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*Illustrated.

THE readjustment of the advertising pages made necessary by the consolidation of the ENGINEERING AND MINING JOURNAL and *Mining and Metallurgy*, taken in connection with the preparation of the unusually large amount of reading matter for our review and export number, caused an unfortunate delay in the publication of last week's issue. It is hoped that the quantity and quality of the contents, when received, compensated for its slightly tardy appearance. The index for Volume LXXII of the ENGINEERING AND MINING JOURNAL will be published next week.

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Subscribers to either the ENGINEERING AND MINING JOURNAL or to *Mining and Metallurgy* will receive the consolidated publication for the full periods for which they have paid. Subscribers to both papers will have their subscriptions to the JOURNAL extended for a period equivalent to that for which they had paid for *Mining and Metallurgy* beyond January 4, 1902.

⚒

OUR CORRESPONDENTS' reports on the London metal markets are given in the present issue. They were mailed early enough to have reached us in time for last week's JOURNAL under ordinary conditions; but stormy weather on the Atlantic delayed them. They will be found of unusual interest, covering a period of varying conditions, especially in the tin and copper markets. We give also in the present issue the tables showing the fluctuations of mining stocks for the year in the principal exchanges of the United States, and also on the London Exchange. These tables will be found very useful for reference by all who are interested in such stocks.

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PIG IRON production in Germany continues to decline, the returns of the German Iron and Steel Workers' Union showing for November reductions of 17,771 tons from the October output, and of 82,662 tons from that of November, 1900. For the eleven months ending November 30, the production was as follows in metric tons:

	1900.	1901.	Changes.
Foundry iron	1,349,783	1,380,398	I. 30,615
Forge iron	1,458,703	1,236,608	D. 222,095
Bessemer pig	452,420	426,095	D. 26,395
Thomas (basic) pig	4,370,046	4,101,241	D. 268,805
Totals	7,630,952	7,144,342	D. 486,610

The reduction has not yet equaled the falling off in consumption, and there are many complaints of the difficulty in disposing of iron and the accumulation of surplus stocks; while German pig is still pressed for sale in foreign markets.

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THE PROGRESS and activity shown in the United States have not, we regret to say, existed elsewhere, and the coal, iron and metal trades in nearly all parts of Europe have been in a state of depression, especially during the later months of last year, which contrasts strongly with our own activity. Of the somewhat complex causes of this depression we have endeavored to treat elsewhere, and we may add that with the opening of the New Year there are some signs of improvement which we hope will continue. The commercial world is so closely connected nowadays that one portion of it cannot view with equanimity depression in another. The conditions in Europe have reacted on some portions of our own industry already, in an unfavorable way and improvement there will be watched for on this side of the water with some degree of hope.

THE STATEMENT issued by the United States Steel Corporation, which is given on another page, is a further evidence of the great prosperity of the iron and steel trades during the past year. After paying all charges, with liberal allowances for depreciation and renewals, the company paid dividends at the rate of 7 per cent yearly on the preferred and 4 per cent on the common stock, and had still a balance of over $19,000,000 to add to its reserve fund. The net earnings reported in November and December fell below the high point reached in October, from causes well understood; but this decrease did not imply any serious reduction in the corporation's earning power.

We have again to commend the company for the publication of a statement showing its monthly earnings and actual condition up to date. This policy tends to give confidence to investors, and is in sharp contrast with that of some other companies.

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THE REPORT of Stratton's Independence, Limited, which we publish on another page, shows a much better state of affairs than was indicated by the first unfavorable reports of several months ago. The development work lately done has shown that the ore reserves are much larger than was then estimated, and point to a consequent better future for the mine. Meantime the company's financial position is certainly strong. The report shows that on the issued capital of $5,000,035 the present company has, since its organization, 2½ years ago, paid $3,645,000 in dividends. It has expended about $500,000 in development work during the past year, and on October 30 had a balance of $412,500 cash on hand. The gross amount of gold taken from the mine in the 2½ years was $7,147,300. These are large figures; and taken in connection with the favorable developments referred to in the report, should certainly encourage the stockholders.

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MARKET CONDITIONS

The general market conditions show little change this week, and the opening of the year brings evidences of continued activity. This is especially the case in the iron and steel trades, where business is still fully up to the limit of production, and in some cases beyond it. Prices continue generally even, and the policy of the chief producer, as we have heretofore noted, prevents any sharp increases. The report of the United States Steel Corporation for the last quarter of the year shows some falling off in earnings during November and December, from causes that are well understood. In pig iron there has been some stiffening in prices, which are generally 50 cents a ton over the close of the year. Southern iron is now on a basis of $12 for No. 2 foundry. Railroad delays continue to affect the trade unfavorably, preventing prompt deliveries of material, and interfering with the working of furnaces and mills.

The anthracite coal trade is active as usual, and the railroads are recovering from the delays caused by the floods in December. Coal is being taken as fast as it can be delivered, and there is little change to be reported.

In the seaboard bituminous trade conditions are largely parallel to those in the anthracite trade. Coastwise deliveries are always precarious at this season, when storms are liable to interfere at any time with the movement of vessels.

The western bituminous coal trade at present is almost entirely a question of car supply and railroad movements. Demand everywhere continues steady, and coal is hurried forward from mines as fast as it can be moved. In coke the Connellsville producers have made a general advance of 25 cents a ton.

In the copper market general demoralization is still apparent. Buying is limited, consumers apparently fearing to take more metal than they are obliged to, until prices reach something which looks like a stable basis.

In the other metals there is little new, but business continues to be good in lead, while spelter is also in demand from the consumers.

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COAL TRADE COMBINATIONS.

The reviews published in our issue of January 4, showed that the consolidation of the anthracite trade in comparatively few hands made considerable progress during the year, and that we may expect to see hereafter none of that sharp competition and none of those fluctuations in production and prices which were so marked a feature of the trade up to a very short time ago. The only competitor to all appearances which the anthracite producers have to fear in their present field is the by-product coke oven. It is quite possible that the great plant which the New England Gas and Coke Company has established near Boston and the new plant which the Semet-Solvey Company has just begun to build at Cleveland, may be the forerunners of other plants of the kind which will supply our large cities with fuel in the form of gas. We have heretofore pointed out in the JOURNAL the advantages of such an arrangement, and we still believe that it will be well for the anthracite coal producers to watch this movement carefully and to support their own position rather by taking part in it than by attempting to oppose it. In bituminous coal substantial progress was made in mining during the year. New mines were opened, old operations extended, and other changes made which are tending to increase the output of coal and at the same time to cheapen its cost. In other words the movement of the last few years continued, but it was assisted during 1901 by the fact that almost everywhere coal commanded better prices. The average pay for fuel at the mines, which in 1901 showed some advance over 1899, again recorded an increase in 1901. From a trade point of view the chief event of importance during the year was the consolidation of a number of the important companies in the Pocahontas field in West Virginia under one ownership, and the progress made towards a similar consolidation in the important New River field, also in West Virginia. In Western Pennsylvania the formation in 1900 of the Pittsburg Coal Co. and the Monongahela River Consolidated Coal Co. to control what are known locally as the railroad and the river mines of that important coal district had been followed by the organization of several large independent companies which have opened new mines; and a similar result is foreshadowed in West Virginia, where the consolidations above referred to have been followed by extensive purchases of coal lands in the Tug River and other fields as yet unworked, with the view of opening new and independent mines. How far this will be carried during the year 1902 depends mainly upon the financial conditions which may develop later in the year. We may say, however, that while an anthracite coal—from the limited extent and peculiar conditions of the field—lends itself easily to the organization of a close combination, our bituminous fields are far too extensive and too widely scattered to make it probable that they can ever be controlled by a single trust or combination.

GOLD PRODUCTION IN THE UNITED STATES.

The Director of the United States Mint has published an estimate of the gold and silver production of the United States in 1901, based upon the receipts at the various mints and assay offices, and the information collected there. According to this estimate the output of gold by States for the year was as follows:

Gold Production in 1901.

State.	Fine Ounces.	Value.
Alabama	187	$3,900
Alaska	334,000	6,904,400
Arizona	202,856	4,193,400
California	760,973	15,730,700
Colorado	1,402,875	29,000,000
Georgia	7,009	144,900
Idaho	110,000	2,273,900
Maryland	11	200
Michigan	1,403	29,000
Missouri	33	700
Montana	243,000	5,023,300
Nevada	145,125	3,000,000
New Mexico	40,292	832,900
North Carolina	3,181	65,800
Oregon	86,000	1,777,800
South Carolina	5,847	120,900
South Dakota	319,361	6,601,800
Tennessee	12	200
Texas	53	1,100
Utah	185,000	3,824,300
Virginia	360	7,400
Washington	30,000	620,200
Wyoming	3,000	62,000
Total	3,880,578	$80,218,800

This estimate shows a total increase, as compared with 1900, of $2,059,000. To this Nevada, Arizona and the smaller producing States were the chief contributors, Colorado and California showing but little change, while in Alaska there was a decrease of about $627,000. Colorado continues to hold the first rank and California the second; while Alaska, South Dakota, Montana, Arizona, Utah, Nevada and Idaho follow, in order.

The production of silver in the different States, as estimated, is shown in the following table:

Silver Production in 1901.

State.	Fine Ounces.	Commercial Value.
Alabama	43	$26
Alaska	55,000	33,000
Arizona	2,995,500	1,797,300
California	1,118,333	671,000
Colorado	20,833,333	12,500,000
Georgia	820	500
Idaho	4,000,000	2,400,000
Maryland	1	1
Michigan	102,000	61,200
Montana	14,500,000	8,700,000
Nevada	4,000,000	2,400,000
New Mexico	434,300	260,600
North Carolina	16,558	9,900
Oregon	125,000	75,000
South Carolina	316	200
South Dakota	364,130	218,500
Tennessee	5	3
Texas	477,400	286,400
Utah	10,250,000	6,150,000
Virginia	1,049	600
Washington	350,000	210,000
Wyoming	30,000	18,000
Total	59,663,788	$35,792,200

This total shows as compared with the completed figures for 1900, an increase of about 92,000 ounces. Colorado shows a small increase and Utah a considerable one; while in both Montana and Idaho there were large decreases, which were offset by gains in Arizona and among the smaller producers. Upon the whole, the production of silver was nearly stationary, the main falling off being in the metal obtained in connection with lead.

The Director of the Mint further estimates that the production of gold in the Klondike or the Canadian Yukon in 1901 was 851,177 fine ounces, or $17,595,400, which would show a decrease of about $4,700,000 from the output of 1900. The production of silver, which was contained in the gold bullion taken out, is estimated at 187,166 fine ounces, having a commercial value of $112,300. These estimates are probably based on receipts at the United States assay offices on the Pacific Coast and may be modified by the Canadian returns.

A telegram just received from Mr. Elfric Drew Ingall, of the Geological Survey of Canada, says that the preliminary approximation of the gold production of Canada in 1901 gives a total of $25,000,000. This is a decrease of about $2,900,000 from the output of 1900, and would indicate a total of about $19,500,000 from the Yukon Territory.

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BRITAIN'S COAL SUPPLY.

The coal mining industry of Great Britain is again to be the subject of an investigation by a royal commission. According to the press dispatches, the inquiries of the commission will be directed towards the obtaining of information on the life of the British coal-fields, the effect of the export trade on the home supply, and the possibility of reducing cost to the consumer by cheaper transportation facilities. It is also to ascertain if British coal is, under present conditions, maintaining its competitive power with foreign coal fields.

An unusual degree of wisdom has been exhibited in the selection of the commission, which is composed of 17 members, and includes chairmen of railroad companies, heads of big colliery companies, prominent engineers and geologists. Mr. William L. Jackson, M. P., chairman of the Great Northern Railway Company, is president of the commission.

A similar commission was appointed in 1865. After five years of investigation this former commission in 1871 delivered an opinion to the effect that the supply of coal in the ascertained coal-fields of the United Kingdom was 90,207,000,000 tons. The coal existing at workable depths in the unascertained fields was estimated at that time at 56,273,000,000 tons, making a total of 146,480,000,000 tons available for use.

The total production of coal in Great Britain during the last 30 years has amounted to approximately 5,000,000,000 tons, or an average of say 165,000,000 tons a year. But the production has naturally been in an increasing ratio, and this average was about attained during the middle of the period. The average annual production from 1871 to 1875 was 125,000,000 tons; from 1876 to 1880, 135,000,000 tons; from 1881 to 1885 160,000,000 tons; from 1886 to 1890, 170,000,000 tons; from 1891 to 1895, 180,000,000 tons, and from 1896 to 1900, 210,000,000 tons. At the average rate of production during the last 30 years and assuming the report of the old commission to be approximately accurate, an admittedly questionable assumption, the coal-fields would last for 900 years. It may be expected, however, that for some time, at least, the annual increase in production will continue, but it is impossible to predict at what rate this increase will be maintained. Estimating on the basis of the last 30 years, the average production for the next 30 years will reach about 400,000,000 tons a year, at which rate the supply would last about 350 years. In the meantime the coal mined is growing more costly and its production may be restricted thereby, and also by changing industrial conditions, so that predictions as to the future are without value. There does not seem to be much reason for the present or the next few generations of Englishmen to fear for their supply of fuel.

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PREVENTION OF COAL SMOKE.

The prevention of coal smoke in large cities is a matter of great importance, not merely because of the nuisance it causes, but also because of the waste of fuel by imperfect combustion which it indicates. Mr. Edward R. Warren has described, in the *Boston Transcript* of December 30, 1901, how Berlin has been a comparatively smokeless city. The good results attained there are far more due to the excellent management on the part of the city authorities, to efficient police control and to faithful and intelligent care of fires than to the employment of expensive methods and devices for consuming smoke. The population of Berlin is about two million and a half.

The city covers a great area and is situated in the midst of a broad level plain. In 1900 there were 1,351 manufacturing plants in operation and the consumption of coal and coke amounted to 1,958,040 tons, of which coke was a very small percentage. In addition there was a consumption of inferior brown coal, chiefly in briquette form, amounting to 1,020,706 tons, making a total coal consumption for the year 1900 of 2,978,746 tons.

The three kinds of coals which are most used in Berlin are Westphalian, Upper Silesian and Lower Silesian, the average cost of which, at wholesale, in 1900 was respectively $5.50, $5 and $6.75 per ton, delivered. They are all bituminous coals and lignites, and produce great volumes of black smoke, when carelessly and wastefully burned. For domestic purposes anthracite coal, coke and brown coal briquettes are principally used. The annual consumption of anthracite is about 80,000 tons, of which two-thirds are imported from England; it costs at retail, in Berlin, from $10 to $12 per ton.

If a chimney in Berlin smokes excessively, the police send an expert to investigate the trouble and advise a remedy. In ordinary cases of careless smoking an officer calls at the factory and reports his observations of several days, and requests more care. If the advice is not heeded, and the offence continues, a fine is imposed, but this is seldom necessary. The height of chimneys is regulated by law, the minimum permitted being 25 meters. Great benefit is derived from the boiler inspection unions, which are private organizations, having for their business the testing of boilers, under state license, the drawing of plans for boiler plants, and other such work. In connection therewith they conduct schools, in which for fees of $2 to $3 men are given two weeks' instruction in the art of firing and in the general care of boilers. The men so trained are greatly in demand, and these schools have been the direct means of raising the standard of firemen in Germany. There are seven such schools in Prussia, and several in other parts of Germany.

In the first place, properly designed furnaces are required for the economical combustion of coal and prevention of smoke, but beyond that the most inexpensive means is skill in firing, and that the smoke nuisance can be very largely abated in that manner is considered by Mr. Warren to be fully demonstrated by the experience in Berlin.

THE UNITED STATES STEEL CORPORATION.

The official statement of the United States Steel Corporation for the nine months of its existence, from April up to the close of 1901, gives the net earnings of all the plants controlled by the company as follows, by months:

April	$7,356,744
May	9,612,349
June	9,324,747
July	9,580,151
August	9,810,880
September	9,272,812
October	12,205,774
November	9,795,841
December (est.)	7,750,000
Total	$84,779,298

The fact that earnings showed a decrease in November and December was not due to any decrease in the demand for iron and steel. In November the car shortage, which prevented deliveries, and also compelled the closing of some mills and furnaces, which could not obtain supplies of ore, diminished the earnings. In December the same cause was operative, while the close of navigation also cut off the earnings of the ore and transportation companies.

The deductions from these net earnings include the interest on the bonds for nine months; the payments into sinking funds of the United States Steel Corporation and its subsidiary companies; and the appropriations for depreciation, for reserve and contingent funds, and for improvements. The statement shows these deductions as below:

Net earnings, as above		$84,779,298
Interest on bonds	$11,400,000	
Sinking funds	2,263,292	
Depreciation, etc	9,695,702	23,358,994
Net balance		$61,420,304
Dividends paid		42,005,807
Balance, surplus		$19,414,497

The dividends paid included 1¾ per cent quarterly —5¼ per cent in all—on the preferred stock; 1 per cent quarterly—3 per cent in all—on the common stock; and $25,101 on stock of subsidiary companies still outstanding. All things considered, the surplus is a satisfactory one. The known conditions in the market sufficiently explain the falling off in November and December from the maximum point, which was reached in October.

THE INSTITUTION OF MINING AND METALLURGY OF LONDON.

The council of the Institution of Mining and Metallurgy of London has made an announcement of considerable interest with regard to the founding of medals, etc., referred to in our issue of November 9. The Consolidated Gold-fields of South Africa, Limited, have founded an annual gold medal and premium of 50 guineas, to be awarded by the council to the writer of the best paper contributed to the *Transactions* by a member, associate or student, on the mining, treatment, or reduction of gold ore. No definite limits on the subject are specified, except that the paper shall deal with the mining or metallurgy of gold. The council also announces that the Institution has founded a gold medal to be awarded annually or otherwise as the premier distinction on the power of the Institution to bestow. Details of the conditions under which this gold medal will be awarded will be issued later on.

It is also announced that the Institution will move to a handsome suite of offices in Salisbury House, London, before long.

CALCIUM CARBIDE AND ACETYLENE IN AUSTRIA-HUNGARY.

London *Engineering* notes that though the municipality of Totis, not far from Budapest, was the first to introduce public acetylene illuminations, this industry did not, owing to a few minor accidents and a natural prejudice, at once become so developed as had been predicted in Hungary. In the absence of sufficient experience and of definite regulations, poor materials and defective apparatus were applied and offered, and it took some time before the public gained confidence. During the last year, however, promising progress has been made, the State railways and other railway companies having adopted acetylene light for their stations. Hungary does not possess any carbide works, but manufactures acetylene generators; no carbide concession appears to have been granted as yet. Austria has five carbide works—at Meran, Lend Gastem and Jajce, and at Matrei and Paternion; the latter two are of more recent date. The aggregate power of these and other plants under construction (23,000 horse-power) mounts up to 80,000 horse-power. As the general overproduction of carbide made itself felt also in Austria-Hungary, three of these works, which are controlled by different companies—namely, those of Meran and Matrei (both in Tyrol) and Jajce (in Bosnia)—formed a syndicate, known in Austria under the term "Cartell." The carbide produced in the united works is sold in Vienna by a concern which is under the immediate control of the Bosnian company. Their carbide enjoys a good reputation, and an acetylene generation of 280 litres per kilogram of carbide is guaranteed. The syndicate charges from 33 to 40 crowns per 100 kilograms of carbide; the price had previously gone down to 24 crowns (a little over 20s.). The Gastem works have not joined this combine, but they have bound themselves not to sell any carbide within the Dual Monarchy; their market is in Bavaria, and their chief customer the Bavarian State Railway Department. Nor has Paternion joined. These works are near the Italian frontier, the seat of the company is in Venice, and all the business done is practically with Italy. Foreign competition need not much be feared in Austria, as an import duty of 20 crowns is levied per 100 kilograms of carbide. The annual consumption of carbide in Hungary is now estimated at about 500 tons. The total annual carbide production has been estimated at 60,000 tons; the figure is probably too high, however. The State Railway Department has made contracts for a supply for three years. The question of standardizing calcium carbide and acetylene generators, or of enforcing due safety measures at any rate, has recently again occupied the authorities and experts, and an early understanding on the basis of the counter proposals made by the manufacturers is confidently expected.

LIQUID FUEL FOR WAR-VESSELS.—The British cruiser *Arrogant* is now being equipped to burn petroleum in her six boilers. As soon as the work is completed the vessel will start on a long cruise, with a view of making a thorough practical test of this form of fuel.

AUSTRALIAN COAL FOR SOUTH AMERICA.—A firm at Cardiff, Wales, is about to start a new steamer to trade with coal from Australia to the west coast of America, and general cargo to Chinese ports. This is the *Mercedes*, 7,000 tons, stated to be the finest collier afloat.

COAL TAR PRODUCTS IN GERMANY.—The London *Engineer* says that the joint capital of the six largest manufacturers of coal-tar colors in Germany amounts to $12,500,000. They employ together about 500 chemists, 350 engineers and other technologists, 1,360 business managers, clerks, travelers, etc., and more than 18,000 workpeople. Compared with such figures as these the English color manufacture assumes insignificant proportions. The total capital invested in the trade in England probably does not exceed $2,500,000.

OZOKERITE IN FINLAND.—The *Viedomosti*, of St. Petersburg, is responsible for the statement that Mr. Berislawski, a Russian mining engineer, recently discovered extensive deposits of ozokerite (mineral wax) in the extreme north of Finland. The deposits are situated along the bed of the Kemioki River, and the ozokerite is said to be extremely rich in paraffin. Up to the present time, ozokerite has chiefly been mined in Galicia. Mr. Berislawski is preparing a report on the deposits for the Society of Russian Mining Engineers of St. Petersburg.

THE NATIONAL BUREAU OF STANDARDS.—Active construction work on the buildings for the National Bureau of Standards will soon be begun, and ground will be broken in a few weeks. The functions of this much-needed and long-desired institution will consist, briefly, in the custody of the given standards, the standardization, testing and calibration of engineering and mechanical instruments for various uses, and the making of tests, solution of problems and the determination of physical constants and the properties of materials, when such information is of value and cannot be elsewhere obtained. The establishment of this new bureau will be of great advantage, not only to the engineering professions, but also to manufacturing and general commerce.

SIGNS OF PROSPERITY IN THE SOUTH.—The following flight of fancy from the editorial rooms of a Southern exchange may serve as a relief from the reading of dry technical articles and mining statistics. These must indeed be prosperous times:

"To-day the winds of heaven sing the conquering arms of prosperous industry upon the thousand-stringed harps of steel that are rising everywhere throughout this fortunate land—harps of steel that the myriad genii of labor are rapidly transforming into temples wherein the exultant tenor of the anvil and the diapason of the cupola, mingled with the myriad notes of happy toil shall attest the wisdom of the men of faith, who know that man has, as yet but climbed the foothills of the mountains of opulence, beyond whose crests stretch the illimitable plains of universal plenty."

THE LINARES LEAD MINING INDUSTRY OF SPAIN

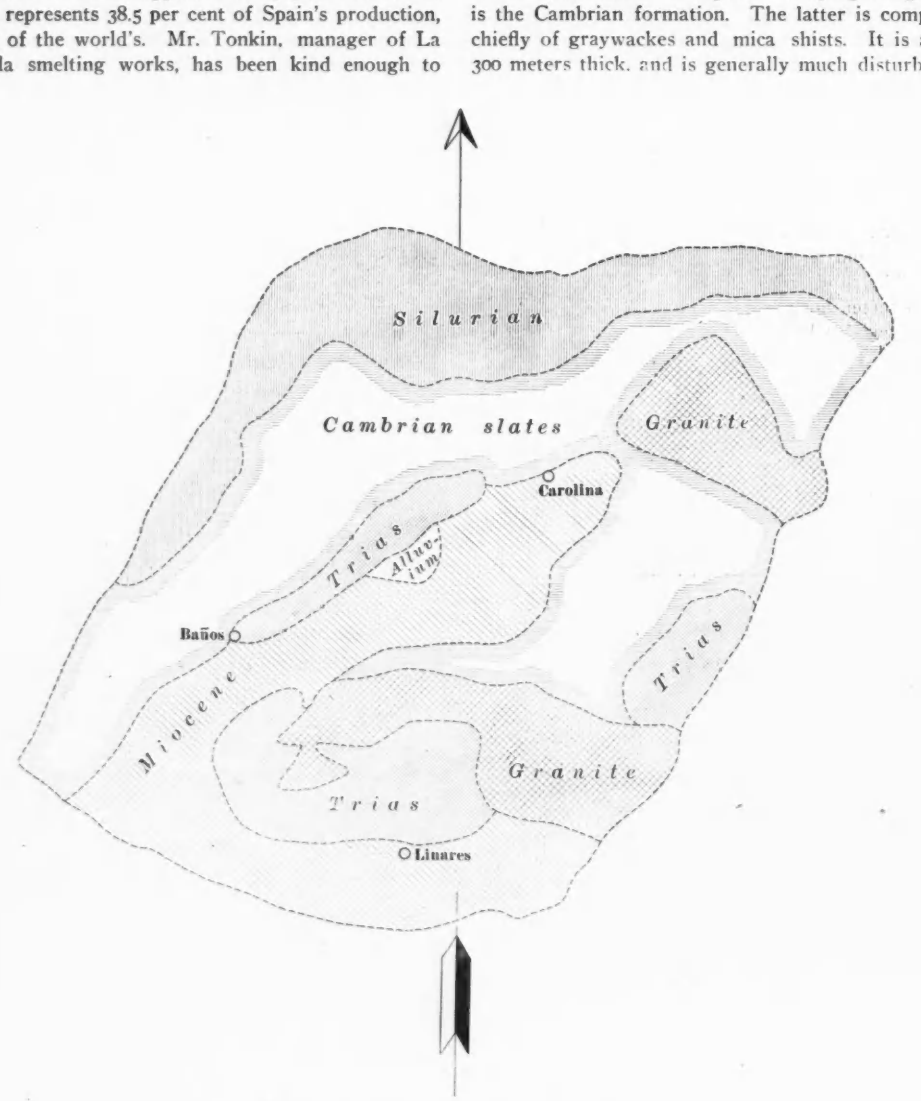
By E. MACKAY-HERIOT.

The importance of the Linares lead mining industry will at once be observed when a glance is given to a few statistical figures. According to Volume IX of *The Mineral Industry*, the world's production of lead in 1899, was 803,272 metric tons. Spain contributed 184,000 metric tons to this amount, and out of these the Linares District supplied about 71,000 metric tons which represents 38.5 per cent of Spain's production, or 8.8 of the world's. Mr. Tonkin, manager of La Tortilla smelting works, has been kind enough to give the writer the following estimates of the production by mines:

	Lead. Tons.	Silver. Ounces.
La Tortilla	16,000	180,000
La Cruz	18,000	270,000
San Luis	15,000	150,000
Los Salidos	2,500	25,000
Pozo Ancho	5,000	50,000
Sulphides exported	5,000	75,000
In carbonates sold	10,000	100,000
Lead	71,000	850,000

Of the above amount, about 20,000 tons are sold as carbonates—a mixture of sulphides and carbonates with about 50 per cent lead—and the remainder as true sulphides, which is estimated at 80,000 tons of 75 per cent lead. Of this quantity, about three-fourths belong to the Linares District, and one-fourth to the Carolina District. In the year 1888 a statement of the mining enterprise was made public, and although 12 years old, it is interesting, and gives some idea of the present work, for modern methods have played little part in Linares. There were then 188 mines in exploitation, with 62,783 lineal meters opened up in main shafts, 86,568 in secondary shafts, and 77,300 in levels. In all, 1,298 horses, 600 horse whims and 206 steam engines were in use for these mines; 47,238 tons of coal were consumed in a year; and 7,098 workers, including 198 women and 1,135 boys, found employment.

The geological features of the Linares District are not very complicated, and may be summed up in a few words. The main body of the district is built up of granite, and this forms the foot-wall to all the known formations. The granite is very uniform in its occurrence. It contains, as a rule, about 45 per cent of feldspar, 35 to 47 per cent of quartz and 11 to 20 per cent of mica. Towards the surface the granite is often in a very decomposed state, what is termed by Cornishmen "pot-granite." With few exceptions, however, it hardens in depth. Overlying the granite is the Cambrian formation. The latter is composed chiefly of graywackes and mica shists. It is about 300 meters thick, and is generally much disturbed at the contact with the granite. The Silurian formation is of little importance in the Linares District, it lying more towards the north, and only being met with here in isolated occurrences. These rocks are mostly composed of quartzites and slates, the latter with an inclination of about 45° southwest. The Trias is occasionally found to overlie the granite, but only in shallow formation, its depth averaging 6 to 8 meters. It is represented here by the new red sandstone, or Lower Trias, which is not fossiliferous. The Tertiary rocks of Miocene era are composed of limestones, molasse and clays, with abundance of *ostrea crassissima* and *clypeasta altus*. These rocks overlie the granite and new red sandstone, sometimes to a depth of more than 100 meters. Don Pedro de Mesa y Alvarez, writing in the *Revista Minera* gives the following geological classification of rocks occurring in the Linares District:



GEOLOGICAL MAP LINARES LEAD DISTRICT.

Geological Systems.	Kind of Rock.	Dip.	M. Thickn'ss
Granite			?
Cambrian	Slates and Graywackes	45° S. S. W.	300
Silurian	Slates & Quartzites.	45° N.	200
Trias	Sandstone.	Horizon'l	8
Tertiary	Molasse, Limestones and Clays.	Horizon'l	Vary Variable.

Innumerable lodes cross the plain of Linares, striking in a southwest-northeast direction, and have, as a rule, a dip of about 80°. Occasionally lodes, with cross-courses are met with, but these are of little or no importance commercially. They are sometimes found to fault the lodes, throwing them several meters in a parallel direction. When speaking of a lode in Linares, a zone of cleaveages is understood about 1 to 1 1-2 meters width.

This zone may contain one or more cleavages filled with galena (PbS), and the latter may run to one or more meters thick, however a good paying average would be 8 centimeters. The rest of the lode zone consists of granite, calcspar, quartz, and barytes or heavy spar. The composition varies in the different lode zones. Down as far as the iron hat reaches the granite is often decomposed, and crumbles to pieces in the hand, but generally gets hard in depth. In the gossan sulphide of lead, carbonate of lead, a mineral called linerita, sulphate of lead, chromate of lead and copper ores are found. Only the two first named, however, have a commercial value. The quantity of lead sulphide in the lodes is variable. The writer saw in Los Quinientos Mine, at the 300-meter level, about 1 meter of pure PbS, and 20 meters back in the same level the lead ore had nearly disappeared. Great variation can be taken as typical for the greater part of the lodes. It will thus be understood that calculations cannot well be made as to the quantity of lead ore in the lodes. Two zones, where little ore is found, are said to occur in these lodes. The first one is from about 170 to 220 meters depth and the second from about 350 to 400 meters depth. This does not hold good in all the mines, but there seems to be some regularity in their occurrence. The most important lode is perhaps that which is exploited by the Arraganes Mine. It strikes in a southwest-northeast direction, and dips 78°. The granite rock of the lode is very changeable, sometimes hard and at other times soft. The lode zone is on an average about 80 centimeters wide, and contains irregular compact masses of lead sulphide. Thus the lode is very rich in one part and very poor in another. Altogether about 30 principal lodes are said to cross the plain of Linares, and these vary little in their composition, strike, and dip. The lode of the Cota la Luz Mine averages 8-10 centimeters of PbS, with 76 per cent of lead and 434 grams of silver to the ton. The lode zone of the Talazuelos Mine is 1½ to 2 meters wide, and carries on an average 4 to 5 centimeters of PbS with 78 per cent lead and 543 grams of silver to the ton. The lode running through the Tortilla Mine is 0.80 to 1.50 meters wide and averages 5 to 6 centimeters PbS with 76 per cent lead and 413 grams of silver to the ton. These figures have been taken from a report written some time ago. It would not be well, however, to place too much faith in them, as the irregularity of the sulphide of lead in the lodes is so great that it is impossible to make calculations anywhere near right. As far as the composition of the lead sulphide is concerned, it varies little in all the lodes, and may be given as 75.77 per cent PbS, with 348 to 543 grams of silver to the ton.

La Cruz Mine was worked in former years as a copper mine, and little lead had been found in the lode up to 100 meters depth; the copper occurring in the form of sulphates and carbonates. History tells us that in 1650 the king of Spain gave Diego Felipe de Quadros the privilege to build copper and silver smelting works in the Linares District. It is evident, therefore, that other lodes than that of La Cruz were worked for their copper ores.

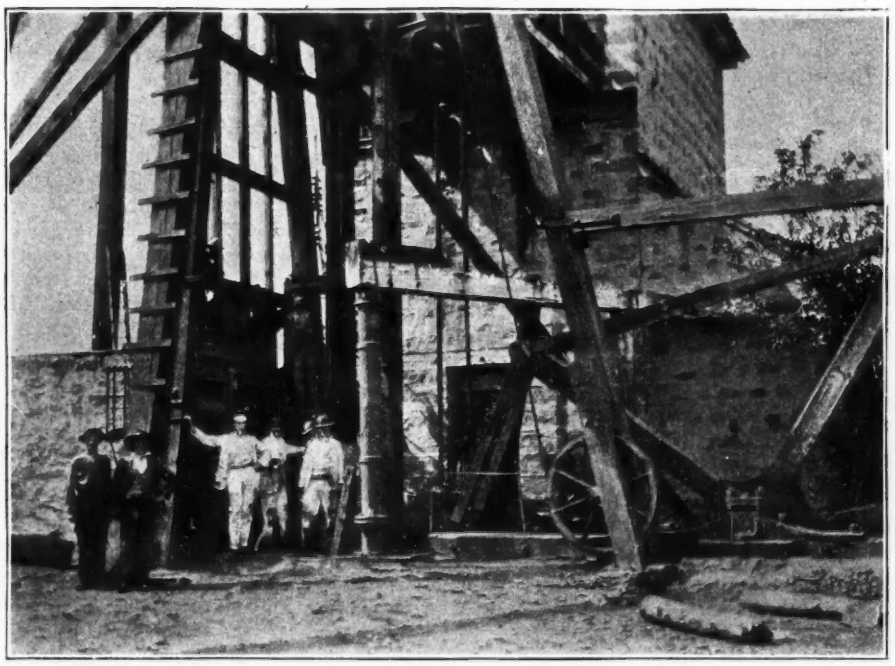
It is said that lead mining was carried on in Linares at the time of the Romans. Whether this be true or not, the antiquity of some of the workings may be estimated from the fact that a worked-out lode has been refilled with weathered granite. The latter now forms a compact mass, and could easily be mistaken for a primal lode.

The first impression one gets of the Linares mining field gives one the idea that many mining concessions have been taken up to be sold rather than to be worked systematically. The whole country to the

north, east and west is literally strewn with mines and prospects; the latter in the majority. Many of the mines are standing idle, mines fitted up with good pumping machinery, steam hauling gear, and dwelling houses erected near by.

The most important mines in Linares are the Spanish State Mine Arrayanes, those managed by Taylor & Co., which comprise Pozo Ancho, Los Cumientos, Los Salidos, La Fortuna and Alamillos; La Tortilla, San Miguel, Matta Cabra, etc. The Arrayanes Mine has a history. In the year 1650 it was already working. In 1691 it was sold to a company who had the right to build a mint to make money out of the silver and copper. So, evidently, the Arrayanes lode was also worked for its copper.

The deepest shafts in the Linares District are the following: San Miguel 525 meters, Matta Cabra 475, Pozo Ancho 450, Los Salidos 450, Los Cumientos 440, Arrayanes 350. The mines are, as a rule, not fitted with modern machinery, and the shaft head gear is hardly in proportion to the importance of the mines. Small wooden propped heads generally fitted with two pulleys, but often enough with one, form the headgear of many of the mines; hand hoists are also in abundance. The shafts are all rectangular, and where necessary Cornish pumping engines have been erected, but much water has seldom to be contended with.



TYPICAL SHAFT HEAD IN LINARES LEAD DISTRICT.

The work underground in the large mines is overhand stoping, the levels being driven about 25 meters apart. In many of the smaller mines no systematic work is carried on, and no reserves left.

There is a contract system in Linares by which the miners obtain the right to extract lead ore, wash it and sell it for a period of so many years. The owner of the mine is then paid a certain per cent. This method of mining has often disastrous effects as soon as water is met with, for with no reserves at hand, and little or no ready money steam pumps cannot be bought, and the result is the closing down the mine.

English companies give as a rule a contract for 2 meters. In this way the price is raised or lowered according to the hardness of the rock, thus allowing the miners to always make a living out of their work which amounts to about 3.50 pesetas a day. At some shafts now being sunk contracts have been given to miners for 200 meters at 250 pesetas a meter. This price includes dynamite and oil.

In levels driven in hard granite on the lode the mining costs are about 35 pesetas per cubic meter, including dynamite and oil. Mr. Alvarez gave in his report in 1888 as the total costs of mining in hard rock in the lodes 56.74 pesetas per cubic meter, against 33.86 in soft rock. Timbering is seldom needed underground. Its chief use, except in the main shafts, is for fortifying the bottom stope above the main levels, and the main winzes adjoining.

The dressing of the ore is perhaps another proof that the Romans mined in the Linares District, because it is most likely that they introduced the system now in use there. The lead ore is often pure galena, or slightly mixed with gangue, and so easily separated, but the writer does not think this an excuse for the primitive dressing appliances. The following is an example of an ore dressing process which may be seen at any mine in Linares in more or less modified condition. The ore is dumped into a hopper from where it falls upon a sorting table to be washed and picked by hand. The middlings are thrown on a dump to be worked once in a while in a mill driven by steam.

The ore too small to be picked by hand is hand worked on jigs without previous classification in trommels.

The fines which the shovel cannot catch pass on to fine jigs and ultimately to Cornish buddles, also worked by hand. The jig used is a large wooden box with a screen hung inside. The screen is attached to a long wooden beam, at the end of which a man or boy works the screen up and down. It has been calculated that to dress a cubic meter of stuff it costs 4.94 pesetas by hand, against 4.87 automatically; however this all depends on the efficiency of the machine. A hand-dresser knows his work well; he earns 3 pesetas a day. The wages for the miners when sinking shafts are 4 pesetas a day, and when driving levels 3.50. Surface men get 2.50, and boys 1.25 pesetas a day; smiths and carpenters 4, engine men 3.50 and boiler men 2.50 pesetas a day. Coal is expensive; poor coal costs at Linares railway station, 34 pesetas a ton, but as many of the mines are a good way from Linares, 37 pesetas may be accepted as the price.

The transport of the lead ore from the mines to the smelting works is done by donkeys and mule carts. On an average each donkey earns his master 1.50 pesetas a day. The mines managed by Taylor & Co. have a branch railway.

COPPER IN BOHEMIA.—Extensive deposits of copper-ore, it is reported, have been discovered in the neighborhood of Graslitz and Klinenthal, in Bohemia, where surveying has been going on for some months. A plant is now being erected, and it is said that the copper ore is of very high quality. About 100 hands are now employed, and the force is to be increased.

AMERICAN COAL ABROAD.

FRANCE.

According to a report to the State Department written by Mr. Thornwell Haynes, United States Consul at Rouen, the importation of American coal into northern France will soon be independent of abnormal conditions. The present depressed state of the continental metallurgical industry offsets the advantages offered by the Transvaal war and the miners' disturbance. In southern France, the importation of American coal has passed the experimental stage; and notwithstanding the nearness of English, Belgian, and German coal fields, American coal has begun to filter into northern France at different points. Two weeks ago, for the first time in the history of this port, a vessel direct from Philadelphia unloaded a cargo on the Rouen quays. If this infiltration is successfully begun with the employment of foreign shipping, it can only be a matter of time when the United States, with her own vessels, will supply most, if not all, of the French deficiency.

French Coal Consumption.—France consumes annually about 45,500,000 tons of coal, of which she produces nearly 75 per cent. Of the 45,228,000 tons consumed in 1899, 13,370,000 tons came from abroad, as follows:

Origin:	Tons.	Per cent.
England	6,720,000	50.3
Belgium	4,752,000	35.5
Germany	1,871,000	14.0
Other countries	27,000	0.2

Of the 13,416,700 tons imported last year, England furnished 7,761,000 tons; Belgium, 4,690,000 tons; Germany, 804,700 tons; and the United States, 161,000 tons.

The Departments bordering Belgium and Germany are naturally the greatest importers of Belgian and German coal, while English coal is consumed mostly by the Departments bordering the British Channel and the ocean. The Department in which this consulate is situated—Seine Inférieure—is the greatest consumer of English coal, using 1,074,000 tons, which is 76 per cent of its total consumption. Meurthe-et-Moselle consumes 1,471,400 tons of German coal, 36 per cent of the total employed. The greatest consumer of Belgian coal is the Nord—1,088,500 tons, or 16 per cent of its total consumption. All the coal for Algeria goes from England.

In French industries, mining consumes 3,002,000 tons; metallurgy, 7,998,000 tons; and the railways, 5,404,000 tons. This is more than one-third of the total consumption. The amount used by the railways is as follows: Paris-Lyon-Méditerranée, 1,417,000 tons; Nord, 934,000 tons; Ouest, 721,000 tons; Orléans, 720,000 tons; Est, 692,000 tons; Midi, 334,000 tons; Etat, 214,000 tons; divers, 43,500 tons.

American vs. English Coal.—One of the greatest objections urged against American coal in France is its friability. This has been the subject of a lengthy article in a recent number of *L'Echo des Mines et de la Metallurgie.* In answer to the charge Mr. Sullivan-Alexander, of the American Coal and Shipping Agency, contributed a letter, at the request of the editor, admitting that American coal in general was more friable than the English product, but insisting that some American coal, such as the Pocahontas, the Westmoreland, etc., rivaled the very best Cardiff steam coal. He further gave reason why the American article arriving in Europe was more broken than that from England—the extraction by machinery instead of chiefly by hand; the employment of dynamite and powder; the closeness to the surface of American coals, thus rendered more friable by atmospheric action; the American custom of dealing in run-of-the-mine, partly because briquettes are not employed to utilize the by-product of screening.

Mr. Henri Bordes, of Bordeaux, who runs a Bordeaux-New York line of steamers, says in the same journal that he has always considered quality and calorific power before aspect. "For my steamers in the service between Bordeaux and New York," he adds, "I have burned Cardiff in going and American coal in returning; almost always the American product has been considered equal to the best Car-

diff. Good American coal gives 4 to 5 per cent of ashes; the best Cardiff, 7 to 9 per cent. This consideration is causing many to prefer the American coal to the Cardiff."

There is no doubt that most of the objections to the American product are due to ignorance of its usage. The Frenchman is accustomed to the screened coal, and does not know how to handle the through-and-through article—a disadvantage that time alone will overcome.

Importers of Coal.—Mr. J. J. Petit, a large importer of German and English coal at Antwerp and Verviers, has written to the consulate asking to be put into communication with American exporters, adding that he was confident the time was ripe for the marketing of American coal in northern Europe. Letters will reach him addressed to 7 rue des Messieurs, Verviers, Belgium; and Mr. A. Brenguier, of Bourges, Cher, France, has written a letter of the same tenor.

The principal Rouen importers are:

Breton et Cie., 3 avenue Mont-Riboudet.

Campagnie des Charbons, 14 quai du Havre.

Campagnie des Charbonnages, 19 rue Seine.

Compagnie des Mines de Vicoigne et de Noeux, 5 rue Centrale.

Compagnie Européenne du Gaz, 62 rue Centrale.

F. Depeaux fils, 25 boulevard Cauchoise.

Jacquinot-Decaux, 114 avenue Mont-Riboudet.

Maiu Colliery Compagnie, Delafosse, agent, 42 quai du Mont-Riboudet.

Marchal et Henot, 3 quai Cav.-de-la-Salle.

The principal importers at Dieppe are:

Auvray, 58 quai Duquesne.

