, showing at any rate that work is going on steadily.

Paris. July 11.

(From Our Special Correspondent.)

So far as the mining stock market is concerned there is very little news. As I have before remarked, speculation remains limited, though many conditions would seem to favor its activity.

The returns from the Transvaal mines begin to make their appearance. The total output reported is absurdly small, compared with what the mines were doing two years ago. These statements, indeed, are calculated to discourage rather than help speculation. It does not seem that there is any present prospect of extending operations.

I have at different times referred to the Huanchaca Company, which owns the great silver mines at Huanchaca in Bolivia, probably the largest in the world after the Broken Hill Proprietary Company's in Australia. The stock is very largely held in France, and there has been a good deal of speculation in the shares, which are now at a low point. Lately a good deal has been said about the company's affairs. The French committee for the defence of the shareholders' interests, which is now in reality the managing board of the company, recently stated that the depreciation of the shares was entirely due to the criticisms which had been made in the press on the company's property; the committee added that such information as had been received from the mine did not justify the depreciation of the shares. "We have done everything in our power," say the committee, "to improve the company's position, but we are only at the beginning of our work, with which we intend to proceed, in spite of all the obstacles which are thrown in our way. Moreover, we possess the full confidence of the largest shareholders, and we are ourselves, by the large number of shares which we represent and hold, intimately interested in the ultimate success of the enterprise." On the other side it is stated that M. Vattier, an engineer who was sent out to report on the Huanchaca Mine by M. Lebaudy, has recently returned to Paris, and by some means or other it has leaked out that his report is a very unfavorable one. It seems that the richer part of the mine is completely filled with water, and M. Vattier, we are told, considers that it will require a period of five years to execute the necessary tunneling work which would keep it from being constantly inundated. The directors themselves consider this tunnel to be indispensable. According to another engineer, M. Cornejo, a Spaniard, who has made a special report on the mine, the cost of constructing the tunnel a length of from 10 to 12 kilometers will be between 16,000,000 fr. and 20,000,000 fr. The Huanchaca is an exceedingly rich mine, but until the necessary drainage works have been executed to draw off the water, the ore that can be worked is of low grade. The rich ore is below water level and the pumping machinery now at work is insufficient to drain off the water. At the anual meeting held at Valparaiso, May 31st, 140,000 shares were represented, of which 130,000 were in French hands. It is reported that for sometime past the shares have been sold on the Valparaiso market. The French committee then secured complete control of the company.

The mine has suffered in the past from extravagant management. Moreover, it is at an altitude of 4,000 meters above the sea, labor is difficult to procure and supplies are costly. It looks, however, as if the best policy would be to raise additional capital and unwater the mine.

The Federated Committee of Minees, in session in Paris last week, held a special conference with representatives of other labor organizations to discuss the question of an eventual strike of all the miners in France. Several responded to this invitation and attended the meeting. A resolution was adopted expressing the complete agreement of all workers on the usefulness of a general strike of miners. At a later sitting the committee discussed the question of a referendum. It was decided that there were grounds for addressing an earnest appeal in favor of a genera' strike to the miners. The committee also decided to advise the International Federal Committee of the decisions arrived at. In consequence the members decided that it was essential, in view of the decisions of the London Congress, that the eventuality of an international and general strike on November 1st should be considered. Should the demands of the French miners not receive satisfaction, they would be compelled to decree a general strike for November 1st. The committee appointed a sub-committee to support the question of a minimum wage. M. Ebrard, of Lille, afterwards suggested that the Government should be asked to bring about an international diplomatic meeting with the object of introducing a minimum wage standard in all countries. After a lengthy discussion, the committee decided to refer the question to the International Federal Committee, at the same time urging the latter to make the necessary representations to the different governments.

Such a strike would be a serious blow to many of our industries. The miners, however, see that a reduction in wages is sure if they do not contest it effectually.

Azote.

ANNUAL MEETINGS.

Name of Co.	L'cation.	Date.	Place of Meeting.
†Acac'a	Colo....	Aug. 5	Colo Springs, Colo..
Calumet & Heela.	Mich....	Aug.15	Boston Mass.
†Monarch	Colo....	Aug.12	Colo Springs, Colo..
Wasatch.	Utah. ..	Aug. 10	Salt Lake City, Utah
Yankee Con ...	Utah.	Aug. 5	Salt Lake City, Utah
....	.....	.....	.....
.. ..	.....	.....	.....

†Special meeting

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Brunswick Con.....	Cal..	16	June 28	July 29	.05
Carmelita Oil	Cal..	1	June 20	July 27	.01
Con Imperial . ..	Nev.	47	July 2	July 30	.01
Con. St Gothard.	Cal..	19	Aug.12	Sept. 2	.10
Eureka Con. Drift	Cal	31	Aug. 15	Sept. 2	.00½
Gonyon	Utah ...		Aug. 1	Aug.22	.00¼
Hale & Norcross ..	Nev.	7	Aug. 5	Aug.29	.10
Inyo Marble .	Cal	34	July 8	Aug. 6	.05
Joe Bowers..... ..	Utah	4	July 29	Aug 17	.01
Junction Oil.	Cal .		Aug.13		.10
Justice	Nev .	72	July 27	Aug.17	.05
Little Chief.	Utah	8	July 27	Aug.15	.01
Mariposa Com'l & Mg.	Cal	23	Aug. 10	Sept. 2	10.00
Martha Washington.	Utah	7	Aug. 7	Aug.27	.03
McKinley.....	Utah	3	July 5	Aug. 9	.00¼
Mohican..... ..	Cal..	1	July 15	Aug.14	.10
Ophir . ..	Nev.	81	Aug.13	Sept. 2	.15
Reward.....	Cal ...		July 31		.02½
R. G. W..... ...	Utah	10	July 31	Aug. 19	.00½
Sailor Con ...	Cal	11	Aug. 5	Aug 26	.01
Skagit Cumberland C	W'sh	9	Aug.19	Sept.23	.03
Sonora Quartz..	Cal.. ...		July 15	Aug. 1	.01
Tanana.....	Cal..	3	July 23	Aug.13	.10
Tetro	Utah	20	Aug. 7	Aug.31	.01
Texas	Cal.. ...		July 31	...	.10
United Sunbeam. ...	Utah	1	July 18	Aug. 3	.10
Utah Con.....	Utah	37	Aug.15	Sept 5	.05
Willietta	Cal	1	July 20	Aug.12	.01
Yellow Jacket.....	Nev..	8	July 23	Aug. 28	.10
Yuba Con..... ...	Cal..	2	July 30	Aug.19	.03

DIVIDENDS.

NAME OF COMPANY.	Latest Dividend. Date.	Per share.	Total.	Total to date.
†Alaska-Mexican.....	July 27	$0.10	$18,000	$555,031
†Alaska-Treadwell...	July 27	.37½	375,000	4,745,000
†Amalgamated Cop...	July 29	1.50	2,325,000	13,600,000
Amalgamated, extra.	July 29	.50	775,000	.. .. ..
Arizona Cop ,Ariz def	July 29	4.44	333,000	2,226,276
Arizona Copper. pf ...	July 29	2 28	7,275	.....
†Boston & Mont	Aug 20	5.00	750,000	25,475,000
Boston & Mont. extra	Aug.20	5 00	750 000	.....
†Cal. & Hecla Copper.	July 31	15.00	1,500,000	75,850,000
†Centennial Eureka..	July 25	.50	5 ,000	2,567,700
§Colo. Fuel & Iron, pf.	Aug.15	4.00	80,000	1,320,000
Con. M'cur Utah(new)	Aug. 1	.12½	125,000	360,000
*Doctor-Jack Pot, Col.	July 27	.01	29,000	203,000
Flat Top C L. As'n pf.	Aug. 1	1.00	37,141	2,061,309
Flat Top com	Aug 1	1.00	37,141	389,981
*Ingham Con.. Colo ..	July 28	.00¼	3,399	27,192
Jeff. & Clearfield, C. & I., pf.....	Aug.15	2.50	37,500	262,500
†Mont. Ore Purch....	Aug 9	1.00	80,000	2,160.000
†Nat'l Salt, com.....	Aug. 1	1.50	105,000	510,000
†Nat'l Salt, pf	Aug. 1	1.75	87,500	787,500
Ontario Silver, Utah .	Aug. 1	.10	15,000	14,662,500
*Pacific Coast Borax..	July 29	1.00	19,000	895,5 0
†Parrot, Mont.	July 29	1.50	344,775	5,428,150
§Quincy, Mich	Aug.15	6.00	600,000	12,870,000
Quincy. Utah	July 20	50	62,500	312,500
South Winnie Leasi'g	July 22	.02	2 500	10,000
†Tenn. C. I. & R. R. pf	Aug 1	2.00	4,960	257 92
U. S Steel Corp., com.	Sept.14	1.00	5,064,734	5,064,734
U. S. Steel Corp , pf...	Aug. 7	1.75	8,897,510	8,897,500
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....
.....	.....	.....	.....	.....

*Monthly. †Quarterly. §Semi-Annual.

STOCK QUOTATIONS.

PHILADELPHIA, PA. §

NAME OF COMPANY.	L'cation.	Par Val.	July 18. H.	July 18. L.	July 19. H.	July 19. L.	July 20. H.	July 20. L.	July 22. H.	July 22. L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	Sales
Am. Alkali.....	.....	$50	.75	.....	.75	.....	.75	.....	.....	.....	.63	.....	.75	.63	2,100
Am. Cement.....	.....	10	.....	.....	.....	.....	.....	6.63	.....	6.63	.....	6.75	6.63		350
Bethlehem Iron.	Pa.	50	60.00	.....	.....	.....	60.25	.....	.....	.....	.....	.....	.....	.....	398
Bethlehem Steel	"	50	.....	.....	.....	.....	22.50	.....	22.63	22.50	.....	.....	23.00	22 50	225
Cambria Iron..	"	50	.....	.....	48.00	.....	.....	.....	48.00	.....	.....	.....	.....	.....	105
Cambria Steel...	"	50	24.00	23.75	24.25	23.88	.....	.....	24.00	23.00	23.63	23.25	23.63	23.38	1,677
Susq. I. & S.....	"	10	2.00	...	2.13	2.00	.....	.....	.....	.....	2.13	2.00	2.13	2.00	1,300
United Gas I....	"	50	116	...	116	.....	.....	.....	116	.....	.....	.....	116	115½	250

Total shares sold, 6,405. § Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SALT LAKE CITY, UTAH. July 20.

STOCKS.	Shares.	Par val.	Bid.	Asked.	STOCKS.	Shares.	Par val.	Bid.	Asked.
Ajax.....	300,000	$10	$1.82½	$1.83	Lower Mammoth.	150,000	$1	$3.61	$3.88
Albion.....	.....	...	.....	.60	Mammoth	400,000	25	.....	2.32
Alice.....	400,000	25	.35	.50	May Day.....	400,000	¾	1.55½	1.57
Anchor.....	150 000	10	2.45	.....	Northern Light..	400,000	5	.06½	.07
Ben Butler.....	500,000	10	.19¾	.20	Ontario.....	150,000	100	.....	.....
Bullion-Beck & Ch..	100,000	10	2.50	.....	Rocco-H'st'k-Ner.	300,000	1	.82	1.02
Centennial Eureka..	200,000	25	29.00	32.00	Sacramento..	1,000,000	5	.29	.35
Con. Mercur.....	1,000,000	5	2.75	3.03	Shower Con.....	400,000	5	.09	.....
Dalton.....	500,000	1	.05¾	.10	Silver King.....	150,000	20	79.00	.....
Dalton & Lark.....	2,500,000	1	.....	.....	Star Consolidated	500,000	1	.49½	.51
Daly.....	150,000	20	2.00	2.25	Sunbeam.....	250,000	1	.95	1.00
Daly-West.....	150,000	20	.....	43.00	Swansea	100,000	5	2.00	2.75
Dexter.....	200,000	5	.72½	.88	South Swansea....	150,000	1	.88	.90
Eagle & Blue Bell..	250,000	1	1.09	.....	Tesora.....	400,000	1	1.10½	1.11
Galena.....	100,000	10	.18¾	.22	Tetro.....	300,000	1	.15	.15¾
Grand Central.....	250,000	1	4.50	5.05	Uncle Sam Con...	500,000	1	1.80	1.82
Homestake.....	400,000	1	.61	.....	Utah.....	100,000	1	.60	.71½
Horn Silver.....	400,000	25	1.80	1.75	Valeo.....	200,000	1	.15	.25
Joe Bowers.....	400,000	1	.05½	.05⅞	Yankee Con	250,000	0.10	5.00	5.50

ST. LOUIS, MO.* July 23.

NAME.	Shares.	Par	Bid.	Ask.	NAME.	Shares.	Par	Bid.	Ask.
Am.-Nettie, Colo....	300,000	$10	$1.02	$1.07	Doe Run Lead, Mo.....	10,000	$100	$125.00	$130.00
Catherine Lead. Mo...	50,000	10	2.50	4.50	Granite Bimetallic, Mt.	1000.000	10	1.87	1.97
Central Lead, Mo.....	10,000	100	130.00	140.00	Kan. & Tex. Coal. Mo..	25,000	100	48.00	51.00
Columbia Lead, Mo...	50,000	10	13.00	14.00	Renault Lead, Mo.....	80,000	10	9.50	11.00
Con. Coal, Ill.....	500 0	100	19.00	20.50	St. Joe Lead, Mo.....	300.000	10	14.50	16.50

* From our special correspondent.

TORONTO, ONT.

NAME OF COMPANY.	Par val.	July 16. H.	July 16. L.	July 17. H.	July 17. L.	July 18. H.	July 18. L.	July 19. H.	July 19. L.	July 20. H.	July 20. L.	July 22. H.	July 22. L.	Sales.
Ontario :														
Golden Star.	1	.07	.06¾	.07	.06½	.....	.....	.06¾	.....	.....	.....	.....	.....	5,000
Ham Reef..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British Col.:														
Cariboo MK	1	.35	.33	.35	.....	.31½	.....	.....	.....	.....	.....	.....	.....	3,500
Center Star.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crow's N. C.	25	.....	.....	.....	.....	.....	.....	290.00	.....	.....	.....	.....	.....	25
Deer Trail ..	1	.02⅝	.....	.....	.....	.....	.....	.....	.....	.....	.....	.02⅛	.02⅜	5,500
Fairview....	1	.00½	.....	.....	.....	.00½	.....	.....	.....	.....	.....	.....	.....	5,500
Mont & Lon	0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morrison....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Noble Five..	1	.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,000
North Star..	1	.50	.....	.....	.....	.50	.....	.....	.....	.....	.....	.56½	.....	1,000
Payne.....	1	.12	.09	.....	.....	.....	.....	.....	.11	.....	.....	.....	.....	2,500
Rambler	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.89½	.....	2,000
Republic....	1	.04	.03	.08	.03	.04	.03	.04	.03	.....	.....	.....	.....	.....
Virtue.....	1	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
War Eagle..	1	.20	.18	.18	.....	.18¾	.....	.....	.....	.....	.....	.....	.....	2,000
Wonderful .	1	.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,000
Winnipeg ..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Develop Co.:														
Can. G. F. S.	0.10	.....	.....	.....	.....	.04¾	.04¾	.....	.....	.....	.....	.04¾	.....	4,500

Total sales, 37,525 shares.

STOCK QUOTATIONS.

NEW YORK.

Name of Company.	Location.	Par val.	July 19. H.	July 19. L.	July 20. H.	July 20. L.	July 22. H.	July 22. L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	July 25. H.	July 25. L.	Sales
Adams	Colo.	$10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alamo	Colo	1	.....	.....	.....	.....	.15	.....	.....	.....	.14	.....	.....	.....	1,500
Amalgamated c.	Mont.	100	116¾	115	115⅞	113½	113	110¾	113	111⅛	112⅛	111¼	113⅝	111½	76,675
Anaconda, c.	Mont.	25	46.25	45.75	45.25	44.00	44.00	43.25	45.00	.....	44.25	44.00	44.25	44.00	4,000
Anaconda Gold	Colo.	5	.....	.....	.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Argentum-Jun.	Colo.	2	.....	.....	.17	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Best & Belcher	Nev.	3	.....	.....	.....	.....	.....	.....	.....	.....	.20	.....	.....	.....	200
British Col. Cop.	B. C.	5	16.00	14.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Brunswick Con.	Cal.	1	.18	.....	.16	.....	.....	.....	.15	.....	.15	.....	.....	.....	2,700
Chrysolite	Colo.	50	.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Comstock T.	Nev.	100	.07½	.06	.07	.....	.06	.07	.06	.....	.07	.06	.06	.....	17,000
Con. Cal. & Va.	Colo.	2½	2.20	.....	2.00	.....	2.15	.....	2.15	.....	2.20	.....	.....	.....	850
Cripple Cr. Con.	Colo	3	.....	.....	.....	.....	.....	.....	.08½	.....	.....	.....	.....	.....	1,500
Croesus	Colo.	1	.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,000
Golden Fleece	Colo.	1	.....	.....	.38	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Hale & Norcross	Nev.	3	.25	.....	.....	.....	.25	.....	.....	.....	.25	.....	.....	.....	800
Horn Silver	Utah	20	1.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.75	.....	500
Isabella	Colo.	1	.44	.....	.46	.....	.45	.....	.47	.....	.....	.....	.....	.....	1 400
Leadville	Colo.	10	.....	.....	.....	.....	.....	.....	.07	.....	.....	.....	.....	.....	500
Little Chief	.....	.....	.13	.....	.....	.....	.....	.....	.14	.....	.....	.....	.....	.....	700
Mollie Gibson	Colo.	1	.....	.....	.38	.....	.38	.....	.....	.....	.....	.....	.....	.....	1,600
Ontario	Utah	100	10.25	.....	9.25	.....	.....	.....	9.50	.....	.....	.....	.....	.....	180
Ophir	Nev.	3	.....	.....	.....	.....	.....	.....	.70	.....	.....	.....	.....	.....	100
Pharmacist	Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.08½	.....	.....	.....	100
Phoenix, g.	Ariz.	1	.....	.....	.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Portland	Colo.	1	.....	.....	.....	.....	3.00	.....	.....	.....	3.00	.....	.....	.....	200
Quicksilver	Cal.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nev.	.....	.....	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
Standard Con	Cal.	10	3.40	.....	.....	.....	.....	.....	3.20	.....	3.10	.....	.....	.....	175
Small Hopes	Colo.	20	.60	.....	.....	.....	.....	.....	.65	.....	.....	.....	.....	.....	200
Union Copper	N. C.	10	5.25	5.13	5.25	5.13	5.25	5.00	5.25	.....	.....	.....	.....	.....	2,000
Work	Colo.	1	.....	.....	.....	.....	.....	.....	.14	.....	.....	.....	.....	.....	1,000

Total sales, 119,080 shares.

COAL AND INDUSTRIAL STOCKS

Name of Company.	Location.	Par val.	July 19. H.	July 19. L.	July 20. H.	July 20. L.	July 22. H.	July 22. L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	July 25. H.	July 25. L.	Sales
Am. Agr. Chem.	U. S.	$100	.....	.....	.....	.....	89	.....	.....	.....	.....	.....	.....	.....	800
Am. Sm. & Ref.	"	100	56⅛	55	54⅞	54	53½	52⅞	54⅛	53	54⅝	53½	54	52½	10,410
" " " pf	.....	100	102	101¼	101½	.....	102¾	100½	101	100	100¾	100¼	100¾	100½	3,475
Col. Fuel & I.	Colo.	100	99¾	98¾	99¼	98	95	94¾	98	95	97¾	97	97	96¼	10,320
Col. & H. C.& I.	"	100	22½	20	.....	.....	20	19	21½	20¼	20¼	20	20	.....	2,100
Int'l S. Pump	U. S.	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" " " pf	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
*Mong. R. Coal.	Pa.	100	13⅞	13¾	13⅞	13⅝	13⅞	13¾	13⅞	.....	.....	.....	.....	.....	1,675
" " " pf	"	100	47¼	.....	47¼	.....	47¼	.....	47	.....	.....	.....	.....	.....	305
National Lead	U. S.	100	.....	.....	20¾	20¼	.....	.....	.....	.....	19½	18	19¼	19	2,700
" " pf	"	100	.....	.....	87	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
National Salt	"	100	44⅛	44	44½	43½	44	43½	44	43⅛	*42	41½	.....	.....	1,942
" " pf	"	100	77¾	.....	77¾	77	77	.....	77	76	*75¼	.....	.....	.....	1,224
*Pittsburg Coal.	Pa.	109	31⅞	31⅝	31⅞	31⅝	31¾	31⅛	31⅜	31¼	.....	.....	.....	.....	2,643
" " pf	"	100	95	94¾	94¾	94½	94½	.....	94	.....	.....	.....	.....	.....	545
Republic I. & S.	U. S.	100	20⅛	19⅛	19¾	19⅜	19	17⅞	19⅛	18½	19⅜	19	19⅝	19⅛	5,220
" " pf	"	100	74⅝	73¼	73¾	.....	73½	72	73½	72⅝	74	73	74	73½	2,100
Sloss-Shef S.& I.	Ala.	100	.....	.....	.....	.....	33½	33	33½	.....	34	.....	.....	.....	300
" " pf	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard Oil	U. S.	100	770	768	770	763	.....	.....	762	751	765	.....	761	.....	45
Tenn. C. I.&R.R	Ala.	100	64⅛	60½	61½	59¼	59⅛	58	62	58	62	60	62½	61	18,450
U. S. Steel Corp	U. S.	100	41½	39¾	40½	39¾	39½	38⅛	40½	38¾	41	39⅞	42	40	375130
" " pf	"	100	90	88⅛	89	88⅛	88¾	87⅝	89¾	87⅞	89½	88½	90⅞	88⅞	120825
Va.-Car. Chem.	"	100	60	59¾	.....	.....	.....	.....	60	.....	60	59½	60	.....	1,000
" " pf	"	100	1.20	.....	1.20	.....	1.20	.....	119⅞	.....	121	120	121½	.....	1,100

* On Pittsburg, Pa. Exchange. Total sales, 553,414 shares * Ex-dividend.

SAN FRANCISCO, CAL.

Name of Company.	Location.	Par value.	July 18.	July 19.	July 20.	July 22.	July 23.	July 24.
Belcher	Nev.	$3.00	.07	.09	.12	.10	.11	.11
Best & Belcher	"	3.00	.13	.17	.15	.18	.18	.19
Caledonia	"	3.00	.36	.39	.42	.38	.36	.39
Challenge Con.	"	3.00	.22	.28	.37	.39	.35	.35
Chollar	"	3.00	.06	.06	.06	.08	.07	.10
Confidence	"	3.00	.87	1.00	1.35	1.50	1.40	1.30
Con. California & Virginia	"	2.50	2.00	1.90	1.95	2.00	2.00	2.10
Crown Point	"	3.00	.08	.10	.10	.10	.11	.11
Gould & Curry	"	3.00	.12	.12	.12	.12	.13	.15
Hale & Norcross	"	3.00	.20	.23	.22	.21	.22	.20
Mexican	"	3.00	.15	.12	.14	.15	.15	.17
Occidental Con.	"	3.00	.03	.08	.03	.03	.03	.03
Ophir	"	3.00	.66	.66	.67	.68	.69	.74
Potosi	"	3.00	.05	.05	.06	.07	.07	.09
Savage	"	2.50	.06	.06	.06	.08	.08	.09
Sierra Nevada	"	3.00	.16	.16	.16	.16	.17	.18
Standard Con.	Cal.	10.00	3.65	3.65	3.65	3.55	3.55	3.35
Union Con.	Nev.	2.50	.14	.12	.12	.13	.13	.14
Utah Con.	"	1.00	.01	.01	.02	.02	.02	.02
Yellow Jacket	"	3.00	.15	.18	.23	.27	.25	.28

CALIFORNIA OIL STOCKS.*

Name of Company.	Shares Issued	Par Val.	July 6. H.	July 6. L.	July 8. H.	July 8. L.	July 9. H.	July 9. L.	July 10. H.	July 10. L.	July 11. H.	July 11. L.	July 12. H.	July 12. L.	Sales
Blue Goose	5,000	$100	.....	.....	2.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buckhorn	16,000	10.00	.....	.....	3.25	.....	3.00	.....	.....	.....	.....	.....	.....	.....	.....
Cal. Standard	500,000	1.00	.....	.....	.26	.25	.25	.....	.25	.....	.25	.24	.26	.24	500
Caribou	30,000	1.00	.....	.....	.76	.75	.78	.75	.80	.78	.80	.....	.85	.80	2,215
El Dorado	100,000	1.00	.....	.....	1.25	.....	1.10	.....	.....	.....	1.10	.....	.....	.....	.....
Four	300,000	1.00	.....	.....	.35	.....	.35	.35	.....	.....	.37	.35	.38	.30	.....
Hanford	2,000	10.00	.....	.....	95.00	94.00	97.00	93.00	91.00	88.00	100	92.00	100	90.00	1
Home	100,000	1.00	.....	.....	2.20	2.10	2.30	2.25	2.25	2.15	2.25	2.15	2.10	.....	250
Homestake	10,000	10.00	.....	.....	7.50	.....	7.25	7.00	.....	.....	7.25	6.75	7.00	6.50	.....
Independence	500,000	1.00	.....	.....	.13	.12	.14	.13	.13	.....	.14	.13	.14	.10	550
Junction	250,000	1.00	.....	.....	.....	.....	.....	.12	.11	.....	.10	.08	.10	.09	3,130
Kern	100,000	1.00	.....	.....	5.50	5.00	6.25	5.90	6.00	5.13	6.00	5.25	6.00	5.13	85
Kern River	20,000	5.00	.....	.....	12.00	.....	12.00	.....	10.00	6.88	12.00	.....	9.00	.....	50
Lion	.....	1.00	.....	.....	.12	.11	.11	.....	.11	.....	.10	.....	.11	.09	9,500
McKittrick	500,000	1.00	.....	.....	.24	.....	.25	.....	.25	.....	.30	.25	.25	.....	.....
Monarch	390,000	1.00	.....	.....	.30	.....	.30	.....	.29	.....	.30	.27	.28	.....	1,000
Monte Cristo	407,600	1.00	.....	.....	2.00	.....	2.00	1.95	1.95	1.50	1.95	1.50	2.00	1.50	200
Occidental	.....	.....	.....	.....	.51	.49	.51	.48	.....	.....	.50	.48	.50	.....	5,975
Oil City Petrol	500,000	1.00	.....	.....	.28	.27	.28	.27	.....	.....	.26	.25	.28	.24	1,650
Peerless	92,000	10.00	.....	.....	.....	.....	4.95	.....	5.25	.....	5.25	4.00	5.00	4.90	440
San Joaquin	100,000	1.00	.....	.....	8.00	.....	8.25	8.00	7.75	.....	8.50	8.00	8.00	.....	165
Sterling	200,000	1.00	.....	.....	.....	.....	1.30	.....	1.38	1.28	1.30	.....	1.35	1.28	2,500
Sunset	100,000	5.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.25	.....	.....
Twenty-eight	60,000	10.00	.....	.....	1.30	1.20	1.35	1.20	.....	.....	1.35	1.15	1.15	.....	200
Yukon	100,000	2.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.35	.....	.....