Leblanc, Charlemaine et Cie., 2 rue Blainville.

Robb frères, 16 quai de Lille.

Société de Charbons et Briquettes de Dieppe.

AMERICAN COAL IN GERMANY.

Mr. Ernest A. Man, U. S. Consul at Breslau, writes in regard to several prominent German coal dealers who visited the United States recently, with the object of arranging for important purchases of coal. Since the return of one of these parties—Gustav Schulze, one of the largest dealers in Berlin—he has been interviewed regarding the result of his trip. He thinks that the talk of America flooding Germany with coal shows ignorance of the situation. American soft coal can not yet, even with the present low ocean rates, be introduced here profitably. Just now, soft coal costs 15½s. ($3.77) per ton in Hamburg, and is of two kinds, both so soft that they can not stand transportation. The Westphalian soft coal is cheaper than the American, and is preferred. At present, American soft coal can only be imported on the Mediterranean with profit, and there, also, everything depends on the freight rates.

The importation of anthracite coal from America is quite another matter. Mr. Schulze has just purchased 10,000 tons, which will reach Hamburg shortly, and has arranged for 30,000 tons more for March and April. He will probably take 100,000 tons next year. The freight, however, must not go above 7s. ($1.70) per ton, or no business can be done. The coal is sent whole, and broken up at the works in Hamburg. In the importation of anthracite coal, England is the only competitor with America.

NATIONALIZATION OF ORE DEPOSITS IN SWEDEN.—A bill is to be introduced in the Swedish Parliament providing for the acquisition of the Swedish ore-fields by the government. The fields to be acquired by the State are the Gellivare iron ore-field, the Luossovaara-Kirunavaara, and several others. It was originally intended to include also the Grängesberg iron ore mines, which, up to the present time, have supplied the Silesian blast furnaces with ore, but for the present this plan has been abandoned. In order to get an accurate estimate of the value of the ore fields in question, a number of mining engineers were summoned to Stockholm, where they submitted their ideas to the minister of finance. The universal opinion throughout Sweden is that the ore-fields should not be allowed to pass under the control of foreign capitalists.

THE CRIPPLE CREEK DISTRICT DURING 1901.

BY OUR SPECIAL CORRESPONDENT.

The production from this district during the past year has exceeded that of 1900 as far as the tonnage is concerned, but has fallen behind somewhat in regard to values. This is especially noticeable of the smelting ore. The production has been more from the larger mines than heretofore. There is not nearly as much leasing as there was; this is due to the fact that a number of leases on ground belonging to large companies, have expired and the tendency on the part of a good many of these companies is not to renew their leases; also a number of the smaller companies have consolidated, and while most of the larger mines are employing more men, it is probable that the total number of men that have worked during the year is at least no greater than 1900. Another reason for the decline in leasing is the fact that the terms upon which the leases are obtained, have been getting harder. The dullness of the stock market during the past six months has also a tendency to discourage smaller companies, as it is almost impossible for them to sell their treasury stock to any advantage to obtain funds for working. During the latter part of the year, however, the mills have made very favorable rates for the treatment of low grade ores, which will tend to considerably increase the output during the coming year. The railroads are also now giving very favorable freight rates on these ores. At present, the contract rate on ores ½ ounce or less, in gold per ton, can be treated for $7 per ton for freight and treatment charges. The rate on high grade ores has been somewhat increased during the year, thus neutralizing the reduction on the low grade ores. The total output of the district for the year amounts to 514,465 tons of a total value of $18,039,999; of this 184,465 tons of the value of $48.60 per ton, amounting to $8,864,990 were treated by the smelters, and 330,000 tons of the value of $27.50, making $9,750,000, were treated by the chemical mills. Of the milling ore, 204,935 tons of the value of $5,794,800 were treated by the Colorado and Standard plants of the United States Refining and Reduction Company of Colorado City; the balance was treated by the mills of the United States Reduction and Refining Company, and others at Florence, and by the Economic Mill of the Woods Investment Company at Victor. The smelting ore was treated by the various mills at Denver and Pueblo.

The following table shows the production by years:

1891	$2,300	1897	$11,500,000
1892	585,010	1898	14,200,000
1893	2,010,367	1899	15,662,400
1894	3,250,787	1900	19,862,594
1895	6,970,015	1901	18,039,999
1896	8,499,300		
		Total	$100,542,772

Dividends.—The dividends paid by the public stock companies of the district have considerably exceeded those of the past year. Most of the large mines have kept up their same rate of payment as last year, and some have increased the rate. The Gold Coin is now paying at the rate of $30,000 a year. Stratton's Independence also increased its dividends during the latter part of the year. The Elkton Consolidated has paid $300,000 during the year. The Lilly has not paid any, nor has the Independence Consolidated. The Isabella paid one dividend of 1 cent a share during the early part of the year, but since then has discontinued. The Vindicator has increased its dividend, and the Bull Hill Consolidated paid a large extra dividend in December.

Mines.—A large amount of work has been done on the mines in this district during the year. On Battle Mountain, the Portland has made a heavier production than ever before. The Gold Coin has kept up its usual rate, and the Ajax has shipped considerable ore. Stratton's Independence, Limited, has shipped a large amount of ore and done a great deal of development work, though, apparently according to Mr. Hammond's report results of the development have not all been encouraging. On Squaw Mountain, considerable interest has been created by the discovery of considerable quantities of ore at good depth in the Santa Rita. On Raven Hill, the Elkton has maintained a heavy production, though very much handicapped with water during the early part of the year.

During the first part of the year, the Doctor-Jack Pot shipped a large amount of ore, but during the latter part, most of the energy has been devoted to the prosecution of development work. Water has also been a heavy handicap. A good deal of work has been done on the Moose, but no ore has been shipped.

On Bull Hill, the Victor has practically remained idle, with the exception of some leasing in the upper workings during the early part of the year. The Isabella has apparently pursued its usual checkered career, and as far as can be learned, the results during the year have been rather disappointing. On the south side of the hill, W. S. Stratton has done a great deal of development work at different times in the John A. Logan and American Eagle. But little work is now being done on the Lilly, the developments at the depth of over 1500 feet have failed to disclose ore in any quantity. Its neighbor, the Vindicator, however, has done remarkably well. The Golden Cycle has also shipped a great deal, notwithstanding the fact that the shaft and other houses were burned down about the middle of the year, and the shaft was also damaged to some extent. The Hull City Placer has been much the same as for two years past, doing some work, but not shipping much ore. Some leasing has been carried on on the Lucky Guss and the Union properties, now owned by Mr. Stratton. The Free Coinage, in Altmann, has been worked by leasers and shipped considerable ores. The Wild Horse has also maintained a heavy production. On Ironclad Hill but little has been done during the year. The Damon and Jerry Johnson have done considerable work, but have been handicapped by litigation.

Globe Hill has been the scene of some activity, Mr. Stratton having commenced to sink a larger working shaft on his properties in that neighborhood. On Gold Hill, the Anaconda has taken the lead and has shipped a great deal of ore, being worked partly by leasers and partly by the company. Considerable ore has also been shipped from the Conundrum claim of the Anchoria-Leland Company. The Moon Anchor has been worked by leasers a little, but has not done anything very startling. The Gold King in Poverty Gulch has maintained its usual good record. On Guyot Hill, the Mary McKinney has kept up its record of being one of the best properties in the district. Quite a little work is being done on the Katinka group. On Beacon Hill, the El Paso has developed into a large property. Some work has also been done on the Mabel M. and Gold Dollar on the east side of Beacon Hill.

Mining Transfers.—Quite a number of consolidations have been made during the year, though not so many large ones as in 1900. Among the principal ones may be mentioned the absorbing by the El Paso of the property of the Kimberly Company and the Cripple Creek Columbia Company. The El Paso has also bought the Little May and the Australia. The Eclipse has consolidated with the Sunset Company, and is now known as the Eclipse-Sunset Company. A consolidation has also been made between the Solitaire and Bonnie Nell companies on Raven Hill, and the Mabel M. and Gold Dollar on Beacon Hill.

Railroads.—One of the noteworthy events of the year in the district, was a completion of the Colorado Springs & Cripple Creek District Railway, usually known as the Short Line. This road comes from Colorado Springs on the south side of Pike's Peak, and is controlled by a number of the principal mine owners of the district. The road was completed to the district in April, but it took considerable time to complete its switches, etc., to the various mines, and for some time it did not handle much ore; but it is at present doing a large amount of freight as well as passenger business. The new electric road, which was completed during the lat-

ter part of 1900, is controlled by the same company as is also the old electric road, which runs over Bull Hill. This makes the Cripple Creek District one of the best equipped mining camps in the world as far as railroad facilities go, and ore hauling by wagons bids fair soon to be a thing of the past.

New Machinery.—Some new machinery has been installed during the year, but probably not as much as in 1900. Stratton's Independence has installed a large new plant as have also several others.

Mills.—During the year the large new Standard Mill has been completed at Colorado City, and is now quite a factor in the treatment of Cripple Creek ores.

smaller ones. Quite an important apex suit is at present going on between the Damon and Jerry Johnson, situated on Ironclad Hill. A very important suit was tried in Council Bluffs, Iowa, during the past year, which involved a large amount of Portland stock, but the outcome will not have any effect on the property.

Tunnels.—Considerable work has been done on the Ophelia Tunnel, which belongs to the Cripple Creek Gold Exploration Company. This tunnel runs into Gold Hill, under the town of Anaconda and into Raven Hill, and now has a length of considerably over a mile. A project is being slowly gotten under

use of electricity in mining during the year. Several of the mills that were being run principally by electricity, are now closed down, and as the number of smaller leasers in the camp has fallen off considerably, the number of electric hoists in use is not so large. The new plant of the Pike's Peak Power Company was put in operation in June, and is now supplying power to all the properties controlled by the Woods Investment Company, as well as to others. The company is doing considerable lighting around the district. This plant is run by water power and it is situated on Beaver Creek, several miles southeast of the town of Victor. The Labella plant, at Gold-

FLUCTUATIONS OF MINING STOCKS IN COLORADO SPRINGS, COLO., DURING 1901.

Name of Company.	Par Value	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Acacia	$1·00	·30	·22	·23	·18	·18	·16	·17	·12	·13	·11	·15	·14	·15	·13	·17	·15	·17	·14	·17	·15	·17	·13	·13	·11	493,838
Alamo	1·00	·13	·11	·16	·15	·14	·13	·14	·13	·14	·13	·15	·14	·15	·13	·14	·13	·14	·13	·15	·13	·14	·13	·14	·13	782,800
American Con	1·00	·07	·06	·07	·06	·06	·05	·06	·05	·05	·04	·05	·04	·06	·05	·05	.....	·05	.....	·05	·03	.....	.....	·04	·03	100,000
Anaconda	5·00	·50	·42	·49	·43	·46	·40	·45	·41	·40	·39	·40	·37	·38	·30	·36	·31	·36	·30	·30	·24	·30	·25	·26	·25	198,797
Anchor	1·00	·03	·02	·03	·02	·03	·02	·02	·02	·02	·02	·03	·03	·03	....	·03	.....	·02	.....	·02	.....	·02	.....	·02	.....	14,000
Antelope	1·00	·03	·02	·03	·05	·02	·02	·02	·02	·02	·02	·02	·02	·02	....	·02	.....	·02	.....	·02	.....	·02	.....	·02	.....	61,500
Aola	1·00	·06	·05	·06	·05	·05	·04	·04	·02	·04	·04	·04	·04	·04	·03	·03	.....	·04	.....	·04	·03	·04	·03	·03	.....	292,900
Argentum-Juniata	2·00	·31	·22	·34½	·25	·26	·25	·27	·25	·19	·16	·20	·17	·17	·14	·17	·10	·15	·09	·10	·06	·09	·05	·06	·05	173,027
Banner	1·00	·03	·03	·04	·03	·04	·03	·03	·03	·03	·03	·03	·02	·02	....	·02	.....	·03	.....	·02	.....	.....	.....	·04	.....	77,500
Battle Mt. Con	1·00	·26	·20	·26	·25	·28	·24	·28	·20	·21	·21	·19	·11	·18	.17	·18	·15	·20	·16	·20	.17	·18	·15	·18	·15	175,509
Black Bull	1·00	·13	·10	·14	·11	·13	·12	·14	·12	·12	·10	·14	·11	·11	·08	·11	·10	·11	·10	·10	·07	·09	·08	·10	·08	82,500
Blue Bell	1·00	·15	·14	·22	·17	·19	·16	·18	·14	·17	·16	·17	·16	·16	·15	·17	·14	·17	·15	·16	·13	.....	.....	·14	·08	130,700
Buckhorn	1·00	·07	·05	·06	·05	·05	·04	·04	·03	·04	·04	·04	·04	·04	·03	·04	·03	·04	·03	·04	·03	·04	·03	·03	.....	65,500
Cadillac	1·00	·03	·02	·03	·03	·02	·02	·02	·02	·02	·01	·03	·02	·02	....	·03	·02	·02	.....	·02	·01	·02	.....	·02	.....	74,000
Central Con	1·00	·07	·06	·06	·05	·08	·06	·10	·09	·09	·08	·09	·07	·08	·05	·09	·07	·11	·08	·10	·03	·09	·07	·07	·06	520,000
Champion	1·00	·07	·06	·07	·06	·06	·05	·06	·04	·06	·05	·05	·04	·06	·05	·05	·04	·06	·04	.....	.....	·04	.....	·04	·03	63,028
Chicolo	1·00	·03	·02	·03	·03	·03	·03	·03	·03	·03	·02	·03	·02	·02	....	·02	.....	·02	.....	·02	.....	·02	.....	·02	.....	84.000
C. K. & N	1·00	·03	·03	·03	·03	·03	·02	·03	·02	·06	·02	·03	·01	·03	....	·03	·02	·02	.....	·03	·02	·02	.....	·03	.....	656,200
C. C. Columbia	1·00	·13	·11	·15	·12	·16	·14	·14	·11	·17	·14	·22	·15	·23	·21	·26	·23	.....	.....	.....	.....	.....	.....	.....	.....	427,500
C. C. G. Ext	1·00	·16	·12	·14	·14	·14	·10	·13	·08	·12	·07	·09	·09	·09	·08	·09	·08	·09	·06	·08	·05	·08	·05	·08	·06	81,097
C. C. & Man	1·00	·10	·09	·10	·09	·09	·08	·11	·10	·09	·07	·08	·08	·08	·07	·08	·07	·10	·C7	·08	·07	·07	·05	·06	·05	274,779
Creede & C. C	1·00	·13	·08	·15	·08	·10	·08	·11	·09	·08	·06	·10	·08	·09	·07	·10	·07	·12	·07	·10	·05	·08	·05	·05	·04	11,000
Cripple Creek Con	1·00	·13	·10	·12	·10	·12	·11	·11	·10	·08	·07	·09	·08	·08	·07	·10	·08	·09	·08	·09	·07	·10	·08	·09	·08	360,000
Dante	1·00	·10	·09	·17	·08	·08	·07	·08	·07	·06	·06	·07	·07	·06	·05	·08	·05	·12	·04	·05	·03	·05	·04	·05	·04	222,300
Eclipse	1·00	·09	·08	·10	·10	.....	.....	·10	·09	·13	·06	·17	·15	·13	·11	·14	·11	·13	·11	·13	·12	.....	.....	.....	.....	1,911,700
Elkton Con	1·00	1·90	1·50	1·91	1·85	1·62	1·60	1·79	1·60	1·79	1·71	1·88	1·75	1·72	1·64	1·88	1·76	1·78	1·70	1·74	1·65	1·52	1·48	1·49	1·39	165,451
El Paso G	1·00	·53	·45	·60	·55	·50	·44	·47	·41	·39	·36	·51	·44	·46	·43	·57	·47	·61	·52	·80	·60	·76	·73	·65	·63	1,586,122
F. Rawlings	1·00	·25	·10	·15	·13	·25	·15	·27	·20	·30	·23	·28	·27	·20	·15	·21	·15	·23	·15	·20	·15	·20	·15	·15	·10	93,900
Findley	1·00	·14	·11	·14	·12	·14	·11	·13	·11	·13	·12	·12	·11	·10	·09	·10	·09	·10	·08	·09	·07	·09	·07	·09	·08	189,266
Gold Sovereign	1·00	·09	·07	.....	.....	·07	·06	·06	·06	·56	·03	·06	.06	....	....	·06	·04	·05	·04	·04	·03	.....	.....	.....	.....	150.000
Golden Fleece	1·00	·30	·23	·40	·30	·40	·28	·41	·35	·40	·40	·40	·39	·39	·35	·40	·34	·40	·30	.....	.....	.....	.....	·40	·20	58,800
Hayden G	1·00	·02	·02	·02	·02	·02	·01	·02	·01	·02	·02	·02	·02	·02	....	·02	·01	·02	.....	·02	.....	.....	.....	.....	.....	39,000
Ingham Con	1·00	·21	·19	·21	·18	·29	·18	·19	·16	·20	·18	·19	·18	·17	·13	·18	·14	·16	·12	·17	·12	·13	·12	·13	·12	166,895
Ironclad	·50	·06	·05	·06	·05	·07	·06	·06	·05	·07	·06	·07	·06	·07	·06	·06	·04	·06	·05	·06	·04	·05	·02	·03	·02	357,129
Isabella	1·00	·72	·62	·86	·69	·77	·67	·75	·65	·66	·64	·63	·55	·45	·40	·63	·43	·60	·40	·50	·40	·40	·35	·34	·41	1,234,828
Jack Pot	1·00	·73	·50	·63	·57	·57	·50	·54	·50	·52	·50	·51	·47	·45	·40	·47	·39	·45	·37	·45	·34	·42	·39	·40	·35	125.050
Josephine	1·00	·03	·02	·62	·02	·02	·01	·01	·01	·02	·02	·02	·02	·02	....	·02	.....	·02	.....	·02	·02	.....	.....	.....	.....	50,500
Key West	1·00	·03	·03	·03	·03	·03	·02	·03	·02	·02	·02	·02	·02	·02	....	·02	.....	·02	.....	·02	.....	·02	.....	.....	.....	128.000
Lexington	1·00	·13	·10	·15	·10	·10	·08	·08	·07	·09	·03	·09	·08	·08	·07	·07	·06	·07	·05	·07	·06	·07	·06	·07	·05	234,700
Magnet Rock	1·00	·04	·03	·04	·03	·03	·03	·03	·03	·02	·02	·03	·02	·03	·02	·03	.....	·03	·02	·03	·02	·02	.....	.....	.....	134.332
Margaret	1·00	·04	·02	·03	·03	·03	·02	·02	·01	·02	·02	·02	·01	·02	·01	·02	.....	·02	.....	·02	·01	·02	.....	·02	.....	40.000
Margery	1·00	·03	·02	·04	·03	·03	·03	·03	·03	·03	·02	·02	·02	·03	·02	·02	.....	·02	.....	·04	.....	·02	.....	·02	.....	64,500
Midway	1·00	·05	·04	·04	·04	·04	·03	·04	·03	·03	·08	·04	·03	·04	·03	·07	·03	·04	·03	·07	·02	·04	.....	·04	.....	638,500
M. J. T	1·00	·05	·03	·04	·04	·04	·03	·03	·02	·02	·02	·03	·02	·03	·02	·02	.....	·02	.....	·02	.....	·02	.....	·02	.....	126.000
Mobile	1·00	·04	·03	·04	·03	·04	·03	·03	·02	·03	·02	·04	·03	·03	·02	·03	·02	·03	·02	·03	·02	·02	.....	·02	.....	157,000
Mollie Dwyer	1·00	·04	·03	·07	·06	·06	·05	·06	·05	·04	·04	·08	·05	·07	·06	·07	·06	·08	·07	·07	·03	·05	·04	·03	.....	1,226,518
Mollie Gibson	1·00	·30	·20	·24	·21	·28	·21	·31	·22	·30	·24	·50	·42	·37	·32	·40	·30	·38	·20	·32	·15	·18	·13	·15	.....	193,418
Monarch	1·00	·10	·09	·09	·08	·08	·05	·05	·05	·05	·05	·05	·04	·05	·04	·05	·04	·05	·04	·04	·03	·04	·03	·03	.....	79,800
Montreal	1·00	·05	·04	·04	·04	·05	·03	·04	·03	·04	·03	·04	·03	·03	·02	·04	·03	·04	·03	·04	·01	·03	.....	·03	.....	45,483
Moon-A'c'r	1·00	·30	·20	·30	·22	·34	·28	·32	·28	·30	·26	·27	·25	·33	·29	·32	·24	·34	·26	·31	·26	·28	·24	·25	·20	85.600
Morning Star	1·00	·05	·03	·04	·04	·04	·03	·04	·02	·03	·03	·03	·03	·03	·02	·04	·02	·05	·04	·05	·03	·04	.....	·04	·03	1,033,669
National	1·00	·11	·09	·11	·10	·09	·05	·06	·05	·04	·04	·05	·04	·04	·03	·04	·03	·05	·03	·04	·03	·03	·02	·02	.....	495.500
Nellie V	1·00	·08	·06	·08	·07	·06	·05	·06	·05	·05	·05	·06	·05	·07	·05	·06	·05	·05	.....	·05	·03	·05	·04	·04	.....	350,350
New Haven	1·00	·09	·07	·12	·09	·10	·07	·09	·08	·07	·06	·07	·07	·07	·06	·05	·02	·06	·05	·07	·04	·06	·04	·05	·04	384,450
Olive Branch	1·00	·05	·04	·05	·04	·04	·03	·04	·02	·04	·03	·03	·03	·03	·02	·05	·02	·04	·03	·03	·02	·03	·02	·03	·02	226.000
Oriole	1·00	·05	·03	·04	·04	·04	·03	·03	·03	·03	·03	·03	·03	·03	....	·04	·03	·04	·03	·03	·02	·02	.....	·02	.....	68,607
Orphan	1·00	·20	·13	·18	·15	·17	·11	·17	·23	·16	·14	·16	·14	·18	....	·18	·17	·20	·17	·22	·19	·10	·07	.....	.....	87,500
Pelican	1·00	·03	·02	·03	·02	·03	·02	·02	·02	·02	·02	·02	·02	·02	....	·02	.....	·02	.....	·02	.....	.....	.....	.....	.....	211,000
Pharmacist	1·00	·09	·07	·11	·11	·14	·10	·13	·10	·09	·08	·09	·08	·09	·07	·10	·08	·09	·08	·08	·06	·06	·03	·06	·05	628,500
Pilgrim	1·00	·12	·08	·11	·11	·14	·07	·09	·08	·09	·07	·08	·07	·09	·07	·08	·06	·07	·05	·06	·04	·04	·03	·05	·03	69.800
Pinnacle	1·00	·20	·15	·22	·17	·19	·12	·12	·10	·11	·10	·11	·10	·08	·05	·09	·07	·10	·07	·11	·07	·09	·08	·09	·08	118,350
Portland	1·00	3·50	3·20	3·25	3·03	3·05	2·85	3·07	3·01	3·05	3·01	3·10	3·00	3·02	3·00	3·15	3·00	3·10	2·90	3·06	2·98	3·00	2·84	3·00	2·75	74,800
Prince Albert	1·00	·06	·05	·06	·06	·05	·05	·05	·05	·05	·05	·05	·04	·05	·04	·05	·04	·05	·04	·05	·04	·04	·02	·04	·03	363,200
Prin ess	1·00	·06	·05	·06	·05	·05	·03	·06	·05	·05	·04	·05	·04	·05	·04	·05	·03	·05	·03	·04	·02	·04	·02	·03	·02	81,000
Progress	1·00	·06	·05	·08	·07	·07	·05	·06	·06	·05	·05	·06	·05	·06	·05	·06	·05	·05	·05	·05	·04	·04	·03	·04	.....	228,500
Republic	1·00	·08	·07	·09	·08	·08	·06	·07	·06	·06	·04	·07	·05	·05	·04	·06	·04	·05	·04	·03	·02	·04	·03	·04	.....	176,200
Robert Burns	1·00	·08	·04	·05	·05	·05	·04	·05	·04	·05	·03	·04	·03	·04	·03	·04	·03	·05	·02	·06	·05	·03	·02	·02	.....	162,500
Rose Maud	1·00	·09	·07	·08	·07	·07	·06	·07	·06	·06	·03	·06	·05	·05	·04	·06	·05	·07	·05	·07	·05	·08	·06	·06	·05	309,028
Rose Nicol	1·00	·12	·10	·08	·07	·10	·07	·08	·07	·07	·05	·09	·07	·08	·06	·07	·06	·07	·06	.....	.....	·07	·05	·06	·03	117,500
Uncle Sam	1·00	·05	·04	·05	·04	·04	·04	·04	·03	·04	·04	·04	·03	·03	·02	·04	·02	·04	·03	·03	·02	·03	·02	·02	.....	73.000
Vindicator	1·00	1·40	1·20	1·35	1·28	1·35	1·00	1·30	1·00	1·30	1·10	1·25	1·15	1·36	1·16	1·20	1·10	1·19	1·12	1·40	1·06	1·24	1·19	1·25	1·17	86,660
Va. M	1·00	·10	·07	·10	·08	·08	·07	·08	·05	·07	·07	.....	.....	·06	·04	·06	·04	·06	·03	·04	·03	·05	·03	·08	.....	50.300
Work	1·00	·22	·19	·23	·20	·22	·19	·19	·18	·17	·15	·19	·15	·14	·13	·16	·13	·15	·13	·13	·12	·11	·10	·10	·09	305,650
Total sales																										20,412,081

A consolidation of this plant, the Colorado-Philadelphia, also at Colorado City, and the Union, Metallic and National Plants at Florence has been effected during the past year, under the name of the United States Reduction and Refining Company. At present, the larger quantity ore is being treated by the Colorado City plants, though within the past month or two the Florence plants are handling considerable ore. Work is also progressing slowly on the large Portland Mill, at Colorado City. The Rocky Mountain Smelter, at Florence, which was closed down for some months, is again in the market for Cripple Creek ores. The Economic Mill, which is controlled by the Woods Investment Syndicate, is the only one at present in operation in the district.

Litigation.—There have not been as many important mining suits, but there have been a number of

way, by which a large drainage tunnel will be run under the Cripple Creek District, cutting Bull Hill at a depth of nearly 4,000 feet. It is reliably reported that money has been promised to construct this tunnel, for a length of 6½ miles. Should this tunnel be constructed it will be of great value in the draining of the mines in the district.

Extension of District.—As has been the case for several years past, the producing area of the district has not been extended to any extent. Considerable work has been done on the Lincoln Mine, near Gillett and the results are fairly promising. Ore in paying quantities has also been reported near Cow Mountain on the property of the Bedford-Annex Company, but so far none has been shipped. Copper Mountain has not produced any ore during the year.

Electricity.—There has been some decrease in the

field, is still in operation, as is also the Colorado Electric Power Company, at Cañon City.

ALUMINUM SOLDER.—The London *Engineer* says that in a paper read before the Society of Arts recently by Professor E. Wilson, the following were given as the constituents of a good aluminum solder: 28 pounds block tin, 14 pounds phosphor-tin—10 per cent phosphorus—3.5 pounds lead, and 7 pounds spelter. The following instructions should be followed when soldering aluminum: Clean off all dirt and grease from the surface of the metal with benzine, apply the solder with a copper bit, and when the molten solder covers the surface of the metal, scratch through the solder with a wire brush, by which means the oxide is broken and taken up. Quick manipulation is necessary.

THE LONDON METAL MARKETS IN 1901.

BY OUR SPECIAL CORRESPONDENTS.

The London metal markets have been active during the past year, but values of all descriptions of metals have been on the downward path. The close control of copper by the Americans and the persistent holding of iron and tin stocks by the bull operators have caused these two articles to rule at a backwardation for forward delivery almost without cessation. This state of affairs is never conducive to good speculative business, and both these articles have been near akin to gambling counters throughout. The cheaper metals have also declined in values, chiefly owing to the fact that trade, if not actually declining, has ceased to be as generally prosperous as in the two preceding years. America has been buoyant with only moderate reactions, and trade in this country has on the whole been good, especially when we take into account the continual drain upon the country's resources by the continuance of the South African War, which drags on day by day without any appreciable sign of termination. Germany and the rest of the Continent have been depressing factors during almost the whole of 1901, excessive speculation and disappointing finance causing heavy realizations, which have entailed the discharge of thousands of workmen and the suspension of a number of the more risky trading institutions.

COPPER.

Electricity has been the salvation of many of the metals, more particularly of copper and lead, and it is a satisfactory feature that this branch of trade is making such headlong strides, not only in America, but throughout England and the Continent.

January opened with a visible supply of 28,860 tons, compared with 22,817 tons at the commencement of 1900, and with standard copper at about £73 spot and £73 12s. 6d. three months; but owing to the increase of the Bank of England rate of discount to 5 per cent and to the apparent indifference of the American manipulators, values became easy and touched £70 12s. 6d. and £71 5s. for the above-named prompts Consumption during this period was good, but buyers were only buying from hand to mouth, which policy they generally adhered to during the whole period that we now have under review, and in the light of later events we can see that this view was correct, and has saved our home manufacturers from being caught at high prices, and so being saddled with large stocks at the top level, as has been the case on the Continent with most of the concerns connected with the iron and steel industries.

February commenced with the visible supply at only 152 tons above the previous month's, but prices eased off a shade owing to realizations and a want of speculative interest; but on the resumption of buying by parties identified with the Amalgamated Company there was a slight improvement to £71 15s. cash and £72 7s. 6d., but some "bear" selling soon pushed prices back to about 10s. per ton. There was rather better demand from consumers, and the English Government also bought fair lines for stock.

March started with the visible supply at 28,995 tons, against 28,904 tons at the end of January and after £71 5s. was done for cash and £71 15s. for three months, dullness again became apparent, and prices were allowed to drift to £67 10s. cash and £68 three months. The chief cause for this flatness was a severe slump in copper shares in Paris which caused holders of copper to take fright, and there was no sign of reaction until the middle of the month, when the statistics showed a substantial decrease and this caused a rally to £69 10s. and £70. Consumers bought freely at the decline, more particularly on the Continent.

April witnessed a better speculative feeling, induced by the strength of the share market in America and the intervention of American supporters in the metal market. Prices steadily rose until cash touched £71 and three months £71 10s., but just at the end of the month there was a sudden break to £69 10s. and £70, respectively. Trade with manufacturers was good and they bought freely in all kinds of copper. The War Office and Admiralty also purchased largely, with the result that at the beginning of May there was a better tone prevailing and the market improved to £70 10s. for early delivery and £71 for forward. At this time the Amalgamated Company and other large producers were offering lake and electrolytic copper at reduced prices, and most of the chief consumers were speedily filled up. The American railway share market also had a shake up at this time, causing a reaction in the standard market, prices declining to £69 spot and £69 10s. for later deliveries.

June statistics gave 27,231 tons as the visible supply, but the standard market entered into a period of inactivity and business became a matter of mere jobbing between insiders; values consequently underwent but very little change, the whole of the fluctuations being covered by 20s. per ton. Trade with consumers was quiet, the chief demand being for copper suitable for electrical and ammunition work. Tough was also scarce owing to the firm attitude adopted by the principal producers.

July opened with a dull outlook, the figures giving a slight increase in the world's supply of copper. Standard, after commencing at £68 cash, fell away to £67, three months metal offering at 10s. advance. American operators gave some support at this level and caused an improvement of about 30s. per ton, but this was partially lost before the end of the month, when the closing rates were £67 10s. cash and £67 17s. 6d. forward. Trade remained quiet and consumers were only buying on a limited scale.

August began with the stock at 27,395 tons, but the metal trade was greatly disturbed by the strike in America among the iron workers and many people, believing that this might complicate the whole of the American labor market, took fright and sold copper freely, causing a rapid decline to £65 5s. cash and £65 12s. 6d. forward. This level was touched about the middle of the month and reports then spread of further arrangements with the Amalgamated and other large producers; in fact, it was suggested that a giant copper trust was to be formed which would embrace all the largest producers of the world. The rumor was good enough to give speculation a fillip and values speedily recovered to about £67 10s. cash and £67 15s. three months. But when we had touched these figures one of the largest of the European outside producers gave an absolute denial to the report and profit taking soon ensued, causing a setback to £66 10s. and £7. The advance in standard gave users of copper more courage and they bought rather freely. It was also stated that some of the larger mines in America were shut down for a time.

September opened with a substantial shrinkage in the visible supply, which stood at 25,821 tons, being a reduction of over 1,500 tons on the month. These figures were responsible for a rise to £67 10s. cash and £68 three months, but the receipt of the news of the dastardly attempt on the late American President's life was a disturbing factor, and this market, in sympathy with all others, experienced a relapse. Reports then arrived from America predicting an early reduction in price by the Amalgamated Company, and this naturally caused uneasiness among speculators and a want of confidence with consumers. The possibility of this action was made more apparent, when it was known that the Amalgamated and Anaconda companies had reduced their dividends. The stock markets in America and in Paris and London quickly gave way to a state bordering on panic, and it was not to be wondered at that the copper market also became demoralized, the result being that standard quickly descended to £60 10s. cash. The Amalgamated then publicly announced that they were not going to cut their price, and there was a sharp recovery to £63 5s. cash, £63 12s. 6d. three months, at which the market closed. Demand for consumption up to the time of the publication of the above recorded unfavorable rumors was good, but naturally fell off very materially towards the end of the month.

October figures showed a further shrinkage in stocks which stood at 24,765 tons, and values of standard continued to improve until £65 was touched for cash. Renewed selling, based on share movements, then caused a decline to £63, but smelters bought good lines of standard to convert into refined, and this caused large deliveries from warehouse, and the fear that this might cause a very considerable reduction in the already greatly reduced warrant stocks, caused a revival, so that an improvement was again made to the region of £65 10s. The dealings were on a large scale and fluctuations were violent, and after prices had dipped again as low as £62 5s. cash and £61 5s. three months, there was an advance to £65 and £64, respectively.

November commenced with a large decrease of nearly 4,000 tons in the visible supply and values were strong in the neighborhood of £66 cash and £65 forward, and remained so until just at the close of the month, when a decided raid on forward metal was commenced by one firm who threw large lines of forward metal on the market, much to the bewilderment of the whole of the operators. Sales were so persistent and of such magnitude that we witnessed a time more exciting than has been seen since the breakup of the French syndicate.

December proved to be the most exciting month of the whole year, commencing with renewed aggressive selling on behalf of a prominent dealer, who in the best informed circles was supposed to be selling on behalf of the Amalgamated crowd, and this hammering continued practically throughout the month with only a few days' intermission, but immediately values showed any signs of steadying a further onslaught was noticeable. Reports from America as to continued reduction in the United Metals Selling Company's price also helped to aggravate the weakness of the standard market, and just before Christmas affairs took a still more sensational turn, owing to the suicide of a well-known broker. This was followed by the failure of one of the oldest firm on the London Exchange, who broke down owing to the weight of metal that they were long of, and their commitments in this article being heavy, caused another setback in values, which on December 20 declined to £48, but later in the day on bear covering there was a reaction to the neighborhood of £49. The year closed with standard copper selling at £49 2s. 6d. for spot, £49 2s. 6d. for three months also.

TIN.

At the commencement of 1901 the month statistics showed a decrease of 2,132 tons excluding American, and a total visible supply of, roughly speaking, about 23,000 tons. In the latter part of December the price had been rushed up to £124 in anticipation of large American purchases, but buying declined towards the close of the year, and January opened with the market at £122 10s. for all positions. Consumers and speculators ceasing to take any strong interest in the metal, prices gradually dropped to about £118, and the market became dull but sensitive, with frequent, but small, fluctuations in price. Towards the close of the month, however, business was fairly active, owing to some moderate buying from America and covering by option dealers, and £123 17s. 6d. was touched for close dates. Forward tin was freely offered, the month closed at £121 5s. cash and a backwardation of £4 on three months.

Statistics at the beginning of February showed a further decrease in European stocks of 396 tons, but supplies during January had largely exceeded the demand, and the total tonnage in sight was increased by 1,600 tons. On the strength of the above European figures bears hastened to buy against their close commitments, and the market started firm at near £123 for early deliveries; the backwardation on forward increasing to about £5. Towards the middle of the month bear covering was less in evidence, and prices declined. A slight rally was followed by extensive realizations, and the closing prices were £121 cash and £115 12s. 6d. three months. A principal feature of the market throughout the month was the heavy backwardation of £5 to £6 per ton on three months' tin. Home consumption

was not very satisfactory, chiefly owing to the shutting down and reduction of output among the South Wales tinplate works.

March opened with a decrease of 786 tons in European stocks and a further addition to the total visible supply. Heavy arrivals in London eased spot prices, and values gradually sank to £118 10s. for early dates, £115 for end of April and £113 7s. 6d. for three months.

American purchases of forward tin gave the market a slight upward tendency, but on the cessation of these orders values again dropped. After the Banka sale the market became sensitive, but good American reports prevented prices from giving way. The end of the month saw prices at £115 5s. for cash and £113 for three months, with a dull tendency. Consumptive demand was very small in Europe, but a large quantity of arrival tin was taken out of the English market for shipment to America.

In the early part of April sellers were persistent, and in spite of good orders from America values fell away until £113 15s. cash and £111 5s. three months was touched; the downward tendency being assisted by the increase in European stocks of 1,316 tons. Later in the month a good consumptive demand came to the assistance of the market, prompts became less plentiful and prices reached £115 15s. cash and £113 10s. three months. A slight fall caused by unfavorable reports from America was quickly followed by some strong buying, and prices rallied for a short time, but to weaken again as orders died away. After numerous but small variations in price, final quotations stood at £118 cash and £115 three months. Consumptive demand was good throughout the month both at home and from America. A considerable tonnage was transferred from London stocks to New York and the diminution of spot holdings caused expectation of favorable statistics.

These expectations were realized by the figures at the opening of May showing a decrease of 3,725 tons in English and Continental stocks. The market opened firm at £118 7s. 6d. cash and £115 for three months, and a good consumptive demand from America and Europe brought values up to £120 10s. for cash and £118 for three months. Eastern sellers became very shy, and consumption remaining good, the bulls easily manipulated a rise of £4 per ton for all positions. Towards the end of the month the position became still firmer and the shortness of supplies together with eager covering of forward dates by anxious bears sent the market up to £130 for cash and £129 5s. for three months. In view of the approach of the Banka sale, however, interested parties endeavored to check the upward rush, and, with an easier feeling apparent in Eastern offers, May ended with prices at £129 15s. prompt and £128 10s. for forward. A characteristic of the month was the smallness of the London spot stock and this gave great assistance to bull operations. The Banka sale realized an average of £129 15s. Consumption was good throughout and tin-plate makers were very busy. Three months tin gained altogether £7 during the month and at one time the backwardation had almost run off.

The commencement of June saw persistent attempts on the part of the bears to depress the market. Statistics showed an increase of 2,083 tons in European stocks and with sellers strongly to the fore prices slowly receded to £127 10s. cash and £124 10s. for three months. A renewal of the American demand strengthened the market somewhat and prices jumped to £131 10s. cash with a £4 backwardation on forward. The middle of the month witnessed a keen struggle for the mastery between bulls and bears. Prices fluctuated rather heavily, but finally the bears by persistent selling and assisted by reports of large shipments from the Straits, brought three months tin as low as £122 5s. with cash at £127. The loss of the *Asturia* with 750 tons for New York revived prices and the final tone of the market was firm with cash at £129 5s. and three months at £123 and £123 5s. Demand from consumers was sluggish and chiefly for prompt delivery and a good deal of speculative option business was transacted. The East was for the most part a free seller, and a large business was done, but towards the close of the month the tone in this quarter became firmer.

The first portion of July was chiefly marked by a great scarcity of warrants for immediate delivery. European stocks decreased 475 tons and business started at £130 10s. for cash. Transactions in three months were very restricted and sellers had to accept a very heavy backwardation in order to market any quantity. London spot stock was very tightly held and owing to shipments from the East being overdue some buyers had to pay fancy prices in order to cover their obligations. In one case as much as £140 was paid for a parcel of cash tin. Heavy bear selling of forward tin increased the backwardation on three months and at one time this stood as wide as £20 to £25. With large arrivals of metal prices of cash

FLUCTUATIONS OF MINING STOCKS IN NEW YORK DURING 1901.