* Producers' Oil and San Francisco Oil Exchanges. Total sales 28,411 shares.

MONTREAL, CANADA.*

Name of Company.	Par val.	Week July 22. H.	L.	Sales.	Name of Company.	Par val.	Week, July 22. H.	L.	Sales.
Big Three	$1	.02	.....	.....	Montreal-London	0.24	.01¾	.....	500
California	1	.05¼	.04	.....	Nat'l Salt, com	.....	46.00	43.00	.....
Can. Gold Fields	0.10	.05	.....	3,000	" " pf	.....	78.00	75.00	.....
Deer Trail Con	1	.03	.02	.....	North Star	.....	.56	.....	500
Evening Star	1	.06	.02	.....	Payne	1	.14	.....	1,000
Golden Star	1	.10	.05	.....	Rambler-Cariboo	1	.20	.10	.....
Gold Hills Dev.	1	.02½	.....	.....	Republic Con	1	.04¼	.04	8,000
Knob Hill	1	.65	.55	.....	Slocan-Sovereign	1	.03	.02½	.....
Monte Christo	1	.02	.01¾	2,000	Virtue	1	.07½	.....	1,000
Montreal G. F.	1	.03	.....	.....	War Eagle	1	.20	.10	.....

* Montreal Stock Exchange. Total sales, 15,000 shares.

BOSTON, MASS.†

Name of Company.	Par val.	Shares listed.	July 18. H.	July 18. L.	July 19. H.	July 19. L.	July 20. H.	July 20. L.	July 22. H.	July 22. L.	July 23. H.	July 23. L.	July 24. H.	July 24. L.	Sales
Adventure Con. c	$25	100,000	25.50	25.25	26.75	25.75	.....	.....	26.00	25.00	25.25	25.00	25.50	25.00	1,855
Allouez, c.	25	80,000	3.38	3.13	3.50	3.25	3.50	.....	3.50	3.25	3.56	3.25	3.25	.....	1,152
Amalgamated, c.	100	1550,000	116	114⅝	117	115	115⅞	113½	113½	110⅛	1.13	111½	112½	111¼	16,017
Am. Z. L. & Sm.	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Anaconda, c.	25	1200,000	45.13	.....	.....	.....	46.50	45.75	45.00	.....	44.50	.....	44.63	43.75	281
Arcadian, c.	25	150,000	.....	.....	.....	.....	.....	.....	15.50	15.00	15.13	15.00	15.00	.....	210
Arnold, c.	25	60,000	.....	.....	3.00	.....	.....	.....	.....	.....	3.00	2.50	2.75	2.50	184
Ash Bed, c.	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlantic, c.	25	40,000	37.50	.....	37.50	.....	.....	.....	37.00	.....	37.00	.....	.....	.....	210
Baltic, c.	25	100,000	52.00	50.13	53.00	51.50	53.00	52.50	52.00	.....	.....	.....	.....	.....	882
Bingham, c. g.	10	190,000	23.00	22.50	23.00	.....	22.75	21.50	22.00	21.00	.....	.....	.....	.....	754
Bonanza Dev.	10	300,000	.....	.....	1.50	1.25	.....	.....	1.50	.....	.....	.....	.....	.....	1,040
British Col.	5	200,000	.....	.....	.....	.....	15.75	.....	.....	.....	.....	.....	.....	.....	20
Cal. & Hecla, c.	25	100,000	775	.....	775	.....	.....	.....	775	.....	.....	.....	770	.....	40
Centennial, c.	25	90,000	27.75	.....	.....	.....	27.75	.....	27.00	26.25	27.50	.....	27.12	27.00	1,056
Central Oil	25	60,050	.....	.....	.....	.....	.....	.....	.....	.....	8.00	.....	.....	.....	50
Cochiti, g.	10	193,750	5.00	.....	5.25	5.00	5.50	.....	.....	.....	5.50	5.00	.....	.....	1,180
Cons. Mercur, g.	5	1000,000	3.00	2.88	2.75	.....	2.75	.....	2.75	.....	2.75	.....	2.75	.....	790
Con. Z.&L.M.&S.	10	110,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Range, c.	25	100,000	75.50	75.00	77.13	75.00	78.00	76.50	76.00	75.00	76.88	75.00	76.50	.....	4,045
Daly-West, g.	20	150,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Coal	100	150,000	39.00	38.50	38.88	38.25	38.00	.....	38.00	37.00	37.25	37.00	37.75	37.00	3,048
do, pref.	100	30,000	.....	.....	11475	.....	.....	.....	.....	.....	115	.....	.....	.....	75
Elm River, c.	12	100,000	.....	.....	4.25	.....	.....	.....	.....	.....	4.50	.....	.....	.....	275
Franklin, c.	25	100,000	18.00	17.50	18.00	.....	18.00	.....	17.50	17.13	17.50	.....	.....	.....	590
Humboldt, c.	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
I. Royal Con., c.	25	150,000	43.00	.....	43.50	43.00	42.00	.....	.....	.....	42.00	41.00	.....	.....	1,015
Mass Con., c.	25	100,000	19.00	18.50	19.13	18.50	18.75	18.50	18.75	18.50	18.75	18.50	18.63	18.50	2,485
Mayflower, c.	25	100,000	.....	.....	.....	.....	.....	.....	1.50	.....	1.00	.....	.....	.....	50
Merced, g.	15	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Michigan, c.	25	100,000	14.00	13.00	14.06	13.75	14.00	13.50	13.38	12.50	13.75	13.50	13.25	.....	2,470
Mohawk, c	25	100,000	42.00	41.50	42.00	.....	42.00	.....	41.00	.....	41.00	40.50	41.00	.....	1,080
Mont. C. & C.	25	200,000	5.13	.....	.....	.....	5.25	.....	.....	.....	5.25	.....	5.25	.....	565
Napa Con., q.	7	100,000	.....	.....	.....	.....	.....	.....	.....	.....	4.00	.....	.....	.....	50
N.E. Gas & Coke	100	100,000	7.00	6.50	6.50	6.25	9.50	.....	6.50	6.00	6.25	6.00	6.00	5.50	288
Old Colony, c.	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....	30
Old Dominion, c	25	150,000	31.00	30.25	31.00	30.88	30.75	30.50	30.50	29.50	30.00	29.59	29.00	28.50	2,193
Osceola, c.	25	93,000	91.00	90.50	93.00	91.00	93.00	92 00	92.00	91.25	93.00	92.50	93.00	.....	1,510
Parrot, s c.	10	229,850	53.00	52.50	*5150	*5100	51.50	51.00	51.00	50.75	53.50	51.00	51.50	50.63	971
Phoenix Con., c.	25	100,000	4.00	.....	5.00	4.75	.....	.....	.....	.....	.....	4.50	.....	.....	460
Quincy, c.	25	100,000	177	.....	.....	.....	180	177	.....	.....	.....	.....	.....	.....	63
Rhode Island, c.	25	100,000	4.88	4.75	5.00	4.75	.....	.....	.....	.....	.....	.....	.....	.....	355
Santa Fe, g. c.	10	250,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Ysabel, g.	5	130,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tamarack, c.	25	60,000	350	346	350	.....	.....	.....	348	342	.....	.....	348	.....	158
Tecumseh, c.	25	80,000	.....	.....	.....	.....	.....	.....	.....	.....	2.00	.....	2.00	.....	325
Tennessee, c.	25	175,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trimountain, c.	25	100,000	.....	.....	.....	.....	52.00	.....	.....	.....	.....	.....	.....	.....	75
Trinity, c.	25	160,000	.....	.....	36.50	35.50	36.00	.....	35.00	.....	35.00	34.00	.....	.....	1,134
United States, g.	25	250,000	18.50	18.25	18.63	18.25	18.50	.....	18.00	.....	18.00	17.50	.....	.....	1,325
U. S. Oil	25	100,000	11.00	.....	12.00	11.00	12.50	11.50	14.00	13.75	13.50	.....	.....	.....	961
Utah Con., g.	5	300,000	30.00	29.50	30.25	30.00	30.37	30.25	30.25	29.50	30.00	.....	30.00	29.50	1,715
Victoria, g.	25	100,000	7.75	7.25	7.75	7.50	7.75	7.25	7.50	7.06	7.25	7.00	7.25	7.13	5,052
Washington, c.	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winona, c.	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wolverine, c.	25	60,000	60.00	59.00	60.00	.....	60.00	.....	59.50	.....	60.00	.....	60.00	59.88	866
Wyandot, c.	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.75	.....	10

† Official quotations Boston Stock Exchange. Total sales, 53,795 shares. *Ex-dividend.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val.	July 15. B.	July 15. A.	July 16. B.	July 16. A.	July 17. B.	July 17. A.	July 18. B.	July 18. A.	July 19. B.	July 19. A.	July 20. B.	July 20. A.	Sales
Acacia	$1	.13⅝	.14	.13½	.14½	.13⅞	.14⅛	.14	.14¼	.13⅞	.14⅛	.13⅞	.14¼	10,000
Alamo	1	.13½	.14¼	.13⅝	.14	.13⅜	.14½	.13⅝	.14	.13¼	.13⅝	.13¼	.14	21,000
Am. Con.	1	.04¾	.05	.04¾	.05	.04¾	.05	.04¾	.05	.05	.05⅛	.04⅞	.05⅛	1,000
Anaconda	1	.30	.26½	.33	.38	.32	.33½	.30	.33	.30½	.31	.30	.30¼	27,500
Anchor	1	.....	.02½	.02	.02¼	.....	.....	.01½	.02¼	.01½	.02¼	.....	.02¼	.....
Antelope	1	.01¼	.02	.....	.02	.01¼	.02	.01¼	.01¾	.01¼	.01¾	.01¼	.02	5,000
Aola	1	.03	.03½	.03	.03½	.03	.03⅛	.03	.03¼	.03	.03⅛	.03	.03⅛	3,000
Arg'ntum J	2	.14	.16½	.15½	.17	.....	.16½	.15	.16½	.....	.17	.15½	.....	.....
Banner	1	.02¼	.....	.....	.02¼	.02	.02¼	.01¾	.01⅞	.01⅝	.....	.02	.....	4,000
Battle Mt.C	1	.16¾	.17¾	.....	.17½	.16¾	.17½	.16¾	.17½	.16¾	.17	.16¾	.17⅛	5,500
Black Bell	1	.08½	.10	.09½	.11	.08¾	.....	.....	.10	.08	.09	.08⅝	.....	12,000
Blue Bell	1	.14⅞	.15½	.14⅝	.15½	.14½	.16	.14⅞	.15½	.14¾	.15¾	.14⅞	.15⅝	.....
Buckhorn	1	.03⅞	.04	.03	.04¼	.03	.04	.03	.04	.03	.04	.....	.04	2,000
Cadillac	1	.....	.02¼	.02	.02¼	.02	.02¼	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼	1,000
Central C'n	1	.06½	.07¼	.05	.06	.06½	.07¼	.07¼	.07½	.07½	.07⅞	.07½	.07¾	13,000
Champion	1	.04½	.05	.05	.06	.04¾	.05	.....	.....	.04½	.05	.04½	.....	.....
Chicolo	1	.01⅞	.....	.....	.02	.01⅝	.....	.01	.....	.01	.....	.01⅝	.01⅞	2,000
C. K. & N.	1	.02⅛	.02⅝	.02⅜	.02½	.02¼	.02½	.02¼	.02½	.02	.02½	.02⅜	.02⅜	5,000
C. C.Col'bia	1	.21	.21¼	.21⅝	.22¼	.21¾	.22	.22	.22¼	.22⅛	.22¼	.22⅝	.22½	17,000
C. C. G. Ext	1	.08	.08½	.08½	.09	.08¼	.08½	.08¼	.08½	.08¼	.08½	.08	.....	1,000
C. C. & Man	1	.07½	.07¾	.07½	.07⅜	.07½	.07⅝	.07½	.07⅝	.07½	.07⅝	.07½	.07⅝	4,000
Creede& CC	1	.07½	.08½	.07	.07¼	.....	.....	.....	.....	.....	.....	.....	.....	5,000
C. C. Con.	1	.07½	.08	.07	.....	.07	.08	.07	.08	.07⅜	.08	.07½	.08	.....
Dante	1	.05¼	.05½	.05¼	.05½	.05¼	.05½	.03½	.05	.04¾	.05½	.04⅝	.05¼	7,500
Dr. Ja'k Pt	1	.65	.65½	.61¼	.61⅞	.58⅛	.59⅛	.58⅜	.59	.60	.61	.60	.61½	57,400
Eclipse	1	.11⅝	.11⅞	.13	.13⅛	.10½	.10⅞	.12½	.12⅜	.12⅞	.13	.12⅜	.12⅝	81,000
Elkton Con	1	1.65	1.68	1.62	.....	1.64	1.66	1.64	.....	1.67	1.69	1.68½	1.72	4,450
El Paso G.	1	.42½	.43	.43	.43½	.43	.44	.44	.44¾	.44¾	.45	.45	.46	17,578
F. Rawlings	1	.15	.20	.15	.....	.15	.20	.15½	.....	.16	.20	.16	.20	.....
Findley	1	.....	.10	.09½	.09⅞	.09⅛	.09½	.07	.10	.09	.09½	.09¼	.09½	6,000
Gold Dollar	1	.15⅞	.16	.16⅜	.16½	.15⅞	.16	.15⅞	.16	.16	.16⅛	.15⅞	.16⅛	134,000
Golden Fl.	1	.35	.39	.35	.39	.35	.....	.35	.....	.34	.....	.35	.....	500
Gold&Cycl.	1	.61½	.....	.61	.63	.62	.....	.62½	.63	.62½	.63	.62½	.64	10,700
Gold Sov'n.	1	.04⅜	.04⅝	.04⅜	.05	.04½	.04⅝	.04⅜	.04⅛	.04⅜	.04½	.....	.....	4,000
Hayden	1	.....	.02	.01¾	.02	.01½	.02	.....	.02	.01	.01¾	.01¼	.02	.....
Ing. Con.	½	.....	.16½	.....	.16⅝	.....	.....	.....	.15¾	.13	.....	.....	.15¾	.....
Ironclad	1	.06⅜	.06½	.06¼	.06½	.06¼	.06½	.06¼	.06⅜	.06¼	.06½	.06¼	.06½	2,000
Isabella	1	.42½	.50	.44⅝	.44⅞	.40⅜	.41½	.40	.....	.41½	.41¾	.40⅝	.41⅞	33,100
Jack Pot	1	.43	.45	.40	.43	.40	.43	.38	.42	.40	.43	.40	.44	2,100
Josephine	1	.01	.01½	.01¼	.01½	.....	.....	.....	.....	.....	.....	.....	.....	.....
Key West	1	.01¼	.01½	.01¼	.01¾	.....	.01⅞	.01¼	.01⅞	.01¼	.01⅞	.01½	.01⅝	4,000
Lexington	1	.07	.....	.....	.07½	.06½	.07¼	.06⅝	.07¼	.06¾	.07¼	.06¾	.07½	3,000
Magnet R.	1	.02½	.02⅞	.02¼	.02¾	.02⅝	.02¾	.02½	.02¾	.02⅝	.02¾	.....	.02⅞	5,000
Margaret	1	.01½	.01⅝	.01½	.01⅝	.01⅜	.01⅝	.01⅜	.01⅝	.01⅝	.01¾	.01⅝	.01¾	.....
Margery	1	.....	.....	.....	.....	.01½	.....	.....	.02½	.....	.02½	.....	.02¼	.....
Midway	1	.03¼	.03⅝	.03½	.03½	.....	.....	.03¼	.03½	.03⅛	.03⅜	.03	.03⅝	3,000
M. J. T.	1	.02	.02¼	.02¼	.02⅝	.02	.02¼	.02	.02½	.02	.02¼	.02	.02⅛	.....
Mobile	1	.02¼	.....	.....	.....	.....	.....	.....	.....	.02¼	.....	.02¼	.02½	.....
Moll.Dwyer	1	.05⅞	.06	.....	.06	.06¼	.06⅛	.06¼	.06½	.06⅛	.06½	.06¼	.06½	31,000
Mollie Gib.	1	.35	.37	.35	.....	.35¼	.....	.32	.....	.35	.....	.35⅛	.37	1,000
Monarch	1	.04	.04½	.04⅛	.04½	.04½	.04½	.04⅛	.04½	.04	.04¾	.04	.04½	.....
Montreal	1	.02¾	.03	.02¼	.....	.02½	.....	.02½	.....	.02⅝	.03⅛	.02¾	.03¼	.....
Moon-A'c'r	1	.31⅞	.32½	.30⅞	.31½	.30½	.....	.30½	.31	.....	.31	.29¼	.31	3,200
Morning S.	1	.02¾	.02⅞	.02¼	.02⅝	.02⅝	.02¾	.02½	.02¾	.02⅛	.02⅜	.02½	.02⅝	7,000
National	1	.03⅝	.03¾	.03¼	.03½	.03½	.03¾	.03⅞	.03¾	.03½	.03¾	.03½	.03¾	.....
Nellie V.	1	.....	.05¾	.....	.06	.06½	.05⅝	.05¼	.06	.05½	.05¾	.05½	.06	.....
New Haven	1	.05⅞	.06	.06½	.06¾	.05½	.06	.....	.06	.....	.06	.....	.....	3,000
Olive B'nch	1	.02⅜	.02⅝	.02¼	.02½	.....	.02⅞	.....	.03	.02¼	.....	.02½	.02¾	10,000
Oriole	1	.02⅝	.03⅛	.02⅝	.02¾	.02½	.03	.02⅝	.03	.02½	.03	.02½	.03⅛	3,000
Orphan	1	.....	.17½	.....	.18	.....	18	.17½	.17¾	.17½	.18	.17½	.18	5,500
Pelican	1	.01½	.01¾	.01¾	.....	.01½	.....	.01½	.....	.01⅜	.....	.01½	.....	2,000
Pharmacist	1	.07⅝	.....	.07⅝	.07¾	.07½	.07⅝	.07⅝	.07⅞	.07½	.08½	.07⅝	.08	24,000
Pilgrim	1	.05	.07½	.06⅛	.06¾	.06	.07¼	.....	.....	.....	.....	.....	.07½	.....
Pinnacle	1	.....	.09¼	.07¾	.08	.07¼	.07⅜	.07⅝	.08	.07½	.....	.07⅝	.08	5,000
Portland	1	3.00	.....	3.00	3.02	3.00½	.....	3.00½	.....	3.01	.....	3.01	.....	800
Prince Alb.	1	.04	.04¾	.04	.04¾	.04	.04½	.04¼	.04⅝	.04	.04¼	.04	.....	1,000
Princess	1	.04	.04½	.04	.04½	.04	.04½	.04	.....	.04	.....	.....	.04¼	.....
Progress	1	.05	.05¼	.05	.05¾	.05	.05⅜	.05	.05¼	.05	.05⅜	.05	.05⅛	2,000
Pointer	1	.07⅞	.08	.08⅛	.08⅜	.07⅜	.07¾	.07½	.07⅞	.07½	.07¾	.07⅝	.07¾	58,000
Republic	1	.04	.05	.04	.05	.04	.05	.....	.04⅝	.....	.05	.03⅞	.05	.....
Rob't Burns	1	.02¾	.03¼	.02⅝	.02¾	.02¾	.03½	.02½	.03½	.02½	.....	.02½	.03¼	.....
Rose Maud.	1	.04⅛	.04½	.04	.04½	.....	.....	.04½	.04⅝	.04½	.04⅝	.04½	.05	2,000
Rose Nicol.	1	.06⅝	.07	.06	.07¼	.06⅛	.07	.....	.07½	.06	.07	.06¼	.07	.....
Silver Gold	1	.01	.....	.01	.....	.01	.01⅛	.01	.01⅛	.01	.....	.01	.01¼	.....
Uncle Sam.	1	.02¼	.02⅞	.02½	.02¾	.02½	.....	.02⅝	.02⅞	.02⅝	.03	.02⅞	.03⅛	4,000
Va. M.	1	.....	.05⅛	.04½	.05¼	.04½	.05¼	.....	.....	.....	.05½	.04	.05	.....
Vindicator	1	.....	1.25	1.16	1.23	.....	.....	1.17½	.....	1.22	1.26½	1.16	1.21½	.....
Work	1	.13	.13½	.13¼	.....	.13	.....	.13½	.....	.13	.....	.13	.13½	6,000

†Colorado Springs Mining Stock Exchange. Total sales, 682,823 shares.

STOCK QUOTATIONS.

LONDON.

July 12.

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
American:			£ s. d.	s.d.		£ s. d.	£ s. d.
Alaska Goldfields, g	Alaska	£300,000	1 0 0	2 3	Jan., 1901	1 13 9	1 16 3
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	Apr., 1901	4 12 6	4 17 6
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	" "	8 17 6	9 2 6
Copiapo, c	Chile	200,000	2 0 0	3 4	Dec., 1900	2 12 6	2 17 6
De Lamar, g., s	Idaho	400,000	1 0 0	1 0	May, 1901	2 6	3 9
El Oro, g	Mexico	1 000,000	1 0 0	1 0	Feb., 1901	1 6 3	1 8 9
Enterprise, g	British Col	200,000	1 0 0	.....	.....	5 0	10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 15 0	1 17 6
Hall Mg. & Sm., c., s	British Col	325,000	1 0 0	.....	.....	8 0	9 0
Le Roi, g	" "	1,000,000	5 0 0	5 0	Nov., 1899	7 13 9	7 16 3
Le Roi No. 2, g	" "	120,000	5 0 0	.....	.....	4 0 0	4 5 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	2 6	7 6
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 0	3 6
Mountain Copper	California	1,250,000	5 0 0	7 0	Apr., 1901	4 7 6	4 12 6
Stratton's Independence	Colorado	1,100,000	1 0 0	1 0	July 1901	1 7 6	1 10 0
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	June, 1901	1 8 9	1 1 3
Utah Con., g. (Highl'nd Boy)	Utah	300,000	1 0 0	5 0	May, 1901	5 10 0	5 15 0
Velvet, g	British Col'mbia	150.000	1 0 0	.....	.....	12 6	15 0
Ymir, g	British Col'mbia	200,000	1 0 0	1 0	May, 1901	2 10 0	2 12 0
European:							
Linares, l	Spain	45,000	3 0 0	7 0	Mar., 1901	5 0 0	6 0 0
Mason & Barry, c., sul	Portugal	420,000	1 0 0	12 6	May, "	8 5 0	9 10 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£2 5s	May, 1901	51 13 9	52 2 6
" pref	"	1,625,000	5 0 0	5s	" "	6 0 0	6 5 0
Tharsis, c	"	1,250,000	2 0 0	12 0	May, 1900	5 17 6	6 2 6
Australian:							
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	2 1 3	2 3 9
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	May, 1901	2 3 0	2 4 0
Great Boulder Prop	W. Australia	175,000	2 0	1 C	June, 1901	17 9 0	18 3 0
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	Oct., 1900	4 0 0	4 2 6
Ivanhoe Gold Corp	"	1,000,000	5 0 0	4 0	July, 1901	8 1 3	8 3 9
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	3 12 6	3 15 0
Lake View Consols, g	"	250,000	1 0 0	5 0	July, 1901	8 0 0	8 2 6
Mt. Lyell M. & R., l., c	Tasmania	900,000	3 0 0	2 6	July, 1901	4 7 6	4 12 6
Mt. Morgan, g	Queensland	1,000,000	1 0 0	3	Aug., 1901	4 5 0	4 15 0
Waihi g	New Zealand	330,000	1 0 0	2 6	June, 1901	5 11 9	5 13 9
Indian:							
Champion Reef, g	Colar Fields	220,000	10 0	rts.	May, 1901	5 18 9	6 1 3
Mysore Gold	"	250,300	10 0	4 0	July, 1900	6 7 6	6 10 0
Nundyroog, g	"	242,000	10 0	1 3	July, 1901	2 2 6	2 5 0
Ooregum, g	"	145,000	10 0	2 0	Aug., 1901	2 12 6	2 15 0
" pref. g	"	120,000	10 0	2 0	" "	3 2 6	3 5 0
African:							
British S. Africa, chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1899	3 0 0	3 2 6
Cape Copper, c	"	600,000	1 0 0	5 0	July, 1901	4 17 6	5 2 6
" pref	"	150,000	2 0 0	5 0	" "	4 17 6	5 2 6
City & Suburban (New), g	Transvaal	1,360,000	4 0 0	8 0	Aug., 1899	5 10 0	5 12 6
Con. Deep Level, g	"	200,000	1 0 0	x all	June, 1898	15 0	1 0 0
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	14 0 0	14 10 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	£1	Jan., 1901	32 17 5	33 2 6
Ferreira, g	Transvaal	90,000	1 0 0	30 0	Aug., 1899	19 0 0	20 0 0
Geldenhuis Deep, g	"	350,000	1 0 0	8 0	" "	9 15 0	10 5 0
Geldenhuis Est., g	"	200,000	1 0 0	10 0	" "	5 17 6	6 2 6
Henry Nourse, g	"	125,000	1 0 0	10 0	Apr., 1900	7 17 6	8 2 6
Jagersfontein, d	Orange Fr. St	1,000,000	5 0 0	6 0	Dec., 1900	16 0 0	17 0 0
Johannesburg Con. Invest	So. Africa	2,750,000	1 0 0	2 0	Aug., 1899	2 0 0	2 1 3
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Aug., 1899	5 7 6	5 12 6
Langlaagte Estate, g	"	470,000	1 0 0	3 0	Sept., 1899	3 2 6	3 7 6
May Con., g	"	290,000	1 0 0	6 0	Aug., 1899	4 1 3	4 3 9
Meyer & Charlton, g	"	100,000	1 0 0	8 0	July 1899	4 17 6	5 2 6
Namaqua, c	Cape Colony	200,000	2 0 0	8 0	June, 1900	4 0 0	4 5 0
Primrose (New), g	Transvaal	300,000	1 0 0	6 0	Aug., 1899	3 17 6	4 2 6
Rand Mines, g	So. Africa	490,000	1 0 0	15 0	" "	40 2 6	40 7 6
Robinson, g	Transvaal	2,750,000	5 0 0	8 0	.....	8 15 0	9 0 0
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	18 9	1 1 3
Sim. & Jack Prop., g	"	5,000,000	5 0 0	4 0	July, 1899	6 0 0	6 2 6
Wolhuter, g	"	850,000	4 0 0	2 0	Feb., 1899	4 0 0	4 5 0

C, copper. D, diamonds. G, gold. L, lead. S, silver.