Name and Location of Company.	Par Value.	January.		February.		March.		April.		May.		June.		July.		August.		Sept.		October.		November		December.		
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H	L.	H	L	
Adams Co., g., Colo.	$10	·25	.....	·25	·15	.....	.....	.....	.....	.....	.....	.....	.....	·20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Alamo, g., Colo.	1	·13	·12	·17	·15	·15	·13	.....	.....	·15	·14	·15	.....	·15	·14	·15	·14	·15	·14	·15	·14	·14	.....	·14	·11	66,300
Alice, g., Mont.	25	·84	·45	·48	.....	·45	·40	·40	·37	·50	·42	·47	·45	.....	.....	.....	.....	.....	.....	·55	·44	·45	.....	.....	.....	8,610
Amalgamated, c., Mont.	100	93·38	88·75	94·00	88·38	10450	94·50	128·75	99·88	123·63	101·50	130·00	117·00	124·25	109·00	122·75	110·00	120·00	88·63	92·00	83·38	88·38	72·50	76·30	60·50	10,057,494
Anaconda, c., Mont.	25	48·75	40·75	47·00	42·25	49·38	45·00	54·25	45·75	51·63	42·00	51·38	47·75	48·88	42·00	48·50	42·50	47·25	35·75	37·00	34·00	35·50	30·30	32·50	28·50	1,069,783
Anaconda, g., Colo.	5	·45	·40	·46	·45	·46	·40	·43	.....	·42	·20	·40	.....	·40	·32	·35	·34	·35	·32	·29	·28	·28	·23	.....	.....	14,500
Argentum-Jun., g.s.l., Colo.	2	·29	·27	·26	·25	.28	·24	·25	·21	·21	·19	·21	·19	·18	·17	·15	·12	·13	.....	·11	.....	·10	·08	.....	.....	34,800
Best & Belcher, g.s., Nev.	2	.....	.....	·26	.....	.....	.....	·20	.....	·30	·25	·32	·19	·22	·20	·23	·17	·22	.....	·18	·15	·19	·16	·15	·13	10,500
Breece, i.s., Colo.	25	.....	.....	.....	.....	1·50	.....	1·50	.....	1·88	1·60	1·70	1·55	.....	.....	.....	.....	.....	.....	1·50	1·20	1·25	1·20	.....	.....	3,675
British Columbia, c., B. C.	10	22·75	17·63	21·63	18·50	21·13	19·75	20·25	16·25	19·00	16·00	18·50	15·00	17·00	14·50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25,700
Brunswick, g., Cal.	1	·28	·22	·40	·28	·29	·23	·25	·20	·20	·15	·22	·15	·20	·13	·11	·09	.....	.....	·12	·06	·14	.....	·18	·14	106,140
Cable Con., g., Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·04	.....	·05	·04	.....	.....	.....	.....	5,000
Catalpa, s.i., Colo.	10	·14	.....	·15	.....	.....	.....	.....	.....	·14	.....	·14	·13	.....	.....	·14	.....	.....	.....	·14	.....	.....	.....	·14	.....	2,200
Chollar, s.g., Nev.	2	.....	.....	.....	.....	.....	.....	.....	.....	·12	.....	.....	.....	.....	.....	.....	.....	·08	·05	.....	.....	.....	.....	·08	·05	6,900
Chrysolite, s.l., Colo.	50	·10	.....	·07	·06	·08	·06	.....	.....	·06	.....	·06	.....	·08	·03	·06	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,880
Comstock Tunnel, s.g., Nev.	100	·05	.....	·05	·04	·08	·05	·08	·05	·06	·05	·07	·06	·08	·04	·07	.....	·08	·07	·07	·06	·07	·06	·07	·03	143,300
Comstock Tunnel Bonds.	100	·06	·05	·04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·07	·06	.....	.....	·08	·06	·06	.....	·06	.....	75,000
Con. Cal. & Va., s.g., Nev.	2½	2·80	1·55	1·85	1·50	2·30	1·50	2·50	2·15	2·55	1·30	2·55	2·15	2·35	1·95	2·50	1·80	1·90	1·65	1·90	1·75	1·85	1·60	1·75	1·65	29,920
Creede & Crip. Creek, g., Colo.	1	·12	·09	.....	.....	·10	.....	.....	.....	·10	·09	·09	·08	.....	.....	.....	.....	·08	.....	.....	.....	.....	.....	·10	·06	16,100
Crescent, s.i., Colo.	10	·12	.....	.....	.....	·13	·12	·12	.....	·12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,600
Cripple Creek Con., g., Colo.	1	·13	·10	·13	·11	·12	.....	·12	·08	.....	.....	·10	·09	·10	·09	·10	·09	·09	.....	·09	·07	·10	·07	·10	·06	73,100
Crown Point, g.s., Nev.	3	·17	.....	.....	.....	·15	·10	.....	.....	·17	.....	·10	.....	.....	.....	·09	.....	.....	.....	.....	.....	.....	.....	·08	·04	2,000
Daly, g., Utah.	20	.....	.....	.....	.....	1·50	.....	.....	.....	1·50	.....	1·30	.....	1·30	.....	.....	.....	.....	.....	.....	.....	.....	.....	1·30	.....	650
Deadwood-Terra, g., S. Dak.	100	.....	.....	.....	.....	·53	·52	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·60	·55	·55	·50	.....	.....	.....	.....	2,735
Dunkin, s., Colo.	1	·15	·13	.....	.....	·11	·10	.....	.....	·12	.....	.....	.....	.....	.....	·12	·10	·08	.....	.....	.....	.....	.....	.....	.....	2,900
Elkton Con., g., Colo.	1	1·85	.....	.....	.....	.....	.....	1·60	.....	.....	.....	1·79	1·70	1·70	.....	.....	.....	1·70	.....	1·60	1·30	1·55	1·45	1·45	1·36	6,700
Fanny Rawlings, g., Colo.	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·21	.....	·19	.....	·20	.....	.....	.....	1,700
Gold Dollar, g., Colo.	1	·26	·25	·28	·26	·23	.....	·26	.....	·21	.....	.....	.....	.....	.....	·20	·19	.....	.....	·10	.....	·18	·10	·10	.....	19,800
Golden Fleece, g.s., Colo.	1	·25	.....	·30	·26	·34	·20	·42	·33	·40	·38	.....	.....	·38	·30	·36	.....	.....	.....	·36	·20	·33	.....	.....	.....	11,800
Gould & Curry, g.s., Nev.	3	.....	.....	.....	.....	.....	.....	.....	.....	·12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·07	·06	·06	.....	2,700
Hale & Norcross, s.g., Nev.	3	.....	.....	·20	·19	·15	.....	·22	.....	·27	·22	·26	.....	·25	.....	·30	·21	·15	.....	·20	·14	·20	·16	·20	·15	9,400
Hart, g., Colo.	1	·14	.....	.....	.....	·14	.....	.....	.....	·13	.....	·14	.....	.....	.....	.....	.....	·13	·12	.....	.....	.....	.....	.....	.....	3,800
Homestake, g., S. Dak.	100	78·00	75·00	80·00	.....	.....	.....	100·00	.....	.....	.....	.....	.....	.....	.....	.....	.....	104·00	.....	.....	.....	.....	.....	.....	.....	208
Horn Silver, s.l., Utah.	25	1·20	1·15	1·45	1·15	1·26	1·10	1·20	1·10	1·30	1·10	1·50	.....	1·75	.....	1·75	.....	2·00	1·80	2·25	1·90	.....	.....	.....	.....	11,315
Iron Silver, s.i., Colo.	20	1·15	.....	·68	.....	·66	·64	·64	·63	.....	.....	.....	.....	.....	.....	·65	·60	·65	.....	·65	.....	·64	·62	·65	.....	5,700
Isabella, g., Colo.	1	·75	·65	·82	·70	·76	·67	·75	·69	·71	·63	·65	·56	·56	·42	·54	·43	·61	·50	·60	·42	·48	·30	·36	·30	48,850
Jack Pot, g., Colo.	1	·62	.....	·64	·60	.....	.....	·55	·54	.....	.....	.....	.....	·40	.....	.....	.....	·42	.....	.....	.....	.....	.....	.....	.....	1,800
Justice, s., Nev.	1	·12	·10	.....	.....	·08	.....	·10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·04	·02	.....	.....	1,200
Kingston & Pembroke, i., Ont.	10	.....	.....	.....	.....	·25	.....	.....	.....	.....	.....	.....	.....	·25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,300
Lacrosse, g., Colo.	10	.....	.....	.....	.....	.....	.....	·10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Leadville Con., g.s., Colo.	10	·08	·06	·08	·07	·06	·05	·07	.....	·07	·06	·06	·03	·07	·06	·08	·07	·09	·08	·08	·06	.....	.....	.....	.....	22,900
Little Chief, s.l., Colo.	1	·17	·15	·15	.....	·15	·14	·15	·14	·13	.....	·14	.....	·14	·13	·14	·13	·14	·12	·13	·12	·12	.....	·13	.....	22,600
Mexican, g.s., Nev.	3	·60	·30	.....	.....	·40	·34	·20	.....	·25	·18	·20	.....	·10	.....	·20	·18	·16	.....	·19	·18	·17	·14	.....	.....	9,000
Mollie Gibson, s., Colo.	5	·24	·22	·22	·20	·26	.23	·25	·23	·34	·23	·46	·34	·39	·36	·40	·32	·36	·30	·30	·18	·25	·20	.....	.....	38,150
Moon-Anchor, g., Colo.	5	.....	.....	.....	.....	·34	·32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Moulton, g., Mont.	25	·30	.....	.....	.....	.....	.....	.....	.....	.....	.....	·35	·30	·40	·35	·35	·30	·28	.....	·30	.....	.....	.....	.....	.....	2,400
Mt. Rosa, g., Colo.	1	.....	.....	.....	.....	.....	·35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
Ontario, s.l., Utah.	100	7·00	6·50	7·63	6·25	11·00	7·88	10·00	9·00	8·50	8·00	9·50	8·00	10·25	9·25	10·00	8·00	13·00	10·00	12·25	10·88	11·00	10·00	9·25	8·25	26,015
Ophir, g.s., Nev.	3	·88	·65	·95	·60	·83	·64	1·05	·35	1·05	·85	1·20	·90	·92	·65	·90	·75	·95	.75	·85	·80	·84	·75	·80	·65	25,650
Pharmacist, g., Colo.	1	·10	·09	·13	·10	·14	·12	·13	·09	·10	·09	·10	.....	·09	.....	.....	.....	·12	·08	·09	.....	·08	·06	.....	.....	72,100
Phœnix Con., g., Ariz.	1	·10	.....	·11	·09	·10	·09	·10	.....	·18	·08	·18	·12	·12	·09	·17	·09	·09	·08	·08	·07	·09	·07	·07	.....	29,250
Plymouth, g., Cal.	10	.....	.....	.....	.....	·10	.....	.....	.....	·10	·09	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,100
Portland, g., Colo.	10	.....	.....	3·20	.....	3·00	2·30	3·00	2·80	3·00	2·80	3·05	2·90	3·00	2·90	2·95	2·90	3·00	2·75	2·85	.....	2·90	.....	2·90	2·65	8,130
Potosi, g.s., Nev.	3	·26	.....	·18	.....	·20	.....	·12	·10	.....	.....	.....	.....	.....	.....	·05	.....	·08	.....	.....	.....	·05	·03	·06	·02	4,800
Quicksilver, q., Cal.	100	.....	.....	.....	.....	1·00	.....	3·00	1·55	5·00	2·00	5·25	4·00	4·13	4·10	4·00	3·13	4·25	2·75	4·75	3·25	4·75	4·00	4·25	3·88	60,118
Quicksilver, pref., Cal.	100	9·50	.....	.....	.....	8·00	7·00	10·88	9·25	12·75	10·00	12·50	10·00	.....	.....	10·75	10·00	10·00	.....	11·50	10·50	10·50	9·75	9·63	9·50	11,700
Savage, s., Nev.	2½	·30	·17	.....	.....	.....	.....	·15	·12	.....	.....	.....	.....	.....	.....	·08	·05	.....	.....	·15	.....	.....	.....	·06	·03	5,400
Sierra Nevada, s., Nev.	3	·40	·20	·35	·20	.....	.....	·35	·30	·28	·15	·22	·18	·20	.....	.....	.....	·22	·15	·20	.....	·10	.....	·11	·07	13,400
Small Hopes, s.l., Colo.	20	·80	.65	·75	·70	·75	·70	·65	.....	.....	.....	.....	.....	·70	·60	·65	.....	·50	.....	·55	.....	·45	.....	.....	.....	5,050
Standard Con., g.s., Cal.	10	4·30	3·90	4·35	.....	4·20	4·10	4·25	4·15	3·80	3·57	3·85	3·75	3·75	3·10	4·00	2·65	3·55	3·50	4·00	3·00	4·00	3·85	4·00	3·50	9,020
Syndicate, g., Cal.	1	·12	.....	·12	.....	·10	.....	·09	.....	·09	·08	·08	.....	·08	.....	.....	.....	·06	.....	.....	.....	.....	·07	.....	.....	5,150
Tennessee, c., Tenn.	25	19·00	16·00	18·63	16·50	20·00	17·50	28·38	14·00	24·00	18·50	23·50	20·00	22·00	17·00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13,602
Union Con., s., Nev.	2½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	·12	·10	1,200
Union, c., N. C.	10	5·75	3·50	5·00	3·50	4·75	3.75	8·25	4·50	7·63	5·88	7·38	6·25	6·88	4·88	5·75	4·25	5·88	4·00	4·88	4·00	7·25	4·25	5·25	3·75	131,850
Work, g., Colo.	1	·20	·18	·22	.....	·20	·19	·19	.....	·20	·19	·17	·16	·16	.....	·15	·14	·15	.....	·14	·13	·13	·10	·10	·08	58,300
Yellow Jacket, s., Nev.	3	·18	14	.....	.....	·20	.....	·15	.....	.....	.....	·10	·08	·08	.....	.....	.....	.....	.....	·10	.....	.....	.....	·08	.....	4,800
Total sales.																										12,063,195

c., Copper; g., Gold; i., Iron; l., Lead; q., Quicksilver; s., Silver.

rapidly fell away towards the end of the month and finally closed at £116 for cash and £112 for three months. Consumption on the whole was not very good, most users buying from hand to mouth. Welsh tin-plate makers were very busy owing to the strike in America and bought fair quantities. The Banka sale at the end of the month realized an average of £118 5s.

The statistics published at the commencement of August showed an increase of 2,300 tons in the total visible supply and of 3,000 tons in European stocks. The market started firm at £121 7s. 6d. for cash and £117 5s. for three months, but the unfavorable figures caused great weakness and in spite of good orders from America values gradually declined to £116 cash and £113 three months. Extensive realizations forced prices still further down and at one time cash was done at £114, and three months at £110 7s. 6d. A slight recovery was followed by still further selling and with declining values transactions became very small. In the latter part of the month cash tin again became scarce and £116 10s. was touched. As the month drew to a close a good demand from the Continent and the expectation of favorable statistics greatly strengthened the market and the close was very firm at £118 cash and £115 for three months. A large quantity of tin was shipped to America during the month and there was a good demand from tin-plate makers both there and in this country. The East sold freely throughout the month without holding out for high prices.

The first of September figures were favorable, the decrease for the month being 1,768 tons in European stocks, and the market opened strong at £118 7s. 6d., and £115 three months. Stale holders, however, availed themselves of the opportunity to realize and prices steadily receded until £113 15s. for cash and £110 15s. for three months was done. Some speculative purchases revived the market slightly, but with the East selling freely and bad reports from America prices slowly sunk. The decline was also assisted by the collapse in the copper market. The last week in the month witnessed a general steadying up of prices, and the final quotations were £113 5s. to £113 10s. for cash and £111 10s. for three months. The European demand was fairly good, but the long duration of the steel strike in America began to cause a serious shrinkage in American consumption of tin for tin-plates.

An increase of 1,005 tons in the stocks at the commencement of October caused somewhat heavy selling and values fell to £109 5s. cash with a backwardation of £2 on three months. After frequent fluctuations persistent buying of prompts from one quarter lifted the price for cash to £114 5s., with thre months at £106 and earlier dates £107 to £109. Purchases of cash continued until £115 10s. was paid, but as soon as buying orders ceased prices collapsed, being again assisted in their decline by the weakness of copper, and £112 cash was touched, while forward tin remained unchanged. The latter portion of the month was dull with an increasing backwardation on forward, and prices finally closed with cash at £114 to £114 10s. and three months £106 to £107. Demand from home consumers was quiet, but during the first portion of the month America made extensive purchases, the tin-plate works being very busy owing to the termination of the steel strike.

There was no Banka sale during October and the beginning of November figures showed a decrease in European stocks of 1,035 tons. The opening was dull with cash tin fluctuating between £114 and £115, and a backwardation for forward of £5 to £6. The tone of the market during the first half of the month was flat, with the exception of a slight rally in the price of cash tin owing to delays through fog in unloading arrivals. Values slowly weakened to £111 10s. cash, with three months at £106 15s. The strong reports from America due to the scarcity of spot tin there strengthened the market and £114 5s. was paid for near dates. In the last week of the month prices were further assisted by bulls calling in cash tin and £118 cash was touched. Realizations, however, quickly followed and the final tone was dull with cash at £113 and three months at £105. The American market was throughout the month considerably above the English level owing to the scarcity of stocks, and at one time prices for immediate delivery touched £156. The East was mainly a free seller at moderate prices.

December commenced with an increase in the visible supply of 2,250 tons, excluding America, and this fact, coupled with the weakness in copper, caused a dull tone throughout the month, values having a weakening tendency, but on December 20, when it was announced that a large bull operator, who had been closely identified with the upward movement for some months past, had suspended payment, there was a rush to sell by people who had to deliver metal to him at higher prices, which caused a very quick break in prices, so that £98 was touched for cash, £97 10s. being accepted for three months. When the most urgent selling had spent itself there was a quick recovery to £101 for cash and £100 for three months. Notwithstanding the continual fall in prices the demand for tin-plates remained good, and the prevailing weakness seems to have arisen more from the growing idea of increased production than of a falling off in consumption. The closing quotations are given as £105 7s. 6d. to £105 10s. for spot, and £104 to £104 2s. 6d. for three months.

LEAD.

Lead commenced in January at £16 5s. for soft foreign and about 2s. 6d. more for English, and trade was brisk at this figure, but later on in the month was a considerable amount of free selling on American account, which speedily brought values down to the neighborhood of £15. The fall was so rapid that consumers were frightened off the market. When February started a steady market for a few days induced a little better demand, but on the resumption of selling, prices again broke quickly, and before the month was out the price was down to £13 10s. March commenced with spirited buying on the part of prominent dealers, and this caused an improvement, and the American and Continental selling ceased for the time, values consequently quickly recovering to £14 10s. As soon, however, as confidence was again established, there was a renewed attack on the market by Continental holders, which drove values t› £12 15s. towards the third week of March, but a good demand from Russia and Germany pulled values up to about £13 5s., which was about the closing price for soft foreign, English being worth about £13 7s. 6d. April again witnessed a slump caused by free arrivals, and £12 3s. 9d.was at one time accepted, but this level attracted consumers and there was a recovery to £13 5s. for forward delivery, but spot stuff being plentiful, only fetched about 10s. discount below the price of distant metals. When a fair business had been put through, the Americans again became pressing with their sales, and ere the month was out, had knocked prices again to £12 5s., and this was the price at the beginning of May. America was only offering in small lines, and this steadied the market to £12 10s., but on a resumption of cheap offers from that side, there was a set-back to £12 2s. 6d. June opened with a dull and neglected market, prices only moving fractionally round about the previous values, the month ending at £12 7s. 6d. to £12 10s. for foreign and £12 10s. to £12 12s. 6d. for English lead.

July commenced with a dull tone at about £12 8s., but owing to low offers, buyers were not inclined to commit themselves to any extent, the consequence being that prices gradually drifted throughout the month, until £11 15s. was the ruling figure, and the month ended at about this price.

August showed a little better demand at the beginning of the month, but this soon fell off, and values fell to £11 10s., but ultimately recovered fractionally to £11 18s. chiefly on speculative buying, and the importers held for full prices.

September witnessed a further improvement, and it was apparent that consumers were very busy, lead for prompt delivery being somewhat scarce, and the price of near stuff was at one time £12 12s. 6d., shedding about 2s. 6d. to 5s. before October, at the commencement of which month prices declined still further to £11 5s. This level induced a good inquiry and there was a rally to about £11 10s. to £11 12s. 6d.

November was a flat month, owing to heavy arrivals of European and Australian metal, which caused a decline to £11, the market practically closing at this figure.

December began with a very poor demand, and with large quantities of metal arriving, and with free selling from America and the Continent, values suffered almost daily, until at one time £10 2s. 6d. was touched for soft foreign, English being quoted £10 5s. Towards the end of the month the lower range of prices attracted a good deal more attention from consumers, who bought rather freely.

SPELTER.

January opened with a steady market at £18 17s. 6d. ordinaries, and £19 for specials, and there was a fair amount of buying by consumers, but towards the end of the month the Americans showed themselves willing to sell the European parity, and this caused values to recede to £18 5s. for ordinaries. Continental makers also sold freely, thus helping the fall.

February again witnessed a further shrinkage, owing to a continuance of Continental offers, but America was somewhat better and offering from that quarter ceased. Values continued to droop throughout the month, until it finally closed at £17 5s.

Consumers bought freely throughout, having good orders placed, principally in the galvanizing and kindred trades.

March was also to be a month of declining rates, and although consumers were tempted to buy ahead and book good quantities, their purchases were not enough to stem the tide of selling, which set in from Europe, where all makers seemed to be rather heavily stocked. The lowest figure touched this month was £16 for ordinaries, specials being held for about 10s. more. Just at the close of the month there was a rally, chiefly induced by speculative buying and a withdrawal from the market of some of the chief sellers. The close was consequently strong at £16 17s. 6d. ordinaries, and £17 for specials.

April commenced with a quiet tone and prices drifted back again to the region of £16. At this time there was a meeting of the principal producers on the Continent to come to some arrangement, whereby they might restrict output and so keep values from declining. This caused a quick reaction from the bottom, and £17 2s. 6d. was paid for ordinaries. This conference was postponed constantly throughout the remainder of the year, but no definite agreement was come to. Continental producers took the opportunity of clearing out good quantities at these figures, which led to a set-back early in May to about £16 18s., only to advance again rapidly to about £18, but a further reduction was apparent towards the end of the month, when the ruling figure was £17 15s. for ordinaries and £18 specials. Consumers bought freely throughout in the hopes that a speedy arrangement would be arrived at by the producers. Zinc sheets and galvanized iron were in good demand, large orders for the latter article being placed for the South African market.

June, until about the middle of the month, was very quiet, but a little buying kept the tone steady at about £17, but towards the end of the month a quick break occurred, owing to heavy pressure of Continental sales, so that when July began the value of ordinaries was no more than £16 10s., specials being held for about 5s. more, and the market was steady throughout the month, prices only fluctuating to the extent of a few shillings, closing figures being practically those last mentioned.

August opened with a fair inquiry at about £16 10s., but steady buying caused a revival to about £17, which was about the nearest price when the month ended. September saw values steadily maintained within five shillings either way of £17, and although consumers were busy, there was enough spelter offering from the Continent to keep values

PRICES OF INDUSTRIAL AND COAL STOCKS IN NEW YORK AND PHILADELPHIA DURING 1901.

Name of Company.	Par Value.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
American Agri. Chem.	100	......	......	30·00	......	30·00	......	......	......	28·50	......	30·00	28·00	32·00	29·00	33·13	25·00	30·00	24·00	25·00	20·00	24·00	22·00	20·00	......	14,370
Am. Ag. Chem., pref.	100	......	......	......	......	......	......	......	......	84·25	......	90·00	84·25	90·00	87·00	89·00	......	85·00	80·00	85·00	80·00	83·00	81·00	81·50	79·50	760
American Alkali	50	2·38	2·00	2·13	1·75	2·25	1·75	2·00	1·25	1·38	1·00	1·13	1·00	2·38	2·00	2·13	1·75	1·75	·75	·88	·75	·75	·50	·50	·38	118,954
American Car & F d'y	100	23·88	19·00	23·00	20·25	27·13	20·38	27·50	25·25	29·00	20·00	35·00	28·00	33·00	27·00	31·88	27·75	31·00	28·00	29·00	23·75	30·00	25·00	30·63	28·50	211,628
Amer. Car & F'd'y, pref	100	73·50	67·00	72·13	69·88	82·00	71·50	83·25	78·88	83·00	75·00	88·88	82·38	89·25	81·25	87·50	80·00	87·38	83·00	83·63	78·00	86·00	80·50	86·50	84·75	32,446
American Cement	10	8·75	7·50	7·50	7·00	7·25	7·00	7·00	6·88	7·25	6·75	7·25	6·88	......	......	8·00	7·75	8·00	6·50	6·75	6·50	6·75	6·00	6·50	6·00	28,236
Amer. Sm. & Ref	100	65·50	53·50	63·25	45·63	59·50	51·75	69·00	53·25	61·75	39·75	59·88	55·13	58·00	51·00	55·25	50·00	52·50	43·25	45·00	38.50	47·75	40·75	45·75	42·25	2,180,934
Am. Sm. & Ref., pref	100	100·00	95·00	99·75	88·00	97·00	90·13	99·00	93·50	98·00	90·00	105·00	97·88	104·25	99·50	102·00	99·75	101·00	96·00	98·00	......	118·75	95·50	97·[illegible]	95·50	427,688
Bethlehem Iron	50	61·00	56·00	61·75	60·38	62·38	61·00	63·00	57·00	63·00	......	63·00	62·00	57·00	56·75	57·00	56·75	61·00	56·25	72·50	60·75	......	......	......	......	10,976
Bethlehem Steel	50	19·50	17·00	19·13	18.00	19·50	18·00	24·38	18·00	25·50	19·00	24·50	21·88	16·00	14·50	15·00	14·50	14·50	12·50	......	......	......	......	......	......	232,774
Cambria Iron	50	46·00	45·25	46·75	43·50	47·00	45·25	47·00	45·50	47·00	45·50	49·00	43·00	44·00	42·75	45·38	44·75	47·00	44·50	47·25	46·50	47·75	47·00	48·00	47·25	12,412
Cambria Steel	50	21·00	16·63	18·38	16·75	18·00	15·75	24·75	16·38	29·75	17·75	35·25	15·50	17·50	15·50	16·88	16·13	25·88	13·50	26·25	25·13	26·75	25·13	25·88	24·38	1,146,082
Colo. Fuel & Iron	100	56·50	41·75	51·50	41·75	55·88	42·13	108·50	55·25	107·50	85·00	136·50	98·00	116·38	90·00	100·00	90·00	104·25	92·75	95·25	88·50	96·00	91·50	92·50	77·00	866,540
Colo. H. C. & Iron	100	16·88	14·00	17·50	15·50	20·88	15·25	20·88	17·25	20·00	15·00	25·50	18·75	23·50	17·50	21·00	19·38	20·00	16·00	17·75	12·50	19·75	14·00	18·75	14·50	179,075
Monongahela R. Con. Coal & Coke	100	11·38	10·50	11·00	10·50	13·13	10·63	15·50	13·00	14·75	12·50	15·75	12·50	14·25	13·25	14·88	14·00	14·75	13·50	13·75	12·88	13·50	12·88	13·50	12·25	147,244
Mong. R. Coal, pref	100	43·25	42·50	43·50	42·75	45·88	43·00	49·00	45·75	48·75	40·00	49·00	47·25	47·50	47·00	47·25	46·50	48·25	47·00	47·00	45·00	46·00	45·00	47·00	45·50	10,579
National Lead	100	20·50	16·38	19·88	15·50	16·13	15·00	19·50	16·25	23·50	14·13	25·50	19·00	23·00	18·00	21·00	19·00	21·00	18·50	21·75	18·13	21·13	18·25	19·00	15·00	179,430
National Lead, pref	100	92·00	82·00	89·75	82·25	88·00	83·00	85·50	83·00	89·50	79·00	93·88	82·00	90·50	87·00	90·00	87·00	90·00	87·00	89·75	84·00	89·00	86·00	86·75	74·75	32,504
National Salt	100	46·00	40·00	44·00	40·00	48·74	42·13	47·00	41·50	46·00	43·00	45·00	43·50	45·00	41·50	43·00	40·00	42·50	40·50	40·00	24·00	33·00	29·50	32·00	27·00	108,429
National Salt, pref	100	79·00	73·00	77·00	74·00	82·38	76·88	81·88	76·00	78·13	75·00	78·25	76·00	77·75	74·50	77·00	74·50	77·25	75·50	70·00	61·75	70·00	62·00	69·00	61·00	53,671
Pittsburg Coal	100	28·00	27·13	29·25	27·63	29·25	26·88	35·00	29·00	34·50	31·25	33·00	30·00	32·25	30·13	32·25	30·50	32·88	30·22	30·13	28·00	28·00	27·00	28·25	25·50	170,578
Pittsburg Coal, pref	100	89·00	86·25	88·50	87·13	95·00	88·13	99·00	94·75	97·75	94·75	98·25	94·88	97·00	92·50	95·50	93·50	96·13	94·00	95·00	92·50	93·00	91·00	93·00	89·13	75,027
Pressed Steel Car	100	51·88	35·00	39·13	35·50	39·75	30·00	......	......	46·50	37·13	46·63	43·75	44·75	40·00	43·75	40·50	42·25	39.00	41·50	37·00	45·00	41·50	42·50	37·50	78,340
Republic I. & Steel	100	18·50	12·88	17·25	13·63	19·13	15·00	22·50	18·75	21·25	15·00	24·00	19·00	22·25	17·00	21·50	18·50	19·50	11·75	15·63	14·13	16·50	14·63	16·25	14·75	660,847
Republic I. & S. pref.	100	65·25	55·25	65·00	58·00	75·25	60·65	82·00	74·50	87·00	73·00	78·00	74·50	76·63	69·75	76·50	73·00	74·00	60·50	67·00	64·00	70·25	66·00	69·75	66·63	370,176
Sloss-Sheffield St. & Iron	100	22·00	20·00	23·00	19·75	37·00	22·50	41·00	35·00	41·00	32·13	39·00	35·50	35·50	33·00	33·00	30·50	31·50	30·00	30·00	......	32·00	29·50	31·50	28·00	72,905
Sloss-Sheffield St. & Iron, pref.	100	69·00	65·50	70·50	63·50	79·50	70·50	86·00	78·50	84·50	78·50	83·75	81·00	80·75	80·00	80·00	......	81·00	80·00	80·00	78·00	83·00	77·00	83·00	79·00	17,454
Standard Oil	100	806·00	785·00	820·00	780·00	805·00	770·00	823·00	797·00	842·00	785·00	800·00	750·00	778·00	755·00	780·00	765·00	778·00	735·00	735·00	689·00	722·00	695·00	710·00	659·75	2,105
Susq. Iron & Steel	10	2·63	......	2·75	2·13	2·50	2·00	2·50	1·25	2·50	2·00	2·38	2·00	2·50	2·25	2·50	2·25	2·50	1·75	2·00	1·88	2·00	1·75	1·88	1·75	60.145
Tenn. Coal, I. & R.R.	100	66·75	52·00	67·75	50·50	62·25	49·38	69·88	62·00	67·00	50·00	76·63	58·00	77·50	55·50	68·25	58·00	68·38	59·00	62·00	56·50	66·75	59·25	65·00	58·75	1,458,655
United Gas Improvement	50	123·00	......	127·75	122·50	125·25	124·00	126·00	122·50	123·00	113·88	120·75	112·00	115·88	111·00	115·50	112·50	116·00	105·00	115·50	113·00	119·00	113·00	118·38	115·00	92,858
United States Steel	100	......	......	......	......	......	......	46·50	......	54·50	24·00	52·38	47·50	48·88	37·00	45·75	39·63	45·88	40·25	44·75	41·00	44·50	41·25	43·63	39·63	6,092,906
United States Steel, pref	100	......	......	......	......	......	......	95·75	......	101·75	69·00	100·38	96·88	99·50	86·00	95·25	89·00	95·75	90·00	98·00	90·13	94·00	90·50	94·00	89·63	3,021,304
Va. Car. Chem.	100	......	......	......	......	......	......	71·25	......	70·00	67·50	68·00	66·25	65·25	59·00	63·00	58·00	64·00	59·00	61·00	56·75	65·00	59·25	63·00	60·00	15,069
Va. Car. Chem., pref	100	......	......	......	......	......	......	122·00	121·00	121·00	117·00	......	......	125·00	124·00	125·00	120.00	125·00	120·00	125.00	118·00	125·00	121·25	125·00	121·00	4,100
Va. Coal & Coke	100	7·00	3·00	5·00	2·00	5·00	3·00	10·00	3·50	9·00	6·00	10·00	7·50	10·00	9·00	......	......	......	......	......	......	......	......	......	......	500
Total sales	...	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	1,848,5[illegible]

FLUCTUATIONS IN MINING STOCKS IN BOSTON DURING 1901.

Name of Company	Par Value.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Copper:																										
Adventure Con. (b)	$25	$11	$9¼	$16	$10	$15¾	$12½	$18½	$14¼	$19½	$14	$22¼	17	$26¾	$21	$32½	$23½	$32½	$21	$25⅞	$26½	$24½	$21	$23	$15¾	209,303
Allouez (b)	25	3⅛	2½	4	2⅝	3¾	2½	3	2¾	3½	2½	3	2⅛	3½	2⅞	6	3	6¼	2⅝	5	1⅞	5	4⅛	4⅛	2¾	71,338
Amalgamated (a)	100	95⅛	88	95	88¼	103⅝	94	128½	99¾	124¼	103	127	119	124¼	110	122½	110	129	88½	91¼	83½	89	72½	76	60	1,597,129
Anaconda (a)	25	45⅛	42	46¾	43	49½	42¼	53	46⅝	52	39	51¼	48	48¼	43⅛	48½	43	47¼	34¼	37	34½	35½	32	32	29	32,147
Arcadian (b)	25	19⅛	16⅛	20⅛	15⅛	24¾	17½	23	20	21⅛	15½	19	16	17	15	15¾	12	14	8½	9⅛	5⅛	9	5	5⅞	3	98,157
Arnold (b)	25	5	3¾	4¼	3⅛	5¾	3½	5	3⅛	3¾	2½	3	2	3	2	3	1⅛	3	1¾	2	1¼	1⅛	1¼	1	½	26,911
Ash Bed (b)	25	½	.30	½	⅜	½	.43¾	......	......	......	......	.35	.35	......	......	......	......	.25		......	......	.25	......			65,564
Atlantic (b)	25	29	26	35	25½	35¼	32	35	30	35	29	38½	30	38	35	38	35	43	32¾	40⅛	30¼	41½	36	40⅛	24⅜	65,564
Baltic (b)	25	35½	32½	45	34	47½	38¼	49⅞	41	52	35	54	42¾	55	49	57	50	58	42	47	39⅞	48	41	45	31	160,486
Bingham (h)	10	16⅞	15	22¾	16	26½	20¾	29½	23½	26½	20	24¼	227	24⅞	21	43¾	20⅛	42¼	32	33	28	30	27	28⅛	23	213,894
Boston & Mont. (a)	25	325	308	331	312	370	330	450	350	484	395	498	438	......	......	......	......	......	......	......	......	......	......	......	......	48,370
British Columbia, Ltd. (i)	5	23¼	22	22	19½	21⅝	19¾	20⅛	14⅛	19	16	......	......	15¾	15¾	14⅛	13¼	15	15	15⅛	9	14	12¼	......	......	30,268
Butte & Boston (a)	10	83	77	87	78½	106	85½	119	95	116	92	124½	112	......	......	......	......	......	......	......	......	......	......	......	......	226,766
Calumet & Hecla (b)	25	848	830	855	842	860	790	838	820	840	820	825	785	790	720	746	700	730	660	680	630	665	622	645	550	5,653
Centennial (b)	25	25⅛	21	28	22½	29	24⅝	32	25	34¼	26	32	28¾	31¼	26¼	31½	26¾	30¾	19½	21¾	15⅛	18¾	15½	16⅛	10½	244,408
Copper Range (b)	25	38	34	50	37½	58	44	60	49½	64	46	75⅞	51½	79¾	71⅛	83	74	83	53	63	54	69	58	66	44	278,772
Elm River (b)	12	6	4⅛	6⅝	4⅛	7	3	6⅞	5¼	5⅛	4	5	4	5¾	4¼	5⅜	4	6	3	4	3	4	3¼	3	1¾	63,421
Franklin (b)	25	18½	16	24⅞	16¾	25⅛	21	23	18	19½	16	18	16⅛	18	16½	19½	17	22⅛	16	18	16⅛	17	16	16	11	96,751
Humboldt (b)	25	⅛	¼	¾	⅜	⅝	½	½	⅛	.35	.25	.25	.25	......	......			⅛	¼	.13	.10	......	......	......	......	3,175
Isle Royale (b)	25	39	35	42½	35	44¾	41	54¼	42½	56½	42	49¼	41	45¾	41	43	38¾	41⅛	25	28	23	25	21⅛	22⅛	18¼	245,972
Mass Con. (b)	25	13¾	11	15	12	17	13	20⅝	16½	20	14¾	18	16	19⅞	16¾	36⅜	20	37⅝	25	28¾	23½	25½	22	25	15	323,873
Mayflower (b)	25	2⅝	1⅞	4	1⅞	3½	2¾	3	2½	2½	1	2	1½	2	1	3	1½	3⅞	2	5⅝	3	4¼	3¼	3⅛	1½	93,174
Michigan (b)	25	7	5⅛	9	5⅛	7½	6⅛	9⅛	7	9	6½	9	7	15	8¾	19	12½	19¾	12½	16	12	14⅞	13	13	7	139,692
Mohawk (b)	25	28	22	29¾	23	35	27½	39⅞	29⅛	47	34	43½	37	44½	39½	53½	41	56¼	41	46	40¼	43½	40¾	40½	25½	297,274
National (b)	25	½	⅛	1⅝	1½	......	......	1	1	1	1	1	1	1¾	1¼	4½	1½	4	1¾	5¼	1¾	2¼	2	1¾	1½	20,280
Old Colony (b)	25	3½	3	5⅛	3¼	4¾	4	4½	4	......	......	......	......	7	2	5	3⅝	5¼	3½	5¼	4	4⅞	3¾	4⅜	2½	65,491
Old Dominion (c)	25	32⅞	28½	38	30	38¾	34¼	36¾	31⅛	36½	29½	34½	30	32	28½	35	29	35	27	29¾	24¾	27¼	24¼	25⅞	21	275,689
Osceola (b)	25	85½	79½	90	81	95	82	89	81¾	90½	83	90	86⅛	94	87	111	94	120	95	104	94	102	91	93	72	168,790
Parrot (a)	10	50¾	45⅛	51½	47	54½	50⅜	58½	49¾	57	49	55½	51⅛	51½	50	53½	50	53¾	37	41½	36¼	37⅞	34	35	26⅛	160,874
Phœnix Con. (b)	25	......	......	5⅛	4¼	5	4⅛	5	3¼	4	3¼	4	3¼	5	4	6¼	4¼	8¾	6¼	7¼	5⅞	6¼	5½	6	3⅛	48,074
Quincy (b)	25	180	163	180	165	177½	170	187	175	179	163	176	170	180¾	170	180	170	180	153	165	155	160	152	155	125	13,718
Rhode Island (b)	25	5	4	10	4⅛	8⅛	5⅜	6½	5⅛	6	4	4¾	3	5¾	3¾	6⅜	4	7⅛	4⅛	5	3¾	4	3⅛	4	3	99,768
Santa Fé (j)	10	7¼	6	8½	6	9	7¼	10¼	8	9	6½	7¾	6	7	6½	8	6½	7¾	4¾	5¾	4	5	4	4	2⅛	109,661
Tamarack (b)	25	344	320	339	330	350	325	350	330	342	315	345	330	350	342	350	343	360	280	305	280	290	265	275	230	11,924
Tecumseh (b)	25	2	1⅝	3	1¾	3	1½	2	1½	2½	1⅛	2½	2	2¼	2	2⅞	1¾	3	1	2¼	1	2	1⅛	1¾	½	78,076
Tennessee (k)	25	......	......	......	......	......	......	......	......	......	......	23	21¼	......	......	22	21	18½	17	......	......	......	......	......	......	1,952
Tri-Mountain (b)	25	23¼	19¾	29	20¾	43	27	50	34	49	37	55	46⅛	55½	50½	60	50	57	42¼	45	39	48½	40	43	28	231,320
Union (b)	25	3½	2⅜	3¾	3	5	3⅛	4	3⅛	......	......	......	......	3	......	3¼	3	3⅜	3	......	......	2	......			22,411
Utah Con. (h)	5	34½	31¾	36¼	32½	37½	31⅛	37¼	33	34½	28	33	29⅛	32½	29	39	28	39	23	26	22	25	22	23	18⅝	228,600
Victoria (b)	25	4	3⅝	5¼	3⅜	5	4¼	5	3⅝	5	3¾	5	4⅛	8	4⅞	10	6½	12	7¼	9	6⅛	7⅛	6½	6⅛	4	207,651
Washington (b)	25	¾	⅛	.80	.55	.65	.50	.55	.20	......	......	.25	.25	25	.25	.25	.25	......	......	13	......	......	......	......	......	5,530
Winona (b)	25	6¾	4½	10	5⅛	8	4	5	4¼	4½	3	3¼	2	3⅛	2	4½	2½	4½	2⅜	3	2	2⅛	2	2¼	2½	109,433
Wolverine (b)	25	50	46½	56	49	56	50	55	50	68	53	60	56½	62	57½	67	61	74	56	66½	57½	60	56¾	58½	44	99,765
Wyandotte (b)	25	2	1¾	3	1⅛	3	1⅜	2	1¼	2	1	1¾	1	2⅛	1¾	3⅛	1¼	2¾	1⅛	1⅞	1	1¾	1	1¼	1	35,378
Gold:																										
Centennial-Eureka (h)	25	25¼	23	28	24	35	27½	34¾	31	34	28⅛	31⅛	30	31⅛	30	......	......	......	......			......	......	......	......	75,102
Cochiti (j)	10	13⅛	9¾	10¾	8⅛	10	8⅛	8½	7⅛	8	5¼	7	5¼	5⅛	4⅛	5⅝	5	5⅛	3¾	4½	3	4	3¾	4	1¾	103,287
Cons. Mercur (h)	5	......	......	......	......	......	......	4	3⅛	3¾	3	3⅝	2⅝	3	1⅞	3	2⅞	3	2½	2½	2	2	1¼	1⅝	1¼	77,359
Daly-West (h)	20	30¾	30	34	30¼	36¼	34	36	35	37	35	41½	40	43⅛	43½	43	40	43⅛	33	37	32½	33	28	30½	30	12,020
Melones (e)	10	1¼	1	1¼	1¼	1¼	1¼	......	......	2	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	4,720
Merced (e)	15	6	5	6	5	5¼	5	5⅛	5	5⅛	5	5	4¾	5	5	4	4	5	3½	......	......	......	......	......	......	10,540
N. Amer. Dredging	5	1	¾	¾	¾	⅛	½	⅛	.10	......	......	5¾	5	......	......	......	......	1⅝	......	......	......	......	......	......	......	28,895
Santa Ysabel (e)	5	2½	2¼	2⅛	2	2	1¼	1¼	1	......	......	1	⅛	......	......	½	⅛	1	¾	⅛	⅛	......	......	......	......	9,586
United States (h)	25	11	9½	13½	9¾	19⅞	12¼	24	18⅜	24	18	21⅛	19	20¾	17	20¼	17¾	22	16¼	17⅝	15½	16⅛	14¾	15¼	13	462,458
Victor (d)	5	¼	¼	.80	.80	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	....
Zinc:																										
Am. Z. L. & Sm. (g)	25	12⅛	11⅛	12⅛	8⅛	11	8⅛	17	8¼	16⅛	12	15	13	14½	13	13	12	12	8¾	10	9⅜	10	9	10½	9	47,027
Continental (g)	10	......	......	......	......	......	......	......	......	......	......	......	......	3	......	......	......	......	......	......	......	......	......	2⅛	1⅛	1,700
Miscellaneous:																										
Ætna (e)	5	¾	¾	1	¾	¾	¾	¾	¾	¾	¾	......	......	......	......	......	......	......	......	......	......	......	......	⅛	......	2,700
Bonanza (d)	25	1¼	1	1½	1	1⅞	1⅛	1¾	1¼	1⅝	1	1⅜	1⅛	3.06	1.25	1.63	1.25	2.30	1.00	1¼	1	1⅛	1	1	¾	58,361
Boston (e)	10	6¾	5	7½	6	7½	6¾	7	6⅛	6	5⅛	......	......	......	......	......	......	......	......	......	......	......	......	......	......	7,790
Central Oil	25	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	8⅛	8	8	8	9	7½	......	......	6,391
Catalpa (d)	10	.20	.20	......	......	......	......	.22½	.21½	.20	.20	.15	.15	......	......	......	......	......	......	......	......	.18	.18	......	......	5,150
Crescent (d)	10	.10	.10	.18	.18	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	.10	......	825
Dominion Coal (f)	100	39¾	32¾	38	34¼	40⅛	36	39	36	37½	32	44	33½	40¼	37	40¼	37	45¼	39⅞	48¼	43¼	49	46	48⅛	46	156,824
Dominion Coal. pref. (f)	100	110	108	110	109⅛	111	110	115	111½	115½	114⅛	117	114	116	114	118	116	117	115	119	116⅜	118	118	120	116	4,460
Mont. Coal & Coke (a)	25	7	6	6⅛	4	6½	5	7¼	5⅛	5⅛	4	5	4⅛	5¼	4⅛	5⅛	5	5	4	4⅛	4¼	4¼	3⅛	4⅛	3⅞	19,420
Napa (e)	7	......	......	4	......	5	4	4½	4	......	......	4¼	......	4	......	......	......	......	......	4	......	......	......	......	......	1,250
New England Gas & Coke	100	14¾	10	14	11⅛	13⅜	12	13⅛	10	12	10	11	6⅛	9	5½	8	5¼	8	6	7	4	9¾	3	6⅜	4¾	83,120
New Idria (e)	5	10	9	......	......	9	9	......	......	......	......	......	......	......	......	6	6	......	......	......	......	......	......	......	......	260
Shawmut Oil	25	......	......	......	......	......	......	10	10	16	15⅛	......	......	......	......	......	......	......	......	......	......	......	......	......	......	808
United States Oil	25	....	......	......	......	17	12⅛	15⅛	13	15	12½	13	11	13	10½	16	11¼	15¾	12	14¼	12	14¾	12½	13⅜	10¼	49,945
Total sales	...	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	7,862,145

(a) Montana; (b) Michigan; (c) Arizona; (d) Colorado; (e) California; (f) Nova Scotia; (g) Missouri; (h) Utah; (i) British Columbia; (j) New Mexico; (k) Tennessee.

from rising much. All the upward movements in October were induced by rumors as to the success of the Producers' Convention, but no confirmation of any agreement was forthcoming. Prices oscillated between £16 18s. 9d. and £17 2s. 6d., and closed about the lowest. November opened with a quiet market and a falling tendency, most producers seeming quite willing to meet the demand at current values. Business was done as low as £16, and as high as £16 17s. 6d., but the end of the month witnessed the lowest figure.