SPOKANE, WASH.

Week July 18.

NAME OF COMPANY.	Par val.	B.	A.	Sales.	NAME OF COMPANY.	Par val.	B.	A.	Sales.
Black Tail	$1	.10½	.10⅝	43,500	Princess Maud	0.10	.01½	.01¾	.....
Crystal	1	.05⅜	.06½	.....	Quilp	1	.22½	.26	.....
Deer Trail Con	1	.02½	.02⅝	2,000	Rambler Cariboo	0.25	.37½	.39	1,000
Gold Ledge	1	.01⅜	.01⅝	14,000	Reservation	1	.02	.02½	4,500
Lone Pine-Surp. Con	1	.05⅞	.06	2,000	Sullivan	1	.07⅞	.08¼	11,000
Morning Glory	0.10	.03⅝	.03¾	2,000	Tom Thumb	1	.13⅜	.13¾	1,000
Mountain Lion	1	.25¼	.27¼	6,000	.....	.....	.....	.....	.....

MEXICO.

July 12

NAME OF COMPANY.	Shares.	Last div'd.	Prices. Op'g.	Prices. Cl'g.	NAME OF COMPANY.	Shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Durango:					Hidalgo:				
Capuzaya Guan	2,400	.....	10	10	Soledad	960	5.00	260	260
Restauradora Guan.	10,000	.....	10	10	Sorpresa	960	5.00	260	260
Guanajuato.					Union Hacienda	2,000	5.00	200	200
Angustias	2,400	5.00	100	95	Mexico:				
Cinco Senores	2,000	15.00	350	350	Coronas	500	.....	45	45
Guadalupe Hacie'a.	10,000	3.00	205	205	Esperanza y An	3,000	10.00	825	80
H dalgo:					Michoacan:				
Amistad y Concord.	9,600	3.65	36	34	Luz de Borda	4,000	.....	25	20
Arevalo	720	.....	200	200	S. Luis Potosi:				
Bartolome de Med.	2,000	2.00	45	45	Concep. aviad	2,400	.....	165	180
Carmen	1,100	7.75	120	120	Zacatecas:				
Luz Ca Maravillas	1,100	.....	80	80	Asturiana	2,500	10.00	90	90
Pabellon	800	27.?9	10	10	C'delar de Pinos	2,500	.....	220	230
Real del Monte	2,554	10.00	550	552	Palma de Somb	2 400	.....	30	30
San Francisco Hc	6,000	1.00	95	95	.....	.....	.....	.....	.....

PARIS.

July 4.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Opening.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	85.00	1,780.00	1,730.00
" " Firminy	" "	.....	3,000,000	500	30.00	2,900.00	2,900.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	3,650.00	3,525.00
" " la Marine	France	Steel mfrs	20,000,000	500	60.00	1,470.00	1 410.00
Anzin	"	Coal	.....	.....	.....	260.00	5,440.00
Boleo	Lower Cal	Copper	.....	500	176.00	2,435.00	2,250.00
Briansk	Russia	Coal & iron	.....	500	.....	680.00	595 00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	84.50	80.00
Courrieres	France	Coal	600,000	300	90.00	2,380.00	2,300.00
Dombrowa	Russia	"	.....	500	75.00	930.00	935.00
Dourges	France	Coal	12,000,000	500	700.00	24,700	24,700
Dynamite Centrale	"	Explosives	.....	500	22.50	500.00	540.00
Escombrera-Bleyberg	Spain	Lead	.....	500	70.00	850.00	785.00
Fraser River	Brit. Col'mb.	Gold	250,000	25	.....	5.50	5.75
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	107.50	92.50
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	375.00	377.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	580.00	500.00
Metaux, Cie. Fran. de	France	Metal d'lers	25,000,000	500	10.00	435.00	445.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	85.00	860.00	775.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	540.00	539.00
Napthe Nobel	"	"	.....	.....	.....	545.00	545.00
" " parts	"	"	.....	.....	.....	10,900.00	10,900.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	17.50	530.00	530.00
Penarroya	Spain	Coal etc	.....	500	100.00	1,230.00	1,230.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	2.00	1.25
Salines de l'Est	France	Salt	.....	500	5.00	215.00	215.00
Salines du Midi	"	"	.....	500	25.00	665.00	670.00
Vielle Montagne	Belgium	Zinc	9 000,000	80	36.00	605.00	585.00

DIVIDENDS.

COAL, IRON, OIL, AND INDUSTRIAL COMPANIES.

Name and Location of Company.		Authorized Capital Stock.	Shares. Issued.	Shares. Par Val	Dividends. Paid, 1901.	Dividends. Total to Date.	Dividends. Latest. Date.		Dividends. Latest. Amt.
Alabama Coal & Iron, pf	Ala	$2,500,000	25,000	$100	$87,500	$306,250	June.	1901	1.75
Altoona Coal & Coke	Pa	2,500 000	250 000	10	75,000	75,000	Jan.	1901	.30
Am. Agricul. Chem., pf.	U. S.	20,000,000	170,449	100	510,000	2,040,000	Apr.	1901	3.00
American Cement	Pa	2,100,000	200,000	10	160,000	300,000	July.	1901	.40
American Coal	Md	1,500,000	60,000	25	75,000	1,057,500	Mar.	1901	1.25
Am. Iron & Steel, com.	Pa	17,000,000	34,000	50	13,600	476,000	May.	1901	.15
Am. Iron & Steel, pf	Pa	3,000,000	60,000	50	112,500	275,000	July.	1901	.62½
Am. Sheet Steel, pf	U. S.	26,000,000	245,000	100	857,500	857,500	Apr.	1901	1.75
Am. Steel Hoop, pf	U. S.	14,000,000	140,000	100	490,000	1,715,000	Apr.	1901	1.75
Arizona Western Oil	Cal	500,000	500,000	1	12,000	18,000	June.	1901	.02
Aztec Oil	Cal	250,000	235,000	1	2,300	2,300	Apr.	1901	.02
Bethlehem Steel	Pa	15,000 000	300,000	50	300,000	1,200,000	June.	1901	.50
Buckhorn Oil	Cal	200,000	16,000	10	.....	3,800	Mar.	1900	.05
Burlington Oil	Cal	60,000	60,000	1	600	4,200	Jan.	1901	.01
California Oil & Gas	Cal	2,000,000	200,000	10	250,000	250,000	Jan.	1901	1.25
Cambria Steel	Pa	50,000,000	900,000	50	800,000	2,400,000	June.	1901	1.50
Central Oil	W.Va	1,500,000	60,000	25	25,000	67,500	May.	1901	.37½
Central Oil	Cal	750,000	662,800	1	59,652	100,364	July.	1901	.03
Central Point Con. Oil	Cal	200,000	190,000	1	15,200	22,800	June.	1901	.02
Colo. Fuel & Iron, com.	Colo	40,000,000	400,000	100	279,500	435,000	July.	1901	1.75
Colo. Fuel & Iron, pf	Colo	2,000,000	20,000	100	80,000	1,240,000	Feb.	1901	4.00
Consolidation Coal	Md	10,250,000	102,500	100	205.000	5,318,000	Feb.	1901	2.00
Consolidated Coal	Ill	5,000,000	50,000	100	50,000	50,000	July.	1901	1.00
Continental Oil	Cal	300,000	260,000	1	7,800	10,400	Apr.	1901	.03
Crucible Steel, pf	U. S.	25,000,000	250,000	100	853,982	1,280,973	June.	1901	1.75
Dabney Oil	Cal	1,000,000	1,000,000	1	10,000	10.000	May	1901	.01
Diamond Star Oil	Cal	250,000	100,000	1	.....	6,250	Nov.	1900	.02
Diamond State Steel	Del	3,000,000	150,000	10	60,000	160,000	Jan.	1901	.40
Empire Steel & Iron, pf	U. S.	5,000,000	23,700	100	71,100	248,850	July.	1901	1.50
Federal Steel, com	U.S.	100000,000	464,843	100	2,324,215	4,067,377	Feb.	1901	5.00
Federal Steel, pf	U.S.	100000,000	532,609	100	2,396,742	9,054'396	July.	1901	1.50
Flat Top C. L. Ass'n, com	Va.	5,000,000	37,141	100	111,423	389,981	Aug.	1901	1.00
Flat Top C. L. Ass'n, pf	Va.	5,000,000	37,141	100	111,423	2,061,309	Aug.	1901	1.00
Four Oil	Cal	300,000	300,000	1	12,000	12,000	May.	1901	.01
Fullerton Oil	Cal	25,000	25,000	1	750	750	June.	1901	.03
General Chem., com	U. S.	12,500,000	71,679	100	143,358	557,624	June.	1901	1.00
General Chem., pf	U. S.	12,500,000	82,690	100	371,700	1,137,578	July.	1901	1.50
Globe Oil	Cal	600,000	600,000	1	3,000	3,000	Apr.	1901	.00½
Gray Eagle Oil	Cal	250,000	100,000	2½	97,000	217,000	May.	1901	.47
Great Western Oil	Cal	100,000	10,000	10	.....	10,000	Oct.	1900	.10
Home Oil	Cal	100,000	100,000	1	40,500	240,500	June.	1901	.07½
Homestake Oil	Cal	100,000	10,000	10	9,000	32,000	June.	1901	.15
Jefferson&Clearf. C'l, com	Pa	1,500,000	15,000	100	.....	30,000	Aug.	1900	2.00
Jefferson&Clearf. C'l, pf.	Pa	1,500,000	15,000	100	37,500	225,000	Feb.	1901	2.50
Kern Oil	Cal	100,000	100,000	1	25,000	375,000	Jan.	1901	.25
Lehigh Coal & Nav	Pa	14,346,650	286,933	50	430,399	18,947,389	May.	1901	1.50
Los Angeles Oil & Trans.	Cal	500,000	500,000	1	125,000	125,000	Feb.	1901	.25
Maryland Coal, pf.	Md	1,885,005	18,850	100	47,125	687,994	July.	1901	2.50
Monongahela R. Coal, pf	Pa	10,00),000	200,000	50	700,000	1,650,000	July.	1901	1.75
Montana Coal & Coke	Mont.	5,000,000	200,000	25	.....	120,000	Oct.	1900	.30
National Salt, com	U. S.	7,000,000	70,000	100	315,000	510,000	Aug.	1901	1.50
National Salt, pf	U. S.	5,000,000	50,000	100	262,500	787,500	Aug.	1901	1.75
National Steel, pf	Pa	27,000,000	270,000	100	945,000	4,252,500	June.	1901	1.75
National Tube, com	U. S.	40,000,000	398,604	100	1,195,812	2,391,624	May.	1901	1.50
National Tube, pf	U. S.	40,000,000	399,963	100	2,099,805	5,599.481	July.	1901	1.75
New Central Coal	Md	$1,000,000	50,000	$20	.....	$510,000	Nov.	1900	.40
New Haven Iron & Steel	Conn.	500,000	100,000	5	$22,500	117,500	Apr.	1901	.10
Oceanic Oil	Cal	100,000	100,000	1	.....	2,000	Dec.	1900	.01
Ohio & Ind. Nat. Gas	U. S.	10,000,000	90,000	1 00	180,000	540,000	June.	1901	1 00
Oil City Petroleum	Cal	500,000	500,000	1	5,000	5,000	July.	1901	.30½
Pacific Coast Borax	Cal	2,000,000	19,000	100	133,000	895,500	July.	1901	1.00
Park Crude Oil	Cal	100,000	82,146	1	.....	4,897	Sept.	1900	.01
Pennsylvania Salt Mfg.	Pa	5,000,000	100,000	50	150,000	12,700,000	Apr.	1901	3.00
Pennsylvania Steel, pf.	Pa	25,000,000	250,000	100	490,000	621,250	July.	1901	1.75
Phila. Gas, com	Pa	14,752,131	295,042	50	626,966	1,364,547	July.	1901	.75
Phila. Gas, pf	Pa	3,998,350	79,967	50	99,959	299,877	Mar.	1901	1.25
Pittsburg Coal., pf	Pa	32,000,000	320,000	100	1,680,000	3,920,00	July.	1901	1.75
Producers' & Con. Oil	Cal	1,000,000	10.000	100	4,000	57,000	Mar.	1901	.10
Reed Crude Oil	Cal	2,000,000	2,000,000	1	50,000	50,000	Apr.	1901	.02½
Republic Iron & Steel, pf	U. S.	25,000,000	203,069	100	1,066,113	2,842,967	July.	1901	1.75
San Joaquin Oil & Dev.	Cal	100,000	100,000	1	10,000	10,000	Jan.	1901	.10
Shawmut Oil	W.Va	1,250,000	50,000	25	75,000	75,000	Aug.	1901	.50
Shelby Iron	Ala	1,000,000	10,000	100	50,000	300,000	May	1901	5.00
Sloss-Sheffield Ir.&St., pf	U. S.	20,000,000	67,000	100	348,500	695,500	July.	1901	1.75
So. Cal. Oil & Fuel	Cal	300,000	200,000	1	18,000	24,000	May.	1901	.01½
Standard Oil (of N. J.)	U. S.	100000,000	1,000,000	100	31,500,000	104 625,000	June.	1901	12.00
Sunday Lake Iron	Mich	1,000,000	40,000	25	40,000	40,000	Feb.	1901	1.00
Susquehanna I. & S., pf.	Pa	1,500,000	300,000	5	67,500	582,500	July.	1901	.15
Tenn. Coal, I. &R.R. com	Tenn.	23,000,000	225,536	100	.....	1,102,144	Nov.	1900	2.00
Tenn. Coal, Ir. & R.R., pf	Tenn.	248,000	2.480	100	14,880	257,920	Aug.	1901	2.00
Texas & Pacific Coal	Tex	2,000,000	20,000	100	90,000	1,890,000	July.	1901	1.50
Union Oil	Cal	10,000,000	52,672	100	47,404	47,404	May.	1901	.45
United States Crude Oil	Cal	100,000	100,000	1	14,000	17,220	July.	1901	.02
United States Marble	Wash	2,000,000	2,000,000	1	23,750	23,750	July.	1901	.00¼
United States Oil	W.Va	2,500,000	100,000	25	.....	744,250	Oct.	1900	.50
U. S. Steel Corp., com	U.S.	550000,000	5,064,734	100	5,064,734	5,064,734	Sept.	1901	1.00
U. S. Steel Corp., pf	U.S.	550000,000	5,064,863	100	8,897,510	8,897,510	Aug.	1901	1.75
Va.-Carolina Chem., com	U. S.	38,000,000	380,000	100	240,000	1,770,000	June.	1901	1.00
Va.-Carolina Chem., pf	U. S	12,000,000	120,000	100	680,000	4,860,000	July.	1901	2.00
Warner Oil	Cal	200,000	200,000	1	10,000	10,000	June.	1901	.01
Warwick Iron & Steel	Pa	1,500,000	139,662	10	41,899	237,425	May.	1901	.30
West Lake Oil	Cal	500,000	500,000	1	.....	50,000	Sept.	1900	.01
Westmoreland Coal	Pa	5,000,000	250,000	50	.....	750,000	Oct.	1900	1.50