December found spelter depressed in sympathy with all other metals, and prices sagged away to £16 5s., but rallied towards the middle of the month, on the renewed reports, that the European producers had at last come to a definite understanding. The highest point reached was about £17 for ordinaries, specials being held for about 5s. advance, and a good business was done on the advancing market, but when the above figure had been reached there was a tendency to recede, caused, no doubt, to a great extent, by the depression in the other branches of the trade. The year closed with good ordinaries selling at £16 15s., and specials at £17.

FLUCTUATIONS OF STOCKS IN LONDON DURING 1901.

Name of Company.	Location.	Authorized capitalization	Par Value.	Latest Dividend in 1901.	January-March.		April-June.		July-September.		October-December.		Year.	
					H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
		£	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Alaska-Treadwell, g	Alaska	1,000,000	5 0 0	1 6	5 5 0	4 17 6	5 2 6	4 12 6	4 17 6	4 10 0	4 12 6	3 17 6	5 5 0	3 17 6
Anaconda, c	Montana	6,000,000	5 0 0	8 2	9 17 6	8 5 0	10 17 6	9 2 6	9 18 9	7 8 9	7 13 6	6 7 6	10 17 6	6 7 6
De Lamar, g.s	Idaho	400,000	1 0 0	2 0	5 6	2 6	5 0	2 6	5 0	2 6	6 0	3 9	6 0	2 6
El Oro, g	Mexico	1,000,000	1 0 0	1 6	1 7 6	1 2 6	1 8 9	1 6 3	1 8 9	1 2 6	1 10 0	1 6 3	1 10 0	1 2 6
Hall Sm. & Mg., c.s	British Col.	325,000	1 0 0	.....	6 0	4 0	10 3	5 3	10 6	7 6	10 0	8 6	10 6	4 0
Le Roi, g	British Col.	1,000,000	5 0 0	.....	7 12 6	5 17 6	9 6 3	7 7 6	7 16 3	6 13 9	8 2 6	4 13 9	9 6 3	4 13 9
Le Roi No. 2	British Col.	120,000	5 0 0	5 0	5 10 0	3 10 0	5 15 0	4 0 0	4 5 0	2 15 0	3 15 0	2 6 3	5 15 0	2 6 3
Lillie, g	Colorado	250,000	1 0 0	.....	12 6	7 6	7 6	2 6	7 6	1 3	3 9	1 3	12 6	1 3
Montana, g.s	Montana	660,000	1 0 0	.....	3 2 6	2 0	4 3 3	2 9	4 0	2 6	5 3	4 3	5 3	2 0
Mountain Copper	California	1,250,000	5 0 0	5 0	5 5 0	4 12 6	5 0 0	4 7 6	4 12 6	3 17 6	4 10 0	3 15 0	5 5 0	3 15 0
Stratton's Independence, g	Colorado	1,100,000	1 0 0	1 0	2 15 0	1 0 0	1 16 3	18 9	1 10 0	1 1 3	1 5 0	18 0	2 15 0	18 0
Copiapo, c	Chile	200,000	2 0 0	2 6	3 5 0	1 11 3	3 13 9	3 6 3	2 17 6	2 10 0	2 17 6	2 10 0	3 13 9	1 11 3
Frontino & Bolivia, g	Colombia	140,000	1 0 0	3 0	2 5 0	1 2 6	2 5 0	1 13 6	1 17 6	1 0 0	1 1 3	17 6	2 5 0	17 6
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	1 6 3	1 0 0	1 3 9	18 9	1 9 6	19 6	1 3 9	19 6	1 6 3	18 9
Utah Con., c.g	Utah	300,000	1 0 0	5 0	7 7 6	6 5 0	7 10 0	6 0 0	6 2 6	4 15 0	5 5 0	4 10 0	7 10 0	4 10 0
Ymir, g	British Col.	200,000	1 0 0	1 0	1 13 9	1 7 6	2 3 6	1 8 9	2 12 0	2 1 3	2 5 0	2 1 3	2 12 0	1 7 6
Linares, l	Spain	45,000	3 0 0	7 0	9 10 0	6 0 0	7 0 0	5 0 0	6 0 0	4 0 0	5 0 0	2 10 0	9 10 0	2 10 0
Mason & Barry, c.sul	Portugal	420,000	1 0 0	12 6	3 17 6	3 2 6	4 5 0	3 5 0	3 15 0	3 5 0	3 15 0	3 7 6	4 5 0	3 2 6
Rio Tinto, c	Spain	1,625,000	5 0 0	1 15 0	60 7 6	57 2 6	59 15 0	54 5 0	53 2 6	46 15 0	48 0 0	41 0 0	60 7 6	41 0 0
Rio Tinto, pref	Spain	1,625,000	5 0 0	2 6	6 5 0	6 0 0	6 6 3	6 0 0	6 7 6	6 0 0	6 7 6	5 17 6	6 7 6	5 17 6
Tharsis, c	Spain	1,250,000	2 0 0	.....	9 2 6	7 2 6	8 10 0	5 12 6	6 17 6	5 17 6	6 10 0	6 15 0	9 2 6	5 12 6
Assoc. Gold Mines	W. Australia	500,000	1 0 0	.....	3 2 6	2 7 6	2 17 6	2 6 3	2 13 9	2 0 0	2 13 9	2 0 0	3 2 6	2 0 0
Broken Hill Prop., s	N. S. Wales	384,000	8 0	1 0	2 10 0	2 6 0	2 7 0	2 3 0	2 0 0	1 15 0	1 19 0	1 11 6	2 10 0	1 11 6
Great Boulder Prop	W. Australia	175,000	2 0	6	1 14 3	1 1 9	1 9 0	1 2 9	1 2 0	17 9	1 0 3	18 9	1 14 3	17 9
Hannan's Brownhill, g	W. Australia	140,000	1 0 0	.....	4 5 0	3 15 0	4 11 3	3 15 0	4 8 9	3 8 9	4 0 0	3 3 9	4 11 3	3 3 9
Ivanhoe Gold Corp	W. Australia	1,000,000	5 0 0	4 0	8 13 9	6 5 0	9 13 9	8 12 6	9 3 9	7 10 0	9 3 9	7 11 3	9 13 9	6 5 0
Kalgurlie, g	W. Australia	120,000	1 0 0	.....	4 5 0	3 6 3	4 8 9	3 10 0	3 15 0	3 3 9	3 13 9	3 5 0	4 8 9	3 3 9
Lake View Consols, g	W. Australia	250,000	1 0 0	5 0	8 17 6	5 17 6	9 12 6	8 5 0	9 1 3	7 11 3	8 17 6	5 11 3	9 12 6	5 11 3
Mt. Lyell M. & R., l.c	Tasmania	900,000	3 0 0	2 6	5 17 6	4 12 6	5 2 6	4 10 0	4 0 0	4 8 9	3 15 0	5 17 6	5 17 6	3 15 0
Mt. Morgan, g	Queensland	1,000,000	1 0 0	6	5 1 3	4 12 6	5 0 0	4 13 9	4 17 6	4 0 0	4 15 0	3 15 0	5 1 3	3 15 9
Waihi, g	New Zealand	330,000	1 0 0	2 6	11 0 0	8 0 0	8 10 0	5 13 9	5 18 9	5 7 6	5 18 9	5 8 9	11 0 0	5 7 6
Champion Reef, g	Colar Fields	234,169	10 0	4 6	6 3 9	5 12 6	6 6 3	5 15 0	6 1 3	5 10 0	5 18 9	5 11 3	6 6 3	5 10 0
Mysore, g	Colar Fields	265,000	10 0	3 2	6 2 6	5 8 9	6 12 6	5 17 6	6 10 0	5 16 3	6 2 6	5 16 3	6 12 6	5 8 9
Nundydroog, g	Colar Fields	242,000	10 0	1 6	4 8 9	3 1 3	5 12 6	5 1 3	2 3 9	1 18 9	2 16 3	1 18 9	5 12 6	1 18 9
Ooregum, g	Colar Fields	290,000	10 0	1 6	4 13 9	3 13 9	6 7 6	5 15 0	2 15 0	2 10 0	2 16 3	2 7 6	6 7 6	2 7 6
Ooregum, pref., g	Colar Fields	240,000	10 0	1 6	5 15 0	4 17 6	5 12 6	5 5 0	3 5 0	3 1 3	3 5 0	2 16 3	5 15 0	2 16 3
British S. Af. Chartered	South Africa	5,000,000	1 0 0	.....	3 13 9	2 18 9	3 11 3	3 1 3	3 5 0	3 0 0	3 0 0	2 10 0	3 13 9	2 10 0
Cape Copper	South Africa	600,000	2 0 0	5 0	5 15 0	4 17 6	5 13 9	5 5 0	5 7 6	4 15 0	5 5 0	4 15 0	5 15 0	4 15 0
Cape Copper, pfd	South Africa	150,000	2 0 0	5 0	5 10 0	4 7 6	5 10 0	4 10 0	5 2 6	4 12 6	5 2 6	4 15 0	5 10 0	4 7 6
City & Suburban, g	Transvaal	1,360,000	4 0 0	.....	6 0 0	4 12 6	6 2 6	5 12 6	6 1 3	5 10 0	6 6 3	5 13 9	6 6 3	4 12 6
Cons. Deep Level, g	Transvaal	200,000	1 0 0	.....	1 7 6	17 6	1 7 6	1 0 0	1 5 0	15 0	1 5 0	1 0 0	1 7 6	15 0
Crown Reef, g	Transvaal	120,000	1 0 0	.....	15 15 0	12 10 0	15 15 0	14 10 0	15 2 6	14 0 0	15 10 0	13 7 6	15 15 0	12 10 0
De Beers Cons., d	Cape Colony	3,950,000	5 0 0	1 0 0	32 5 0	28 2 6	34 15 0	32 0 0	36 16 3	33 2 6	39 15 0	36 16 3	39 15 0	28 2 6
Ferreira, g	Transvaal	90,000	1 0 0	.....	21 5 0	18 10 0	22 0 0	20 10 0	21 0 0	19 0 0	21 0 0	18 15 0	22 0 0	18 10 0
Geldenhuis Est., g	Transvaal	200,000	1 0 0	.....	7 2 6	5 7 6	6 17 6	6 7 6	6 11 3	5 17 6	6 16 3	5 15 0	7 2 6	5 7 6
Henry Nourse, g	Transvaal	125,000	1 0 0	.....	9 0 0	7 5 0	8 15 0	8 2 6	8 10 0	7 17 6	8 15 0	7 15 0	9 0 0	7 5 0
Jagersfontein, d	Orange Fr. St.	1,000,000	5 0 0	.....	18 10 0	15 0 0	19 10 0	16 10 0	19 5 0	15 10 0	22 12 6	18 17 6	22 12 6	15 0 0
Johannesburg Con. Invest	South Africa	2,750,000	1 0 0	.....	2 7 6	1 16 3	2 6 3	2 2 6	2 6 3	2 0 0	3 7 6	2 1 3	3 7 6	1 16 3
Jubilee, g	Transvaal	50,000	1 0 0	.....	6 15 0	5 0 0	6 10 0	5 15 0	6 2 6	5 7 6	5 17 6	5 6 0	6 15 0	5 0 0
Langlaagte Est., g	Transvaal	470,000	1 0 0	.....	3 12 6	2 17 6	3 10 6	3 5 0	3 12 6	3 2 6	3 10 0	2 1 3	3 12 6	2 1 3
May Con., g	Transvaal	290,000	1 0 0	.....	4 12 6	3 10 0	4 13 9	4 5 0	4 7 6	4 1 3	4 10 0	3 5 0	4 13 9	3 5 0
Meyer & Charlton, g	Transvaal	100,000	1 0 0	.....	5 12 6	4 5 0	6 0 0	5 7 6	5 12 6	4 17 6	5 17 6	4 1 3	6 0 0	4 1 3
Namaqua, c	Cape Colony	200,000	2 0 0	4 0	5 2 6	4 15 0	5 12 6	4 2 6	4 11 3	4 0 0	4 7 6	3 17 6	5 12 6	3 17 6
Primrose (new), g	Transvaal	300,000	1 0 0	.....	4 11 3	3 7 6	4 7 6	4 1 3	4 5 0	3 17 6	4 3 9	3 13 9	4 11 3	3 7 6
Rand Mines, g	South Africa	1,795,956	4 0	.....	42 10 0	36 12 6	42 15 0	41 15 0	42 17 6	40 2 6	40 11 3	9 17 6	42 17 6	9 17 6
Robinson, g	Transvaal	2,750,000	5 0 0	.....	9 12 6	8 12 6	9 17 6	9 10 0	9 16 3	8 15 0	9 18 9	8 17 6	9 18 9	8 12 6
Sheba, g	Transvaal	1,100,000	1 0 0	.....	1 2 6	16 3	1 3 9	1 0 0	1 1 3	17 6	1 0 0	16 3	1 3 9	16 3
Simmer & Jack Prop., g	Transvaal	5,000,000	5 0 0	.....	6 13 9	5 3 9	6 8 9	6 5 0	6 8 9	6 0 0	6 16 3	5 16 3	6 16 3	5 3 9
Wolhuter, g	Transvaal	860,000	4 0 0	.....	4 17 6	3 11 3	4 17 6	4 2 6	4 12 6	3 17 6	4 7 6	3 15 0	4 17 6	3 11 3

C., Copper; D., Diamonds; G., Gold; L., Lead; S., Silver.

COAL IN NEW CALEDONIA.—The *Australian Mining Standard* says that when the works which are now in progress are completed, Noumea will become a rendezvous for French ships of war, and, under present conditions, they will have to obtain their coal from New South Wales or New Zealand, which is regarded as undesirable. Coal is known to exist in New Caledonia. It is doubtful, however, whether it is suitable for naval or industrial purposes. It ignites with difficulty, and requires, it is stated, to be mixed with other coal before it will burn freely. However, it is unquestionable that a strong impetus has been given to the quest for the mineral, and it is quite possible that seams of better quality may yet be discovered.

THE WESTERN PENNSYLVANIA CENTRAL MINING INSTITUTE

The winter meeting of this Institute was held in the Court House in Pittsburg on December 18 and 19. On the morning of December 18, the meeting was called to order by the president, T. B. De Armit. The secretary reported that remarkable progress had been made during the past year, the Institute being in a very satisfactory condition, both numerically and financially, the income being ample for all purposes, while the members in good standing numbered 150 (not including 27 new members received during this session). The members include coal operators, mine officials, civil and mining engineers, together with a number of other persons connected with educational institutions and scientific journals.

The president in his address congratulated the members present (about 80 in number) upon the very prosperous condition of the Institute, which had, he said, been brought about by the earnest co-operation and progressive spirit displayed by the executive board, ably supported by the members. He went on to speak of the great benefits accruing to the mining fraternity by such institutions, wherein those having the burden of management resting upon them could meet together and exchange opinions upon every-day practical problems, likewise wrestle with the more intricate difficulties always to be anticipated in mining operations, the information thus gained being invaluable to all thoughtful persons who feel their great responsibility in guarding life and limb and the security of the property intrusted to their care, together with the successful and economical operation of the mines.

At the afternoon session two papers were read, the first being by Mr. F. Z. Shellenberg, of Pittsburg, on the Barometer, showing its usefulness in mining operations. The second, by W. C. Wilkins, of Pittsburg, was devoted to Mechanical Engineering, showing its various applications in coal mines and its relations to their economical and successful working.

At the morning session, on December 19, Mr. Austin King, of Leisenring, Pa., read a paper on Mine Explosions. It gave a summary of the history and causes of mine explosions which have occurred in the bituminous regions of Pennsylvania, and the lessons that may be learned therefrom, with a view to prevent like accidents in the future. A second paper, by Mr. James Blick, of Idlewood, Pa., on Mine Fires, treated of the history and causes of mine fires in the Pittsburg Region, and the methods used to subdue them, as gleaned from observation.

At the closing session in the afternoon, Mr. Roger Hampson, of Punxsutawney, Pa., read a paper on the Snow Shoe and Broad Top coal-fields, showing their extent, characteristics and the methods of working adopted. All of the papers read were fully discussed by the members present.

It was decided to hold the summer meeting of the Institute for 1902 at Uniontown, giving the members an opportunity to visit and inspect the fine plants recently introduced into the new coal-field now being developed near that place, commonly known as the New Klondike Coke Region.

The officers elected for the ensuing year were as follows: President, F. C. Keighley, Uniontown; vice-presidents, Charles Connor, California, and Austin King, Leisenring; editor of *Journal*, F. C. Keighley, Uniontown; secretary and treasurer, James Blick, Idlewood; auditors, Ruben Street, New Salem, and John Britt, Sturgeon.

MINERAL CLAIMS IN TEXAS

By Dr. William B. Phillips.

In a letter written on April 1 last, I mentioned an opinion from the office of the Attorney-General of Texas with respect to the reservation of mineral rights in certain public lands. Within the last 2 or 3 months the matter has again come to the front and this time in a more positive form, for the Supreme Court of Texas has decided a very important case in respect of the public lands and another opinion of the Attorney-General has been called for and given. In Volume 2, No. 15, of the *Texas Court Reporter*, the decision of the Supreme Court, through Associate Justice Brown, was pronounced in the Schendell case, as also in the Chappell case; and Hon. T. S. Reese, Assistant Attorney-General, has informed the Commissioner of the General Land Office with respect to certain claims in the quicksilver district of Brewster County.

In the case of Schendell versus Rogan, Commissioner of the General Land Office, Justice Brown held: 1. Where the Commissioner of the General Land Office has, in the exercise of the powers conferred by the statute, classified school land as agricultural, pasture or timber land, and offered the same for sale under such classification, and a purchaser has complied with all the requirements of the statute regulating the sale of such lands, the Commissioner's acts are conclusive upon the State, and the purchaser takes title free from any claim of the State for mineral that may hereafter be found in the land.

2. The provisions of the Act of 1895 (Revised Statutes, Article 3498a) that "all public school, university and asylum land . . . containing valuable mineral deposits, are hereby reserved from sale," etc., was not intended to operate upon lands which had not been found to contain valuable mineral deposits, and were not apparently mineral lands.

3. The provision in the Act of 1895 (Revised Statutes, Article 3498n) requiring a purchaser of school lands to make oath "that there is not, to the best of his knowledge and belief, any of the minerals embraced in this title thereon," does not apply to lands classed as agricultural and not known as mineral lands.

The effect of this decision is to prevent the location of any mining claim, by outside persons, upon public lands which were classified and sold as agricultural, pasture or timber lands, and to confirm the absolute title to the surface as well as to the minerals in the original purchaser. It has been thought by some good lawyers that the mineral rights did not go with the surface rights when the land in question had been classified and sold as agricultural, pasture or timber land, but that, on the contrary, mining claims could be located on such lands if mineral was discovered subsequent to the sale. The Supreme Court, however, holds that such is not the law. Justice Brown said:

"The free school, university and asylum lands embraced in Article 4218b were distributed over a large area; in fact, in almost every section of the State, and the law required the Commissioner to classify all of them as agricultural, pasture or timbered lands. No such class as mineral lands is recognized by the law, but such as had been classified as agricultural, pasture or timbered lands that should be found to be 'apparently mineral bearing,' were required to be designated as 'mineral lands.'"

Article 4218b is as follows: "All lands heretofore or hereafter surveyed and set apart for the benefit of the public free schools, the lunatic asylum, the blind asylum, the deaf and dumb asylum, and the orphan asylum, shall be sold and leased under the provisions of this chapter."

There has not been, nor is there now, any public land recognized by the law as mineral lands. The law does not provide for any such grouping, but confines itself exclusively to agricultural, grazing and timber lands. If mineral had been found on any one of these three, this did not change the classification, it merely added an additional designation without affecting the nomenclature.

The Court holds that the language, "All public school, university and asylum lands . . . containing valuable mineral deposits are hereby reserved," etc., which language is used in Article 3498a and 3498n, "was not intended to operate upon lands which had not been found to contain valuable mineral deposits, and which were not apparently mineral lands. The State provided for the classification so as to designate the land reserved and offered all for sale through the same officers, and it can not be said that there was an intention to have a secret reservation of that which was not known."

Following the principle thus enunciated by the Supreme Court, the Assistant Attorney-General is of the opinion that unless lands had been examined and designated as mineral lands by the Mineralogical and Geological Survey, provided for in the Mining Act of 1889, they did not come within the provisions of that act, and that the Commissioner of the General Land Office has no authority, in and of himself, to designate lands as mineral lands, or apparently mineral lands. The only authority that has existed in the State for designating mineral lands was the Mineralogical and Geological Survey. But this was in operation only from 1888 to 1892, about four years, and was suffered to lapse in 1892. There has not been, since 1892, any agency in the State authorized and empowered to designate a single foot of land as mineral land, until the establishment of the University of Texas Mineral Survey by an act approved March 28, 1901. For nearly nine years there were no mineral lands, and for the reason that the sole agency in the designation of such lands was taken away in 1892. Many valuable minerals have been discovered since that time, notably the rich cinnabar deposits in the southern part of Brewster County, but if the lands were sold as agricultural, or grazing, or timbered lands, the minerals go with the surface, and the purchaser has a vested right in them. As Justice Brown says: "The Commissioner's acts are conclusive upon the State, and the purchaser takes title free from any claim of the State for minerals that may hereafter be found upon the land."

This decision of the Supreme Court clears up a matter around which there has been more or less of mistiness for some years. It will have the effect of dispelling any lingering doubts as to the rights of prospectors to locate mining claims upon land which had been sold as agricultural, grazing or timbered land, for it declares that such claims have no standing in law.

The present survey is now engaged in examining public lands and its reports will be made to the Commissioner of the General Land Office. It has maintained a field party west of the Pecos River since early in August, and another party will enter that region in January. It requires time to classify and designate lands, and when it is considered that the area west of the Pecos River comprises some 30,000 square miles, one arrives at some conception of the magnitude of the task.

THE KAIPING MINING COMPANY, CHINA.—*The North China Herald,* published at Shanghai, has an article on the Kaiping Mining Company, with a list of its enterprises, according to which the conversion of the company from a purely Chinese concern into an international stock company, with headquarters at London, has now been accomplished, and the liabilities of the old company paid. The working of the coal mines, which was temporarily interrupted by the Boxer uprisings, has now been resumed, and is once more in full sway; 1,200 tons are shipped daily by rail, 300 tons by canal, and 250 tons are sold on the spot. The production is limited at present, owing to the small number of railroad cars available for transportation; as soon as the cars, which are now being purchased in England and America, arrive, the daily output will be considerably increased. The company has purchased large tracts of land, and has undertaken to improve the harbor of Chinwangtao, in the hope that a depth of 30 feet can be attained.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

JURY DETERMINES FACTS AS TO CONFLICTING LOCATIONS.—In a case involving conflicting locations of mining claims or mines, where it becomes material to ascertain the locations of the original monuments, and a large amount of conflicting evidence has been given before the jury upon this and other issues joined, it is error for the trial court to take the question of fact from the jury, and direct them to find for the plaintiff; it being the province of the jury to determine the weight of the evidence and credibility of the witnesses, and determine the facts in the case.—Storz v. Burragge, (65 *Pacific Reporter,* 162) Supreme Court of New Mexico.

PATENTS NOT CONCLUSIVE AS TO DATE OF LOCATIONS.—A patent for a mining claim is not conclusive as to the date of location, such fact not being one which it is essential for the land office to determine in issuing the patent; hence the failure of the owner of an adjoining claim, where the two overlap, to contest the application is not an admission on his part of the priority of the location of the patented claim, which excludes him and debars him from thereafter contesting the question in the courts.—Bunker Hill & Sullivan Milling and Concentrating Company v. Empire State Idaho Mining and Developing Company (108 *Federal Reporter,* 191); United States Circuit Court, Idaho.

MONUMENTS TO BE ERECTED ON DISCOVERY OF LODE.—Under the Revised Statutes, 1898, section 1496, providing that the locator, at the time of the discovery of any lode, must erect a monument at the place of discovery and post thereon a notice of location, there must be something beyond a mere guess on the part of the miner, to authorize him to make a location which will exclude others from the ground—such as the discovery of the presence of the precious metals at the place where the notice of location is posted, or in such proximity to it as to justify a reasonable belief in the existence of a lode there. This notice must contain the name of the lode, the name of the locator, the date, etc., as provided in the law, so as to substantially comply with the requirements of said section. To perfect his mining claim the locator must within 30 days, and in the manner prescribed by section 1497, mark the boundaries of his claim substantially as indicated by the discovery monument and notice of location, and within the same time as required by section 1498 he must file for record with the county recorder of the county wherein the claim is located a substantial copy of the notice of location.—Copper Globe Mining Company v. Allman (64 *Pacific Reporter,* 1020); Supreme Court of Utah.

WHAT IS ESSENTIAL TO RIGHT OF EXCLUSIVE POSSESSION.—A locator of a mining claim only acquires exclusive right to the possession of the claim when all of the necessary requirements of a location are observed; and if he neglects to perform any necessary requirement within the time prescribed by statute, his attempted location is of no avail as against an intervening location peaceably and regularly made and covering the same ground, though he shall have performed the neglected requirements after the inception of the second location. Where parties are in actual possession of mining ground at and before the institution of suit, under a location the validity of which was attacked only on the ground of a previous location was made and perfected in compliance with the laws of the State relating to the location of mining claims as are not inconsistent with the United States statutes. A State may, under the laws of the United States (Rev. St. sec. 2324) providing that the miners of each mining district may make regulations, not in conflict with the laws of the United States governing the location of mining claims, subject to the requirements imposed by Congress, or with the laws of the State where the lands

are located, pass acts supplemental to the mining acts of Congress in relation thereto.—Copper Globe Mining Company v. Allman (64 *Pacific Reporter*, 1019) Supreme Court of Utah.

LIABILITY OF MINE OWNERS FOR SAFETY OF MINERS.—The code, Section 3165, requires mine owners to provide reasonably safe places for miners to work. Plaintiff and C. were experienced miners employed by defendant. On going to work, C. saw the word "Gas" written on a sign. C. (plaintiff being in sight of his lamp, an open one) took off his coat, went to the face of the breast, and brushed the gas with his coat. The gas, on coming in contact with C.'s lamp, exploded, and he and plaintiff were injured. The gas tester had inspected the mine and placed warning notices in conspicuous places, and notified an assistant to get brattice cloth and meet him later to remove the gas. Open lamps were used in the mine, except under contrary direction of the tester. There was evidence that the brattice cloth in use was insufficient to give ventilation, and a new one had been promised, and that the tester had brushed small collections out of the place where the explosion occurred, and had directed C. to do so. C. believed the collection of gas which exploded was small enough to brush out. Plaintiff testified that he did not see the warning notice that was posted. Held, to show negligence of defendant concurring with the negligence of plaintiff's fellow servant, so as to render defendant liable.—Costa v. Pacific Coast Company (*Pacific Reporter*, 66); Supreme Court of Washington.

ABSTRACTS OF OFFICIAL REPORTS.

Stratton's Independence, Limited, Colorado.

The report made on this mine at Cripple Creek by Mr. John Hays Hammond, as consulting engineer was published in the ENGINEERING AND MINING JOURNAL, December 21, 1901. We have now the report of the directors as issued from the London office, and give it in substance below. The capital stock issued is 1,000,007 shares of £1 par value each; the authorized stock being £1,100,000. The report covers the year ending June 30, 1901. The directors say, in substance:

"The revenue account of the mine, which was audited on the spot, shows the sales of ore to have realized £534,716, including £8,294 from last year's stock. The quantity of ore sold during this period was 57,534½ tons of 2,000 pounds. Adding the royalty from waste heaps and sundry rents, and deducting freight and treatment and working expenses, the revenue account at the mine resulted in a profit of £260,152, the expenses including development work in the mine, also additions and improvements to buildings, plant and machinery. After the further deduction for London expenses the amount available for dividends was £252,350, of which £229,168 represents the four quarterly (interim) dividends, paid to March 31 last. From the surplus which accrued to June 30, a final distribution of £50,000 was received by the shareholders on July 19, leaving a balance of £51,489 in hand. From profits made to September 30, a further dividend of £50,000 was paid on October 24, bringing up the dividends received by the shareholders since the incorporation of the company to a total of £729,172.

"These payments did not, however, exhaust the company's resources in cash. The present balance at our London bankers is £54,000, to which must be added the accrued profits not yet remitted from Colorado, which will bring up our available cash to, say, not less than £82,500 at the present moment, thus amply providing for the important developments now in progress. It should be borne in mind that the entire expenditure on the equipment and development of the mine has been provided out of profit, in addition to the foregoing dividends and available cash. Up to the end of October last, this expenditure had amounted to £100,219. During the 16 months, from July 1, 1900, alone, an outlay of £23,490 was made on buildings, plant and machinery, including about £5,000 on a new air compressor, and £6,000 for a new hoist and accessories, thereby, latterly, greatly increasing the tonnage output. The foregoing figures of dividends, expenditure on mine equipment and development, and available cash, aggregate a total net result of over £900,000. This was derived from a total sale of gold of $7,147,300, or £1,473,669, produced in the mine during the same period of a little over 2½ years. Besides the large amount of gold thus realized, the company possesses in the dumps what the directors believe may eventually prove a valuable asset. At the end of June last the manager estimated that the dumps contained some 250,000 tons of ore, averaging 0.2 ounce per ton, or, say, 50,000 ounces of gold, which is receiving important additions month by month from the low-grade portions of the output set aside after selection of the ore shipped to the reduction works for sale. It is believed that sooner or later the value in these residues will be realizable on a remunerative scale, either by means of a separate treatment, or by mixing the dumps in suitable proportions with richer ore from the mine. The latter process promises to become practicable from improvements now being introduced in the methods of the reduction works for dealing more economically with low-grade ore.

"Mr. Hammond in his report, gave a summary of the developments carried out under his management. It will be remembered that Mr. Hammond's original plan of development contemplated the sinking of the main shaft to a further depth of at least 500 feet below the 900-ft. level, lateral exploration below the rich area embraced within the 30 acres forming what is known as the 'Old Territory,' and explorations at an upper horizon in the unprospected Southern or Granite area. Taking first the Southern area, the 700-ft. level was resumed at 240 feet from the main shaft and extended south in the granite a further distance of 998 feet. At 1,086 feet from the shaft this drift met a seam of ore assaying 0.1 ounce, which improved at the next 100 feet of driving to 0.4 ounces for the width of 1 foot, and shortly after fell off in value. At a point in this drift, 1,058 feet from the shaft, a cross-cut was started east, which, after driving 121 feet, cut two small seams assaying 0.35 and 0.43 ounce. No improvement taking place, after advancing the cross-cut a total of 500 feet it was stopped. In this area the 300-ft. level on the Bobtail was also extended south in the granite for a distance of 446 feet without meeting ore. A cross-cut from the end of the level was then started east, and extended 700 feet without result. From near the end of the level a cross-cut is being extended west, in the vicinity of the Washington shaft. At this shaft, Mr. Hammond reports, a small block of ore has been discovered. A lease has been given of this ground for one year on a royalty of 25 per cent of the net value of the sales of gold, the lessees bearing all the expense of exploration.

"The result, so far, of the new development in the Southern area must be described as disappointing. At the same time, having regard to the fact that ore has been met with, although in small values, and to the discoveries of rich ore in the granite formation in other parts of the district, the directors are of opinion that the work done on this part of our property should not be considered as a conclusive indication of the non-existence of payable gold in quantity in the Southern area.

"With regard to the Northern area or 'Old Territory,' it will be noted that Mr. Hammond reported an important increase in the ore reserves, principally upon the system of flat veins, at and above the 400-ft. level, which showed that pay ore persisted beyond previously recognized limits. Latterly, however, these flat veins have been found to yield payable values only at their points of intersection with the vertical veins. Mr. Hammond considered it certain these flat veins would apex not far from the Washington shaft—situated in the granite at a distance of about 600 feet south of the main shaft—but this has yet to be proved by explorations in that direction. Since Mr. Hammond took charge, extensions in the old ore bodies have also been reported from time to time, as adding to the ore reserves. It should be remembered that no ore has been stoped below the 800-ft. level, and that the Bobtail and Emerson veins, which have yielded large quantities of good ore, have not been followed down below the 500-ft. level, except to a very limited extent, in the case of the Bobtail in one place only where in November last, 1 ounce ore was reported in a winze sinking from the 500-ft. level, and in the case of the Emerson in a comparatively small block of ground which has been stoped between the 500 and 600-ft. levels. It is only reasonable to suppose that the large blocks of ground remaining unworked on these two veins between the 500-ft. and the 800-ft. levels, may, in the near future, be found to add very considerably to our resources, and that these veins may, like the Independence vein, continue to persist at a much greater depth.

"Up to the time when Mr. Hammond took over the control, explorations for the Independence vein had failed to locate that vein below the 800-ft. level. In carrying out the new development plan, this vein was rediscovered at that level, and it has been followed down by a winze to a further depth of 250 feet. Between the 800-ft. and 900-ft. levels the vein was proved for a width of 3 feet, carrying 2-ounce ore. Twenty feet below the 900-ft. level it assayed 3.6 ounces for the same width, but at 969 feet it was reported as having nearly pinched out. This was shown to be a local change only, as in a drift run out north from the bottom of the winze, the vein, at a distance of 52 feet, strengthened to 4 to 5 inches, assaying from 4.5 ounces to over 25 ounces gold to the ton. The vein continued at about the same width, with assays varying from under 1 ounce up to 5 and 6 ounces, to a distance of 195 feet from the winze. A drift was also run in the opposite direction, on the course of the vein, which was struck at 70 feet from the winze, showing to a distance of 146 feet, about the same width as towards the north, but of rather less value. This drift was stopped to resume the winze, which was continued to 150 feet below the 900-ft. level. At 138 feet a width of 2 feet assayed an average of 1.75 ounces, the vein afterwards becoming broken into fine seams. Meantime, a drift was being run from the shaft at 1,150 feet, and on attaining a distance of 628 feet to the north, it struck the Independence vein, reported on November 30, as assaying 1 ounce, for a width of 2 feet across the breast. According to Mr. Hammond's report this drift should be communicated with the winze by the end of January.

"In view of Mr. Hammond's remarks on the subject of the re-occurrence of ore zones, the picking up of the Independence vein at this new level may be regarded of most hopeful augury, especially as the shaft is now down to the depth of 1,400 feet, so that, should a new system of ore bodies be discovered at depth, we shall be prepared for exploiting them without loss of time or very much additional outlay. Seeing that in neighboring properties there has been a re-occurrence of payable ore zones, after passing through poorer ground, the directors feel justified in hoping that the present indications may be followed by the discovery of ore bodies, perhaps equally rich and productive as those from which the large dividends already paid have been drawn.

"When the directors found themselves confronted last autumn with the situation revealed by the disastrous discrepancy in the ore reserves, they considered it imperative to secure the very best expert advice obtainable. The only person available, who combined the two necessary qualifications of being known to the public, and possessing their confidence, and at the same time resident in America, was Mr. Hammond. The directors, therefore, approached that gentleman, but, owing to the peculiar circumstances in which the mine was involved at that time, the negotiation was one of some difficulty. Eventually Mr. Hammond consented to an engagement for one year at a salary of £10,000. The directors are of opinion the appointment has been amply justified by the manner in which the plan of development has been carried out, as well as by the economies introduced in the working expenses, the great importance of which is

apparent from the fact alone that Mr. Hammond has been able to utilize large blocks of low-grade ore at a profit which previously could not be made payable. In view of the present condition of the mine, Mr. Hammond has agreed to continue his services for another year at a moiety of his former salary.

"The directors regret the delay which has occurred in calling the general meeting. It has arisen through the impossibility of securing Mr. Hammond's personal attendance. They have twice cabled to Mr. Hammond since receiving his report, to ascertain from him the earliest date at which he could come to London, explaining to him the importance of his being present to meet the shareholders. He has definitely replied, that for reasons beyond his control, it is impossible for him to arrive in London before February, and he adds that this delay may enable him to speak more precisely on the future of the mine, from the further progress of the developments now in hand. The meeting will be called by the usual notice to the shareholders, as soon as Mr. Hammond arrives in London."

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that of book buyers, give the retail prices. These notices do not supersede review in a subsequent issue of the ENGINEERING AND MINING JOURNAL.

Dunbar's Western Mining Directory. 1901-1902. Denver and San Francisco; the Western Mining Directory Company. Pages, 316. Price, $10.

Transactions of the American Society of Mechanical Engineers. Volume XXII, 1901. New York; published by the Society. Pages, 1164; illustrated.

Seventh Annual Report of the Boston Transit Commission, 1901. Boston, Mass.; printed for the city. Pages, 56; illustrated.

Cyanide Practice. By Alfred James. London, England; E. & F. N. Spon, Limited. New York; THE ENGINEERING AND MINING JOURNAL, Incorporated. Pages, 186; illustrated. Price, $5.

The Insurance of Workingmen. Extract from the *Thirty-first Annual Report* of the Massachusetts Bureau of Statistics of Labor. By Horace G. Wadlin, Chief of the Bureau. Boston; State Printers. Pages, 180.

Report of the Governor of Arizona to the Secretary of the Interior. 1901. N. O. Murphy, Governor. Washington; Government Printing Office. Pages, 144; illustrated.

NEW PUBLICATIONS

Outlines of Electrochemistry. By Prof. Harry C. Jones. New York; the *Electrical Review* Publishing Company, and the D. Van Nostrand Company. Pages. 106; illustrated. Price, $1.50.

This book is a reprint of a series of papers published in the *Electrical Review* under the title, "Selected Chapters in Electrochemistry." In his preface the author modestly disclaims the intention of presenting a systematic treatise on electro-chemistry, his purpose being merely to take up several of the most important chapters of that subject, and deal with them more or less fully.

Physical chemistry is a comparatively new branch of the great science of chemistry. The term does not nowadays mean simply the study of the physical properties of chemical compounds, as it did formerly, but relates especially to the transformation of energy which takes place in chemical reactions, the conditions under which chemical reactions take place, the velocity with which they are effected, and the conditions under which they come to rest. The importance to modern physical and chemical science of the study of those conditions and the generalizations which have been built upon such studies cannot be overestimated. As Prof. Jones remarks, "it is not an exaggeration to say that every important development in electro-chemistry, in the last dozen or fifteen years, is centered around certain of the generalizations," which have been made in that division of the subject. Thermo-chemistry and electro-chemistry are two of the most important and absorbing chapters in the new physical chemistry.

Prof. Jones has presented in his book an introduction to the study of electro-chemistry, which we conceive will be of much service to the great majority of technical chemists, who have not found time in the course of their every-day work to follow the discoveries and generalizations of van't Hoff, Arrhenius, Ostwald, Nernst and others, although they have been revolutionary in our ideas as to the theory of electrolytic dissociation and the manner in which chemical reactions between solutions take place. Prof. Jones has written about these matters in not only a very lucid, but also an extremely interesting manner, and his book, therefore, offers an easy and convenient path to those who have not yet passed through the gateway of this intricate and important field of knowledge. If anything, we have found the earlier chapters of the book, which deal with osmotic pressure, the theory of electrolytical dissociation and the theories of electrolysis, to be presented rather more engagingly than the later chapters, which deal with the velocity of ions, the conductivity of solutions and the calculations of the electro-motive force of elements. This is not at all due to any fault of the author's style, but rather to the character of the illustrative examples that he has used, which we think might have been advantageously expanded to greater length and detail.

Although we desire to accord high praise to the author of this book, we cannot refrain from condemning the manner in which it has been presented by the publishers. The form chosen for it is bad, the typography and press work are bad, and the editing, if it had any editing, is also bad. The book was certainly worth publication in a less slovenly manner, and in bringing out a new edition, which we hope will be required by the demand, we think it would be worth while if the publishers should discard the present plates and begin all over again.

Salzbergbau und Salinenkunde. By Professor E. A. Fürer. Brunswick, Germany; F. Vieweg & Sohn. Pages, 1124; illustrated. Price (in New York), $13.50.

Salt mining and the salt industry in general, have developed to such an extent during recent years that they now form a study in themselves. The methods of mining and the subsequent treatment of the mineral are so different from the usual practice of metal mining, that a standard reference work on this important subject was needed. This want is supplied by Fürer's exhaustive treatise, dealing as it does with every branch of the industry. Detailed explanations are given of nearly everything that pertains to the mining of salt. It is not only a book for practical men, but can be studied also by students; in fact, it may be said to go rather too deeply into lengthy descriptions of the elementary principles in some places, for such a work. One great feature of the book is the excellence of the drawings; they are not spoiled with unnecessary detail, and show at a glance the point the author wishes to illustrate. The text is good, but the binding is not in keeping with the value of the book.

The geological formations containing salt deposits are gone into at some length, the mineral occurring in different formations in different countries. The Triassic rocks probably contain the greater part. A review of the properties of common salt, brine, etc., follows, and several valuable tables are given, showing the percentage of the salts in saline solutions of all specific gravities. The ingredients of natural brines, temperature of brine springs, the grouping and proportions of the ingredients, influence of foreign salts on the solubility are all dealt with in a masterly fashion. The several salt districts of the world are next treated individually and the arrangement of the different beds is described. The theories advanced by those most competent to express an opinion as to the origin of salt deposits, are given. The researches of Ochsenius to explain the Stassfurt deposit are exceedingly interesting; the evaporation of sea water causes a concentration of the salts, and as the specific gravity increases, so the several salts settle in the order found in the famous Stassfurt mines; but what is seemingly true in one case will not apply to others. The author compares the deposits of Stassfurt, Hanover and Galicia to bring out this point.

In describing the several deposits, Dr. Fürer gives the output of the countries, dues levied by their respective governments and the mining laws relating to the same. Having briefly touched upon the subject of nomenclature of the many salts, the first part concludes with a resumé of the uses of the common forms in the arts and manufactures.

Part 2 deals with salt mining and the preparation of the mine products for the market. Each branch is taken separately and the most modern practices thoroughly explained.

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 ourseles responsible for the opinions expressed by correspondents.

Loss in Cyaniding Tailings.

Sir: Perhaps some one of your many readers may be willing to furnish an explanation of the following extraordinary discrepancies shown in the returns from the cyaniding of an old tailings pile.

The quantity treated was 2,561 dry tons, in 62 charges. The average assay value was $2.66 a ton, making a total of $6,812. The assay value of the tailings was $1.02 a ton, making a total of $2,622. The theoretical value was therefore $4,190; but the actual bullion recovered was only $2,449, showing a loss after leaching of $1,741. The zinc consumed was 650 pounds, an average of 6.25 pounds of zinc to 1 ounce pure gold; the usual average is 1 pound zinc to 1 ounce gold. The cyanide consumed was 2,400 pounds.

The tailings contained much vegetable matter, which it was impossible to eliminate. The bullion recovered averaged .500 fine.

SUBSCRIBER.

Gold Mining in Georgia.

SIR: I would like to have space in your valuable JOURNAL to give a few hints about gold mining in Georgia. Notwithstanding much history to the contrary, I for one firmly believe that legitimate profits could be made here in mining for gold. After 20 years' experience here I have come to the conclusion that the best possible way to succeed would be to smelt the ores. We have high grade ores, but the supply at one claim is generally too limited to justify the erection of a smelter, or even an up-to-date treating plant of any well known method. This has led me to the conclusion that the best plan would be to consolidate a number of small claims into one huge mining tract, and let the choice of the location for the treating plant be made on practical lines, according to the locations of the different orebodies. This plan would give ore sufficient to justify extensive milling, thus reducing the cost per ton. Georgia has allowed much to be said against her mineral resources, largely by bad management. Parties have erected plants to treat ore before learning what kind of ore they have, often before they have even an intelligent idea as to the quantity of ore. Such people ought not to condemn the mines of the State, because such methods do not give good results. I could refer to men who have erected costly treating plants who did not know, and do not yet know, whether they have 50 tons of paying ore on their claims. The State needs companies able to investigate and learn the character of ores and the quantity before starting treating works. Such parties could succeed here. S. M. HILLHOUSE.