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

DIVIDENDS.

COLD, SILVER, COPPER, ZINC, LEAD AND QUICKSILVER COMPANIES.

Name and Location of Company.		Author-ized Capital Stock.	Shares. Issued.	Par Val	Dividends. Paid, 1901.	Total to Date.	Latest. Date.	Amt.
Acacia, g.	Colo.	$1,500,000	1,500,000	$1	.....	$45,000	Dec.. 1900	.01
Adams, s.l.c.	Colo.	1,500,000	150,000	10	$7,500	708,500	Apr.. 1901	.05
Ætna Con., q.	Cal.	500,000	100,000	5	.....	225,000	Apr.. 1900	.15
Alaska Goldfields	Alask	1,500,000	250,000	5	135,000	260,000	Jan.. 1901	.54
Alaska-Mexican, g.	Alask	1,000,000	180,000	5	54,000	555,031	July.. 1901	.10
Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	225,000	4,745,000	July.. 1901	.37½
Alice, g. s.	Mont.	10,000,000	400,000	25	.....	1,875,000	Apr.. 1898	.05
Alliance, g.	Colo..	500,000	500,000	1	.....	47,500	Nov.. 1899	.07
Amalgamated, c.	Mont.	155000,000	1,500,586	100	6,041,172	13,541,172	July.. 1901	2.00
Amanda, g.	Colo..	1,000,000	1,000,000	1	.....	10,000	June. 1900	.01
Amazon, g.	Colo..	600,000	600,000	1	.....	121,882	May.. 1900	.10
American, g.	Colo..	3,000,000	300,000	10	.....	420,000	Dec.. 1899	.04
Amer. Sm. & Ref., pref.	U. S..	50,000,000	500,000	100	1,834,000	4,516,553	July.. 1901	1.75
Am. Zinc, Lead & Sm.	Mo...	2,500,000	60,000	25	.....	180,000	Jan.. 1900	1.00
Anaconda, c.	Mont.	30,000,000	1,200,000	25	2,400,000	19,350,000	Apr.. 1901	2.00
Anchoria-Leland, g.	Colo..	600,000	600,000	1	.....	198,000	Apr.. 1899	.03
Anglo-Mexican, g.	Mex..	2,001,625	400,230	5	.....	1,825,048	Dec.. 1899	.24
Appie Ellen, g.	Colo..	600,000	600,000	1	.....	25,000	Nov.. 1898	.04
Argonaut, g.	Cal..	2,000,000	200,000	10	.....	490,000	May.. 1900	.05
Arizona, c.	Ariz..	3,775,000	.....	....	761,428	2,226 276	July.. 1901	6.72
Associated, g.	Colo..	1,250,000	1,250,000	1	.....	84,000	Feb.. 1899	.01
Athabasca, g.	B.C..	550,000	110,000	5	.....	25,000	Oct.. 1900	.23
Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	880,000	Feb.. 1901	2.00
Bald Butte, g. s.	Mont.	250,000	250,000	1	105,000	1,027,148	July.. 1901	.06
Bankok-Cora Belle, g.	Colo..	600,000	600,000	1	.....	107,510	July.. 1896	.01
Big Seven, g.	Cal...	100 000	100,000	1	.....	6,000	Apr.. 1898	.03
Big Six, g. s. l.	Colo..	500,000	500,000	1	.....	15.000	May.. 1898	.00½
Boston, q.	Cal..	1,000,000	100,000	10	.....	20.000	Jan.. 1900	.10
Boston-Aurora, pref.	Mo...	800,000	32,000	25	.....	66,160	May.. 1900	.50
Boston & California, g.	Cal...	600,000	600,000	1	.....	72,000	June. 1899	.06
Boston & Colo. Smelting	Colo..	750,000	15,000	50	22,500	337,600	Apr.. 1901	.75
Boston Duenweg, z.	Mo...	1,000,000	40,000	10	.....	56,000	June. 1900	.10
Boston Get There, z	Mo...	250,000	22,500	10	.....	20,250	Apr.. 1900	.10
Boston Gold-Copper Sm.	Colo..	1,000,000	1,000,000	1	50,000	100,000	May.. 1901	.02½
Boston&Mont.Con.,c.s.g	Mont.	3,750,000	150,000	25	4,500,000	25,475,000	Aug.. 1901	10.00
Bosun, s. l.	B. C..	250,000	50,000	5	12,500	12.500	Apr.. 1901	.25
Breece, i. s.	Colo..	5,000,000	200,000	25	20,000	120,000	June. 1901	.05
Buffalo Hump, g.	Idaho	1,000,000	100,000	10	25,000	300,000	Jan.. 1901	.10
Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	.....	2,498.400	June. 1900	.10
Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	126,000	1,179,000	June. 1901	.07
Butte & Boston Con., c.	Mont.	2,000,000	200,000	10	.....	1,000,000	Dec.. 1900	5.00
Butterfly-Terrible, g.	Colo..	1,500,000	1,250,000	1	25,000	25,000	July.. 1901	.00¾
Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	3,000,000	75,850,000	July.. 1901	15.00
Cariboo-McKinney, g.	B.Col	1,250,000	1,250,000	1	.....	478,087	Oct.. 1900	.01½
Centen'l-Eureka, g.s.l.c.	Utah.	5,000,000	100,000	25	100,000	2,517,700	Apr.. 1901	.50
Center Creek, l. z.	Mo...	1,000,000	100,000	10	20,000	60.000	July.. 1901	.10
Center Star, g.	B. C..	3,500,000	3,500,000	1	105,000	175,000	Apr.. 1901	.01
Central Eureka, g. s.	Cal...	4,000,000	400,000	10	10,000	30,000	June. 1901	.02½
Central Lead, l.	Mo...	1,000,000	10,000	100	35,000	242,000	July.. 1901	.50
Champion, g. s.	Cal...	340,000	34,000	10	.....	402,300	Dec.. 1899	.25
Cloverdale, z.	Mo...	1,000,000	100,000	10	.....	80,000	July.. 1900	.20
C. O. D., g.	Colo..	500,000	500,000	1	.....	25,000	Mar.. 1896	.01
Columbia, l.	Mo...	600,000	60,000	10	.....	12.125	June. 1900	.05
Columbian Hyd., c.	C'l'm	375,000	75,000	5	.....	463,500	Nov.. 1899	.12
Commodore, g.	Colo..	1,200,000	1,200,000	1	.....	432,000	Jan .. 1899	.04
Con. Cal. & Va., s.g.	Nev..	540,000	216,000	2½	64,800	3,963,600	July.. 1901	.10
Con. Mercer Gold Mines.	Utah.	5,000,000	1,000,000	5	250,000	1,728,500	Aug.. 1901	.12½
Consolidated (New), g.	Colo..	2,500,000	1,900,000	1	57,000	57,000	July.. 1901	.01
Copiapo, c	Chile.	1,125,000	112,500	10	.....	2,718,000	Dec.. 1900	.80
Creede & Cripple C'k..g.	Colo..	800,000	80,000	1	16,000	16,000	May .. 1901	.02
Cripple Creek Con., g.	Colo..	2,000,000	2,000,000	1	.....	160,000	Mar .. 1900	.08
Crœsus, g.	Cal...	1,000,000	200,000	5	66,000	217,300	July.. 1901	.05
Crowned King, g. s.	Ariz..	6,000,000	600,000	10	.....	242,760	May . 1901	.02
Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1	256,725	344,225	July.. 1896	.10½
Daly-West, g.	Utah.	3,000,000	150,000	20	315,000	922,500	July.. 1901	.30
Deadwood-Terra, g.	S. D..	5.000,000	200,000	25	.....	1,350,000	May . 1898	.15
Deer Trail Con., g.	Wash	3,000,000	3,000,000	1	.....	55,000	Dec.. 1899	.00½
De Lamar, g. s.	Idaho	2,000,000	400,000	5	96,000	2,490,000	May . 1901	.24
Della S., g. s.	Colo..	1,000,000	1,000,000	1	.....	60,000	Jan.. 1897	.01
Dewey Con., g.	Utah.	10,000	10,000	1	3,250	5,850	June. 1901	.10
Doctor-Jack Pot Con., g	Colo..	3,000,000	2,900,000	1	203,000	203,000	July.. 1901	.01
Doe Run, l.	Mo...	1,500,000	10,000	100	45,000	462,072	July.. 1901	1.50
Ducktown, c. i. sul. (ord)	Tenn.	374,000	7,480	50	.....	133.144	May.. 1900	5.00
Ducktown (founder).	Tenn.	1,000	200	5	.....	66,160	May.. 1900	125.00
Eldorado, g.	Cal..	1,000,000	100,000	10	.....	10,000	July.. 1899	.10
Elkton Con., g.	Colo..	3,000,000	2,500,000	1	150,000	1,129,461	June. 1901	.03
El Oro, g. s.	Mex..	5,000,000	1,000,000	5	240,000	480 000	Feb.. 1901	.24
Empire State-Idaho, l.s.	Idaho	6,000,000	505.542	10	332,879	1,005,567	July.. 1901	.10
Enterprise, g.	Colo..	500,000	500,000	1	.....	900,000	Sept. 1898	.05
Fanny Rawlings, g.	Colo..	1,000,000	1,000,000	1	.....	20,000	Aug. 1899	.01
Fern, g.	B. C..	200,000	200,000	1	.....	10,000	Jan.. 1898	.05
Ferris-Haggarty, c.	Wyo.	1,000,000	1,000,000	1	.....	5,000	Mar.. 1899	.00½
Florence, s.	Mont.	2,500,000	400,000	5	.....	223,780	Mar.. 1900	.05
Frisco Con., l. s.	Idaho	2,500,000	500,000	5	.....	920,000	Nov.. 1899	.25
Frontino & Bolivia, c.	C'l'm	643,310	128,662	5	.....	1,109,066	Oct.. 1899	.36
Galena, s. l. g.	Utah.	1,000,000	100,000	10	.....	71,000	Sept. 1897	.05
Gemini	Utah.	500,000	5,000	100	.....	700,000	Aug.. 1900	10.00
Gold Belt, g.	Colo..	1,250,000	1,250,000	1	.....	112,500	Aug.. 1900	.09
Gold Coin of Victor, g.	Colo..	1,000,000	1,000,000	1	210,000	810,000	July.. 1901	.03
Gold Deposit, g.	Colo..	500,000	500,000	1	.....	10,000	Mar.. 1900	.02
Gold & Globe, g.	Colo..	750,000	750,000	1	.....	51,625	July.. 1897	.00½
Gold King, g.	Colo..	1,000,000	936,850	1	56,212	412.214	July.. 1901	.03
Golden Cycle, g.	Colo..	1,000,000	200,000	5	30,000	408,500	Mar.. 1901	.05
Golden Eagle, g.	Colo..	500,000	500,000	1	5,000	30,000	Apr.. 1901	.01
Golden Fleece, g. s.	Colo..	600,000	600,000	1	.....	569,480	Feb.. 1897	.01
Golden Reward, g.	S. D..	1,000,000	100,000	10	.....	155,000	Feb.. 1898	.15
Grand Central, g. s.	Mex..	1,500,000	250,000	5	.....	840,000	Jan.. 1900	.48
Grand Central, g.	Utah.	250,000	250,000	1	.....	691.250	Nov.. 1900	.10
Grass Valley Expl	Cal...	100,000	30,000	2	.....	30,000	Jan.. 1900	.25
Greater Gold Belt, g.	Col .	5,000,000	3,800,000	1	.....	76,000	June. 1900	.02
Gwin, g.	Cal.	1,000,000	100,000	10	90,000	241,500	Julp.. 1901	.10
Hall, c. s.	B. C..	1,625,000	267,609	5	.....	220,000	May.. 1899	.24
Hecla, l. s.	Idaho	250,000	1,000,000	¼	.....	100,000	Dec.. 1900	.02
Hecla Con., s. l.	Mont.	1,500,000	30,000	50	15.000	2,235,000	Feb.. 1901	.50