Cherokee, Ga., Dec. 12, 1901.

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, or 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. Preferences will, of course, always be given to questions submitted by subscribers. Books referred to in this column can be obtained from the Book Department of the ENGINEERING AND MINING JOURNAL).

Copper and Silver Values of Ores.—Will you kindly inform one what is the average percentage of copper in the ores of the Boston & Montana, the Parrott and the Copper Queen mines? Also the average gold and silver values? I have your *Mineral Industry*, but do not find the information in it.—T. R. H.

Answer.—It is impossible to give these values which you ask for. Such reports as are published by the companies named do not state the average values of the ores, nor do they give any information from which such averages can be calculated.

Profits of Hydraulic Companies.—Can you inform me as to the results actually obtained by gravel mining on a large scale by hydraulicking? What I would like to know is the amount of dividends actually paid by companies working such mines in the United States.—R. D. V.

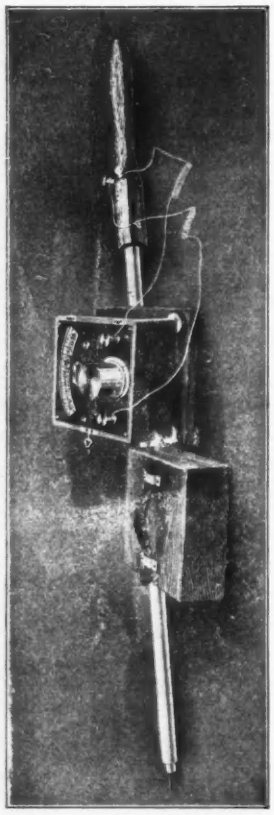


FIG. 1.

Answer.—It can only be said in a general way that companies working in the United States—in California, Montana and elsewhere—have made large profits by hydraulicking gold-bearing gravels on a large scale. It would be impossible to compile the total amount of dividends paid. A number of the most successful hydraulic operations have been conducted by firms or private companies which have made no returns of their profits.

Aluminum-Magnesium Alloys.—Can you give me the latest information as to what alloys of aluminum and magnesium have been found, or are known to chemists?—A. M.

Answer.—A note presented at a recent meeting of the Academie des Sciences in Paris, from M. O. Boudouard, says: "In some previous experiments on the possibility of alloys of aluminum and magnesium, the author had ascertained the existence of at least two definite combinations—Al Mg and Al Mg_2. By utilizing the information obtained on the one hand from microscopic researches into metallography, and on the other hand by chemical methods, the author has been able to distinguish a third combination—Al_4Mg—in addition to the two already known and given above."

Heating Cyanide Solutions.—Are you aware of any cyanide plant that is in active operation in which the temperature of the solution is raised above normal? And, also to what degree is the temperature brought, if raised above normal? Also, has the use of the heated cyanide solution been successful in actual practice?—R. M.

Answer.—We do not know any plant in which it is the practice to heat the solution. Authorities seem to agree that a high temperature increases the rapidity of the leaching action up to a certain point, though they differ as to the degree of acceleration. The temperature must not be too high, however, as an approach to the boiling point will cause the solution to disintegrate. The exact importance of raising the temperature does not seem to have been determined by any exact experiments.

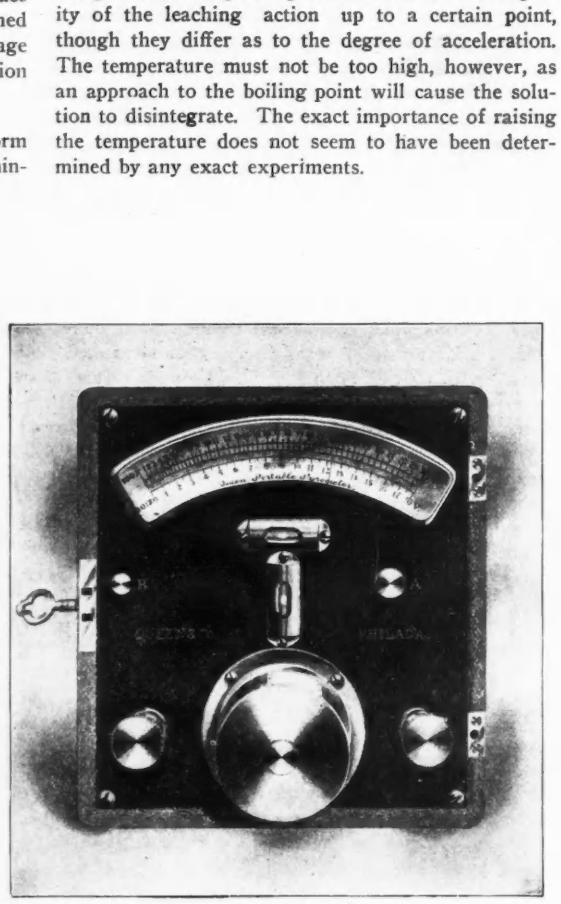


FIG. 2.

THE QUEEN ELECTRICAL PYROMETER.

THE QUEEN ELECTRICAL PYROMETER.

A decided improvement in pyrometers has recently been made in the perfecting of the Queen electrical pyrometer by Queen & Company, Incorporated, of Philadelphia, who have been manufacturing pyrometers for a great many years. This pyrometer is a modification of the form designed by Le Chatelier. It indicates the temperatures by measuring the current of electricity generated when the ends of a thermo-electric couple are heated.

There are several features of the pyrometer that especially appeal to any who have used thermo-electric pyrometers, but seem of minor importance to those who have had less experience, namely, the short space of time necessary to set up the instrument and take a reading, the compactness of the whole pyrometer, and the fact that considerable vibration of the building will not prevent its working. The galvanometer was specially designed and constructed for this work with three objects in view, accuracy, portability and durability. The galvanometer is mounted in a mahogany box, only 6 inches square. Fig. 1 shows the galvanometer with the lid removed and resting against the porcelain cane. Fig. 2 shows the face of the pyrometer with the two scales, one graduated in millivolts, the other in degrees Fahrenheit or Centigrade.

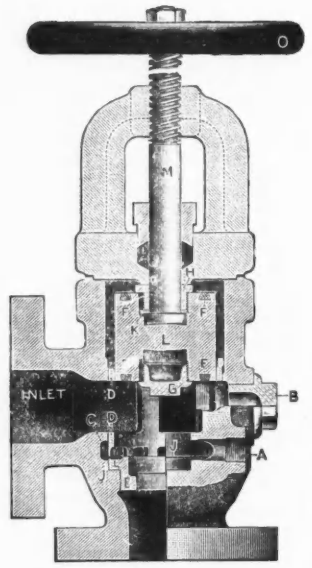
The galvanometer is dead beat, which insures both accurate and quick readings. It is also of such high resistance that any change in temperature of the connecting wires will not change the reading 0.5 per cent.

The milled nut *A*, Fig. 2, is used to clamp the hand during shipment, although the button *B* clamps the hand securely whenever the lid is locked in place. The thermo-electric couple consists of one meter each of platinum and platinum-rhodium wire, welded together. These wires are insulated from each other by passing through double-bored porcelain tubes and are supported by a long porcelain tube, one end of which is fastened in a wooden handle. As these porcelain tubes have a higher melting point than the platinum, it enables the pyrometer to be used in a furnace permanently up to 3,000° F.

This pyrometer is not so delicate that it requires the services of an expert electrician to set it up, nor a specially constructed foundation, free from any vibrations, on which to put it, but can be carried around and set up, in most any place and by any one, it requiring only two or three minutes to level it properly. In fact, Queen & Company, the manufacturers of this pyrometer, seem to have solved various difficulties that have heretofore prevented thermo-electric pyrometers from being made in a convenient form.

THE "DURO" BLOW-OFF VALVE.

The accompanying illustration shows in section a new pattern of blow-off valve for boilers, made by the Lunkenheimer Company, of Cincinnati. This valve has been designed with a view to avoiding defects found in other valves used for the same purpose, and the makers have given it the name of the "Duro" blow-off valve.



THE "DURO" BLOW-OFF VALVE.

Referring to the illustrations it will be noticed that there is a steam inlet *A*, and it will be seen that this connects with an annular passage *C*. The iron body of the valve has a brass casing *D* with circular slot *J* cut into the side of same just below the level of the seat *E*. This casing *D* is held in place in the valve body by the seat ring *E* screwing over same, both of which are removable at any time for repairs or replacement with new parts. The opening *A* is connected to the steam part of the boiler and a suitable valve interposed. The object of this steam inlet *A* is to admit steam to *C* and *J*, which discharging from the latter blows across the seat, and will clean off any scale or sediment that may have accumulated on it, so that the disk and seat bearing, when in contact, will be perfectly clean.

In operating the "Duro" blow-off valve, when it is desirable to close same, the disk is screwed down in the usual manner. As it approaches the level of the

inlet the edge of the disk passing the lower edge of the casing *D* cuts off a great deal of the flow of water, sediment, etc. At this time the valve in the steam pipe leading to inlet *A* should be opened and the steam admitted to the annular space *C*, from whence it passes through slot *J* and blows off the entire surface of the seat *E*. In the meantime the disk is being screwed home to the seat, which also cuts off the flow of steam from inlet *A* as well as the blow-off from the boiler. The valve in the pipe leading to inlet *A* can be left open at all times, as the disk of the blow-off valve would keep this outlet closed.

It will be seen that, by the time the seating is accomplished, all scale and sediment have been blown off the seat and the surface is clean; hence there is nothing present to cut out bearing surfaces. The disk, or plug, is reversible, having two valve or seating faces, which can be changed at will, thereby increasing the durability and efficiency of the valve considerably. These valve or seating faces in the disk consist of dovetailed slots, which are filled with babbitt metal, and, when both are cut or worn out, the old babbitt metal can be melted out and new metal poured into the slots, and same can be faced off, thus renewing this wearing part of the valve. The seat ring *E* and casing *D* are easily removable, and, as these are interchangeable, new ones can be supplied at small cost. There is also provided a plug *B* opposite the inlet, so that this can be taken off, and a rod run through the blow-off pipe to clean it out, if it is desirable to do so.

All the parts about this valve are very substantially made. It is furnished in three sizes—2 inches, 2½ and 3 inches, covering the usual sizes of blow-off valves, with either flanges or screw ends, as wanted.

PATENTS RELATING TO MINING AND METALLURGY

UNITED STATES.

The following is a list of 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 ENGINEERING AND MINING JOURNAL upon receipt of 25 cents.

Week Ending December 24, 1901.

689,381. PROCESS OF MANUFACTURING MINERAL WAX.—Edgar von Boyden, Hamburg-Steinwarder, Germany. A process for producing, from bituminous coal, a wax-like substance, consisting of an acid and an unsaturated hydrocarbon, according to which an extract is first obtained from the coal by means of suitable solvents such as benzine and the like, which extract is converted into the mineral wax by distillation with superheated steam, under rarefaction.

689,391. PROCESS OF PRODUCING NICKEL SALTS.—Hans A. Frasch, Hamilton, Canada. The process of producing a nickel-ammonium salt, which consists in dissolving an oxide of nickel in a solution of ammonia and precipitating the nickel-ammonium salt by the addition of a salt capable to displace it.

689,427. PIT SAFETY LAMP.—Eduard Simon, Darmstadt, Germany. A safety lamp composed of an accumulator, an electro-magnet, a switch lever influenced thereby, an incandescent lamp in circuit when the switch lever is attracted, an incandescent wire in circuit when the switch lever is released, and an open light in proximity to the incandescent wire.

689,456. CENTRIFUGAL DISTRIBUTER.—Hiram W. Blaisdell, Yuma, Ariz. A distributer comprising a horizontally disposed disk adapted to receive thereon the material to be distributed, ribs or vanes on said disk, a distributer located on the disk and constructed to direct material to the spaces among the various ribs or vanes, means for rotating the disk and a hopper located over and adapted to discharge material upon said distributer.

689,461. METHOD OF MAKING SULPHATES AND CHLORINE.—Adolf Clemm, Mannheim, Germany. The method consists in first mixing chlorides with clay, adding sufficient water to the mixture to obtain a plastic mass, forming balls from the mass, drying said balls, and heating the dried balls above the melting point of the chlorides while at the same time subjecting them to the action of sulphurous acid and oxygen.

689,516. ROCK DRILL.—Frank Rattek, Bridgewater, Mass. The combination, with a casing, and a cylinder slidable in the casing; of a piston slidable in the said cylinder, and a distributing valve, said cylinder being provided with passages controlled by the said valve and piston whereby the piston is reciprocated in the cylinder and the cylinder is fed forward automatically in the casing when its supply port is uncovered by the said piston at the end of its outstrokes.

689,529. RECORDING GAGE.—Frank L. Wolfe, Medford, Mass., assignor to the Crosby Steam Gage & Valve Company, Boston, Mass., a corporation of Massachusetts. The combination, with pen, penholder, penholder support, and a chart; of a pen platform resting directly against the chart and attached to said support, and adapted to travel simultaneously with the pen, occupying at all times the same relative position thereto; together with means for adjusting the distance between the pen and its platform, and means for actuating said support.

689,561. MEANS FOR MAGNETICALLY SEPARATING DIFFERENT SUBSTANCES FROM EACH OTHER.—Charles F. McKenna, New York, N. Y. In a magnetic separating apparatus, the combination of a magnet with an upright circular horizontally rotating shell or shield, the latter so shaped as to present its least horizontal cross-section nearest to the intensest magnetic field of said magnet, and its inferior or underlying horizontal cross-sections in size substantially inversely proportionate to the intensity of the respective magnetic fields opposite which they are respectively situated.

689,565. REGULATOR FOR AIR-COMPRESSORS.—William Prellwitz, Easton, Pa., assignor to the Ingersoll-Sergeant Drill Co., New York, N. Y. a corporation of West Virginia. The combination with an air-compressor the discharge valves of which are subject to fluid pressure tending to close them, a receiver into which said compressor discharges and a motor for driving said compressor, of an unloading valve for said discharge valves, a regulator for said motor and means controlled by the receiver pressure for producing first the operation of said regulator and afterward the operation of the unloading valve.

689,570, 689,571, and 689,572. PROCESS OF CENTRIFUGAL EXTRACTION.—John J. Berrigan, East Orange, N. J. The improvement in the art of separating the solid constituent from a fluid mass of combined solid and liquid constituents which consists in, first, depositing the solid from the mass introduced into a rotating vessel upon a definite area of the internal periphery of said vessel by the action of centrifugal force due to said rotation and permitting the liquid to escape; second, removing said solid from said place of deposit and conveying it over a portion of said internal periphery rendered substantially dry by said centrifugal force whereby said solid is further freed from moisture, and, third, causing said solid to be ejected in substantially dry condition by the action of said centrifugal force.

689,577. BLASTING AGENT.—Hans von Dahmen, Vienna, Austria-Hungary, assignor to Josef Fuhrer, Vienna, Austria-Hungary. A composition of matter consisting of metallic aluminum in a finely divided state and nitrate of ammonium.

689,585. IRON NOTCH FOR BLAST FURNACES.—John M. Hartman, Philadelphia, Pa. The combination of a crucible wall; a crucible jacket surrounding the wall, a cylindrical graphitic breast extending through the crucible jacket and well back into the crucible wall, and a removable bushing of graphitic material fitted to the inner end of the breast.

689,612. GOLD-SAVING APPARATUS.—Charles G. Hambleton, East Oakland, Cal. An apparatus for saving gold, consisting of a cone-shaped mercury-containing chamber, said journal boxes for forcing said feed roller toward one serving as a discharge, a removable cap fitted to the larger end of the chamber and provided with a reduced extension with an opening therein for the inlet of pulp, a horizontal shaft passing through the chamber and its extensions and about which the chamber is turnable, radial, longitudinally extending ribs or vanes fixed into the interior of the chamber between the opposite end extensions, and an extension beyond the outer periphery of the chamber at the larger end and serving as a collecting pot or chamber for mercury, said pot capable of projecting a charge of mercury into and through the one at the head end of the cylinder at each revolution thereof.

689,655. FEEDING APPARATUS FOR ROLLING MILLS. Harry E. Sheldon, Leechburg, Pa. The combination of a pair of rolls mounted in suitable housings, an idle feed-roller mounted in journal boxes, and spring supports for said journal boxes for forcing said feed roller toward one of said pair of rolls.

689,660. GAS PRODUCER.—William Swindell, Allegheny, Pa. The combination of a gas discharge chamber, generating chambers located on opposite sides thereof and having separate fuel-supply openings, a fuel support below and open to each of said chambers, ports establishing continuous communication between the generating chambers and gas-discharge chamber, a discharge passage leading out of the gas-discharge chamber, and a partition wall extending across the upper portion of the generating chambers and the gas-discharge chamber.

689,673. GAS PRODUCER.—Harry Hyatt, Cleveland, Ohio, assignor to the Wellman Seaver Engineering Co., Cleveland, Ohio, a corporation of Ohio. The combination of a gas producer with a rock shaft extending across the same and composed of a series of sections connected together, a series of projecting pokers each carried by one of the sections of the rock shaft, and means for rocking said shaft.

689,674. MACHINE FOR EXTRACTING METAL FROM ORE.—Albert I. Irwin, Cripple Creek, Colo., assignor of one-third to Caleb F. Bryant, Cripple Creek Mining District, Teller County, Colo. A treatment tank, an endless anode traveling in said tank, the upper and lower stretches of the anode being in position to be immersed in the solution in the tank, diagonally disposed blocks of insulating material attached to said anode, cathodes in the tank one under each stretch of the anode, and connections with a source of electricity.

689,695. AMALGAMATOR AND CONCENTRATOR.—Irwin H. Springs, Eureka, Utah, assignor of one-half to Newman H. Mix, Eureka, Utah. An ore amalgamator and concentrator, comprising two semi-cylindrical trays, one arranged above the other, rockers of resilient metal attached to the lower tray, the said rockers having upwardly extended portions to engage the sides of the upper tray, and means for supplying water to the feed end of the upper tray.

689,702. AIR COMPRESSING AND COOLING APPARATUS.—Rudolf Eberg, Pittsburg, Pa., assignor of one-half to Ferdinand Wenig, Pittsburg, Pa. The combination of an exterior casing, a piston cylinder in the same, open at one end, and constantly communicating at its open end with the interior of the casing, a piston working in said cylinder, valve chambers communicating with the piston cylinder and the casing, suction and discharge valves in said chambers, and heat exchangers or absorbers supported one between said valves and the piston cylinder, and the other between the valves and the casing.

689,733. GOLD-RECOVERING APPARATUS.—Origen M. Lawrence, Foster, Ore., assignor to Samuel M. Long, Spokane, Wash. The combination of a series of plates adapted to lap each other, and means for holding said plates in position, said plates fitting loosely over each other and having a semi-liquid body of amalgam covering the same and interposed between their overlapping portions.

689,780. METHOD OF MAKING AMMONIA FROM WASTE PRODUCTS.—Eduard R. Besemfelder, Charlottenburg, Germany. The process consists in subjecting the same to dry distillation, conducting the gas thereby obtained in contact with a heated alluminate, then conducting said gas in contact with an alkaline lye capable of absorbing cyanide compounds, and then passing said gas in contact with calcium diphosphate.

689,799. ORE-LEACHING APPARATUS.—Ralph L. Graves, Sumpter, Ore. Apparatus consisting of a plurality of tanks, a pump, a discharge pipe leading from said pump and having a plurality of branches leading to the several tanks and provided each with a discharge pipe which may be turned axially or swung vertically, valves controlling the several branches, and a flexible supply or suction pipe leading to the pump and arranged to be shifted from tank to tank.

689,805. CONCENTRATING AMALGAMATOR.—Archibald M. Horton, Saratoga, Wyo., assignor of one-third to John Henry Rose and Robert Brown, Saratoga, Wyo. An oscillating cylinder having a discharge for waste material at its lower portion, an adjustable discharge pipe extending upward from said discharge, and an ore-discharge valve adapted to be automatically controlled by centrifugal force in the movement of the cylinder.

689,823. MINER'S RATCHET DRILL.—James Lucas, Lucius E. Decker and Claude V. Hoover, Chattanooga, Tenn. In combination a drilling apparatus for mining and other purposes consisting of a screw and ratchet, a nut made in two halves, with a lug on the back of each half, a cam working around the nut and the cam grooves engaging the said lugs, a cog wheel for a ratchet with a reversible pawl.

689,835. PROCESS OF EXTRACTING COPPER FROM ORES.—George H. Waterbury, Denver, Colo., assignor of one-half to Frank Williams, Denver, Colo. A process of precipitating copper in solution, consisting in placing the solution in a tank or receptable containing pieces of iron small enough to allow the solution to pass readily therethrough, and introducing hot air under pressure into the solution.

GREAT BRITAIN.

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

Week Ending November 30, 1901.

14,291 of 1900. GOLD ORE TREATMENT.—E. L. Graham, London. Disintegrating gold ores by means of solution of acid and electric current without mechanical crushing, and subsequent mechanical concentration.

23,315 of 1900. CONVERTERS.—A. Reynolds, Sheffield. Symmetrically shaped converters with tuyeres on both sides pointing downwards, suitable for either reducing or heating.

10,715 of 1901. COATING ALUMINUM.—A. G. Betts. Troy, N. Y., U. S. A. Coating aluminum and alloys with other metals such as copper by immersing in a fused salt of the metal.

16,638 of 1901. BLAST PRESSURE GAUGE.—B. H. Thwaite, London. A pressure gauge for signalling defects in tuyeres of blast furnaces.

19,044 of 1901. CONCENTRATOR.—G. A. Overstrom, Anaconda, Montana, U. S. A. A concentrating table in which the forward motion takes less time than backward, and other improvements.

Week Ending December 7, 1901.

20,316 of 1900. SAFETY LAMP KEY.—J. Treharne and D. Roberts, Llanelly. Improved key for opening miners' safety lamps.

PERSONAL.

Mr. A. J. McDonnell is now in charge of the Sierra Nevada Mine, at Virginia, Nev.

Mr. G. Carey has been appointed foreman of the Grand Central Mine at Minas Prietas, Sonora, Mex.

Mr. Charles M. Schwab, president of the United States Steel Corporation, is on a two months' tour of Europe.

Mr. E. C. Engelhardt, metallurgical engineer of Denver, Colo., has gone to Arizona on professional business.

Mr. G. M. Gouyard, mining engineer of Denver, Colo., has returned from a professional trip to Durango, Mex.

Mr. D. H. Campbell has been appointed general manager of the Rico Mining and Milling Company, of Rico, Colo.

Mr. D. B. Huntley, late manager of the DeLamar Mine at DeLamar, Idaho, is on the way to Rhodesia, South Africa.

Mr. W. H. Gilmore was recently appointed superintendent of the Ketchikan Mining Company at Sea Level, Alaska.

Mr. J. T. McCall recently returned to Michigan Bluff, Cal., from a 2 years' mining trip in the Philippines and Siberia.

Mr. H. A. Shipman, superintendent of Stratton's Independence Mine at Cripple Creek, Colo., is visiting Los Angeles, Cal.

Mr. Louis Auerbach, manager of the Trinity Copper Company, is in personal charge of work at the mine, near Kennett, Cal.

Mr. W. L. Cobb, formerly assayer for the Keystone Consolidated Mining Company has opened a custom assay office in Redding, Cal.

Mr. Philip Argall, metallurgical engineer of Denver, Colo., has started on a 2 months' professional trip to California and Mexico.

Mr. P. L. Kimberly, of Sharon, Pa., arrived in Salt Lake, Utah, on December 30. He is interested in the Annie Laurie, Honorine and other Utah mines.

Mr. Fred. C. Keighley, of Pittsburg, Pa., was elected president of the Central Mining Institute of Western Pennsylvania, at its recent winter meeting.

Mr. J. C. H. Ferguson, Pacific coast agent of the Midvale Steel Company, has returned to San Francisco, Cal., from Pennsylvania. His office is at 220 Market street.

Mr. J. B. Gallagher, for some time connected with the Anaconda Copper Mining Company, has been appointed superintendent of the new Washoe Concentrator at Butte, Mont.

Mr. Gill S. Peyton is in Salt Lake, Utah, after an absence of several months in the East. Mr. Peyton is interested at Milford, Utah, in the Imperial and Majestic copper mines.

Mr. Gardner Williams, general manager of the De Beers Consolidated Diamond Mines, of Kimberley, South Africa, who has been on a visit to the United States, has sailed for Europe.

Mr. Chas. F. Howe, formerly of Chicago, Ill., has located in Gainesville, Ga., and has erected a stamp mill on a gold mining property in that State, on which development is being pushed.

Mr. R. H. Channing who has for 2 years been superintendent of the Highland Boy Mine of the Utah Consolidated Company at Bingham, Utah, has become general manager of the company's interests in Utah.

Mr. Richard A. Parker, mining engineer of Boston, Mass., has left for Velardeno, Durango, Mex., where he will remain some weeks. Telegrams sent to his office, 4 Post Office Square, Boston, will be forwarded to him.

Mr. A. B. Ernst, secretary of the North Pacific Mining Company, Seattle, Wash., has returned recently from a business trip to New York City. Mr. Ernst s company is developing the Virginia property in Eastern Oregon.

Prof. Nicholas Murray Butler has been elected president of Columbia University, New York City, to succeed Mr. Seth Low. Mr. Frederick Paul Keppell succeeds Mr. William H. H. Beebe as secretary of the University.

Mr. Thos. N. Smith, formerly of the Utica Mine, in California, has returned to San Francisco from Urga, Touchetoukan, China, where for 18 months he was in charge of the assay office of the Franco-Russian Mining Company.

Mr. John V. N. Dorr, who has been engaged recently in experimental work for the Clover Leaf Mining Company at Perry, has been appointed superintendent of the Rossitter cyanide mill at Deadwood, S. Dak., recently leased by John Lundberg.

Mr. Wm. B. Mucklow, of Hartford, Conn., in on a visit to Utah, and is taking in the Beaver County copper deposits with Mr. A. B. Lewis and Mr. Gill S. Peyton. Mr. Mucklow is largely interested in the Majestic and Imperial copper mines near Milford.

Mr. S. H. Riechenbach, managing director of the Nickel Corporation, Limited, has been in San Francisco, Cal., en route to New Caledonia from Paris, France. He was accompanied by Major Robert G. Leckie, who is interested in the Sudbury, Ont., nickel mines.

Mr. H. F. Poland, who has been several years with the Utah Consolidated Company at Bingham, Utah, has taken the general management of the Boss Tweed Gold Mine at Pony, Mont., owned by Eastern men. Mr. Poland's many friends at Salt Lake will regret his departure.

Mr. B. C. Riblett, of Nelson, B. C., has returned from Peru where he superintended the installation of a 23,000-ft. gravity aerial tramway at the Cerro de Pasco silver mines. According to Mr. Riblett, the mines are to become producers of copper ore on an immense scale.

Mr. A. F. Wuensch, mining engineer of Denver, Colo., has returned from Sonora, Mex., where he has for some time past directed the development of the Calera Mine and the erection of a mill. He will return soon to Mexico to direct work on that property and exploit some other mineral resources.

Mr. C. H. Foote, first vice-president of the Illinois Steel Company, has resigned and will retire from business. Mr. T. W. Robinson, formerly general manager, has been elected first vice-president to succeed him. Mr. F. H. Foote, formerly superintendent of blast furnaces, has been elected second vice-president.

Mr. W. L. Sims, who recently resigned as general manager and treasurer of the Empire Iron and Steel Company, has accepted the general Southern agency for the Maxim boiler and water tube boiler manufactured by the Maxim Company, of Starrucca, Pa. He will have his headquarters at Birmingham, Ala.

Mr. L. Kreielsheimer, of Milwaukee, Wis., has recently returned from Mexico, where he took over the Ramos Mines at Ramos, San Luis Potosi. The mine will be managed by the Mexican Mining and Milling Company recently organized with $1,000,000 capital. Mr. Kreielsheimer will be general manager with offices in Milwaukee.

OBITUARY.

Capt. M. C. Jones, for the past 15 years connected with the Guadaloupe Mines, died recently at Villademada, Mex. He was about 75 years old and unmarried. He was related by marriage to the United States Ambassador to Mexico, Gen. Powell Clayton. The remains were shipped to Camden, N. J., for interment.

Amos Pickard, who was associated with the first attempts to make coke in Western Pennsylvania, died in Connellsville recently, aged 83. Mr. Pickard was born in Germany and came to the United States when a young man and settled at Brady's Bend, later going to Connellsville. For a number of years he was superintendent of the Ferguson coke plant.

W. F. Birch, who died in St. Louis, Mo., recently, was for several years engaged in gold digging on the Chestatee River near Dahlonega, Ga. He operated several dredges successfully, in connection with his brother, J. W. Birch. They were the first to introduce dredging machinery of a modern type in North Georgia. They sold out their interests a few months ago, and left Dahlonega for St. Louis.

William Barnsdall, Sr., a pioneer of the Pennsylvania petroleum industry, died at his home in Titusville, Pa., December 29, aged 91 years. He was born in Bedfordshire, Eng., and went to Carlisle, Pa., in 1831. He became interested in petroleum in 1859 when he sunk the second well in the Pennsylvania oil region near Titusville, on the Parker farm. In 1860 in connection with W. H. Abbott, Mr. Parker and others he erected the first refinery in the oil region. Mr. Barnsdall was the first to find oil in the Bradford field, and organized several companies to sink wells. He also helped develop the Pleasantville field. He retired from active business in the late '70's. Mr. Barnsdall left a widow, 3 daughters, and 2 sons, one of whom, Theodore N. Barnsdall, is said to be the largest individual oil producer in this country.

SOCIETIES AND TECHNICAL SCHOOLS.

WASHINGTON-ALASKA MINERS' ASSOCIATION.—This association was formed recently at Seattle, Wash., to unite men interested in the development of Alaska and Washington mines. F. W. Mitchell, of Seattle, was elected president; Andrew Knox, of Seattle, vice-president; Isaac Hulme, of Seattle, treasurer; J. F. Rathbun, of Seattle, secretary, and J. P. Hunnell, of Seattle, assistant secretary.

An executive committee was elected to look after the various interests of the association. Those chosen were: O. R. Dahl, Van R. Pierson, J. W. Kahle, T. F. Kane, James G. Givens, H. B. Drees, John E. McManus, Van B. De Lashmutt and Wm. Van Waters, all of Seattle.

ENGINEERS' CLUB OF PHILADELPHIA.—At the meeting on December 21, 75 members and visitors were present.

Mr. John Birkinbine made an address upon "Some of the Great Things which Make Our Country Great; with Special Reference to Engineering Constructions." In a non-technical way he described the rapid development of this country in material wealth, and pointed out how the engineer had contributed to this prosperity in mining coal, iron, and precious metals; building railroads, bridges, and tunnels; utilizing waterpower and its transmission, especially by electricity; constructing and equipping mills and factories; building breakwaters, lighthouses, etc. His remarks were illustrated by a large series of photographic views of objects of natural or artificial engineering interest.

In view of the fact that the club in the near future will be asked to endorse the plan of the Appalachian Park Association for the Government Forest Reserve in the Southern Appalachian Mountains, Dr. Henry Leffmann exhibited and described a series of views illustrating the character of this region, and Mr. Birkinbine explained the economic value of scientific forestry.

INDUSTRIAL NOTES.

The Kilby Manufacturing Company, of Cleveland, O., has in hand an order for some 500 24-in. pipe joints for the Risdon Iron Works, San Francisco.

The Marion Steam Shovel Company of Marion, O., has received an order from the Ohio Iron and Steel Company of Leadville, O., for a 75-ton steam shovel.

The Thew Automatic Shovel Company, of Lorain, O., has let contracts for a 100-ft. addition to its automatic shovel plant.

The Atlas Pipe Wrench Company, of New York City, announces that it is ready to deliver Atlas pipe cleaners of 4-in. size for water-tube boilers with 4-in. tubes.

The Rarig Engineering Company, of Columbus, O., shipped a horizontal cross-compound blowing engine to the Bingham Consolidated Gold and Copper Company, at Bingham Junction, Utah.

The Harrisburg Foundry and Machine Works, of Harrisburg, Pa., through its New York City offices, has secured a contract for a 150-h. p., horizontal tubular boiler for shipment to Brazil.

The plant of the Michigan Alkali Company, at Wyandotte, Mich., recently destroyed by fire, will be rebuilt immediately. The company is in the market for engines, boilers and air compressors for equipping the plant.

The W. B. Scaife & Sons Company, of Pittsburg, Pa., has been granted a New Jersey charter with a capital of $850,000. The capitalization is necessary for carrying on the business of the firm, and also for improvements.

The Cling-Surface Manufacturing Company, Buffalo, N. Y., reports that at the Homestead Works of the Carnegie Steel Company a series of competitive tests of various belt-dressings was made, after which cling-surface was adopted as having given the best general results.

Edward A. Willard & Co., selling agents for the Davis Coal and Coke Company, of West Virginia, have moved their New York City offices to 21-24 State street. Messrs. Willard & Co. are American agents for James Bumers & Sons, of London, Eng., agents for Welsh, Australian, Japanese and West Coast coals.

Messrs. Theodor Lexow and I. C. Yawger, importers of carbon and bortz, of New York City, state that their two firms have been consolidated as a stock company to be known as the Yawger-Lexow Company, with offices at 12 to 16 John street. Messrs. Yawger and Lexow will continue to give their personal attention to the business of dealing in bortz and diamonds for mechanical purposes, while Henry Demmet will represent the new company on the road.

The Consolidated Rosendale Cement Company, of Binnewater, Ulster County, N. Y., has been incorporated with a capital of $1,500,000, of which $1,000,000 is to be 7 per cent non-cumulative preferred and $500,000 common stock. The directors are James P. Paulding, A. Lanfear Norrie, Wm. C. Beach, A. C. Hall, A. J. Rose, W. C. Lyman, P. M. Brett and Robert Lawrence, of New York City, and J. B. Cook, of Binnewater.

The American Bridge Company has purchased the properties heretofore owned by the Detroit Bridge and Iron Company, of Detroit, Mich., and the same will hereafter be known as the Detroit Plant of the American Bridge Company. Max J. L. Fowler has been appointed manager. The plant becomes a part of the Western Division of the American Bridge Company, under the jurisdiction of August Ziesing, western manager, in Chicago.

The Robinson Machine Company, of Monongahela, Pa., has installed one of its latest improved patent

mine-ventilating fans, capable of circulating 200,000 cu. ft. of air per minute, in the Crescent, O., mine of the Lorain Coal and Dock Company, this being the second Robinson fan purchased by that company in the past four months. The People's Coal Company, of Browneville, Pa., recently purchased for its pipe mine a 20-ft. Robinson fan, with a capacity of 500,000 cu. ft. of air per minute.

The A. Wyckoff & Son Company, of Elmira, N. Y., states that Wyckoff's acid proof wood pipe has a distinct advantage over iron pipe for carrying acids, sulphurous mine water, etc., in that it will not corrode. The company also makes a water proof steam pipe covering of wood for underground pipes and for insulating lines in deep mine shafts and in exposed places. The Big Four Coal and Coke Company of Bluefield, W. Va., recently covered its steam line with Wyckoff wood covering, and reports a surprising decrease in coal consumption as a result.

At a recent meeting of the board of directors of the Pressed Steel Car Company, at Pittsburg, Pa., 3 vacancies were filled by the election of Judge J. H. Reed and T. H. Given, of Pittsburg, and H. E. Moller, of New York City. The president reported gratifying trade conditions and stated that the company's output, which had been interrupted by failure to secure materials had resumed its former proportions. Taking effect January 1, 1902, the company make the following appointments: George H. Goodell, appointed chief engineer. He had been assistant chief engineer for several months and prior to that time was mechanical engineer with the Northern Pacific Railway. C. E. Moore, auditor, is an expert accountant, having been employed by both the Carnegie Steel Company and the Philadelphia Company. G. H. Judy, appointed superintendent of the McKee's Rocks works, was formerly in the Pennsylvania Railroad service, and has been in the employ of the Pressed Steel Car Company as assistant superintendent at McKee's Rocks for some months.

Among the orders, received at the Colorado Iron Works, of Denver, Colo., recently are the following: One 5-ton silver amalgamating band for A. H. Keller, Honduras, C. A.; one sal soda plant consisting of galvanized iron tanks, boiler, etc., for Campbell & Wood, Wyoming; one 10 in. by 16 in. Blake crusher, for the Smuggler-Union Mining Company, Telluride, Colo.; 12 mining cars for the Federal Lead Company, of St. Louis, Mo.; 3 33 cu. ft. screw dumps slag trucks for the Velardena Mining and Smelting Company, Mexico; 3 Bartlett concentrating tables for Robert Boker Company, Pachuca, Mex.; one 50-ton copper matting smelter complete for the Keystone Copper Smelter Company, Guauelajara, Mex.; 6 25 cu. ft. screw dumps slag trucks for the Mountain Copper Company, Keswick, Cal.; one carload cast iron water-jackets for the Compania Metallurgica Mexicano, Mexico; one 36 in. by 72 in. silver-lead smelting furnace for the Mazapil Copper Company, of Mexico, and one carload of cast iron water jackets for the Aguas Calientes, Mex., plant of the American Smelting and Refining Company.

AMONG THE MANUFACTURERS.

That the year 1901 was a profitable one for American manufacturers is well shown by letters we have received from many of our advertisers regarding business conditions during 1901, the outlook for 1902 and the condition of export trade. We regret that the pressure on our news columns prevents us publishing these letters in full.

The Burt Manufacturing Company, of Akron, O., maker of the Cross oil filter and purifier, states that its trade among mining concerns during 1901 was exceedingly good, in fact, the largest the firm has ever experienced. Foreign trade is especially good and the company looks forward to a very prosperous new year.

C. O. Bartlett & Co., of Cleveland, O., manufacturers of mining machinery, paint mills, dryers and cement machinery, of Cleveland, O., report that their business during 1901 increased about 40 per cent. Sales of paint machinery showed the greatest increase; sales of conveying and elevating machinery show the next greatest.

The Sturtevant Mill Company, of Boston, Mass., states that it had an exceptionally good year in 1901, and largely increased its business in the 12 months. The company looks forward to a much larger trade this Spring. Regarding foreign trade the company says that it did little export business in 1901 but expects to do better the coming year.

Wm. O. Lee, manager, Lee Injector Manufacturing Co., Detroit, Mich.: "Business during 1901 was very good with us, and everything points to an increase for the coming year. Our foreign trade was much larger than during any previous year. We put on the market during the past year a ball check-valve, which has met with success."

The Merrell Manufacturing Company, Toledo, O., says: "Our business with mining industries was exceptionally good during 1901. We not only received orders from the mining districts of our own country, but have been favored with a very nice foreign trade. We believe the coming year will see large orders placed in this country for mining machinery."

The Export Shipping Company, of 11 Broadway, New York City, states exports of American mining machinery were very brisk during 1901. Shipments to Spain, Scandinavian countries, and Australia showed a material increase. The firm's foreign correspondents report that American mining machinery and tools are giving entire satisfaction and the prospects for 1902 are regarded as very bright.

Frank G. Bolles, manager of the Advance Department of the Bullock-Wagner Electric Manufacturing Companies, of Cincinnati, O., says: "Our business during 1901 has very largely increased, each month over the preceding month, and the outlook for 1902 seems to be as good. Our foreign business has been constantly growing, and from present indications I do not see why we cannot double our export trade in the coming year."

H. C. Buzby, of the Keystone Lubricating Company, Pa., says: "Our business among mining interests greatly improved during 1901, more especially during the last 6 months. Mining engineers are rapidly becoming acquainted with the value of our product, for air-compressors, fans and general mining machinery from its purity and special adaptation to weather conditions. We consider the outlook for 1902 very promising."

George G. Lobdell, Jr., vice-president of the Lobdell Car Wheel Company, Wilmington, Del.: "Our trade in the Faught patent self-oiling mining car wheels, axles and pedestals was exceptionally good for 1901. We have more than doubled our capacity (having facilties now for turning out over 200 wheels a day), but are still at times pushed. We have sent a number of wheels abroad, but fully 90 per cent of our product goes to the home market."

F. R. Ashley, secretary and treasurer of the Western Chemical Company, of Denver, Colo., says: "We are pleased to report a decided increase in business for the past year, which indicates a growing activity in the mining industry of this section, especially in the treatment of low-grade ores by the chlorination process. While our capacity is now largely in excess of the present market, we have every reason to expect that the coming year will see us running full in all departments. In fact, the contracts which we already have will very probably compel us to enlarge our works considerably to keep ahead of the demand."

Robert Ryan, manager of the Morgan-Gardner Electric Company, of Chicago, Ill., says: "The past year has been fairly satisfactory in our line—that of furnishing mining machinery for use in bituminous coal mines only. The prospects for domestic business are fairly encouraging, but it is rather difficult to predict what may develop in export trade, as some foreign countries are agitating retaliatory tariff legislation which would, if enacted, undoubtedly retard progress for American manufacturers. We are not particularly looking for an increased export trade during the year, though we hope we may be agreeably disappointed."

S. H. Pitkin, general manager of the Webster, Camp & Lane Company of Akron, O., says: "We ran under high pressure during 1901, the demand for our products being beyond our capacity. A good share of the time we have been running our own works night and day, besides contracting considerable work in other shops. We have done some export work, but we have not followed up this line, owing to the great home demand for our mining machinery and coal and ore handling machinery for docks and steel plants. We are now building a modern plant, which we hope to have ready early in the spring. This will about treble our capacity, enabling us to take care of our customers promptly, and do our share of foreign work."

A. Wyckoff & Son Company, of Elmira, N. Y., says: "Our trade with the coal, iron, copper and silver mines of this country, Mexico, Canada, British Columbia, Northwest Territory and Nova Scotia for our acid-proof wood pipes for conveying bad mine-water was very satisfactory during 1901. We have recently established an agency in Germany, and think the prospects for trade bright in that country. We anticipate a heavy business during 1902. Our heavy-pressure wood pipe for deep mine workings is made of heavy stock and is strengthened with extra heavy bands. We guarantee this wood pipe to stand 200 lbs. pressure per square inch. It is perfectly air and water-tight."

F. D. Johnson, manager of the Chicago Pneumatic Tool Company, of Chicago, Ill., says: "We have had an exceptionally prosperous year, and the prospects for the coming year are exceedingly bright. We are having an increased demand for all of our pneumatic appliances, and especially for our air-compressors. We are looking forward to an increased trade, especially among mining interests, as we expect to have a new rock-drill ready to place on the market early in the coming year. Foreign business was not as brisk as in 1900, but trade is now picking up. We have had some very large orders in the last few weeks, and a large number of inquiries for future delivery, and have every reason to believe that we shall do a large export business in 1902."

The Weber Gas and Gasoline Engine Company, of Kansas City, Mo., states that its business for the past year has been very satisfactory. It has made sales for Norway, Northwest Territories, Australia, New Zealand, Mexico and several South American countries. Among the new engines the company is to put on the market this year will be a little prospecors hoist of 2½ actual h. p., to sell at a comparatively low figure. It will be built in sections for mule pack transportation. The characteristics of this engine, the company states, will be low cost, light weight and simplicity. While the Weber Company's new factory has been completed only a little over 18 months, additions are already underway, and the outlook for the new year is excellent.

The Ottumwa Box Car Loader Company of Ottumwa, Ia., says "The sales of the Ottumwa box car loader in 1901 were very encouraging, and have steadily increased as the machines have become better known. The outlook for 1902 is good. In the past many coal mine managers have seriously objected to receiving box cars from railroad companies for loading with coal, and have often closed their mines for days, rather than load box cars. They are learning, however, that this work can be done at about the same cost as for loading open cars, and that there are several advantages in having coal in box cars aside from being able to keep mines in operation by taking any kind of cars offered. Mail inquiries for particulars about the Ottumwa loader are very encouraging, and indicate a prosperous business for 1902. We have done practically no foreign business except to answer some inquiries, and do not know whether conditions in many foreign countries are such as would require the use of our machine."

The Trenton Iron Company of Trenton, N. J., says: "The past year's results indicate a marked increase in the demand for our productions, more especially for equipments for Bleichert wire rope tramways, enought in fact to warrant a corresponding increase in our facilities for production in the way of new machinery. The increased demand is due largely to a realization by all mining men of the great economy effected by Bleichert tramways, as attested by the many lines now in operation, an economy due to the increased service obtained in the use of the patent locked coil track cable, and the Webber patent automatic compression grips. A recent improvement in the grip whereby the tramway cars may be attached automatically to the traction rope as well as detached automatically enables these lines to be run at the highest possible speed, reducing the number of buckets required for a given output. Holding in view the maintenance of the high standard of excellence now attained in work in this and other lines, we feel justified in the anticipation of increased business and hope for a prosperous year."

The Goodman Manufacturing Company, of Chicago, Ill., maker of electric coal cutting and coal hauling machinery reports that 1901 demonstrated most clearly that coal operators are alive to the fact that machine mining when it can be employed, effects a saving over hand methods. Electric haulage effects an additional saving besides increasing the output. Electricity as a motive power for mining is by far the most flexible system that can be installed and the increase in the number of mines using it is shown by the large number of contracts placed during the past year. The Goodman Manufacturing Company has found its new factory facilities heavily taxed during the entire year to take care of the many orders received. Probably the largest mining machinery contract ever placed by one coal company fell to its share, consisting of boilers, engines, complete steam equipment with 7 electric generators, 7 locomotives and 30 coal-cutting machines with all necessary supplies. Such a contract shows the high esteem in which its machinery is held by the operator. The company closed the year with shops running overtime and from the large number of inquiries and the apparent intentions of many new operators to equip with electric power, the company anticipates a large increase in the demand for its machinery in 1902.

TRADE CATALOGUES.

F. Weber & Co., Philadelphia, Pa., have issued another catalogue of their engineering instruments, which are made for them by Messrs. C. L. Berger & Sons.

The Sprague Electric Company, of New York City, recently sent out its bulletin No. 2 on direct-current generators of the split-pole type. Full descriptions of the generators, both engine and belted types, are given, with many illustrations.

The Atlas Car and Manufacturing Company, of Cleveland, O., is getting up a new catalogue of its

large line of mine cars and special cars for smelting and refining works. The list includes a number of cars of new design. The Atlas Company is also getting out a catalogue of industrial railway equipment.

Henry Disston & Sons, the saw makers, have issued a catalogue of their products, which are confined not merely to saws of every conceivable shape, size and pattern, but also to milling tools, setting, gumming, grinding, wrenching and other similar tools for the care of saws, to say nothing of swages, sets, punches, post-hole diggers, wire and nail gauges. The same company is also sending out its catalogue of files and rasps.

The Allis-Chalmers Company, Fraser & Chalmers Works, Chicago, Ill., is mailing the 8th edition of its catalogue No. 9, a handsome 104-page book on general mining machinery and appliances. Included in the book are practically all the appliances needed in milling, from complete concentrating plants to small, round-hole screens. The machinery turned out by the Allis-Chalmers Company is well known and the catalogue maintains the high reputation of the company.

The C. W. Hunt Company, of West New Brighton, S. I., N. Y., has published pamphlet No. 0115, which deals with the Hunt electric hoists. The principal advantages claimed for these hoists are easy manipulation, simpleness of action, strength and safety. The Hunt Company manufactures hoists of various sorts, among which are coal hoists, contractors' and derrick or quarry hoists, all of which are operated by electricity. The pamphlet is sent free on application to the company.

The Keystone Driller Company, of Beaver Falls, Pa., has completed additions to its plant, consisting of 2 buildings, 40 by 200 ft. and 60 by 100 ft. The company manufactures portable oil and gas-well drilling machinery, and drilling machines for testing purposes, and is now putting through its shops a machine which will drill to a depth of 2,500 ft. This larger driller will be tested by the company in sinking a gas well for its own use. An 84-page catalogue, the 10th edition in 1901, recently issued, will be mailed upon application.

The Chicago Pneumatic Tool Company, Monadnock Block, Chicago, Ill., has recently issued a handsome catalogue of its appliances using compressed air. Practically every sort of tool or machine using compressed air is shown, from the smallest part of a taper-drill attachment to full-sized, heavy riveters, drills and hammers, both of the long and short-stroke type. Other machines shown and described are bolt nippers, stone hammers and stone-dressing machines, general hoists, flue cleaners, and drilling, calking and riveting hammers.

GENERAL MINING NEWS.

Mines Securities Corporation.—This company recently organized with an authorized capital of $2,500,000, of which $1,300,000 has been issued, has its offices at 35 Wall street, and 15 and 17 Broad street, New York City. The officers are Thomas J. Hurley, president; William H. Burger, vice-president; George J. Schermerhorn, treasurer; Charles P. Perrin, consulting engineer, and W. Harold Cockroft, secretary. The company states that its object is to furnish authentic information about the physical and financial condition of mining property, and to act as New York transfer agent for mining companies of undoubted responsibility. The company states that it has the services of chartered accountants in the United States and Mexico to make expert examinations of books and give advice in mine accounting. The company also states that it has a corps of selected engineers and is prepared to make confidential reports.

ALASKA.

CAPE NOME.

In the United States Circuit Court of Appeals at San Francisco, Cal., on January 13, Judge Morrow sentenced Judge Noyes to pay a fine of $1,000 for connection with the Cape Nome conspiracy case. United States District Attorney Woods was sentenced to four months' imprisonment and Assistant United States District Attorney Frost, was sentenced to 12 months' imprisonment.

The opinion of the Court was read by Judge Morrow, who said:

"I concur in the finding of fact contained in the opinion of Judge Gilbert in the cases of Arthur H. Noyes, Joseph K. Wood and C. A. S. Frost. I am also of opinion that the evidence does not establish the charge against Thomas J. Geary.

"In my judgment the evidence established the fact that there was a conspiracy between the respondent, Alexander MacKenzie, and others, to secure possession of certain valuable mining claims in Alaska, under proceedings involving the appointment of a receiver for the purpose of working the properties and obtaining the gold deposited in the claims. To carry these proceedings to a supposed conclusion, Noyes, MacKenzie and others found it a necessary part of their scheme to resort to the process of this court."

ARIZONA.

MOHAVE COUNTY.

(*From Our Special Correspondent.*)

James Carrol has struck rich chlorides and horn silver in the Chloride District. The vein averages about 6 in. thick.

Boundary Cone District.—A Denver company is interested in discoveries in this district and will do considerable development. The ores are free milling.

Cerbat Mining and Reduction Company.—This company has been formed to work the Alexander group of claims.

Eagle.—J. W. Gerritt is having the water pumped from this mine at Cedar and will develop the ore bodies under an option for $35,000.

Exploration Mining Company.—This company has 3 shifts of men driving a tunnel under the Star group of claims. Within 30 ft. more of work the first of 3 veins will be cut.

Sheeptrail.—Davis & Avery, who have been operating a cyanide plant on the tailings for some weeks, have 140 lbs. of auro-cyanides worth $12 per lb.

Sunrise.—A contract for a 600-ft. tunnel has been let for this mine.

CALIFORNIA.

AMADOR COUNTY.

(*From Our Special Correspondent.*)

Defender.—At this mine at Defender, of which F. B. Joyce is superintendent, a new 6-in. Cornish pump is in position and sinking is resumed.

Kennedy.—A new 40 or 60-stamp mill is to be erected at the new East shaft of this mine, at Jackson. Superintendent J. F. Parks is considering the use of power drills.

BUTTE COUNTY.

(*From Our Special Correspondent.*)

Cherokee.—At this hydraulic mine at Cherokee, Superintendent Hill is working 2 monitors and 30 men.

Gray Lizard.—Application for permit to mine by hydraulic process has been made by A. H. Soper and Jerry Buckly for this mine, near Rackerby, tailings to be deposited in Swedes Flat Creek.

CALAVERAS COUNTY.

(*From Our Special Correspondent.*)

Easy Bird.—C. M. Harris has bonded this mine to J. J. McSorley, of Mokelumne Hill, and work will begin at once.

French Hill.—M. A. Kiser has found a rich prospect within a few hundred yards of the old French Hill placer diggings. The new find is in the eastern suburbs of Mokelumne Hill.

Lancell.—Work has been resumed under a renewal of the bond at this mine, near Buckeye, 20 miles by stage from Valley Springs.

Mahala.—This claim at Mokelumne Hill, owned by S. Redmond and W. Casey, has been bonded.

Maxey.—This gravel mine, near El Dorado, has again started.

Melones Consolidated Mining Company.—This company, at Robinsons, has bought a number of quartz claims and is patenting those heretofore held by possessory title only. Wm. C. Ralston is general manager of this property, owned by Boston men.

Monte Cristo.—This mine, the Good Hope and San Bruno at Glencoe, have been bonded by S. H. Krim, of Mokelumne Hill, to Chicago men.

San Joaquin Mining Company.—This company, Jos. McClay, superintendent, owns the Sugar Pine Mine near Angels, has started a new 2-compartment shaft, and is giving employment to 20 men. The new 10-stamp mill is completed.

Scieffard.—The new mill at this mine, near the Kentucky Home, has started up. William Austin, of San Andreas, had charge of construction.

Sunrise.—A number of improvements are being made at this mine at Glencoe.

ELDORADO COUNTY.

(*From Our Special Correspondent.*)

Larkin.—At this mine, at Diamond Springs, a 7-ft. vein of ore has been cut on the 400-ft. level. This is one of the producing mines of the county and is in charge of C. H. Dunton.

INYO COUNTY.

(*From Our Special Correspondent.*)

No Sabe.—This mine, 12 miles northeast of Bishop, is being opened by John and Louis Leidy. The ore is piled for shipment in the spring.

KERN COUNTY.

(*From Our Special Correspondent.*)

Phoenix.—G. W. Lloyd who is building a 5-stamp mill on this mine at Johannesburg, has purchased the water system of the Eagle Company.

Yellow Aster.—The 2 mills at Randsburg are crushing 450 tons a day and improvements are being made to increase the capacity. John Singleton is manager.

NEVADA COUNTY.

(*From Our Special Correspondent.*)

Lupine.—At this gravel mine, near Washington, operations are resumed.

Ross.—This mine, at Sweetland, under Superintendent Samuel McCullough, is turning out good rock from a ledge recently encountered. The old Armstrong Mine, in the same district, is worked by Charles L. Miller.

PLUMAS COUNTY.

(*From Our Special Correspondent.*)

McGill & Standart.—The mill on this property, at Crescent Mills, is to be enlarged.

SAN BERNARDINO COUNTY.

(*From an Occasional Correspondent.*)

Columbia Mining and Milling Company.—This mine, besides putting in 15 more stamps, intends to install a cyanide plant for treating its oxidized ores and tailings, and recently ordered a compressed-air drill. The company now has in operation 5 stamps with power sufficient to run 20 stamps. Lack of water has prevented full operation of the plant up to the present, but increased supply has been obtained in sinking the main shaft. The ore in sight above the 200-ft. level is estimated at over 200,000 tons. The company's offices are at Los Angeles. Jas. D. Evans is president; W. A. Boeck, secretary and treasurer, and R. J. Dyas, vice-president and manager.

Supply and Jean.—J. R. Cheatham is putting up a 60-ton cyanide plant for these mines at Dale.

SAN DIEGO COUNTY.

(*From Our Special Correspondent.*)

California King Company.—This company, at Pichaco, F. Guerra, superintendent, has a number of men opening its claims.

SAN LUIS OBISPO COUNTY.

(*From Our Special Correspondent.*)

Cinnabar Mining Company.—This Los Angeles company has begun work on its quicksilver claims near the Oceanic Mine.

SHASTA COUNTY.

(*From Our Special Correspondent.*)

Arps.—This group of copper claims, in Pittsburg District, between Bully Hill and Copper City, owned by R. M. Saelzer, A. Jaegel, and J. A. Kahny, of Redding, and Wm. Arps, of Copper City, has been bonded to Frank Hall. The figure in the bond is given as $80,000.

Connor.—At E. P. Connor's claim, on Salt Creek, now under bond to J. J. Chambers, of Redding, a body of telluride ore is reported found.

Shasta Mineral Belt Railway Company.—This company has been organized in San Francisco to construct a railroad connecting with the California & Oregon line at the junction of the Pitt and Sacramento rivers and extend 60 miles, terminating at the junction of the Fall and Pitt rivers. The incorporators are David P. Doak, of St. Louis, Mo., and T. A. Johnson, S. C. Denos, Bert Schlesinger and S. C. Wright, of San Francisco.

SIERRA COUNTY.

(*From Our Special Correspondent.*)

Oriental.—A lot of electrical and other machinery has been shipped to this mine at Alleghany.

SISKIYOU COUNTY.

(*From Our Special Correspondent.*)

Bloomer.—W. P. Bennett is increasing the water supply at this mine at Forks of Salmon by enlarging the ditch.

Callahan Dredger.—Superintendent Scott has most of the machinery in place on the dredger at Callahan, and the electric plant is ready for connections.

Hawkinsville.—The dredger on the Yreka Creek bed is operated by Rupert Winters, who is to make some improvements in the machinery.

John Quincy.—This mine, at Oro Fino, is ready for work again.

Nordheimer.—The mine at Forks of Salmon is now running day and night with a full head of water. Wm. Lord is superintendent.

Oak Bar Mining Company.—This company at Oak Bar is working the old Poverty Point Mine under superintendence of H. T. Barton.

Pine Grove.—This placer mine, near Oak Bar, is worked by a Detroit company under supervision of Messrs. Newkirk & Whitney.

Red Bird.—The company, which made its first payment on the ground recently, has commenced sinking a 200-ft. shaft in Greenhorn Gulch, near Yreka. The new mill has started.

SONOMA COUNTY.

(From Our Special Correspondent.)

Mercury Mining Company.—This company has incorporated to work the Socrates quicksilver mine, and will install 2 30-ton furnaces at Pine Flat.

TRINITY COUNTY.

(From an Occasional Correspondent.)

Dorleska.—The small prospecting mill on this mine made quite a remarkable record during 1901. Five 125-lb. stamps and a Woodbury concentrator, run by a 4½-h.p. engine, made an output of a little over a ton a day. From June 3 to December 3, 184 tons were crushed, yielding $32,191. Of this, 46 tons, classed as bonanza ore gave the extraordinary return of $25,377, or $551.67 per ton. The remaining 138 tons, second class ore, yielded $6,815, an average of $49.38 per ton. These returns were entirely from free gold in the battery and on the plate, and do not include high-grade concentrates. A new 3½-ft. Huntington mill replaced the prospecting mill December 8. During the season a sawmill, shaft house, and other buildings were erected, roads made, and the Abrams postoffice removed to the mine. A thousand feet of drifts and tunnel have been run, and 180 ft. of shaft and winze. During the winter 15 men will be employed in sinking and in running a third level, additional to 500 ft. of tunnel No. 2. The Union Consolidated Gold Mines Company, of Los Angeles, is the owner. H. Z. Osborne is president and general manager and M. H. MacIlwaine, superintendent.

Jenny Lind.—Homer Wilson, of San Francisco, is directing the installation of a 20-stamp mill on this mine, near Dedrick. He is also putting in a new hoisting plant on the Chloride-Bailey Mine, at the same place.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

Crystalline.—Work on the new compressor building, gallows frame and hoist for this mine, at Jamestown is going ahead rapidly, and the 10-stamp mill runs full time. The superintendent is C. E. Shafer.

Dutch Mining and Milling Company.—This company, at Quartz, is cutting a station at the 1,155-ft. level, and will begin drifting at once.

Seminole.—At this mine, at Carters, the 10-stamp mill has started. The mine is worked under bond.

Soulsby.—At this mine, at Soulsbyville, a new compressor is being installed and arrangements made to accommodate a larger force of miners.

Stockton Gravel Company.—At the Philadelphia claim in Star District, near Columbia, good channel gravel has been found. The superintendent is Wash. Tucker. The company's secretary is J. Pitcher Spooner, Yosemite Theatre Building, Stockton.

Tanzy.—This pocket mine, near Sonora, has been turned over by the lessees to its owners, T. C. Birney, G. Oneto and Jas. Cuneo.

YUBA COUNTY.

(From Our Special Correspondent.)

Jefferson.—A company has arranged to re-open this old mine at Brown's Valley. In the early '60's this mine yielded largely.

COLORADO.

BOULDER COUNTY.

(From Our Special Correspondent.)

Eclipse.—Mrs. H. A. Tabor, widow of the late Senator Tabor, is interested in the development of this mine at Ward. The owners have incorporated under the title of the Earl Mining Company, and will push developments.

CHAFFEE COUNTY.

Belle of Granite.—This mine near Granite is operated by the Occidental Development Company, of Boston, Mass., of which E. W. Redding is general manager and E. L. Redding assistant manager. Ben. H. Pelton is superintendent at Granite. The company owns 2 claims and has 3 others under bond and lease from the owners, August Pine, J. F. Mero and Mrs. M. S. Smith. The main shaft is 400 ft., equipped with a 6 by 8 double flat friction hoist. There are 5 levels and about 2,000 ft. of drifting. The main shoot about 100 ft. long is now being opened on the 3d level. A second ore shoot is to be opened at a depth of 225 ft.

Climax Company.—This company, under the management of E. W. Redding, owns a group of 5 claims, 2 of which are on the Belle of Granite lead.

(From Our Special Correspondent.)

Buena Vista Smelter.—Work on the new smelter to replace the one recently destroyed by fire is pushed.

Cache Creek Placers.—Fred O. Harvey, of Granite, manager, reports satisfactory progress during last season. Between April 25 and November 15 over 1,000,000 cu. yd. of dirt were removed by 70 men.

Dolomite.—A strike was recently reported in this mine at the head of Trout Creek about 12 miles above Buena Vista. Development has been in progress for many years with varying results.

GILPIN COUNTY.

(From Our Special Correspondent.)

Gilpin Ore Shipments.—The shipments of smelting and crude ores, mill tailings and concentrates from Black Hawk for December to the smelters and outside points of treatment, were 314 cars or 5,810 tons.

Mining Deeds and Transfers.—Benjamin Shurtliff to B. M. Meyers, the Plymouth and east 833 ft. of Carr lode, Gregory District; J. Flynn to J. R. Quigley et al, 1-2 interest in Lake View lode, Gregory District; E. Spear et al to E. S. Moulton, the Nemeha, Nemeha and Cotton lodes in Gregory District; B. T. Owen to Argo Mining, Development, Tunnel and Townsite Company, the Old Jordan, Mamie, Margaret and Peton lodes in Russell District; A. Summer to Dan Fuelscher, Independence lode in Illinois District; M. Hyman et al to I. D. Cohen, the Cohen group of 5 lodes in Vermillion District; J. Reed to J. W. Smith, 1-7 interest in Minnesota lode in Russell District; W. L. Jackson et al to P. Rohling, 1-3 interest in East Perigo lode, 3-4 interest in Stuart lode in Independent District.

British.—New York men have taken a lease and bond on this property in Lake District, for $26,000. Active work will be carried on under the management of H. McCowell, of Central City.

Cashier Gold Mining and Reduction Company.—Ores shipped from the Golden Wedge Mine gave values of 34 oz. gold per ton or over $600. Sinking has begun and the working force is larger. B. L. Campbell, Central City, is superintendent.

East Boston.—The property has started under new management, and sinking has begun for 100 ft. farther. Boston parties are interested, with W. Job, Central City, as superintendent.

Nemeha.—Boston men have purchased this group for $16,000 as the Gilpin & Boston Mining Company. Extensive work is to be carried on as the property has a good record. The shaft will be sunk 200 ft. deeper. W. Ballantyne, Central City, is manager.

GUNNISON COUNTY.

(From Our Special Correspondent.)

California Tunnel.—This tunnel near Tomiche has been leased to Mr. Tobin and associates, who will press work.

Mineral Point Mining Company.—This company in Crystal River District is giving especial attention to its copper properties.

LAKE COUNTY—LEADVILLE.

(From Our Special Correspondent.)

Leadville Ore Tonnage.—The tonnage averages 2,000 tons daily of all classes of ores, with no change in the smelter situation. The A. M. W. combination could easily ship 500 tons instead of 100, the Greenback 200 instead of 50, the Ibex 500 instead of 150, the Resurrection 250 instead of 50, the Small Hopes 150 instead of 50. The glut in the sulphide market held down the production during the last 3 months of 1901 over $2,000,000. In 1901 the Ibex Company produced 50,000 tons of sulphides and 20,000 tons of siliceous ores; the Small Hopes Combination 2,400 tons oxidized iron, 1,725 tons carbonates and 33,000 tons sulphides; Penn Mining Company, 31,744 tons siliceous ores; New Leadville Home Mining Company, 102,067 tons oxidized iron; New Monarch, 10,000 tons sulphides, 2,000 tons siliceous; A. M. W. combination, 2,000 tons oxidized iron, 1,000 tons carbonates and 102,000 tons sulphides; Midas, 68,000 tons oxidized iron; Phoenix Mining Company, 50,000 tons iron; the Stars, 22,000 tons oxidized iron; Iron Silver Mining Company, 3,960 tons oxidized iron, 56,600 tons sulphides and 3,442 tons zinc; Yak Mining, Milling and Tunnel Company, 23,000 tons sulphide, 1,562 zinc. Some 50 other propositions produced all the way from 2,000 to 5,000 tons during the year.

Bartlett.—New lessees have opened some very rich silver ore and have shipped 50 tons of good matrial.

Cloud City Mining Company.—Development of the new strike shows 45 feet of good manganese-iron ore, some of which has been shipped to Chicago.

Ibex Mining Company.—Only the better grade ore is shipped. The company has just arranged with the Yak Company to extend the big tunnel and cut the Ibex at 1,200 ft. in virgin territory.

Iron-Silver Mining Company.—A new boiler and pump are being put in the Stevens shaft and prospecting is going ahead in virgin territory, At the Moyer, about 150 tons a day are mined.

Keystone Mining Company.—An immense surface plant is being put in preparatory to developing through the old Rex shaft. Pittsburg, Pa., men are behind the company.

Manganese Ore.—Shipments are not as heavy as usual owing to the failure of local brokers to make new contracts with the steel works at Pueblo and Chicago. The cut in the market price will close several manganese producers.

Mikado.—The dump is under lease to Andy Dyatt, who shipped 14,000 tons last year. He is now shipping 100 tons a day of highly siliceous ore, just what is needed by the smelters. There are thousands of tons in the dump.

Nisi Prius.—The company denies the report that rich gold ore is found in these workings. A considerable amount of prospecting work is being done and new machinery is being put in.

Printer Boy Gold Mining Company.—New York men head this newly organized company to work 21 acres of the Old Printer Boy. A new plant of machinery is in position. Geo. C. Adams of New York City is president; John McDonald, New York City, vice-president; J. R. Shoaff, New York City, 2d vice-president; W. W. Detrick, New York City, secretary and treasurer. The company has a 5 years' lease and bond.

OURAY COUNTY.

(From Our Special Correspondent.)

Camp Bird Extension.—Campbell & Wood, of Denver, associated with F. L. Sigel, have secured an interest in this company, which has concluded the purhase of all mines of the group, including the Monument and Connecting Link. The main tunnel is in 900 ft.. Work will proceed all winter.

National Belle.—The consolidation is announced of this and the Guston properties on Red Mountain, making 14 claims in all.

Virginius.—This mine has the deepest vertical shaft in Colorado. The shaft was cut on the Revenue Tunnel at over 2,000 ft., and continued from the tunnel to a total depth from surface of over 3,000 ft. The second deepest shaft is on the Geyser in Custer County 2,600 ft., followed by the California of Gilpin County.

SAN JUAN COUNTY.

(From Our Special Correspondent.)

Mining Transfers.—Deer Park Gold Mining Company to Henry T. Henderson, Montana et al. lodes; J. B. Patterson et al. to the Notaway Gold and Copper Company, Champion No. 2 et al lodes; Jack Shaffer to Joe T. Terry, Little Johnnie lode.

Bald Eagle.—A new strike was recently made in this Silverton property, assays from which are said to run 100 oz. silver and 71 per cent lead. A carbonate lead and copper streak being developed, gave returns of 25 per cent copper.

Congress.—Arrangements have been made by this company at Red Mountain to ship its product to the Kendrick-Gelder Smelter at Silveron during the winter sleighs until the reopening of the Silverton railroad in the spring.

Grand Mogul.—New electric generators are being put in at both the mine and mill of this Silverton mine. The force has been increased to 90.

Henrietta.—The 7th level is being driven 5 ft. per day. Gardner electric drills will be put in. The ore mined will be held in the bins until spring.

Hudson.—This Silverton property is being stocked with winter supplies, and active development is about to begin. A force of 15 men now retimbering the mine will be increased as soon as preliminary work is completed.

Lackawanna.—George Whitelaw, the owner of these claims on Blair Mountain, is now in New York City organizing a company, and expects to begin active development soon.

Minnie Gulch Section.—J. C. Magner, of Florence, who represents a Pueblo company, has secured a bond and lease on the Hubbard group, and is pushing operations with a small force. J. O. Campbell, representing the American Smelting and Refining Company, has taken the Silent Friend Group of 5 claims under bond and lease, and will prosecute development work all winter with a large force. The Esmeralda has discontinued shipments for the winter. Development will be discontinued, and the product stored until spring. The Beaton properties have a fine vein of sulphide ores showing in the breast.

National Bell.—Two thousand tons of coal and $1,800 worth of provisions were recently ordered for these properties near Silverton.

Neigold.—These properties in Stony Gulch are producing an average of 7 tons per day of good ore from a 70-ft. winze.

Sioux Mining Company.—Work is progressing rapidly. The shaft is being sunk by contract, and the tunnel is being driven by the company. The product so far is entirely concentrating ore.

SUMMIT COUNTY.

(From Our Special Correspondent.)

King Solomon Tunnel and Mining Company.—Certain properties on Royal Mountain together with the Royal placer have recently been transferred to this

company, and an early completion of the tunnel is contemplated.

GEORGIA.

FANNIN COUNTY.

Chestnut Gap.—Work is soon to be begun on the old copper mine near this place.

Rans Hill Mining Company.—This company was recently organized to operate a placer property on Noontootley Creek.

LUMPKIN COUNTY.

Cavender's Creek.—This property was recently sold by Capt. R. R. Asbury, of White County, to S. A. Jones, of Waynesville, N. C. The property includes 4,000 acres of land, including a considerable area of placer ground, and the price is said to be $75,000.

Dahlonega Gold Mining and Milling Company.—This company has been organized with offices at Auravia and in Chicago, Ill. The capital stock is $2,500,000, in shares of $1 par value. The company owns 710 acres of land and proposes to work placers, build dredges and also to mine ores and built a 50-stamp mill. The officers of the company are R. S. Disney, president; Simon P. Shope, secretary and treasurer; Cecil Sovey, assistant secretary at mines; W. I. Rush, general manager; J. T. Miller, superintendent; H. B. Tregent, assistant superintendent. The board of directors consists of R. S. Disney, S. P. Shope, W. I. Rush, J. F. Miller and Dr. T. R. Cravens.

North Georgia Dredging Company.—This company, which has headquarters in Dahlonega, has bought some property along the Etowah River, and has begun work on a dredge to operate on the river.

IDAHO.

IDAHO COUNTY.

Ella Hill Gold Mining Company.—This company has been incorporated at Salt Lake, Utah. The capital stock is fixed at $25,000. The officers are John W. Burton, president; H. A. Smith, vice-president; E. A. Wilson, secretary and treasurer. The company owns the Ella Hill, Columbia, Independence, Ajax and North Pole claims in Neil District.

SHOSHONE COUNTY.

American Placer Mining Company.—This company is said to control 6 miles of placers in Orofino Creek below Pierce City. The company has its high flume about ready for work.

Eureka Pacific Placer Mining Company.—This Spokane, Wash., company is reported to control 6 miles of locations along Reed's Creek, in the neighborhood of Orofino and to have spent $20,000 in building a 4-mile flume and preparing for hydraulicking. It will start mining next summer.

Gold Creek Mining Company.—This company is stated to control 4 miles of locations on Gold and Snake creeks, 30 miles from Orofino. The company has in place 3 miles of 4 by 5 ft.-flume and a long stretch of 22-in. pipe. It will start hydraulicking in the spring.

MICHIGAN.

COPPER—HOUGHTON COUNTY.

(From Our Special Correspondent.)

Arcadian.—One stamp is in use, the other 2 at the mill being leased. The showing at the Douglass shaft and No. 1 continues fair.

Champion.—This property, owned jointly by the Copper Range Company and the St. Mary's Canal Mineral Land Company, will take a head at the Atlantic Mill, recently released by the Baltic. Work on the Champion Mill is well advanced. A shaft is sinking to a depth of 60 ft., from which a drift will run out under Lake Superior 1,000 ft. to secure water.

Elm River.—Work is confined to cross-cutting. Operations are slow and costly, owing to surface sand.

Isle Royale.—The December output was somewhat smaller than expected, owing to an accident at the mill.

Mayflower.—Work is confined mainly to the amygdaloid lode found some time ago on the surface.

Old Colony.—The tunnel on this property will soon tap the amygaloid lode cut last summer with the diamond drill. Exploration with a diamond drill continues.

Rhode Island.—The Allouez conglomerate lode recently encountered in a cross-cut from No. 2 shaft at the 5th level, is reported about 25 ft. wide, with 5 ft. well charged with copper.

Trimountain.—Shipments of rock to the Arcadian Mill have started and stamping has begun. The mine will ship about 500 tons of rock to the Arcadian Mill daily.

Winona.—Sinking in No. 2 shaft continues.

Wolverine.—The December product was 251 2-5 tons of mineral.

COPPER—KEWEENAW COUNTY.

(From Our Special Correspondent.)

Allouez.—A small force is sinking No. 1 shaft on the Osceola amygdaloid lode. It is stated that the management is considering unwatering the workings on the Allouez lode, which were worked by tributors some years ago.

Arnold.—This property is practically idle.

Mohawk.—The new mill, on Traverse Bay, is progressing well and several pieces of machinery are in place.

COPPER—ONTONAGON COUNTY.

(From Our Special Correspondent.)

Mass Consolidated.—At the mill the second head is being put. The December output was 137 tons, 1-2 of which was mass and barrel copper. At the mine both shafts are sinking to the 11th level.

Michigan.—Development continues on the Calico conglomerate lode. The Minnesota workings will be in condition in a few weeks for through examination.

IRON—MARQUETTE RANGE.

Negaunee.—A bad cave-in at the bottom of the old shaft at this Negaunee mine on January 7, entombed a number of men. The mine has had much trouble in sinking and drifting from surface water and quicksands.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

Joplin Ore Market.—The first week of 1902 opened with a dull market for both zinc and lead ores, though the price of zinc ore continued high. Ore bins are bare and new smelter blocks are in course of construction in the Kansas gas belt. The lead ore situation remains depressed. The top price paid for zinc ore during the week was $31 per ton. Lower grades of zinc ore in many instances brought more for the percentage of metal than did the top price ore. During the corresponding week in 1901 zinc ore's top price was $27 per ton.

During the week lead ore brought $21 per 1,000 lbs. delivered as during the preceding week and the total output was cleaned up. During the corresponding week of 1901 lead ore brought $23 per 1,000 lbs. delivered.

Following is the turn-in by camps of the Joplin District for the week ending January 4.

Joplin	2,244,750	549,090	$46,202
Galena-Empire	973,410	202,660	17,884
Carterville	1,462,870	357,140	27,980
Webb City	509,060	40,600	7,992
Zincite	423,690	22,350	7,824
Aurora	585,990	26,480	6,639
Cave Springs	340,140	20,180	5,696
Duenweg	131,680	57,930	3,127
Neck City	295,100	.....	4,427
Spurgeon	232,430	76,110	4,503
Carthage	184,020	.....	2,392
Carl Junction	196,350	.....	2,965
Granby	240,000	60,000	3,419
Sherwood	127,600	.....	1,786
Oronogo	197,150	2,140	2,900
Roaring Springs	47,040	6,300	754
Badger	41,050	21,070	1,058
Gillam	35,700	.....	357
Total	8,268,930	1,433,140	$147,885
Total Corres'd Week 1901	8,509,600	907,160	$126,866
Zinc value last week			$117,608
Lead value last week			30,277

MONTANA.

BEAVERHEAD COUNTY.

(From Our Special Correspondent.)

Ajax.—This property, situated in the Big Hole Basin, 80 miles from the railroad belongs to J. E. Morse, of Dillon and J. B. Noyes, of Jackson. A 60-ft. shaft and 2 short tunnels have produced about 100 tons of galena ore carrying gold. A carload sent to Omaha recently gave returns of $855 for the shipment. This is a new district and but little is known of its mineral prospects.

BROADWATER COUNTY.

(From Our Special Correspondent.)

January Group.—This property on Weasel Gulch, 6 miles from Winston has been acquired from the owners on a bond at $75,000 by Martin Buckley and John Byrne. The bond runs for two years. The property has produced a number of cars of high-grade silver-lead ore, principally from the 1,000-ft. tunnel. The principal owners are A. C. Johnson, of Helena, and John W. S. Neil, of St. Paul, Minn. The new operators will sink a winze from the tunnel level.

CASCADE COUNTY.

(From Our Special Correspondent.)

Boston & Montana Smelter.—Fires were started in the furnaces of this plant at Great Falls on January 7. It is expected that the entire plant will be in operation within 30 days.

Boston & Montana Smelter.—It is stated that the smelter at Great Falls will resume work on January 15. The Boston & Montana mines, at Butte, it is said, will start at that time also, with a slightly reduced force of men.

FERGUS COUNTY.

A group of 27 claims between Whiskey and Dry Gulches is being developed under bond by Waite Wright & Co. John L. Westergreen is in charge of the work.

Big Six.—This group of 5 claims in Gilt Edge District is being developed under a $20,000 bond by H. T. Kendall & Co. A drift is being run from the bottom of a 100-ft. shaft.

Mammoth.—John Fitzpatrick is developing this group of claims. A 180-ft. tunnel is said to show considerable ore. A mill may be erected in the spring.

FLATHEAD COUNTY.

American Kootenai Mining Company.—This company, which has been working a 10-stamp mill in the West Fisher, has suspended work temporarily. It is said that when mining is resumed power drills will be used.

Blacktail Mining Company.—This company, that has completed a 10-stamp mill in the West Fisher gold district, is running a 1,100-ft. tunnel from the mill site on Bramlett Creek. The ore will be conveyed from the mine to the mill by an aerial tramway. The company is composed largely of Kalispell men.

Fisher Creek Mining Company.—This company on West Fisher gold belt is running a 10-stamp mill steadily, and intends to add 10 more stamps in the spring. Water-power will be used instead of steam. The machinery for the mill is ordered.

Snowshoe.—At this silver-lead mine southeast of Libby, preparations are being made to sink the 500-ft. 3-compartment shaft. Everything is ready for an active winter's work. About 20 men are now at work under D. P. Bowers, superintendent. The Chicago & Montana Mining Company in the early '90's spent a large sum in development and built a mill. Although it has been run mainly by water power, the plant is also fitted to use steam. There are 6 claims in the Snowshoe group and water rights have been taken on a number of creeks in the vicinity. About $150,000 have been expended on the properties including the mill, and a tunnel 1,700 ft. long, on the Rustler Claim. In this tunnel a winze has been sunk 100 ft. and connected by tunnel with the surface.

(From Our Special Correspondent.)

Montana Oil and Land Company.—This company, organized to develop oil lands in the Kiutla Lake District, is composed of Helena people. The capital stock is $300,000. The concern has control of 3,200 acres of oil land adjoining that of the Butte Oil Company. R. C. Wallace, W. G. Bailey, Henry Klein, and F. H. Ray, of Helena, are the incorporators. P. W. Francis will be in charge of operations. Drilling will start in the spring with one or more wells.

GALLATIN COUNTY.

Montana Corundum Company.—This company, recently incorporated with $300,000 capital in $3 shares has its headquarters at Bozeman. Leverett S. Ropes, superintendent, states that the company is preparing plans for a 50-ton concentrating plant and expects to take the machinery in across the snow this winter. Much of the lumber for the mill is already sawed and the company hopes to be producing corundum on a commercial scale by June 1. The company's property is about 20 miles southeast of Bozeman and comprises 4 claims.

JEFFERSON COUNTY.

(From Our Special Correspondent.)

King Solomon.—Isaac Morland, of Helena, has purchased this property from the Redding heirs. This mine came into prominence a few years ago by the shipment of a number of cars of high grade silver ore, some single cars netting from $4,000 to $5,000 each. It is located 3 miles from Clancy.

New State Mining Company.—The new ownership has drained the mine at Clancy. The company has added new machinery and is preparing to sink another 100 ft. to the main shaft. A. P. Meng is manager.

LEWIS & CLARKE COUNTY.

(From Our Special Correspondent.)

Columbia Gold Mining Company.—This company, at York, 25 miles from Helena, will build a 60-ton cyanide mill to work the old tailings accumulated by the 10-stamp mill built some 10 years ago at the Dandy Mine.

Hubbard.—This gold property, in the Jay Gould District has been purchased by Owen Byrnes of Helena, and associates. Some years ago an eastern company put up a new process gold mill which proved a failure.

MADISON COUNTY.

(From Our Special Correspondent.)

Bowery.—Manager Merk announces that the 20-stamp mill and cyanide plant of this Silver Star property will close during cold weather.

Hudson.—This property near Silver Star has marketed by leasees during the past 12 months $107,000. The lead will average 25 ft. wide. The shipping ore runs from 5 per cent to 15 per cent lead, and 1 to 4 oz. gold. Four cars a week are going to the smelter. Dahler, Bennett & Pasco have the lease, which will expire next May. A lease on a portion of the ground held by Ford & Dunbain, of Silver Star, from which a goodly portion of the last year's prodution was taken, expired December 31.

Iron Rod.—Dahler & Miller, of Silver Star, who are working this property on a lease have closed the cyanide plant for the winter and are confining operations to shipping ore to the East Helena Smelter. The mine was one of the first opened up in the county and has a shaft 600 ft. deep; the ore is worked in a 10-stamp mill run by water power. The tailings had an average assay value of $9 gold and 10 years or so ago a cyanide plant was built to work them.

Overland.—Frank Esler has again assumed charge of this gold property 8 miles from Helena. Two feet of shipping ore is exposed in a new lead tapped by a cross-cut from the old workings. This mine in the past has produced nearly $500,000.

POWELL COUNTY.

(From Our Special Correspondent.)

Black Rock.—A Salt Lake company is operating this property adjoining the Emery. A streak of shipping ore encountered in the cross-cut tunnel is being opened. A Mr. Cobb, of Salt Lake, is superintendent.

Emery.—This property in Zozel District 8 miles from Deer Lodge, has received a new plant of machinery costing nearly $40,000; included in the equipment is a 100-h. p. Heine boiler, a 15-drill air compressor and a hoist with a capacity of 1,500 ft.

SILVER BOW COUNTY.

Boston & Montana Company.—Judge Knowles, of the United States Court, has dissolved the injunction which John MacGinnis and Daniel Lamm, minority stockholders of this company, obtained to prevent the payment of dividends to the Amalgamated Company and to prevent the latter and its officials from voting stock and controlling the affairs of the Boston & Montana. Judge Knowles decides that MacGinnis and Lamm had no right to complain, and he also enjoins them from prosecuting a similar suit now pending in the District Court until the one in the United States Court is finally disposed of.

Minnie Healey.—The Supreme Court has taken under advisement the application of F. Augustus Heinze for a writ of supervisory control, reviewing the action of Judge Clancy of the District Court of Silver Bow County in granting the Boston & Montana Company permission to make underground inspections of the Minnie Healey Mine at stated periods. The mine has been decreed by the District Court to be the property of Mr. Heinze. An appeal from that judgment is now pending before the Supreme Court.

(From Our Special Correspondent.)

Transit, Hoadley & Packard, of Butte, have taken a lease and bond on this silver property just west of the old Lexington. The last mining on the claim was 20 years ago when some very rich ore was produced, but the lead finally was lost and no effort was made to find it.

Anaconda Copper Mining Company.—The Saint Lawrence, Neversweat and Anaconda Mines of this company have been closed and the machinery partially disconnected. The close is attributed to the refusal of Judge Clancy to vacate the order to survey the underground workings of these properties, in the case of Heinze vs. this company, plaintiff Heinze alleging that the company is working a vein having its apex in the Fairmount Claim, this latter claim being one of the properties of the Nipper Consolidated Copper Mining Company.

Carlisle.—The Butte & Anaconda Mining Company which was organized to operate this claim, is to be reorganized by a new issue of stock to be paid for by a pro rata assessment.

Raven.—This silver property situated near the Poulin, is being operated under bond by John Berkin and Charles Mattison, of Butte. The ore is free silver and is sent to East Helena for treatment.

Stockton Copper Company.—This concern organized ostensibly to work some copper prospects in Broadwater County is now in trouble in this county. A short time ago its operations were transferred to Butte by securing a working bond on the Ida, a copper claim in the eastern Butte District, where a force of miners worked until the prospects of pay day faded. The management has been taken from the chief promoters and the properties at present are in the hands of a receiver. It is the intention to take a new bond on the property, place the management in competent hands and thoroughly explore the property.

NEVADA.

ELKO COUNTY.

Smuggler.—This mine is taken over by the Haggarty-Jordan Copper Mining Company, a Delaware corporation that has operated chiefly in Wyoming. The mine was a large producer of silver some years ago. It will be operated by a subsidiary company with $1,000,000 capital. E. W. Sebben, of Denver, Colo., examined the property for the company before the purchase.

LANDER COUNTY.

Iron Mine.—This group of 6 claims 12 miles south of Battle Mountain, was recently sold by James Johnston, W. M. Bradley and V. H. Pease to ex-Senator Pettigrew, of South Dakota, and A. E. Hyde and Jesse W. Fox, of Salt Lake, Utah. The price is reported as $75,000. The ledge 4 to 16 ft. wide is reported to show values of $21 gold per ton. About 15 men are now employed. The purchasers, it is said, will erect a mill.

STOREY COUNTY—COMSTOCK LODE.

Andes Mining Company.—At the annual meeting in San Francisco 63,292 shares out of 73,604 shares of outstanding stock were represented. The following directors were elected: Nat. T. Messer, E. L. Parker, William Edwards, George C. Sneider and H. Zadig. Nat. T. Messer was elected president; E. L. Parker, vice-president; John W. Twiggs, secretary, and Jos. R. Ryan, superintendent. The company has $887 in cash on hand.

Kentuck Consolidated Mining Company.—At the recent annual meeting the old directors were re-elected, with R. E. Kelly as president; Aug. Waterman, secretary, and J. H. Kinkead, superintendent.

Ophir Mining Company.—At the recent annual meeting in San Francisco 77,032 shares were represented. The following directors were elected: Chas. H. Fish, A. W. Havens, H. Zadig, Charles Hirshfeld, Nat. T. Messer, John W. Twiggs, and A. F. Coffin. Charles H. Fish was elected president, A. W. Havens, vice-president; E. B. Holmes, secretary; and G. McM. Ross, superintendent. The cash balance on hand is $1,200. The annual report of Superintendent G. McM. Ross says of the 1,660-ft. level of the mine, where a large body of quartz has been partially opened, that there are 2 sets in ore about 14 ft. in length, the ore extending in unopened ground. The average coin value of this ore is $14.77 per ton, the value of the gold and silver being nearly equal. On the southwest side of the winze, in the roof of the 1,565-ft. level station, are 2 sets in ore about 14 ft. in length that show ore in place of an average coin value of $26 per ton. On either side of this ore the quartz assays from $6 to $10 per ton, coin value. From the Burning Moscow workings of the Ophir Mine there were extracted during the fiscal year 1,844 tons of ore, which yielded bullion valued at $41,336.