Helena, g.	Ore..	1,000,000	1,000,000	1	35,000	85,000	July.. 1901	.00½
Hidden Treasure, g.	Cal...	360,000	36,000	10	.....	457,452	Sept. 1900	.10
Holy Terror, g.	S. D..	500,000	500,000	1	.....	172,000	Jan.. 1900	.01
Homestake, g.	S. D.	21,000,000	210,000	100	735,000	10,138,750	July.. 1901	.50
Horn-Silver, g. s. c.z.l.	Utah.	10,000,000	400,000	25	.....	5,279.000	June. 1900	.05
Idaho, s. l.	B. C..	500,000	500,000	1	.....	292,000	Jan.. 1899	.05
Independence Con., g.	Colo..	2,500,000	2,500,000	1	181,375	281.375	Apr.. 1901	.04
Ingham Con., g.	Colo..	750,000	1,359,600	½	27,192	27,192	July.. 1901	.00¼
Iowa, g. s. l.	Colo..	1,666,667	1,666,667	1	50,000	186,834	July.. 1901	.01
Iron Silver	Colo	10,000,000	500,000	20	.....	2,550,000	Dec.. 1900	.10
Isabella, g.	Colo..	2,250,000	2,250,000	1	22,500	742,500	Mar.. 1901	.01
Jamison, g.	Cal...	3,900,000	390,000	10	.....	50,700	Apr.. 1899	.10
Kennedy, g.	Cal...	10,000,000	100,000	100	10,000	1,801,000	June. 1901	.05
Klondike Bonanza, g.	Klon.	750,000	52,750	5	.....	50,000	Aug.. 1899	.24
La Fortuna, g.	Ariz..	250,000	250,000	1	87,500	1,003,000	July.. 1901	.05
Lake City, g	Colo..	50,000	50,000	1	.....	3,875	May . 1900	.01
Last Chance, s. l.	B. C..	500,000	500,000	1	.....	45,000	Apr.. 1899	.05
Last Dollar, g.	Colo..	$1,500,000	1,500,000	$1	$60,000	$150,000	May . 1901	.02
Le Roi, g.	B.C .	5,000,000	200,000	5	.....	1,305,000	Nov.. 1899	1.20
Le Roi, No. 2, g.	B.C..	3,000,000	120,000	5	144,000	144.000	June. 1901	1.20
Lightner, g.	Cal..	125,000	102,255	1	17,894	28,117	May.. 1901	.10
Lillie, g.	Colo..	1,250,000	250,000	5	.....	349,183	Apr.. 1900	.05
Mammoth, g. s. c.	Utah	10,000,000	400,000	25	120,000	1,910.000	July.. 1901	.05
Marian Con., g. s. z, l. i.	Colo..	5,000,000	500,000	10	.....	202,000	Sept.. 1899	.01
Mary McKinney, g.	Colo..	1,000,000	1,000,000	1	90,000	270,000	July.. 1901	.03
May Day	Utah.	100,000	400,000	¼	18,000	18.000	July.. 1901	.02½
Midget, g.	Colo..	1,000,000	1,000,000	1	.....	120,000	Dec.. 1900	.15
Modoc, g. s.	Colo..	500,000	500,000	1	35,000	240,000	July.. 1901	.01
Mollie Gibson, s. l.	Colo..	5,000,000	1,000,000	5	.....	4,080,000	Jan.. 1895	.05
Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5	.....	453,700	Apr.. 1899	.12
Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	560,000	2,160.000	Aug.. 1901	1.00
Montreal, g.	Colo..	1,000,000	750,000	1	.....	7,500	Nov.. 1898	.01
Monument, g.	Colo..	300,000	300,000	1	3,000	21,124	Feb.. 1901	.01
Moon-Anchor, g.	Colo..	1,750,000	350,000	5	.....	261,000	Nov.. 1898	.07½
Moose, g.	Colo..	600,000	600,000	1	.....	186,000	Feb.. 1896	.01
Morning Star Drift, g.	Cal...	240,000	2,400	100	.....	854,490	Sept.. 1900	3.00
Morse, g.	Colo..	1,250,000	1,250,000	1	.....	215,650	May . 1899	.12
Moulton, g.	Mont.	2,000,000	400,000	5	.....	500,000	Oct.. 1899	.05
Mountain, c.	Cal..	6.250,000	250,000	25	420,000	2,793,750	Apr.. 1901	1.68
Mt. Diablo, s.	Nev..	5,000,000	50,000	100	.....	260,271	Jan.. 1900	.10
Mt. Rosa, g.	Colo..	1,000,000	1,000,000	1	.....	75,000	Dec.. 1899	.04
Mt. Shasta, g.	Cal...	100,000	20,000	5	.....	6,000	May . 1899	.30
Napa Con., q.	Cal..	700,000	100,000	7	30,000	1,130,000	July.. 1901	.10
National Lead, com.	U. S..	15,000,000	149.054	100	.....	1,341,486	Mar . 1900	1.00
National Lead, pf.	U. S .	15,000,000	149,040	100	521,640	11,361,920	June. 1901	1.75
New Elkhorn, g.	Colo..	437,500	87,500	5	.....	1,325,000	June. 1898	.48
New Idria, q.	Cal...	500,000	100,000	5	60,000	310,000	July.. 1901	.20
New Jersey Zinc.	U. S..	10,000,000	100,000	100	400,000	3,200,000	Feb.. 1901	4.00
New Leadville Home, g.	Colo..	2,000,000	2,000,000	1	75,000	175,000	July.. 1901	.00⅝
N.Y.& Hon Rosario, s.g.	C. A..	1,500,000	150,000	10	105.000	1,535,000	July.. 1901	.10
New Zealand Con., g.	Colo..	1,000,000	765,000	1	7,650	7.650	June. 1901	.01
North Star, s. l.	B. C..	1,500,000	1,300,000	1	78,000	198,000	June. 1901	.03
North Star, g.	Cal...	5,000,000	250,000	10	.....	584,850	Nov.. 1899	.20
Nugget, g.	Colo..	1,000,000	991,000	1	29,730	84,730	July.. 1901	.01
Old Colony Zinc & Sm.	Mo...	1,100,000	69,909	10	34,954	103,230	May.. 1901	.25
Omega, g.	Colo..	1,500,000	1,200,000	1	.....	18,188	June. 1900	.01½
Ontario, s. l.	Utah.	15,000,000	150,000	100	15,000	14.662.500	Aug.. 1901	.10
Original Empire, g.	Cal...	5,000,000	50,000	100	.....	530,000	Oct.. 1899	1.00
Orphan Belle, g.	Colo..	1,000,000	1,000,000	1	.....	197,899	Dec.. 1899	.09
Osceola, c.	Mich.	2,500,000	95,900	25	287,700	3,958,100	June. 1901	3.00
Parrot, c.	Mont.	2,300,000	229,850	10	1,034,325	5,428,150	July.. 1901	1.50
Payne Con., s. l.	B. C..	3,000,000	2,600,000	1	78,000	1,438,000	Jan.. 1901	.03
Pennsylvania Con., g.	Cal...	5,150,000	51,500	100	.....	161,325	May.. 1900	.10
Pioneer, g.	Cal...	1,000,000	200,000	5	.....	62,500	Mar.. 1899	.12½
Plumas Eureka, g.	Cal..	1,406,250	140,625	10	33,750	2,831,294	Apr.. 1901	.24
Pointer, g.	Colo..	1,250,000	1,250,000	1	25,000	25,000	June. 1901	.01
Portland, g.	Colo..	3,000,000	3,000,000	1	540,000	3,847,080	July.. 1901	.06
Princess, g.	Colo..	1,000,000	1,000,000	1	.....	55.000	Feb.. 1897	.00½
Queen Bess, s. l.	B. C..	500,000	100,000	5	.....	25.000	July.. 1899	.12½
Quicksilver, pref.	Cal...	4,300,000	43,000	100	21,500	1,888,411	May . 1901	.50
Quincy, c.	Mich.	2,500,000	100,000	25	900,000	12.870.000	Aug.. 1901	6.00
Rambler—Cariboo, s. l.	B.Col	1,250,000	1,250,000	1	.....	105.000	Apr.. 1900	.01
Reco, s. l.	B. C..	1,000,000	1,000,000	1	.....	287.500	Jan.. 1898	.10
Republic Con., g.	Wash	3,500,000	3.500,000	1	.....	382.500	Mar.. 1900	.01
Reward, g.	Cal...	1,000,000	100,000	10	.....	20.000	Aug.. 1899	.20
Richmond, g. s. l.	Nev..	1,350,000	54,000	25	.....	4,453,797	Dec.. 1900	.24
Rocco-Homestake, g.s.	Nev..	300,000	300,000	1	31,500	40,500	July.. 1901	.01½
Sacramento, g.	Utah.	5,000,000	1,000,000	5	10,000	128.000	July.. 1901	.00½
St. John del Rey, g.	Br'zil	3,000,000	425,482	5	.....	13.633.991	Dec.. 1900	.24
St. Joseph, l.	Mo...	3,000,000	250,000	10	75,000	3,384.500	June. 1901	.15
Santa Rita, g.	Colo..	1.000,000	1,000,000	1	.....	4,000	July.. 1900	.02
Silver King, g. s. l.	Utah.	3,000,000	150,000	20	675,000	4,125,000	July.. 1901	.66⅔
Silver Shield, g.	Utah.	300,000	300,000	1	3,000	4.500	Feb.. 1901	.00½
Small Hopes, s.	Colo..	5.000 000	250,000	20	.....	3,325,000	Feb.. 1899	.10
Smuggler, s. l. z.	Colo..	1,000,000	1,600,000	1	210,000	2,005.000	July.. 1901	.03
Southern Boy, g.	Colo..	1,250,000	875,000	1	.....	17.500	May . 1900	.02
South Swansea, s. l.	Utah.	300,000	275,000	1	7,500	172.500	Mar.. 1901	.05
South Winnie, g. s.	Colo..	250,000	250,000	1	7,500	7.500	June. 1901	.03
Squaw Mountain, g.	Colo..	2,000,000	2,000,000	1	.....	10.000	Nov.. 1899	.00½
Standard Con., g. s.	Cal...	2,000,000	178,394	10	35,678	3,999,780	May . 1901	.10
Standard, s. l.	Idaho	500,000	500,000	1	150,000	2,340,000	July.. 1901	.05
Stratton's Independ'ce.	Colo..	5,500,000	1,000,007	5	547,503	3,312,855	July.. 1901	.24
St Eugene Con., s.l.	B. C..	3,500,000	3,500,000	1	210,000	210,000	Apr.. 1901	.03
Swansea, s. l.	Utah.	500,000	100,000	5	35,000	341.500	July.. 1901	.05
Tamarack, c.	Mich.	1,500,000	60,000	25	600,000	7,890,000	June. 1901	10.00
Tomboy, g.	Colo..	1.500,000	300,000	5	72,000	1,028,000	June. 1901	.24
Town Topics, g. c.	Colo..	1,000,000	1,000,000	1	10,000	10,000	July.. 1901	.00½
Union, g.	Colo..	1,250,000	1,250,000	1	.....	395,244	Sept.. 1900	.25
Union, z. l.	Kas..	500,000	500,000	1	35,000	70,000	July.. 1901	.01
United, z. l., pref.	Mo...	6,000,000	14,998	25	22,497	52,760	July.. 1901	.50
United Verde, c.	Ariz..	3,000,000	300,000	10	.....	7,861,180	Dec.. 1900	1.50
Utah, g.	Utah.	1,000,000	100,000	10	6,000	187.000	May . 1901	.02
Utah Con., c.	Utah.	1,500,000	300,000	5	375,000	375,000	Apr.. 1901	1.22
Vindicator Con., g.	Colo..	1,500,000	1,100,000	1	115,000	609,000	July.. 1901	.05
War Eagle Con., g. s. c.	B.C..	2,000,000	1,750,000	1	.....	545,250	Feb.. 1900	.01½
Wolverine, c.	Mich.	1,500,000	60,000	25	.....	510,000	Oct.. 1900	2.00
Yellow Aster, g.	Cal...	1,000,000	100,000	10	.....	459,410	Dec.. 1900	.10
Ymir, g.	B. C..	1,000,000	200,000	5	96,000	144,300	May . 1901	.24
Zoe, g.	Colo..	1,500,000	1,500,000	1	.....	7,500	Dec.. 1900	.00½