NEW MEXICO.

COLFAX COUNTY.

(From Our Special Correspondent.)

Thelma.—This mine on the east side of Baldy Mountain, near Elizabethtown, besides working about 30 men, has a mill nearly ready for operation. The mill will be a combination of stamps and Huntington tables with cyanide tanks. A recent discovery of ore has greatly encouraged prospecting in the district.

OREGON.

BAKER COUNTY.

Blue Mountain Telurium.—This property on Cracker Creek near Sumpter, is the property of Portland men, H. C. Bowers is president; A. D. Charlton, treasurer, and J. D. Wilcox, secretary of the company. A tunnel 150 ft. long is said to show rich ore.

JOSEPHINE COUNTY.

Gem.—This and 2 other claims in Phillip's Gulch, Elkhorn District, owned by Lambert, Wasser & Market, were recently sold to C. C. Nepple and H. C. Kruse, said to represent English capital. The price reported was $20,000.

PENNSYLANIA.

BITUMINOUS COAL.

(From Our Special Correspondent.)

Cambria Steel Company.—The Morrell coke plant of this company has closed indefinitely owing to the supply of coal being exhausted. This plant, which has 400 ovens, and has been in operation for 20 years. It is reported that the company will open a new slope and operate a small number of ovens. This is the first large plant in the Connellsville region to shut down on account of exhaustion of coal supply. The Morrel houses are being moved to Dunbar.

Clyde Coal Company.—This company's new mine at Fredericktown is called the best equipped on the Monongahela River. The company controls 1,034 acres of coal lands. The steel tipple has a capacity of 3,000 to 4,000 tons, the largest on the Monongahela. A 16-ft. Capell fan gives 250,000 cu. ft. of air per minute for the mine workings. The power plant includes a 175-k.w. Westinghouse generator, direct-connected to a 250-h. p. Westinghouse engine and 2 76-in. by 16-ft. tubular boilers. Foundations for another 175 k.w. generator are laid. Electricity is used in the mine.

Duquesne Coal and Coke Company.—This company's plant at Bradenville, has closed for several months, so that a new tipple and new haulage way can be constructed.

Pittsburg Coal Company.—At the annual meeting, on January 7 in Pittsburg the regular quarterly dividend of 1 3-4 per cent on the preferred stock was declared. A lease of the property of the Shaw Coal Company, covering a period of 40 years, was approved. The following officers were elected: F. L. Robbins president and chairman of the board of directors and the executive committee; John D. Nicholson vice-president and treasurer, J. B. L. Hornberger auditor, F. J. Lemoyne secretary. Board of Directors—Francis L. Robbins, F. M. Osborne, John D. Nicholson, Henry C. Frick, M. P. Taylor, John A. Bell, John I. Bishop, D. R. Hanna, W. P. Murray, P. M. Hitchcock, Henry W. Oliver, A. W. Mello, Grant B. Schley and A. M. Neeper.

Semet-Solvay Coke Company.—This company at Dunbar, has begun work on 60 new by-product ovens. These will be in addition to the block already in operation at Dunbar.

SOUTH DAKOTA.

LAWRENCE COUNTY.

(From Our Special Correspondent.)

Belt Development Company.—Drifting has started from the bottom of the 700-ft. shaft towards the Homestake.

Buxton & Big Bonanza.—John Lundberg, lessee of the claims, has taken a lease on the Rossiter 50-ton cyanide plant in Deadwood, where the ore will be treated. J. V. Dorr has an interest in the lease.

Hidden Fortune.—Final payments have been made on the tract purchased adjoining the Homestake. The company is developing in 3 tunnels and a shaft.

Homestake.—The new Ellison hoist is ready to start January 1. Work began in 1896. A steel tramway 600 ft. long and 115 ft. high connect with the stamp mills, on the opposite side of the gulch. The new hoist is for deep mining.

Horseshoe Mining Company.—Ore is shipped at the rate of 100 tons a day to Omaha. A contract has been entered into to furnish that amount a day for 6 months. Anson Higby is resident agent.

Recovery Gold Mining Company.—The Deadbroke Mine on Blacktail Gulch has been purchased by Colorado and Texas men, who have formed a company, capitalized at $2,000,000. The officers are F. T. Saunders, of Colorado Springs, president; R. M. Maloney, Deadwood, vice-president; Oliver H. Shoup, Colorado Springs, secretary and treasurer. The company has paid $200,000 for the Deadbroke. A 200-ton cyanide plant has been ordered. The ore is a conglomerate; 200,000 tons are blocked out that will average $5 a ton. It is partly free milling and will be amalgamted either before or after cyaniding. A stamp mill was operated on the property for several years, before the ore became too refractory.

Redwater Mining Company.—The Chicago Two Bit shaft is being unwatered. W. S. York is in charge and intends to continue the drifts.

Spanish R.—The shaft is being continuued to lower quartzite. A new hoist, pumps and air compressor have been installed. Conners Brothers of Spearfish own the property.

Two Johns.—A diamond drill is to prospect the formation.

PENNINGTON COUNTY.

(From Our Special Correspondent.)

Blue Lead.—The company is drifting on the main ledge. The cross-cut tunnel is 1,800 ft. long.

Castle Creek Company.—A flume is being laid by this company on the Wheeler Hill Group, near Rochford. The work is in charge of Sydney Smith. A mill is to be built in the spring.

Elizabeth Mining Company.—The 40-stamp mill has started up again after a shut-down on account of cold weather. The mill had just been built and was not wholly enclosed. Concentrates are shipped to Denver.

Elmendorf Gold Mining Company.—The tunnel is 300 ft. long, exposing the ledge on one side. A cross-cut is started to determine its width.

Gertie Mining Company.—A new hoist and pump have been purchased for the mine.

Golden Slipper.—The Empire State Mining Company is going to replace the old hoist.

Mount Aetna Mining Company.—Articles of incorporation have been filed by John G. Mattes, Elmer E. Axford, Matt R. Taillner and George A. Clarke. The company has bonded a group of claims near Keystone.

National Smelting Company.—The steel structure is being raised for the smelter building at Rapid City. The machinery is all in place and the plant will start as soon as the building is completed.

Standby.—The Ajax Mining Company is going to put in an engine as the water power is not adequate. A cyanide plant is to be built in the spring.

Wabash Mining Company.—The Drummond 10-stamp mill is being removed to the Wabash property. A new hoist has been purchased in Denver.

UTAH.

(From Our Special Correspondent.)

Bullion Settlements.—The settlements at Salt Lake for the week ending January 4 were: Bullion, $111,600; gold bars, $6,400; cyanides, $4,600.

BEAVER COUNTY.

(From Our Special Correspondent.)

Ben Harrison.—John P. Meyer, superintendent of this mine, which adjoins the Majestic, is to start active work. The shaft is down about 125 ft. and a drift has opened some large bodies of low-grade ore carrying copper and gold values.

Horn Silver.—This mine at Frisco forwarded to the Salt Lake Valley smelters 1,564,180 lbs. of first class ore for the 2 weeks ending January 4.

Majestic.—A number of experts and mining men visited this mine the last 2 weeks and all admit that the showing of copper ore is very good.

JUAB COUNTY.

(From Our Special Correspondent.)

Tintic Shipments.—Following are the shipments from Tintic for the week ending December 28: Ajax, 2 cars; Carisa, 9; Mammoth, 11; Lower Mammoth, 2; Gemini, 25; Godiva, 6; May Day, 2; Uncle Sam, 5; Yankee Consolidated, 14; Tesora, 4; South Swansea, 6; Victor, 3; total, 80 cars. The following are the shipments for the week ending January 4; Gemini, 10 cars ore; May Day, 2; Yankee Consolidated, 9; Carisa, 15; Ajax, 3; Grand Central, 5; Lower Mammoth, 2; Mammoth, 9; Victor, 3; Tesora, 3; total, 61 cars. The Mammoth Mill sent in 2 cars concentrates, and 1 bar bullion.

SALT LAKE COUNTY.

(From Our Special Correspondent.)

Bingham Shipments.—The following are the shipments to the Salt Lake Valley smelters for the 2 weeks ending January 4: Commercial, ore, 353,490 lbs.; Ben Butler, ore, 541,060 lbs.; Columbia, ore, 85,660 lbs.; Acme, ore, 57,000 lbs.; Last Chance, 58,420 lbs. Chicago, 98,200 lbs., concentrates.

Ben Butler.—Manager Jacobs has decided to continue shipments and accept the cut in the price of lead. The Ben Butler has a fine showing at present, and for a new mine has make an excellent impression.

SUMMIT COUNTY.

(From Our Special Correspondent.)

Park City Shipments.—Following are the shipments for the week ending December 28: Daly-West, 2,323,050 lbs. ore and concentrates; Silver King, 1,856,300 lbs.; Quincy, 836,090 lbs. ore; Ontario, 1,245,800 lbs. ore; Anchor, 622,950 lbs. ore. The principal shipments for the week ending January 4 are: Ontario, 1,756,800 lbs. ore; Daly-West, 1,108,200 lbs. ore and concentrates; Silver King, 1,108,400 ore and concentrates; Quincy, 1,216,650 lbs. ore; Anchor, 446,050 lbs. ore; Loring Bros. Lease, 93,050 lbs. ore.

Wabash.—Manager Treweek is pushing work. The shaft is now down 225 ft., the hoist and compressor in place, the big boilers bricked in and in a few days everything will be working.

TOOELE COUNTY.

(From Our Special Correspondent.)

Stockton Shipments.—The following are the shipments from Stockton for the 2 weeks ending January 4; Ophir, concentrates, 1,880,820 lbs.; Cygnet, ore, 149,380 lbs.; Hennefer, 32,860, ore, lbs.; Stockton, ore, 42,900 lbs.

Utah.—This mine at Fish Springs forwarded for the week ending January 4 to the Salt Lake Valley smelters 29,800 lbs. first class ore.

WASHINGTON COUNTY.

(From Our Special Correspondent.)

Dixie.—The total output of ore for the year is 7,859,000 lbs., which smelted 1,441,834 lbs. of bullion. The average percentage of copper is given as 18.357; the earnings under a strict policy of development exceeded $60,000 net.

WASHINGTON.

FERRY COUNTY.

(From Our Special Correspondent.)

Golden Lion-Little Four.—The Golden Lion tunnel at Republic is in 490 ft. Drilling is being done with a hand drilling machine. It is mitre-geared and worked by a short hand-crank. The drill is driven with a feed screw, and bores the rock with a Morse pattern twist bit 2½ ft. per minute. The rock in the face is porphyrite, similar to the hanging wall in the Republic Mine. This tunnel is driven 2½ linear ft. every 10 hours. The tunnel is not less than 7 by 5 ft.

Gold Ledge.—The tunnel is in 705 ft. and has 35 ft. further to run to strike the vein.

Tioga.—A tunnel has been started on the vein, the quartz filling of which is 12 ft. wide. This property is about 1½ miles southwest of the Mountain Lion Mine at Republic.

FOREIGN MINING NEWS.

AFRICA.

RHODESIA.

The gold output for the month of November is reported by the Rhodesia Chamber of Mines at 16,487 oz. crude, which is the largest ever reported, and exceeds that for November, 1900, by 7,136 oz. For the 11 months ending November 30, the total was 157,013 oz. crude, against 82,472 oz. for the corresponding period in 1900; showing an increase of 74,541 oz., or 90.4 per cent. The total this year was equal to 139,742 oz. fine gold, or $2,888,467.

TRANSVAAL.

Robinson Gold Mining Company.—This company's statement for the month of November shows that 60 stamps were at work, crushing a total of 7,703 tons of ore. The yield was from mill, 4,710 oz.; from tailings cyanided, 1,234 oz.; total, 5,944 oz. fine gold; an average of 0.77 oz. per ton crushed. The estimated net profit was £16,803 for the month.

NEW ZEALAND.

(From Our Special Correspondent.)

Gold and Silver Export.—During October 40,474 crude oz. of gold, valued at £155,030 ($775,150), and 41,810 oz. of silver, valued at £4,876 ($24,380), were exported from New Zealand. The gold production for the current year will show a large increase over that for 1900, probably about 15 or 16 per cent.

Gold Dredging.—During the past few weeks the returns from the Otago dredges have fallen off, as the Molyneux River has risen to its summer level. So far this year's yield is only slightly in excess of last year's, in spite of the much greater number of dredges busy. During the first 10 months of 1901, Otago dredges yielded 53,955 oz. of gold, as against 51,413 oz. during the corresponding period of 1900. The average return was nevertheless profitable, as shown by the numerous dividends.

On the West Coast dredging field, the returns have of late greatly improved, and some 15 or 20 dredges are now obtaining payable results.

Hauraki Gold-field.—The returns from this gold-field are improving, and the prospects of legitimate mining are of a very hopeful character. Several companies have lately resumed crushing, though the Waihi Union Company has decided to close down its mine and mill, owing to the lack of funds for carrying on development. The Waihi Company's last return is again a record. The prospects of this great mine are better than ever, the main reef at the lowest level (No. 7) being of great thickness, and of good quality. The following are the chief returns: Waihi, £39,933 ($199,665) from 12,747 tons; New Zealand Talisman, £7,500 ($37,500) from 6,928 tons: New Zealand Crown, £6,580 ($32,900) from 2,782 tons; Waitekauri, £4,035 ($20,175) from 2,053 tons; Union Waihi, £3,677 ($18,385) from 2,134 tons; Barrier Reefs, £2,222 ($11,110) from 998 tons; Woodstock, £2,023 ($10,115) from 1,688 tons; Hauri Freeholds, £1,698 ($8,490) from 1,668 tons; Royal Oak, £1,358 ($6,790) from 20 tons; Komata Reefs, £1,095 ($5,475) from 1,230 tons.

The Royal Oak return includes the bullion from the treatment of 727 lbs. of picked ore.

SOUTH AMERICA.

DUTCH GUIANA.

(From an Occasional Correspondent.)

Concession Gros.—The owners of this property have just completed the new 20-stamp mill, which is the first mill of the kind erected in the colony. It is believed that the operation of this mill will considerably increase the gold output of the colony for 1902. Mr. J. P. Colp, formerly of Denver, Colo., is managing engineer. The prospects for gold mining at present are very good. The climate here is very good.

MINING STOCKS.

Complete quotations will be found on pages 94 and 95 of mining stocks listed and dealt in at:

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

New York. Jan. 9.

The copper stocks are quiet, with fewer rumors current. Amalgamated hovers around $70, and Anaconda about $30; the sales of each are materially less than they have been of late. On curb brokers are not enthusiastic in their trading in the coppers, and transactions are small at $14½@$14¾ for Tennessee, $10 for British Columbia, $31@$32 for Greene Consolidated, of Mexico, $18¾ for White Knob, of Idaho, and $4 for Union, of North Carolina. Efforts were made to interest the public in Montreal & Boston, of British Columbia, and quotations have been made at $3¼@$4 for the $5 par value shares. This is a new organization, with a capital stock of $3,000,000. Recently the Philadelphia Stock Exchange listed the shares, and the financial statement made by the company showed assets of $3,054,500 on November 1, 1901, of which $2,925,319 was property account, machinery, equipment, etc., and $79,834 cash in bank. Liabilities on that date were given as $2,960,000 outstanding capital stock, and $94,500 surplus. About $300,000 is said to have been spent on the property, containing about 115 acres, and located in the Osoyoos Division of Yale District, British Columbia. The company says it paid for the property $134,900 in cash and $2,825,000 stock.

Gold and silver stocks were dull. Of the sales reported Standard Consolidated, of California brought $3.70, Elkton Consolidated, of Cripple Creek, Colo., $1.18@$1.14; Ontario Silver, of Utah, $9@$9.50; Consolidated California & Virginia, of Nevada, $1.75@1.80, and Ophir, 87c.

Quicksilver common, of California, sold at $3.75, and the preferred $10.

Some sales of United States Reduction and Refining, of Colorado, were noted on curb at $36⅜ for the common, while the preferred was quoted at $62¼.

Auction sales were 200 common shares Columbus & Hocking Coal and Iron Company, O., at $15¼; 38 shares Lykens Valley Railroad and Coal Company at $80, and $15,000 6 per cent bonds of the Warrior Coal and Coke Company for $10,000.

Boston. Jan. 8.

(From Our Special Correspondent.)

The movement of copper shares has been insignificant the past week, although prices have yielded somewhat. The further reduction in the price of the metal and the uncertainty regarding a further cut restricts speculation. Brokers report a good many orders in hand, those for buying being under the market and those for selling being above current prices. There is a hopeful feeling that the spring may see an improved state of affairs, but Boston retains only a remnant of its former self, so far as being the leader of the mining market.

A story is going the rounds that the Amalgamated people are going after Heinze in a manner different than heretofore. An effort will be made to round up those who are associated with him, both here and abroad, and his backers may oblige him to capitulate. He is reported already as being crippled for the lack of funds and the higher courts are constantly reversing decisions of the lower courts which have favored him.

All but a very small proportion of Copper Range and Baltic mining stocks assented to the merger with the new Copper Range Consolidated Company. They are quoted on a parity, $55½ for Range and $37 for Baltic. It will be remembered that 1½ shares of the latter went into the deal for 1 share of Range. Osceola hangs around $83 to $80 with considerable buying credited to New York copper people. Osceola will shortly be in position to yield a large production, second to Tamarack. The Trimountain is sending an average of 470 tons of rock per day to be treated at the Arcadian's mill. Results are said to be up to expectations. The Arcadian has resumed sinking at the Douglas shaft, with some improvement reported as depth is attained. This refers to the mine and not the stock. The Atlantic Mine is running five heads of stamps and a sixth will start on rock from the Champion Mine shortly.

Some talk has been made that the Calumet & Hecla Company guarantees the price on sales of the metal. The facts of the case are that it guarantees its customers only on its own prices and as long as it sells to no one at less than the past price it has no rebates to pay. When it does sell at a reduction, rebates apply only to deliveries subsequent to such

sale. As a result no rebates have been paid by Calumet & Hecla on the recent decline in copper. The company is well sold ahead before delivery of the copper and does not care to sell until the deliveries have been made. In this way it will avoid the payment of rebates. The declaration of a $10 dividend by Calumet & Hecla was not unexpected at this time in view of general conditions. This dividend is the third during the current fiscal year commencing May 1, 1901, and makes $40. It is payable January 29. For the last fiscal year the company paid $65, against $80 the year previous to that. The last dividend is No. 121 and makes a total distribution of $78,350,000 to stockholders.

The calling of a $3 assessment by the Trimountain Mining Company was hardly looked for, but as explained by the management it is to complete the mill and give added money for development work. It is payable $2 January 10, and $1 March 10. The mine is expected to be in condition to supply 1,000 tons of rock daily when the mill is completed. The reduction of the Parrot Silver and Copper dividend to 50c. is in line with the Amalgamated policy. It is payable January 27. The last payment was $1 and the one previous to that $1.50. In 1901 $5.50 was paid, against $6 in 1900. Total dividend payments foot up $5,749,422.

The financial exhibit of the Arcadian Copper Company, as submitted at the annual meeting, tells a story of ill luck plainer than words can depict it. Here is a property selling for $600,000, capitalized for $3,750,000. It has $8,822 cash on hand, $72,205 in accounts receivable, and a profit and loss deficit of $1,048,634. The real estate and mills are valued at $3,517,007. It has $903,669 bills payable. The condition of affairs here certainly forecasts an assessment, if work is to be continued.

Salt Lake City. Jan. 4.

(From Our Special Correspondent.)

The Salt Lake Mining Exchange did little business during holiday week, but there was an upward movement in nearly all the stocks traded in; 253,345 shares were sold, realizing $146,746.

The mining companies have not responded to the request of the governing board of the Exchange in sending in reports of their financial standing and many brokers are wondering what the next move will be.

The shareholders of the Richmond & Anaconda Mining Company met in Salt Lake on December 31, and the majority voted to make the stock of the company assessable, and also to make the headquarters of the company at Salt Lake. The mines are at Tintic.

San Francisco. Jan. 4.

(From Our Special Correspondent.)

The market closed very tamely at the end of the year. After New Year's however, there was quite a lively day or two, and a sharp rise in prices, the North End shares being specially in demand. The opening was really encouraging, giving promise of better things this year.

Some quotations noted are: Consolidated California, $1.65; Ophir, 90c.; Silver Hill, 55c.; Mexican, 43@44c.; Sierra Nevada, 20c.; Best & Belcher, 14c.; Potosi, 12c.; Crown Point, 9c.

The sales on regular call at the San Francisco Stock Exchange for the year to date compare as follows:

	1900.	1901.
January, shares	104,400	312,385
February	112,000	132,585
March	252,730	152,220
April	121,500	180,625
May	171,015	151,020
June	129,505	107,340
July	84,110	163,980
August	163,985	143,940
September	113,350	86,710
October	229,790	127,150
November	136,210	97,875
December	125,585	165,365
Total	1,804,180	1,821,195

The increase in total sales last year was 17,015 shares, which was all due to the large sales in January.

The total sales of mining stocks at all sessions of the San Francisco Stock and Exchange Board for December were 498,545 shares, making a total for the year 1901 of 5,236,452 shares, against 5,344,768 shares for 1900.

The Savage Mining Company has levied an assessment of 5c. per share.

The Pacific Stock Exchange will occupy its new quarters at 6 Leidesdorff street before the end of the present week.

Assessments have been levied of 10c. by the Gould & Curry and of 5c. by the Savage.

London. Dec. 17.

(From Our Special Correspondent.)

The South African mining market has worked up from its long state of lethargy, and there has been quite a boom on a small scale. The reopening of the Rand is now going on rapidly and the civilian population are returning thither in large numbers. In addition to this, the recent successes of the British in capturing parties of Boers in the Eastern Transvaal has had a most encouraging effect on the market. Altogether the market is in a much more hopeful state than it has been in for many a long month.

A few weeks ago I mentioned that the London & Globe Finance Corporation had gone into compulsory liquidation under the management of the official receiver in bankruptcy, owing to the discontent of creditors and shareholders with the process of voluntary liquidation. The first report of the official receiver has been made, and though he has no astounding disclosures to make, his report completes the history of the complicated doings of this corporation, and the British-American Corporation and the Standard Exploration Company. He points out that the cause of the wreck of these companies was the failure of a gigantic deal in Lake View Consols, and any irregularities that he has unearthed so far are of quite minor importance. He does not find that Mr. Whitaker Wright enriched himself at the expense of the companies, a proceeding which was suspected in many quarters, though he shows that that gentleman made profits personally concurrently with the companies. The main points of offence are the temporary transfer of liabilities from one company to another for the purpose of making better balance sheets, the presentation of qualifications to directors of subsidiary company and the presentation of calls on shares to members of the press. Next month there are to be public examinations of Mr. Whitaker Wright and others connected with the company. The official receiver is also going to publish the names of the newspapers receiving calls on shares together with details of the transaction, so we shall obtain some idea as to how public opinion is formed in London.

Few companies have had such extraordinary adventures (if such a word may be used in connection with a company, as the Klondike Bonanza, Ltd. It will be remembered by readers of the JOURNAL that this company was formed some four years ago to acquire claims in the Klondike from a party who was supposed to hold options on these; but that when Mr. Macfarlane, the company's manager arrived on the spot he found that these so-called options were of no value. Mr. Macfarlane then acquired on his own initiative some other properties for the company and worked them at a considerable profit, so enabling the company to pay two very respectable dividends. A year ago, however, Mr. Macfarlane most unaccountably disappeared, and although he had in his possession a few thousand pounds belonging to the company, it was hardly supposed that his disappearance was intentional. When, however, a new manager arrived in the Klondike, he found that Mr. Macfarlane had mortgaged the properties for £2,500 at a ruinous interest, so it became evident that things were not as they should be. It is still a mystery, however, why he should thus spoil a successful career for a comparatively small sum of money. The new manager, Mr. MacLaren, by energetic work has redeemed the claims and has realized a profit on the year's work so that a dividend is to be paid. It is stated that the claims are now very nearly worked out, but it is intended to acquire others next season. It may be mentioned that Mr. Macfarlane held 5,000 shares in the company, accepted by him as part payment for his services. These have now been forfeited. He also owned an extensive tract of real estate in Scotland, but as this was mortgaged, there was nothing for the company to realize on in making good their claim against him. Altogether, the history of the company is a romantic one, and quite in keeping with the adventurous air of the Klondike.

A company called the London & California Gold-Mining and Milling Company, Limited, that was formed three years ago has had an unsuccessful life, in spite of vigorous private beating up of subscribers. The company was formed to acquire claims in the south of Sierra County, California called the Grizzley, Hog Eye, Alaska and Alaska East Extension. These were abandoned mines, full of water and their value uncertain, but an outside broker circulated prospectuses extinsively and raised subscriptions to the extent of about £10,000. It appears that very little work has been done, and for some time now, operations have been entirely suspended. The directors are now trying to raise money on debentures, and they are also proposing a reconstruction. Shareholders will be wisest if they go into liquidation and cut their losses, for the whole thing has been more of a share-peddling transaction than a mining operation.

DIVIDENDS.

Name of Company.	Latest Dividend—Per Date.	Per Share.	Total.	Total to Date.
†Amalgamated Copper	Jan. 27	$1.00	$1,538,879	$17,348,370
Am. Cement	Jan. 15	.40	80,000	380,000
Am. Iron & St., com.	Jan. 20	.15	5,100	489,200
†Am. Sm. & Ref., pf.	Jan. 14	1.75	875,000	6,266,553
*Bald & Butte, Mont.	Jan. 10	.06	15,000	1 117,148
†Boston & Colo. Sm.	Jan. 1	.75	11,250	371,350
*Bunker Hill & Sull.	Jan. 6	.07	21,000	1,306,000
Cal. & Hecla Copper	Jan. 29	10.00	1,000,000	78,350,000
*Central Lead, Mo.	an. 15	.50	5,000	272,000
Colo. Fuel & Iron, com.	Jan. 15	1.75	402,500	1,240,000
*Daly-West, Utah	Jan. 15	.40	60,000	1,267,500
†Empire Con., Qu'ks'r, Cal.	Jan. 15	.30	150,000	156,00
*Empire State, Ida.	Jan. 15	.10	50,554	1,308,892
†Federal Chem., pf.	Jan. 2	1.50	22,500	22,500
*Gwin, Cal.	Jan. 17	.05	5,000	276,500
Hanford Oil, Cal.	Jan. 2	1.00	2,000	8,000
*La Fortuna, Ariz.	Jan. 9	.05	12,500	1,078,500
Napa Quicksilver.	Jan. 1	.10	10,000	1,150,000
New Idria Quicksilver	Jan. 1	.10	10,000	330,000
†Parrot, Mont.	Jan. 27	.50	114,925	5,772,925
†Phila. Gas, com.	Jan. 15	.75	221,282	1,807,111
†Pittsburg Coal, pf.	Jan. 25	1.75	560,000	4,718,168
†Tenn. C. I. & R. R., pf.	Feb. 1	2.00	4,960	267,840
Thirty-three Oil, Cal.	Jan. 2	.10	10,000	10,00[0]
†United Zinc com.	Jan. 15	.05	10,000	10,000
†United Zinc, pf.	Jan. 15	.50	7,499	67,758
†Va.-Car. Chem., pf.	Jan. 15	2.00	240,000	5,340,000

*Monthly. †Quarterly. ‡Semi-annual.

ASSESSMENTS.

Name of Company.	Location.	No.	Delinq.	Sale.	Amt.
Alpha Con.	Nev.	..	Jan. 30	.....	.03
App. Con.	Cal.	1	Feb. 6	Mar. 5	1.00
Century Oil.	Cal.	5	Jan. 11	.....	.05
Challar.	Nev.	..	Jan. 17	Feb. 12	.05
Con. Imperial	Nev.	..	Dec. 14	Jan. 15	.01
Crown Point	Nev.	..	Jan. 2	Jan. 28	.05
Dublin	Cal.	..	Jan. 15	.....	.00½
Dudley	Cal.	13	Jan. 13	Feb. 4	.02
Garibaldi	Cal.	1	Jan. 21	Feb. 15	.01½
Gerrymander	Cal.	..	Jan. 13	.....	.05
Gould & Curry	Nev.	..	Feb. 2	Feb. 24	.10
Hale & Norcross	Nev.	..	Jan. 7	Jan. 28	.10
Inyo Marble	Cal.	35	Jan. 15	Feb. 10	.05
Julia Con.	Nev.	..	Jan. 17	Feb. 12	.03
Justice	Nev.	..	Dec. 17	Jan. 11	.05
Marina Marsicano	Cal.	26	Jan. 6	Jan. 27	.04
Mohican	Cal.	2	Jan. 4	Feb. 3	.05
National Con.	Cal.	15	Dec. 26	Jan. 23	.05
Ophir	Nev.	..	Dec. 27	Jan. 20	.05
Orleans Con.	Cal.	1	Dec. 28	Jan. 30	.02
Overman	Nev.	9	Dec. 24	Jan. 15	.15
Potosi	Nev.	61	Jan. 6	Jan. 28	.20
Sailor Con.	Cal.	14	Jan. 17	Feb. 7	.01
Savage	Nev.	..	Feb. 2	Feb. 27	.05
Seg. Belcher & Mides Con.	Nev.	..	Jan. 6	Jan. 27	.03
Union Con.	Nev.	..	Jan. 31	Feb. 24	.10
Yuba Con.	Cal.	5	Jan. 27	Feb. 17	.03

COAL TRADE REVIEW.

New York. Jan. 10.

ANTHRACITE.

The market for anthracite continues strong at all points with prices firm. The principal producing companies have about recovered from the effects of the recent floods and are running nearly their normal tonnages to tidewater. The Philadelphia & Reading, which is reported to have suffered most, is now working about 2-3 of its collieries and will probably be running nearly full capacity in a week more. Some collieries in the Schuylkill and Lehigh regions, however, will not be in running order for a month or more. Galleries and tunnels where the roof is bad will undoubtedly be found to need retimbering when the water is pumped out, and these repairs will take time. It is reported, also, that in some of the Lehigh mines the stench from the dead mules and thousands of drowned rats has kept the miners from returning to work until the air is purer. The Wyoming and Lackawanna mines are generally in normal condition. All roads are taking orders for coal at tidewater though those from the Schuylkill and Lehigh regions are booking orders subject to delays in delivery.

In Lake Superior territory there has been a brisk demand for coal and the movement from the docks is heavy. Unless the winter proves unusually long and severe, however, it is thought that supplies will last till navigation opens. In Chicago territory also, demand is good. The supplies on docks, though below normal, are greater than a year ago. All rail coal is in fair supply, and is likely to be sufficient for all demands, if the car situation improves a bit.

At inland points and along the Atlantic seaboard consumption continues steady and the market is generally strong. In all territories as has been the case

The retail prices of buckwheat and pea have advanced at both Philadelphia and New York Harbor, partly no doubt because of the recent floods that kept down supplies, and partly because of the difficulty many consumers have had in getting a sufficient supply of bituminous. At several New York Harbor shipping ports there was a great accumulation of orders while coal was kept back by damages along the railroads. The companies are filling these orders as fast as possible and the situation is much easier than 10 days ago.

We quote free burning white ash f. o. b., New York Harbor shipping ports: Broken, $4; egg, $4.25; stove and chestnut, $4.50; pea, $2.75@$3.15.

for several winters past chestnut size is in most demand. At New York Harbor chestnut and stove are both in short supply with several roads while egg coal is much easier.

BITUMINOUS.

The demand for coal in the Atlantic seaboard bituminous trade continues strong and at Long Island ports, where many consumers are in great distress for coal, the situation is no better than it has been. There are indications, however, that relief is in sight. During the week the main line roads have been pushing coal to tidewater and have got down a very large proportion of the coal on their lines, showing a desire on their part to clean up their tracks. Since then there has been a slight improvement in car supply at the mines and it is thought that this may be the turning point in the car shortage and that things will improve henceforth. The ordinary demand at this time of the year is usually light and natural causes will help the roads in their attempt to improve car supply.

In the far east coal is wanted. Along Long Island Sound the distress of consumers is great. At New York Harbor points the situation is easier and speculative prices have fallen as a result of the increased tonnages brought to tidewater by the railroads. We hear of Clearfield selling for $3.15 per ton f. o. b., New York Harbor shipping ports. All-rail consumers are calling for more coal than producers can supply, and the latter are still scaling down orders.

Transportation from the mines to tidewater is better than in a long time. Car supply is beginning to improve. In the coastwise vessel market vessels are reported in poor supply. We quote current rates from Philadelphia as follows: Providence, New Bedford and the Sound, $1; Boston, Salem and Portland, $1.15; Portsmouth, $1.20.

Notes of the Week.

It is stated that the West Virginia Central Railway, running from Cumberland, Md., south through the Piedmont and Elk Garden coal-fields in West Virginia, has been purchased by the Wabash Railroad representing Gould interests. The price at first reported paid was $17,000,000, but this figure is probably too high. There is some speculation as how the Gould interests will get their coal to tidewater. One suggestion is that they will get by lease or otherwise the Western Maryland road and build a line from Cumberland to Hagerstown giving them a tidewater port at Baltimore. Other reports hint at tidewater ports farther south on Chesapeake Bay.

Birmingham. Jan. 6.

(From Our Special Correspondent.)

There is such a demand for coal in this section of the country that the production is inadequate. The demand has become so urgent that the larger companies who hold big contracts are buying total outputs of the smaller concerns. The production is great, and the railroad companies are furnishing more cars. Some of the larger companies, the railroad and steamship companies in particular, have had special agents in this district recently looking after coal shipments. Good prices obtain.

There is general satisfaction in the ranks of the miners as an advance of 2 1-2 cents on the ton was noted on Saturday last, for the present month, and the operators say that the miners can get in all the time they possibly can. Walker County mines have been assured of contracts on the Mississippi River which will probably take up their year's production. The orders which have been placed aggregate almost double the amount which was shipped down the Mississippi River last year. Some of the railroads have been offering premiums for coal recently.

Cleveland. Jan. 8.

(From Our Special Correspondent.)

The domestic demand for coal has continued at a pace this week which it is difficult for the railroads, in their present disabled state, to keep even with. Most of the dealers have been keeping pretty close to the limit on their sales and have not had much more coal than they were able to sell immediately. It has been found impossible to collect any surplus of either anthracite or bituminous coal here. The sales have been active but so far the dealers have refrained from boosting prices. Shippers by the lake route are already getting reports of stocks up above to determine the amount of coal to be shipped in the spring. All of the reports show that the docks in the Northwest are carrying a smaller supply through this winter than they have had for years, and it is quite apparent that there must be a heavy all rail movement from the mines further west to the northwestern field. This has given ample evidence that the early spring movement by the lake route is to be more than ordinarily heavy. It is probable that this fact will make it possible to establish coal prices earlier in the spring as well as contract for carrying the material. The Wheeling & Lake Erie Railroad has taken over the dock property at Huron and has announced that it will install during the winter a new McMyler coal handling machine capable of loading 800 tons an hour. The Manufacturers' Railroad of Toledo has also announced that it will build a new dock a half mile in length. A new fuel company in Cleveland will also build new docks and a company at Fairport will put in another coal dock.

Pittsburg. Jan. 8.

(From Our Special Correspondent.)

Coal.—Among the important transactions of the week was the consolidation of the Jones interests forming the Manufacturers' and Consumers' Coal Company with a capital of $5,000,000, and the leasing of the property and equipment of the Shaw Coal Company by the Pittsburg Coal Company, the railroad coal combination. The new independent company includes the Pittsburg & Buffalo Company, but this concern will continue to be operated as a separate corporation. John H. Jones, one of the most successful coal operators in this district is now at the head of the largest independent coal company in Western Pennsylvania. He was one of the principal promoters of the Monongahela River Consolidated Coal and Coke Company, the river coal combination, and served on the board of directors for over a year when he retired to engage in the railroad coal business with his four brothers. The Manufacturers' and Consumers' Coal Company which comprises the Jones interests now owns about 25,000 acres of valuable coal land in this district and has under option 15,000 acres. It is operating five mines, the Bertha and Blanche, on the Baltimore & Ohio Railroad; the Rachel, on the Monongahela Division of the Pennsylvania Railroad; the Johnetta on the Allegheny Valley Railroad and the Hazel Mine on the Pittsburg, Cincinnati & St. Louis Railroad. The present combined capacity of these mines is 4,000 tons a day which is soon to be increased to 8,000 tons. The company is also preparing to open four additional mines and has let the contracts for the equipment. The Midland Coal Company, another large independent concern, which operates mines in the Panhandle field, has just purchased about 7,000 acres of coal land on the West Penn Railroad, which it will soon develop.

At the monthly meeting of the board of directors of the Pittsburg Coal Company yesterday afternoon several important changes were made. Chairman Francis L. Robbins was made president in addition to his duties, the offices being combined. Vice-president J. D. Nicholson was chosen treasurer, this office being added to that he already holds. F. J. Le Moyne was elected secretary and J. B. L. Hornberger was chosen auditor. The most important change in the official management was the election of H. C. Frick, the former partner of Andrew Carnegie, to a position on the board of directors.

San Francisco. Jan. 4.

(From Our Special Correspondent.)

The following statistics of coal receipts at San Francisco and at Los Angeles and San Diego, giving approximately the coal consumption at all the coast cities are compiled by Mr. J. W. Harrison, of San Francisco.

	1900.	1901.	Changes.
Mt. Diablo, Coos Bay and Tesla..	160,915	143,318	D. 17,597
Seattle, Wash.....	250,590	240,574	D. 10,016
Tacoma, Wash.....	418,052	433,817	I. 15,765
Rocky Mts., by rail.....	42,673	51,147	I. 8,474
Eastern	17,319	27,370	I. 10,057
Total domestic.....	889,549	896,226	I. 6,677
British Columbia	766,917	710,330	D. 56,587
Australia	178,563	175,959	D. 2,604
Great Britain.....	54,099	52,270	D. 1,829
Total foreign.....	999,579	938,559	D. 61,020
Totals.....	1,889,128	1,834,785	D. 54,343

The fact that an actual decrease was shown, in a year of great business activity proves that oil is making a considerable figure in the fuel consumption. Oil is now used in locomotives, in the powerhouses of most of the electric railroads and in many factories; the chief uses of coal now are for domestic purposes and on steam vessels. The changes are further shown by the fact that, in spite of the smaller receipts and the large demand for fuel, coal is selling at near $1.50 a ton less in San Francisco that at the opening of 1901.

Foreign Coal Trade. Jan. 9.

There is little new with regard to foreign shipments at present. Negotiations are understood to be pending as to some contracts for France, and also for Mediterranean ports, but nothing definite can be said about them as yet.

A charter is reported from Philadelphia to Bordeaux, France, January sailing, at 8s. 3d.—$1.98—per ton.

Exports of coal from Baltimore in December, 1901, were 28,568 tons, making a total for the year of 493,646 tons, which compares with 423,495 tons in 1900; showing an increase of 70,151 tons, or 14.2 per cent. The bulk of this was bituminous coal, which was destined to Central and South America, the West Indies, Mexico, Canada, France, Italy, Austria-Hungary, Norway and Sweden, Africa and Japan; while small quantities of anthracite were sent to Germany and Holland.

Messrs. Hull, Blyth & Co., of London & Cardiff, report under date of December 21, that owing to the Christmas holidays, business at Cardiff has been very restricted, and prices for January shipment are only nominal. Quotations are: Best Welsh steam coal, $4.08@$4.20; seconds, $3.96; thirds, $3.84; dry coals, $4.02; best Monmouthshire, $3.78@$3.90; seconds, $3.54; best small steam coal, $2.64; seconds, $2.16; other sorts, $2.04.

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, but inclusive of export duty, and are for cash in 30 days, less 2½ per cent discount.

Very little business has been done during the week, and the market has an easy tendency. Some rates quoted are: Algiers, $1.30; Marseilles, $1.35; Genoa, $1.14; Naples, $1.20; Port Said, $1.20; Singapore, $2.88; Las Palmas, $1.44; St. Vincent, $1.62; Rio Janeiro, $2.64; Santos, $2.94; Buenos Aires, $2.34.

Shanghai, China. Nov. 27.

(Special Report of Wheelock & Co.)

Coal.—Nothing has been doing in Japan coal. Deliveries of Cardiff to men-of-war and others have been heavy. Sydney Wollongong has again been confined to the natives. Arrivals of all kinds of coal during the fortnight were 26,808 tons. We quote per ton: Welsh-Cardiff, 18 taels ($12.06); Australian Wollongong, 13 taels ($8.71); Japan, Takasima, Namazuta, and Miike, all contracted for; but other sorts, 6@8 taels ($4.02@$5.36); Chinese, navy, $16; locomotive, $13; household, $10; No. 1, slack, $10; No. 2, slack, $7.75, and No. 3, slack, $6.50.

Kerosene Oil.—Steady. Importers of Devoes are asking 1.67 taels, less 2 per cent, but we have not heard of any settlements having been made. Stocks, including arrivals amount to 882,500 cases American; 817,600 cases Russian, and 102,500 cases Dutch; total, 1,802,600 cases. Quotations per case are as follows: American Devoes, 1.66 taels ($1.11); Russian, Batum, Anchor Chop, 1.52 1-2 taels ($1.02); Star & Crescent and Horse Chop, 1.48 taels (99c.); Ram Chop, 1.50 taels ($1); bulk oil, in 2 tins, 1.30 taels (87c.), and loose, 0.90 taels (60c.); Dutch Langkat, Dragon Chop, 1.45 taels (97c.), bulk in 2 tins, 1.30 taels, and loose, 0.90 taels.

IRON MARKET REVIEW.

NEW YORK, Jan. 9.

The iron market continues to show little change, our local reports showing the activity in various sections. Pig iron prices show a general stiffening, with large buying, and advances in all lines. In steel billets little has been done, as there is no material offered. Structural material continues in demand, and there are many small contracts coming in.

There has been no movement yet to fix prices of Lake Superior ore for the coming season, but the general impression continues that there will be no considerable changes. Coke has been advanced 25c. a ton in the Connellsville Region.

The railroad troubles continue, and there is still difficulty in securing supplies of fuel and ore at furnaces, which is interfering with production. Deliveries of iron and steel from mills are a little better, but not much.

The United States Steel Corporation has issued its statement for the closing quarter of the year: it is given on another page.

Birmingham, Ala. Jan. 6.

(From Our Special Correspondent.)

The pig iron market starts the new year under very promising conditions. The actual present conditions are most favorably and hardly does the new year commence before the much anticipated advance in quotations is announced, the basis being $12 for No. 2 foundry. The railroads are relieving the situation some in the transportation of the product of the blast furnaces. There was some falling off in the amount of iron made during December as several of the furnaces were banked on account of shortage of raw material supply, brought about by the refusal of the hands to remain at work steadily during the holiday season. However, this has been corrected and business is down to the hard plane again.

Some of those who have placed orders in this section have demanded easlier delivery than was at first desired. In some instances the railroads are furnishing more cars and this can be done, but in many cases the furnace companies themselves can make no earlier delivery not only on account of the scarcity of cars which has prevailed for several weeks but on account of the production not being sufficient.

The following quotations are given: No. 1 foundry, $12.50@$12.75; No. 2 foundry, $12; No. 3 foundry, $11.50; No. 4 foundry, $11; gray forge, $10.50@$11; No. 1 soft, $12.50@$12.75; No. 2 soft, $12.

The salesbooks of the Tennessee Coal, Iron & Rail-

road Company and Sloss-Sheffield Steel & Iron Company were investigated during the past week by the committees of their miners and it was ascertained that the average price obtained warranted an advance of 2½c. on the ton in coal mining wages for the month of December. The miners received 55 cents per ton, the maximum wage.