This table is corrected up to July 26th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT WHOLESALE PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.08
Grains	"	.10
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Crushed Steel, f. o. b. Pittsburg	"	.05½
Emery, Turkish flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Naxos flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Chester flour, in kegs	"	.03½
Grains, in kegs	"	.05@.05½
Peekskill, f.o.b. Easton, Pa., flour, in kegs	"	.01¼
Grains, in kegs	"	.02½
Crude, ex-ship, N. Y.: Abbott (Turkey)	lg. ton	26.50@30.00
Afrodissia (Turkey)	"	23.00@24.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr.	"	26.00
Pumice Stone, Am. powd.	lb.	.01⅞@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg	"	.07
Acids—Benzoic, English	oz.	.12
German	lb.	.40
Boracic, crystals	"	.10½@.11
Powdered	"	.11@.11½
Carbolic, crude, 60%	gal.	.27
Cryst, 37½ drums	lb.	.23
Liquid, 95%	gal.	.45
Carbonic, liquid gas	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Hydrochloric, ch. pure	"	.07
Hydrofluoric, 36%	"	.03
48%	"	.05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphurous, liquid anhy.	"	.08
Tartaric, cryst	"	.28¼
Powder	"	.29
Alcohol—Grain	gal.	2.45
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.75
Ground	"	1.80
Powdered	"	3.00
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	100 lbs.	2.60
Sulphate, pure	"	1.50@2.00
Com'l	"	1.15@1.25
Ammonia—Aqua, 16°	lb.	.03
18°	"	.03¼
20°	"	.03¾
26°	"	.05½
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08½
Powdered	"	.09@.09¼
Muriate, gran.	"	.06@.06⅞
Lump	"	.09
Nitrate, white, pure (99%)	"	.12
Phosphate, com'l	"	.10
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09½
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	.03¼
Red	"	.07@.07¼
Asphaltum—		
Ventura, Cal.	sh ton	32.00
Cuban	lb.	.01½@.03¼
Egyptian, crude	"	.05½@.06
Trinidad, refined	sh. ton	35.00
San Valentino (Italian)	lg. ton	16.00
Seyssel (French) mastic	sh.ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barium—Carbonate. Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@.02
Chloride, com'l	100 lbs.	1.67½@1.76
Chem. pure cryst	lb.	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.02
Barytes—Am. Cr., No. 1	sh.ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
German, gray	"	14.50
Snow white	"	17.00
Bauxite—Ga. mines: 1st grade	lg. ton.	6.00
Second grade	"	5.50
Ala., f.o.b., 1st grade	"	6.00
Second grade	"	5.50
Bismuth—Subnitrate	lb	1.65
Subcarbonate	"	1.85
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	.02¼@.02½
Borax	"	.07¼@.07½
Calcined	"	.25
Bromine	"	.40

	Cust. Meas.	Price.
Cadmium—Metallic	lb.	$1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.55
" brown	"	1.05
Carbide, ton lots, f. o. b. Niagara Falls, N.Y. or Jersey City, N. J.	sh. ton	75.00
Carbonate, ppt	lb.	.05
Chloride, com'l	100 lbs.	.75
Best	"	.80@1.00
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Foreign	"	1.70@2.55
"Rosendale," 300 lbs.	"	.95
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.13
White	"	.14
Chalk—Lump, bulk	sh. ton	2.60
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.15
Chrome Ore—		
(50% ch.) ex-ship, N. Y.	lg. ton	24.00
Sand, f.o.b. Baltimore	"	33.00
Bricks, f.o.b., Pittsburg	M	175.00
Clay, China—Am. com., ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Fire Clay, ordinary	sh. ton	4.25
Best	"	6.00
Slip Clay	"	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.75
Nitrate	"	1.50
Oxide—Black	"	2.26@2.30
Gray	"	2.28@2.40
Smalt, blue ordinary	"	.10
Best	"	.20
Copperas	100 lbs.	.35@.40
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar	"	.19¾
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb. keg		2.65
Blasting powder, B		1.40
"Rackarock," A	lb.	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite (20% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.16½
(60% nitro-glycerine)	"	.18
(75% nitro-glycerine)	"	.21
Glycerine for nitro (32 2-10° Be.)	"	.13@.13½
Feldspar—Ground	sh. ton	8.00@9.00
Fluorspar—		
Am. lump, 1st grade	"	14.40
2d grade	"	13.90
Gravel & crushed, 1st g	"	13.40
2d grade	"	12.40
Ground, 1st grade	"	17.90
2d grade	"	16.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Graphite—Am. f. o. b. Providence, R.I. lump	sh. ton	8.00
Pulverized	"	30.00
German, com. pulv.	lb.	.01½
Bes pulverized	"	.01½@.02
Ceylon, common pulv.	"	.03@.03¼
Best Pulverized	"	.04@.10
Italian, pulv	"	.01¼
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground, American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—Crude	100 lbs.	2.45
Iron—Muriate	lb.	.05
Nitrate, com'l	"	.01¼
True	"	.04
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—Acetate, white	lb.	.07
Com'l, broken	"	.06¼
Brown	"	.05½
Nitrate, com'l	"	.06½
" gran	"	.8¼
Lime—Com., ab. 250 lbs	bbl.	.70
Finishing	"	.80
Magnesite—Greece. Crude (95%)	lg. ton	6.50@7.00
Calcined	sh.ton	14.00@15.00
Bricks	M.	170.00
Am. Bricks, f o.b., Pittsburg	"	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.04½
Blocks	"	.06@.07
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Sulphate	100 lbs.	.70@.90
Manganese—Powdered. 70@75% binoxide	lb.	.01¼@.01½

	Cust. Meas.	Price.
Manganese—Crude, pow'd 75@85% binoxide	lb.	$0.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.23@.24
Domestic	"	.30
Marble—Flour	sh. ton	6.00@7.00
Mercury—Bichloride	lb.	.77
Mica—N. Y. gr'nd. coarse	"	.03@.04
Fine	"	.04@.05
Sheets, N. C., 2x4 in	"	.30
3x3 in	"	.80
3x4 in	"	1.50
4x4 in	"	2.00
6x6 in	"	3.00
Scrap, f.o.b., Dillsboro, N. C.	sh. ton.	25.00
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.: 20@30 cold test	gal.	.09¼@.09¾
15, cold test	"	.10¼@.10¾
Zero	"	.11¼@.12¼
Summer	"	.08¾@.09¼
Cylinder, dark steam ref	"	.08¼@.10¼
Dark filtered	"	.11¼@.15¾
Light filtered	"	.14¼@.17¼
Extra cold test	"	.21¼@.26¼
Gasoline, 86°@90°	"	.14@.18
Naphtha, crude 68@72°	bbl.	9.05
"Stove"	gal.	.12
Linseed, domestic raw	"	.68@.70
Boiled	"	.72
Calcutta, raw	"	.85
Ozokerite	lb.	.11½
Paints and Colors—		
Chrome green, common	"	.05
Pure	"	.16
Yellow, common	"	.10¼
Best	"	.25
Lampblack, com'l	"	.04½
Refined	"	.07
Litharge, Am. powd.	"	.05¼
English flake	"	.07½@.08
Glassmakers	"	.07½
Metallic, brown	sh. ton	19.00
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02
Orange mineral, Am	"	.07¾@.08
Foreign, as to make	"	.08¼@.11¼
Paris green, pure, bulk	"	.12
Red lead, American	"	.05½
Foreign	"	.07¼@.08¼
Shellac, "D. C."	"	.27
Native	"	.14½
Turpentine, spirits	gal.	.37½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.10@.14
Quicksilver, bulk	"	.72
Foreign	"	.80@.85
White lead, Am., dry	"	.05
American, in oil	"	.05¾
Foreign, in oil	"	.07¾@.09⅜
Whiting, common	100 lbs.	.40
Gilders	"	.45½
Zinc white, Am., ex. dry	lb.	.04⅜@.04⅞
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05½@.05⅝
Green seal, dry	"	.07¼@.09⅞
Potash—		
Caustic, ordinary	"	.05¼@.05½
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst	"	.08¼
Powdered or gran	"	.14
Bichromate, Am	"	.08¼
Scotch	"	.08½@.09
Carbonate, hydrated	"	.04¼
Calcined	"	.04
Chromate	"	.35
Cyanide (98@99%)	"	.24@.25
Iodide, bulk	"	2.05
Kainit	lg. ton	9.05
Manure salt, 20%	100 lbs.	.66
Double Manure salt, 48@53%	"	1.12
Muriate, 80@85%	"	1.83
95%	"	1.86
Permanganate, pure cr.	lb.	.11@.11¼
Prussiate, yellow	"	.13½@.13¾
Red	"	.37
Silicate	"	.06
Sulphate, 90%	"	2.11
96%	"	2.13
Sulphide, com'l	"	.10
Sylvinit	unit	.36
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.45
Best	"	3.60
Salt—N Y com fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpeter—Crude	100 lbs.	3.20@3.25
Refined	"	4.25
Silica—Best foreign	lg. ton	10 00@11.00
Ground quartz, ord	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Silicon—Carbide	lb.	.05
Silver—Chloride	oz.	$0.65
Nitrate	"	.40½
Oxide	"	.85@1.10

	Cust. Meas.	Price.
Silver—		
Slate—Ground, black	sh. ton	7.50@8.75
Ground, red and olive	"	20.00
Sodium—Bichromate, com'l	lb.	.04¼
Bichromate	"	.06¼
Chlorate, com'l	"	.09¼@.09⅝
Hyposulphite, Am	100 lbs.	1.75@1.80
German	"	1.95@2.00
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.11
Silicate, conc	"	.05
com'l	"	.01
Sulphate, com'l	100 lbs.	.70
Gran., puri'd	lb.	.08
Sulphide	"	.01¼
Sulphite crystals	"	.02½
Tungstate, com'l	"	.35
Strontium—Nitrate	"	.07¾@.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.80
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	2.25
Oil barrels	"	4.25
Tin—Bichloride, 50%	lb.	.09½@.10
Crystals	"	.20
Muriate, 36°	"	.09
52°	"	.15
Oxide, white, ch. pure	"	.43
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.07@.09⅞
Carbonate	"	.15
Chloride	"	.05
Dust	"	.05⅝@.05¾
Sulphate	"	.02@.02½

THE RARE ELEMENTS.

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

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium—Sticks	kg.	1.55
Sheets	"	2.83
Granulated	"	1.79
Powder	"	1.19@1.79
Calcium—Elect	grm.	4.28
Tungstate (Scheelite), N. Y.	lb.	.60
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	oz.	1.10
Chromium—Fused, Elect.	kg.	5.95
Pure powder, 95%	"	1.55
Chem. pure cryst	grm.	.20
Cobalt—(98@99%)	kg.	7.26@9.52
Pure	"	30.94
Didymium—Powd.	grm.	3.81
Fused, Elect.	"	5.47
Nitrate (N. Y.)	oz.	1.75
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	2.50
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Balls, fused	"	35.70
Nitrate (N. Y.)	oz.	1.50
Indium	grm.	3.57
Iridium—Fused	"	1.07
Powder	"	.95
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	2.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—Ingot	kg.	6.43
Powdered	"	5.47@7.14
Ribbon	"	9.99
Sheet	"	9.04
Wire	"	9.52
Manganese—Fu'd com'l	"	1.31@1.43
Fused, pure	"	3.81
Molybdenum—Fused pr	grm.	.07
Chem. pure	kg.	17.85
Powder, 95%	"	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.86
Sponge	"	62
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.38
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.49
Selenium—Com'l powder	"	26 18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Fused, pure	"	14.28
Chem. pure crystals	"	47.60
Amorphous	"	23.80
Strontium—Electrol	grm.	6.19
Tantalium—Pure	"	3.57
Tellurium—Ch. p. sticks.	kg.	107.10
Chem. pure powder	"	83.30
Thallium	"	26.18
Thorium—Nitrate 49@50% (N. Y.)	lb.	4.60
Titanium—Pure	kg.	19.04
Chem. pure	"	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium	grm.	1.19
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	.95
Chem. pure powder	"	6.43
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	2.50
Zirconium—Com'l	kg.	95.20
Nitrate (N. Y.)	oz.	.50

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to June 29th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.