There is much work being done now in finished iron. The rolling mills have gotten down to work again after a semi-idle spell covering nearly two weeks. For a week the mills closed down for the holidays and part of the past week was lost because of the lack of fuel. The steel plant at Ensley is fast getting down to work again. The production there is improving. During the past week the machinery in the steel rail mill was tested.

Buffalo. Jan. 8.

(Special Report of Rogers, Brown & Co.)

The general run of consumers seem to persits in keeping up their melt at the full pressure limit. There is no dropping off in the urgent demand for deliveries, which is an almost unprecedented condition for this season of the year. New iron is practically unobtainable, yet some of the largest melters are in the market for supplies for spring and midsummer delivery. We quote below on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $16.75; No. 2, $16.25; Southern soft, No. 1; $17; No. 2, $16.50; coke malleable, $16.50; Lake Superior charcoal, $18.50.

Cleveland. Jan. 8.

(From Our Special Correspondent.)

Iron Ore.—Although there is still some talk of sales of iron ore pending, none of them have been closed during the week and the situation is about as it has been. The meeting of the Ore Association to fix prices is a possibility at almost any time but it has not been held as yet. The general expectation along this line does not change but the current belief is that last year's figures will again prevail. In the absence of any definite movement to establish new prices old quotations prevail. They are $4.25 for bessemer and $3 for non-bessemer and Mesabi.

Pig Iron.—The quotations on foundry grades have been advanced this week 50c. a ton and now the transactions are all being made on the basis of $16.50 for No. 1 and $16 for No. 2 in the Valleys. No iron is available for quick shipment and the best that can be done in the way of deliveries is probably two months. The continued idleness of the stacks is preventing any relief in the situation. The supply of iron is growing shorter all the time. Basic producers are not disposed to make any further contracts until some relief is seen in the car situation. The nominal quotation now is $15.75 in the Valley at which the last sales were made, but the producers announce that they will make no further sales at that figure. Bessemer producers report no sales during the week but continue the quotation at $16. The production has not been increased to any extent.

Finished Material.—There has been ever so slight a relief in the car situation, but it has extended no further than to permit of a freer movement of steel between the plants. Even with this five bloomer mills have been idle during the week for lack of material. Sales have been in small quantities although the general booking has been very satisfactory. The booking of orders in fact, the decreased production being considered, is greater than the output. The rail trade has been moderately heavy with some small orders placed at $28, which continues to be quoted. Structural steel is also in good demand with prices holding firm and orders anticipating production further and further ahead. The mill men are quoting 1.70c. on beams, channels and angles. Plates have picked up a little, although not much. Universal mill plates are quite active and even the sheared plates are in better demand than they have been in weeks. The quotation remains at 1.70c. The bar buyinng has been heavier than of late and the dealers are reporting that if the present curtailment in production continues for any length of time the material will be as hard to get as any other grade. As it is the market is very strong at 1.50c., Pittsburg, for bar iron; 1.50c., Pittsburg, for bessemer steel bars and 1.60c., Pittsburg, for open hearth steel bars. Sheets are being sold quite extensively out of store, the market being represented by a quotation of No. 27, as a base of from 3.35@3.50c. for one pass cold rolled with 10c. extra for full cold rolled.

Old Iron.—An effort was made this week to break the prices on scrap but this failed and the market is steady at the old figures. The quotations are as follows: Old iron rails, $22; old steel rails, $17; iron axles, $19; heavy steel, $17; stove plate, $10; cast scrap, $13; No. 1 wrought, $16.50; cast borings, $8; wrought turnings, $12.25.

Philadelphia. Jan. 9.

(From Our Special Correspondent.)

Pig Iron.—So far as Eastern Pennsylvania pig iron makers are concerned they are quite indifferent to booking up new orders at this time. So far as buyers are concerned certain inquiries have been made within two or three days of representatives of southern iron with a view of ascertaining what can be done there during the next 60 days. The information obtained from this quarter does not promise that much business will be done as prices are just close enough to Pennsylvania pig to make many consumers prefer to use what they know. The sales for the past six days in pig iron have been light, but could have been heavy had asked prices suited. There are negotiations pending this week for bessemer and basic pig, which street talk says will certainly result in big business very soon. Foundry men are willing to add to their stocks or to their contracts, but they feel more indifference to the matter than a month ago. This about covers the forge iron situation also, but No. 2 would sell quite rapidly if buyers were satisfied with 50c. less.

Muck Bars.—Inquiries during the past two or three days show that buyers are once more on the move, but prices will not be given to anyone but an actual buyer.

Merchant Bar.—While there is no observable change in the outward features, there is a change of tone growing out of the anxiety of quite a number of small buyers to load up a little more.

Nails.—There is much less business in nails, both wire and cut, than one would imagine. One explanation given is that storekeepers imagine wire nails especially are going to be cut.

Sheet Iron.—One or two large sheet iron interests said here yesterday that the investigations they have made as to probable spring requirements warrant them in expecting as much business as they will be able to take care of. Just at present the buying tone is for smaller lots.

Pipes and Tubes.—All users of pipes are taking more than they ever have, but their purchases two months ago and longer have made them pretty safe, and for that reason we hear of very few big pipe contracts. Manufacturers on their part say that their inquiries satisfy them that the new work in hand or projected will keep them busy. Tubes are as active as they well can be.

Plates.—We are looking to New York this week for some pointers on steel plate. The desire for a pool still exists.

Structural Material.—The smaller buyers are making their demands felt. There are quite a number of building requirements now in the market, and the aggregate is likely to keep structural material stiff all winter.

Steel Rails.—The only point that our people consider worth talking about is the probable demand for trolley lines, but the trolley people themselves refuse to speak; but the rail makers think that the trolley line requirements will be urgent.

Scrap Iron.—Scrap is said to be a little easier, but whatever scrap is selling is selling under cover. None is being offered.

Pittsburg. Jan. 8.

(From Our Special Correspondent.)

The old year closed and the new one opened without any falling off in the heavy demand for iron and steel products. Sales of bessemer pig iron have been made for delivery throughout the first half at prices which insure a minimum rate of $16 a ton at the alley furnaces. Despite the inadequate transportation facilities large orders continue to be placed in almost every line but deliveries are not guaranteed for any specified time. Furnace men are making every effort to secure coke and keep the furnaces in blast, but this week from 8 to 10 are banked with no prospect of an early resumption and others are being operated very irregularly. The United States Steel Corporation has placed orders for its bessemer pig iron requirements for January, but doubt is expressed as to the ability of the furnace to supply the full amount. While the minimum price of bessemer iron is $16 in the Valleys a much higher price is being paid where it is possible to secure prompt shipment. Gray forge and foundry iron prices are firmer and higher than at the close of the year and some large sales have been made for extended delivery. The bessemer steel billet market is quite with prices unchanged, buyers evidently holding off in anticipation of a decline in prices. The wire rod market is stronger and prices for small lots have advanced to $34 a ton. The demand for steel plates and bars continues heavy and some large orders were placed during the week. Mills have orders that will keep them busy for several months. A meeting of the Plate Pool is scheduled to be held in New York to-day at which, it is said, manufacturing concerns outside of the big steel corporation will endeavor to establish a higher price. An advance of at least $1 a ton is proposed. No increase in prices likely will be made. New business in structural material is unprecedented and the market is believed to be strong enough to warrant an advance over the present prices, but none is contemplated at present. The mills are filled up to the middle of the second quarter. The sheet mills have caught up on deliveries and prices are now normal on the lighter gauges. Manufacturers are still behind in the shipments of the heavier gauges.

The bi-monthly examination of the sales sheets of the American Tin-Plate Company on which the wages of the men in the union mills are based under the Amalgamated Association scale, was held here yesterday. The base of the scale is $4.20 a box and as sales were made during November and December at $4 a box, the wages of the men for January and February will remain unchanged. The bi-monthly examination for the sheet and bar iron sales will be made during the week. There will likely be no change in the wages of the sheet mill workers as sales have not averaged more than the base except on the No. 28 gauge and the difference will hardly be sufficient to warrant an advance, although the workers look for an increase of 2 per cent. It is barely possible that the iron sales will give the puddlers an advance of 25c. a ton and the finishers an increase of 2 per cent.

Pig Iron.—The sales of bessemer pig iron in December aggregated 160,000 tons and since the first of the year 15,000 tons have been sold. Some is for delivery in the second quarter and the lowest price is $16, Valley furnaces. Gray forge is quoted this week at $15.75@$16, Pittsburg, and 4,500 tons were sold. Foundry No. 2 is quoted at $16.25@$16.50, Pittsburg, and several thousand tons were sold.

Steel.—But few small sales of bessemer steel billets were made this week at $27.50@$28 and the market is very quiet. Buyers seem to be waiting for lower prices. Business in plates and bars is unusually good. Tank plates are still quoted at 1.60c. and steel bars at 1.50c.

Sheets.—There is no change in prices, No. 28 gauge being quoted at from 3.10@3.20c. Manufacturers are still behind in deliveries on the heavier gauges. Galvanized sheets continue to be quoted at 70 and 5 per cent off.

Ferro-manganese.—Domestic 80 per cent remains at $52.50 and the foreign product is held at $50.

New York. Jan. 9.

Pig Iron.—The local market continues strong, with another advance threatened in Southern irons and a pronounced shortage in foundry grades for prompt delivery. We quote for tidewater delivery: No. 1X foundry, $16.65@$17.15; No. 2 X, $16.15@$16.65; No. 2 plain, $15.65@$16.15; gray forge, $15.15@$15.40. For Southern iron on dock, New York, No. 1 foundry, $16@$16.50; No. 2, $15.50@$16; No. 3, $15.25; No. 4, $14.75; No. 1 soft, $16.25; No. 2, $15.75.

Bar Iron and Steel.—Considering that stocktaking is underway, demand is good. We quote 1.58c. for common bars in large lots on dock; refined bars, 1.60@1.68c.; soft steel bars, 1.68c.

Plates.—The market is, if anything, a little easier, but demand is large. Eastern mills quote for tidewater delivery in car-loads: Tank, ¼-in. and heavier, 1.78c.; flange, $1.88c.; marine, 1.98c.; universals, 1.78c.

Steel Rails and Rail Fastenings.—Standard sections are still 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.—There is little or no let up in demand, which promises to be active for months. We quote for large lots at tidewater as follows: Beams, 1.75c.; channels, 1.75c.; tees, 1.80c.; angles, 1.75c.

Nails.—Demand is fair; wire nails in car-loads on dock are quoted at $2.25; cut nails, $2.18.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 96.)

New York. Jan. 10.

The market is in a healthy condition; prices are generally firm, and demand satisfactory to sellers. The slow dispatch of railroad cars continues to annoy manufacturers, whose customers are dissatisfied with their deliveries. The railroads, however, will soon remedy the conjestion, it is thought.

Heavy Chemicals.—Domestic alkali is in demand for immediate shipment, while future deliveries are quoted easier. Makers' f. o. b. prices for bags are 87½@90c. per 100 lbs. for 58 per cent, and 90@95c. for 48 per cent. Foreign is uninteresting, as the imports in the 11 months ending November 30, 1901, were only 24,239,390 lbs., against 64,705,113 lbs. a year ago. Caustic soda, of domestic make, is in small supply for prompt shipment, and is quoted at $1.95@$2 per 100 lbs. f. o. b. works for high test, while a few more 1903 contracts have been booked at $1.90 f. o. b. works. Foreign, of which imports into the United States in the 11 months ending November 30, 1901, were less than one-half those of 1900, being 3,338,512 lbs., against 7,915,741 lbs., is in small request, and prices are nominal at $2.25@$2.50 per 100 lbs. in New York. Sal soda for early spring delivery by domestic makers is in good request at 55c. per 100 lbs. f. o. b. works. Foreign for shipment is held in New

York at 70c. per 100 lbs., or 15c. more than the domestic article. The United States imports in the 11 months ending November 30, 1901, were 4,265,731 lbs., against 4,768,308 lbs. in 1900, and 6,141,052 lbs. in 1899. Domestic bicarb. soda shows a better inquiry from the home and foreign market, ordinary selling at $1 per 100 lbs. f. o. b. works; while the finer grades are worth $3.25@$3.50 per 100 lbs. f. o. b. works, less the usual discounts. Further contracts for prime Liverpool bleaching powder have been taken at $1.75@$1.80 per 100 lbs. in New York, while other brands sold at a little less. Our imports are much less than either 1900 or 1899, amounting in the 11 months ending November 30, 1901, to 106,809,493 lbs. Domestic chlorate of potash is selling from works at $7½@$7¾ per 100 lbs., for shipment this year, while prompt sales are reported at $8 for either crystals or powdered. The foreign article is quoted in New York at $10@$10¼ for crystals, and $10½@$10¾ for powdered. The imports are growing constantly less, amounting to only 674,215 lbs. in the 11 months ending November 30, 1901, which compares with 1,154,572 lbs. in 1900, and 1,467,373 lbs. in 1899. Of the 1901 imports we re-exported 215,520 lbs., leaving only 458,695 lbs. for our consumption, a very small quantity considering the big demand in this country. This shows how important our domestic industry is becoming.

Copperas.—With an improved demand prices have strengthened to 35c. per 100 lbs., in car-load lots.

Arsenic.—Competition has lowered the price for outside makes to 3 1-16@3 1⅛c. per lb. to arrive, while regular brands are held at 3¼@3⅝c. Red is also unsettled, being quoted at 6¼@6⅜c. per lb.

Acids.—Shipments on contracts are better. Oxalic contracts are being taken at $4.75@$5.25 per 100 lbs., according to make and seller, the English brands commanding the higher price. German on spot is offered at $4⅞@$5 per 100 lbs. Blue vitriol is feverish, though unchanged owing to the unfavorable market price of copper.

Quotations are per 100 lbs. as below, unless otherwise specified, for large lots in carboys or bulk (in tank cars), delivered in New York and vicinity.

Acetic, com'l 28%.....$1.80	Oxalic, com'l.....4.87½@5.00
Blue vitrol .....4.50 @4.75	Sulphuric, 50 deg., bulk ton .....14.00@16.00
Muriatic, 18 deg..... 1.50	Sulphuric, 60 deg..... 1.00
Muriatic, 20 deg..... 1.62½	Sulphuric, 60 deg., bulk .....18.00@20.00
Muriatic, 22 deg..... 1.75	Sulphuric, 66 deg.....1.20
Nitric, 36 deg 4.00	Sulphuric, 66 deg, bulk .....21.00@23.00
Nitric, 38 deg..... 4.25	
Nitric, 40 deg..... 4.50	
Nitric, 42 deg..... 4.87½	

Brimstone.—The vessel that was delayed off Bermuda due to an accident is here with 2,500 tons, all of which will be delivered on contract. Small sales of best unmixed seconds on spot are noted at $25 per ton, but $24 can probably buy. Shipments are strong at $23.25@$23.50 for best seconds, and $20.75 for best thirds. New contracting at these figures is limited, as consumers consider them too high. Importers, however, do not expect an easier market as long as the Sicilian syndicate pursues its present policy, which some believe unwise. The exports of brimstone from Sicily in November, 1901, are reported by Emil Fog & Sons at 38,856 tons, against 36,360 tons in 1900; showing an increase of 2,496 tons. The United States received 20,142 tons in 1901, of which 13,447 tons were best unmixed seconds, and the balance thirds. Stocks in Sicily on November 30, 1901, were 289,785 tons, against 280,157 tons in 1900; the increase of 9,628 tons being due to the larger holdings at Girgenti and Licata.

Pyrites.—The Pilley's Island, N. F., mines are again shipping, and recent arrivals at New York were 3,352 tons. We also note that 1,450 tons pyrites were imported by the Orford Copper Company from Norway. Domestic is in good request at unchanged prices.

Quotations are f. o. b.: Mineral City, Va., lump ore, $4.90 per ton, and fines, 10c. per unit; Charlemont, Mass., lump, $5, and fines, $4.75. Spanish pyrites, 12@14c. per unit, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46 to 51 per cent. of sulphur; American, from 42 to 44 per cent.

Sulphate of Ammonia.—Gas liquor, 24@25 per cent. foreign is firmer for shipment during January and February at $2.82½@$2.85 per 100 lbs. Domestic for shipment is nominal at $2.75@$2.80. Little doing on the spot.

Nitrate of Soda.—Firmer in New York on account of the concentration of supplies into one hand, and on the coast of South America, owing to the approach of the European consuming season. Spot is held at $1.95@$1.97½ per 100 lbs., while shipments are $1.95. Cable advices give the exports from Chile to Europe in December at 2,500,000 qtls., and loadings on January 1, 1902, at 1,500,000 qtls. The sailings to the United States in December were 200,00 qtls., and an equal quantity was reported loading on January 1, 1902. The *E. M. Phelps* sailed for the United States on December 31 with 32,375 bags, and the *Virginia* on January 7, 1902. The ruling ocean freight rate is 25s. Expected arrivals during January are the *Ran*, with 30,000 bags; *Cuzco*, 45,000 bags, and *Buckingham*, 22,400 bags; making a total of 97,400 bags. In February 80,000 bags are due.

Messrs Mortimer & Wisner's monthly statement of nitrate of soda, dated New York, Jan. 1, gives the following statistics:

	1901. Bags.	1900. Bags.	1899. Bags.
Imp. into Atlantic Ports from West Coast, S. A., from Jan. 1, 1901:			
To Date	1,372,891	1,178,448	927,772
From Europe	.....	2,063	.....
	1,372,891	1,180,511	927,772
Stock in store and afloat Dec. 31, 1901:			
New York	20,517	13,446	9,586
Boston	1,000	.....	.....
Philadelphia	10,000	.....	.....
Baltimore	25,000	.....	1,000
Norfolk, Va	17,000	.....	.....
Charleston	1,000	.....	.....
Savannah	3,000	.....	.....
To arrive, due April 15, 1902	358,000	419,000	235,000
Visible supply to April 15, 1902	435,517	432,446	245,586
Stock on hand Jan. 1, 1901	13,446	9,586	58,406
Deliveries past month	166,412	103,007	49,609
Total yearly deliveries	1,308,820	1,176,651	976,592
Prices Current, Dec. 31. 1901	$1.95	$1.85@ $1.87½	$1.85@ $1.87½

Concerning the coast market, Messrs Jackson Bros., of Valparaiso, Chile, write us under date of November 16, as follows: Transactions in nitrate of soda have been very limited owing to unfavorable news from Europe and the unwillingness of producers to cede in their pretensions. A few sales have been made of 95 per cent at 6s. 9 1-2d. for November delivery and at 6s. 9d. for December. For the refined quality there has been no demand. Exports for the 10 months are cabled 21,524,000 qtls., as against 22,694,313 qtls. during same period in 1900. The production up to October 31 this year amounted to 23,481,000 qtls., against 26,471,000 for the 10 months of 1900; the consumption of the world being 28,476,000 qtls. and 26,973,000 qtls., respectively. We quote 95 per cent November-December, 6s. 9 1-2d.; January, 6s. 8d.; February, 6s. 6 1-2d.; and 96 per cent November-December, 6s. 10 1-2d.; January-March, 6s. 9d., all ordinary terms sellers. The price of 6s. 9 1-2d., with an all-round freight of 21s. 3d., stands in 8s. 7 1-4d. per cwt. net cost and freight, without purchasing commission. Reported sales for the fortnight ending November 16 were 100, 200 qtls., and resales, 45,000 qtls.

Phosphates.—The forecast made by a leading exporter indicates a promising year for the phosphate industry. With c. i. f. and f. o. b. prices proportionately nearer than they have been in some time and an improved demand from leading distributing territories, it is said a more healthy condition will prevail. Abroad prices are firmer, although competition of our lower grade phosphates with Algerian continues keen. Sales of Florida high-grade rock have been made at 7@7 1-16d. per unit., c. i. f. Mediterranean ports on a freight of 12s.

The exports of high grade Florida phosphate rock through Savannah, a most important port, during the year 1901 were distributed as follows: To Germany, 88,706 long tons; Holland, 27,907; Belgium, 14,959; Italy, 8,340; Sweden, 5,651; Denmark, 5,321; Austria, 2,014; United Kingdom, 10,241, making a total of 163,139 tons, as against 121,724 tons in 1900; showing an increase of 41,415 tons, or over 25 per cent in 1901.

The Florida high-grade rock exports in the 11 months ending November 30, 1901, are reported by Messrs. Auchincloss Bros. at 402,814 long tons, which compares with 323,672 tons in the corresponding period in 1900, and 420,475 tons in 1899. Of the 1901 shipments Continental ports received 266,337 tons, against 196,744 tons in 1900; Baltic, 78,618 tons, against 94,817 tons; United Kingdom, 37,405 tons, against 25,189 tons; and Mediterranean, 20,454 tons, against 5,922 tons. The largest exports were made to Germany and Holland. Nearly all countries show an increased demand over 1900. It is of interest to mention that these exports were equal to 58 per cent of the total American phosphate shipped abroad in the 11 months ending November 30, 1901.

Reports from Polk County, Fla., phosphate plants show that closer economy is planned by using Texas oil as fuel. Many of the companies, it is said, have already consumed all the available water within economical haulage distance.

Completed statistics for 1901 give the shipments of Peace River phosphates through Punta Gorda during the year at 28,023 tons domestic, and 18,790 tons foreign; total 46,813 tons. In 1900 the domestic movement amounted to 33,079 tons, and exports 21,427 tons; total 54,506 tons, which is an increase over 1901 of 7,693 tons, of which 5,056 tons was domestic, and 2,637 tons foreign. The exports were principally to Great Britain.

The movement of Florida land pebble in the 11 months ending November 30, 1901, is reported as 91,141 tons foreign, and 155,703 tons domestic; a total of 246,844 tons, which compares with 193,545 tons in the corresponding period in 1900; showing an increase of 53,299 tons in 1901, of which 21,338 tons were foreign and 32,061 tons domestic. Of the foreign shipments in 1901, Mediterranean ports received 30,200 tons, Continental 25,827 tons, and Baltic 24,518 tons.

Tennessee phosphates are in good request at unchanged prices. South Carolina rock is in fair demand for home consumption, and in the foreign market competition with 58@63 per cent Algerian stuff is active. A charter from Port Royal to France is noted at 11s ($2.64).

Phosphates.	Per ton F. o. b.	C. i. f. Un'd Kingdom or European Ports. Unit.	Long ton.
*Fla. hard rock (77@80%).	$7.50	7 @7¼d	$10.92@11.31
*Fla land peb. (68@73%).	3.00@3.25	5 @6d	7.00@ 8.40
*Fla. Peace Riv. (58@63%)	2.25@2.50	5 @5½d	6.00@ 6.60
†Tenn....(78@80%), export.	3.50	6¾@7d	10.53@10.92
†Tenn.....78% domestic.	3.00@3.25	.....	.....
†Tenn.....75% domestic.	2.75@3.00	.....	.....
†Tenn....70@72% domestic	2.25@2.50	.....	.....
‡So. Car. land rock.....	3 25	4½@5d	5.67@ 6.30
†So. Car. river rock.....	2.75@3.25	.....	.....
Algerian, rock...(63@70%).	.....	6 @6½d	8.04@ 8.70
Algerian, rock..(58@63%).	.....	5½@5½d	6.30@ 6.60
Tunis, Gafsa...(58@63%).	.....	5¼@5½d	6.30@ 6.60

*Fernandina, Brunswick or Savannah. †Mt. Pleasant. ‡On vessels Ashley River.

Acid phosphate is quoted at 57½@60c. per unit

METAL MARKET.

New York. Jan. 9.

GOLD AND SILVER.

Gold and Silver Exports and Imports.

At all United States Ports in November and Year.

Metal	November. 1900.	1901.	Year. 1900.	1901.
Gold.				
Exports....	$677,207	$15,905,612	$53,724,000	$52,598,928
Imports....	12,641,988	5,270,053	63,362,473	49,808,733
Excess.....	I. $11,964,781	E. $10,635,559	I. $9,638,383	E. $2,790,195
Silver.				
Exports....	$5,258,080	$4,689,209	$58,863,325	$50,914,821
Imports....	3,680,252	2,794,701	36,982,486	28,366,367
Excess.....	E. $1,157,828	E. $1,894,508	E. $21,880,839	E. $22,548,466

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

Financial Notes of the Week.

Business generally seems to promise well for the new year, and general trade is in good condition, though the speculative markets are rather quiet. Some small exports of gold are reported, but they seem to be in the nature of special transactions, and do not indicate a large movement of this kind at present.

The statement of the New York Banks, including the 63 banks represented in the Clearing House, for the week ending January 4, gives the following totals, comparison being made with the corresponding weeks in 1901 and 1900:

	1900.	1901.	1902.
Loans and discounts	$677,797,000	$803,989,600	$860,546,600
Deposits	748,953,100	870,950,100	926,204,100
Circulation	16,234,100	30,982,500	31,874,200
Specie	144,001,700	164,827,800	164,808,800
Legal tenders	54,994,300	67,059,800	74,257,800
Total reserve	$198,996,000	$231,887,600	$239,066,600
Legal requirements	187,238,275	217,737,525	231,551,025
Balance surplus	$11,757,725	$14,150,075	$7,515,575

Changes for the week this year were increases of $11,586,400 in loans and discounts, $15,334,300 in deposits, $18,100 in circulation, $1,190,600 in specie, and $2,267,200 in legal tenders, a decrease of $375,775 in surplus reserve.

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

	1901. Gold.	Silver.	1902. Gold.	Silver.
N. Y. Ass'd.	$165,023,800	.....	$164,808,800	.....
England ...	143,336,500	.....	162,966,095	.....
France	466,570,145	$219,610,565	489,797,405	$219,351,655
Germany ...	120,420,000	62,035,000	152,945,000	77,785,000
Spain	70,005,000	81,705,000	70,080,000	86,335,000
Neth'l'ds ..	24,385,000	28,120,000	28,710,000	31,456,000
Belgium ...	14,215,000	7,110,000	15,326,665	7,663,335
Italy	77,510,000	8,850,000	80,035,000	10,308,000
Russia	368,695,000	31,980,000	346,960,000	32,210,000

The returns of the Associated Banks of New York are of date January 4, and the others January 2, as reported by the *Commercial and Financial Chron-*

icle cable. The New York banks do not report silver separately, but the specie carried is chiefly gold. The Bank of England reports gold only.

Silver has been fairly steady the past week. No important movements seem to have developed, and we quote no material change in the situation.

Receipts of silver at the United States Assay Office in New York were 27,000 oz. for the week; making 78,000 oz. since January 1.

Shipments of silver from London to the East for the year up to December 19, are reported by Messrs. Pixley & Abell's circular as follows:

	1900.	1901.		Changes.
India	£6,331,779	£7,402,910	I.	£1,071,131
China	1,471,944	792,857	D.	679,087
The Straits	619,554	647,412	I.	27,858
Total	£8,423,277	£8,843,179	I.	£419,902

Arrivals for the week this year were £138,100 in bar silver, and £17,400 in Mexican dollars from New York; total, £155,500. Shipments were £130,000 in bar silver to Shanghai, £105,000 to Bombay, £10,000 to Calcutta, and £2,500 to Madras; total, $247,500. Also £17,240 in Mexican dollars to Hong Kong.

Indian exchange is steady, Council bills selling in London at 15.97d. per rupee, with a fair demand. The taking of silver for Indian account has not been large.

Imports of specie at San Francisco by water for the 11 months ending November 30 are reported as below:

	Gold.	Silver.	Totals.
Coin	$13,239,313	$473,780	$13,713,093
Bullion	3,920,980	2,530,369	6,451,349
Totals	$17,160,293	$3,004,159	$20,164,442
Totals, 1900	22,618,883	2,754,845	25,373,728

The imports in 1901 were from the following sources: British Columbia, $114,705; Mexico, $3,539,545; Central America, $87,196; South America, $114,797; China, $46,219; Japan, $3,788,593; Australia, $12,458,075; miscellaneous, $15,312.

The coinage executed at the mints of the United States in the year ending December 31, 1901, compares with 1900 as below, the figures being furnished by the Bureau of the Mint, Treasury Department:

Denominations.	1900. Value.	1901. Value.
Double Eagles	$86,681,680.00	$34,150,520.00
Eagles	3,749,600.00	46,036,160.00
Half Eagles	8,673,650.00	21,320,200.00
Quarter Eagles	168,012.50	228,307.50
Total Gold	$99,272,942.50	$101,735,187.50
Dollars	24,960,912.00	22,566,813.00
Half Dollars	5,033,617.00	3,119,928.50
Quarter Dollars	3,822,874.25	2,644,369.25
Dimes	2,477,918.20	2,507,350.00
Total Silver	$36,295,321.45	$30,838,460.75
Five Cent Nickels	1,362,799.75	1,324,010.65
One Cent Bronze	668,337.64	796,111.43
Total minor	$2,031,137.39	$2,120,122.08
Total Coinage	$137,599,401.34	$134,693,770.33

The fall in values during 1901 equals a little over 2%, or $2,905,631, due to the smaller coinage of silver.

Prices of Foreign Coins.

	Bid.	Asked.
Mexican dollars	$0.44¼	$0.46
Peruvian soles and Chilean pesos	.40	.44
Victoria sovereigns	4.85	4.88
Twenty francs	3.84	3.88
Twenty marks	4.73	4.85
Spanish 25 pesetas	4.78	4.82

OTHER METALS.

Daily Prices of Metals in New York.

January.	Sterling Exchange	Silver—N. Y. Cts.	Silver—London Pence.	Copper—Lake Cts. per lb.	Copper—Electrolytic per lb.	Copper—London £ per ton.	Tin, cts. per lb.	Lead cts. per lb.	Spelter—N.Y. cts. per lb.	Spelter—St. L. cts. per lb.
3	4.86⅛	56⅛	25⅛	11½ @12	11¼ @11¾	48⅛	23¼	3.95 @4.	4.30 @4.32½	4.15 @4.17½
4	4.86⅛	56⅛	25⅛	11½ @12	11¼ @11¾	....	23¼	3.95 @4.	4.30 @4.32½	4.15 @4.17½
6	4.87	55⅞	25⅞	11½ @12	11¼ @11½	47¼	23	3.95 @4.	4.30 @4.32½	4.15 @4.17½
7	4.87⅛	55¾	25⅛	11½ @12	11¼ @11½	47	22⅛	3.95 @4.	4.30 @4.32½	4.15 @4.17½
8	4.87	56	25⅛	11½ @12	11¼ @11½	47⅜	23	3.95 @4.	4.30 @4.32½	4.15 @4.17½
9	4.87	56⅛	25⅞	11½ @12	11¼ @11½	47⅜	22⅞ @23	3.95 @4.	4.30 @4.32½	4.15 @4.17½

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.

An unfortunate mistake in proof-reading made us give the average prices of copper for the month of December incorrectly in our last week's issue. The correct averages for the month were 13.845 cents for electrolytic and 14.36 cents for Lake copper. These slight errors are corrected in the tables on this page.

Copper.—After we had gone to press last week, the leading interests reduced their official prices to 12⅛c. for Lake, 12c. for electrolytic and 11½ for casting copper. These quotations were not only met by the outside interests, but lower ones were freely accepted for the few orders which presented themselves. Trade conditions have been very seriously disturbed by the rapid and heavy decline; manufacturers complain bitterly of the action which has brought about the present condition of things, and the result has been a tremendous falling off of orders. Under the circumstances, there is no desire as yet to make new purchases of raw material, and what little business has been transacted was for export to Europe, where consumers' stocks are practically depleted. We quote Lake copper at 11½@12c.; electrolytic in cakes, wirebars and ingots at 11¼@11½c, in cathodes at 11@11¼c.; casting copper at 11@11¼c.

The London market, which closed last Friday at £48 2s. 6d., opened on Monday at £47 5s., and the closing quotations on Thursday are cabled as £47 7s. 6d.@£47 10s. for spot, £47 15s. @£47 17s. 6d. for three months.

Refined and manufactured sorts we quote: English tough, £50@£51; best selected, £54@£55; strong sheets, £59@£60; India sheets, £57@£58; yellow metal, 5¼@5⅜d.

Exports of copper from New York, Baltimore and Philadelphia during the week are reported by our special correspondents as follows: To Great Britain, 1,521 tons; Germany, 365; Holland, 302; Belgium, 328; Australia, 67; total, 2,583 tons. Also 140 tons matte to Great Britain.

Imports were 100 tons copper from England and 25 tons from Japan; also 20 tons matte from Mexico.

Tin.—Declined sharply during the earlier part of the week. At the lower prices, however, consumers bought freely, and the market advanced again. At the close we quote spot and January at 22⅞@23c.; February and March at 22¾c.

The foreign market, which closed on Friday at £102 10s., opened on Monday at £102 5s., declined on Tuesday to £101, and closes firm on Thursday at £102 10s.@£102 12s. 6d. for spot, £100 10s.@£100 12s. 6d. for three months.

Lead—Is in fair demand, but quotations are unchanged at 3.85@3.95c St. Louis, 3.95@4c. New York.

The foreign market, which at one time ruled as high a £10 10s., closes somewhat easier at £10 8s. 9d. @ £10 10s. for Spanish lead, £10 11s. 3d.@£10 12s. 6d. for English lead.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is steady at the late decline. Missouri brands are selling at 3.87½@3.90c., according to brand and delivery.

Spelter.—Has been without special feature, although somewhat irregular. The ruling quotations are 4.15@4.17½c. St. Louis, 4.30@4.32½c. New York.

The foreign market is steady, good ordinaries being quoted at £16 10s., specials at £16 15s.

St. Louis Spelter Market.—The John Wahl Commission Company telegraphs us as follows: Spelter is fairly active at 4.15@4.17½c. at East St. Louis.

Antimony.—Is dull and unchanged at 10c. for Cookson's; 8¼c. for Hallett's; 7¾@8c. for Hungarian, Japanese, Italian and U. S. Star. These quotations are understood to be for retail lots; larger quantities can be had at a discount.

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

Platinum.—Consumption continues good, but prices are a little lower. Ingot platinum in large lots brings $19.50 per oz., in New York.

Chemical ware (crucibles and dishes), best hammered metal from store in large quantities, is worth 82c. per gram.

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

Aluminum.	Per lb.	Aluminum.	Per lb.
No. 1, 99% ingots	33@37c.	Ferro-Tungsten (37%)	28c.
No. 2, 90% ingots	31@34c.	Manganesium	$2.75@$2
Rolled sheets	4c. up	Manganese (over 90%)	$1.00
Alum-bronze	20@23c.	Mangan'e Cop. (20% Mn)	32c.
Nickel-alum	33@39c.	Mangan'e Cop. (30% Mn)	38c.
Bismuth	$1.50	Molybdenum (Best)	$1.82
Cromium (over 90%)	1.00	Phosphorus	50c.
Copper, red oxide	50c.	American	70c.
Ferro-Molyb'um (50%)	$1.25	Sodium metal	50c.
Ferro-Titanium (10%)	90c.	Tungsten (Best)	62c.
Ferro-Titanium (20%)	$1.10		

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

Quicksilver.—Prices in New York are a little easier, and the metal can be had for $48.50 per flask of 76 lbs. for large orders. For small lots 50c. more is asked. This is a reduction of 50c. a flask from recent quotations. San Francisco quotations are $46.50@$48 for domestic orders, and $42.50@$44 for export. The London price is £8 17s. 6d. per flask, with the same figure quoted from second hands.

Average Prices of Metals per lb., New York

Month.	Copper. 1901.	Copper. 1900.	Tin. 1901.	Tin. 1900.	Lead. 1901.	Lead. 1900.	Spelter. 1901.	Spelter. 1900.
January	16.25	15.58	26.51	27.07	4.35	4.68	4.13	4.65
February	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	3.91	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	16.31	15.97	27.85	33.10	4.35	4.030	3.95	4.28
August	16.25	16.35	26.78	31.28	4.35	4.250	3.99	4.17
September	16.25	16.44	25.31	29.42	4.35	4.350	4.08	4.11
October	16.25	16.37	26.62	28.54	4.35	4.350	4.23	4.15
November	16.224	16.40	26.67	28.25	4.35	4.350	4.29	4.29
December	13,845	16.31	24.36	28.94	4.153	4.350	4.31	4.25
Year	16.117	16.19	26.54	29.90	4.334	4.37	4.08	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 16.52a.; 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.; for July, 16.61c.; for August, 16.50c; for September, 16.54c.; for October, 16.60c.; for November, 16.333c.; for December, 14.36c. for the year 1901, 16.53c.

Average Prices of Silver, per oz., Troy.

Month.	1901. London. Pence.	1901. N. Y. Cents.	1900. London. Pence.	1900. N. Y. Cents.	1899. London. Pence.	1899. 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	27.04	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	59.64	27.56	59.96	28.15	61.23
June	27.42	59.57	27.81	60.42	27.77	60.43
July	26.96	58.46	28.23	61.25	27.71	60.26
August	26.94	58.37	28.13	61.14	27.62	60.00
September	26.95	58.26	28.85	62.63	27.15	58.89
October	26.62	57.59	29.58	63.83	26.70	57.98
November	26.12	56.64	29.66	64.04	27.02	58.67
December	25.46	55.10	29.68	64.14	27.21	58.99
Year	27.11	58.95	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.

UNITED STATES.

Articles. Long tons.	November. Imports.	November. Exports.	Eleven months. Imports.	Eleven months. Exports. For-eign.	Eleven months. Exports. Do-mestic.
Ores and Metals.					
Antimony	100	.....	1,489	.....	.....
Antimony ore	41	.....	771	22	.....
Copper	2,434	5,683	30,304	5,581	77,761
Copper ore, matte	12,001	2,490	89,309	9,484	15,628
Iron and Steel:					
Bar, rods	3,068	4,296	34,472	64	49,419
Billets, blooms	522	90	7,124	3	27,286
Hoops, bands	128	27	2,969	.....	1,959
Pig iron	13,958	18,054	53,289	160	75,810
Nails and spikes	.....	1,106	.....	.....	27,576
Rails	303	16,852	1,388	.....	303,133
Scrap	2,585	1,047	19,039	3,331	13,598
Sheet, plates	677	872	4,995	104	28,958
Wire	491	8,956	3,848	28	79,332
Miscellaneous	79	4,822	434	13	49,089
Iron ore	79,790	4,024	887,337	.....	64,558
Lead	301	2	531	22	2,112
Lead ore, bullion	9,653	4,694	94,042	80,991	.....
Mang. ore, oxide	2,551	.....	144,542	106	.....
Nickel ore, matte	31	221	28,002	.....	2,473
Quicksilver	.....	19	.....	.....	337
Tin	2,178	14	30,376	908	.....
Tin & black plates	7,182	4	67,103	143	429
Zinc	1	99	330	.....	2,597
Zinc ore	.....	2,375	.....	.....	35,392
Minerals.					
Asphalt	10,212	1,485	125,590	1,698	.....
Brimstone	14,679	26	143,750	182	.....
Cement	21,337	5,363	153,886	6,624	72,259
Coal, anthracite	.....	120,754	.....	7	1,889,438
Coal, bituminous	173,788	410,268	1,745,636	3,457	5,043,221
Coke	.....	38,108	.....	.....	360,744
Copper, sulphate	.....	21	.....	.....	21,136
Graphite	865	.....	13,215	3	.....
Nitrate of soda	21,563	251	190,810	2,050	.....
Phosphate rock	17,698	47,752	157,621	71	696,161
Pyrites	25,371	.....	357,191	.....	.....
Salt	6,197	425	155,576	1,519	8,188

The figures for copper are those given by the Treasury Department. The statement made by Mr. John Stanton for the Associated Copper Companies will be found monthly in our metal market. These figures give the exports for November as 6,069 long tons, eleven months, 80,195 tons.

Import Duties.

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 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.

Minerals.—Duties are: Asphalt, crude, $1.50 per ton, and refined $3 per ton. Coal, bituminous, 67c. long ton; coke, 20c. ad. val. Cement, Roman, Portland and hydraulic, in bulk, 8c. per 100 lbs., and in packages 7c. Copper sulphate, ½c. a lb. Salt in bulk, 8c. per 100 lbs., and in bags, etc., 12c. Brimstone, anthracite coal, graphite, phosphate rock, pyrites and nitrate of soda are free of duty.

STOCK QUOTATIONS.

NEW YORK.

Company and Location.	par val	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 6. H.	Jan. 6. L.	Jan. 7. H.	Jan. 7. L.	Ja H.	Ja L.	Sales
Alamo, Colo.	$1					13								1,000
Amalgamated c.,Mont	100	70.50	68.75	71.38	69.38	71.0	69.88	71.63	69.50	72.25	70.63	71.63	70.50	193250
Anaconda c., Mont.	25	31.25	30.75	30.88	30.25	30.75	30.13	31.38	30.00	31.38	30.75	31.00	.....	5,600
Argentum-Jun., Colo.	2							.08				.08	.....	2,500
Belcher, Nev.	3			.14										500
Best & Belcher, Nev.	3	.15	.....											1,000
Brunswick, Cal.	1			.15	.....					.12	.10			2,600
Cable, Colo.	1				.04									2,000
Comstock T., Nev.	100			.05						.06	.....	.06	.....	1,800
Comstock Bonds, Nev.	100													
Con. Cal. & Va., Nev.	2½	1.70	.....	1.70	.....	1.80	.....	1.75	.....			1.70	.....	600
CrippleCr. Con., Colo.	1							.11	.....	.07	.....	.11	.....	6,500
Elkton, Colo.	1	1.25	.....			1.20	.....	1.18	.....	1.16	1.14			1,900
Gold Dollar, Colo.	1					.03								
Hale & Norcross, Nev.	3	.18	.....			.19								200
Imperial, Nev.	1					.03								
Iron Silver, Colo.	20													
Isabella, Colo.	1	.33	.32	.32	.31							.32	.....	2,700
Jack Pot, Colo.	1									.35				300
Justice, Nev.	1													
Mexican, Nev.	3	.42	.....					.40	.39			.45	.43	800
Mollie Gibson, Colo.	5							.18						300
Ontario, Utah	100					9.00	.....	9.50	9.25	9.50	.....	9.00	.....	320
Ophir, Nev.	3			.90	.87			.87						400
Quicksilver, Cal.	100			4.13	4.00					3.75				350
Quicksilver pf., Colo.	100	9.75	.....	10.00	.....	10.00	.....			10.00	.....			200
Savage	1	.09	.....											200
Sierra, Nev.	3	.24	.....									.25	.....	500
Small Hopes, Colo.	20									.43	.42			200
Standard Con., Cal.	10	3.85	.....									3.70	.....	900
Union Copper, N. C.	1	4.13	3.88	4.00	3.75	4.00	3.75	4.13	4.00	4.13	4.00	4.13	4.00	.....
U. S. Red. & Ref., Colo.	100	37.00	36.38	37.00	36.38	37.25	36.50	37.25	36.50	37.25	36.38	37.25	36.38	.....
U.S.Red.&Ref.pf,Colo	100	63.00	62.00	63.00	62.00	63.00	62.25	63.00	62.25	63.00	62.25	63.00	62.25	.....
White Knob, Ida.	10	20.00	19.00	20.00	19.00	20.00	19.00	20.00	19.00	19.00	18.00	19.50	18.50	.....
Work, Colo.	1			.10						.10				1,500
Yellow Jacket.	1													

Coal and Industrial Stocks.

Am. Agr. Chem., U.S.	100	22	.....	22½	22	.....	.....	.....	.....	22¼	.....	39	21	360
Am.Agr.Chem.pf,U.S.	100	82½	82¼	.....	.....	.....	.....	84	.....	83	.....	83	82½	312
Am. Car & Fdy., U.S.	100	31	30¾	31	30½	31¼	30¾	31⅝	31	31¾	30¾	30⅞	30¼	24,159
Am. Car & Fdy. pf,U.S.	100	87	86¼	87¾	87	87⅛	87¼	88	87⅛	88	87¾	87¾	87½	5,020
Am. Sm. & Ref., U.S.	100	46½	45¾	46	45¼	46	45¾	46⅛	45¼	46	45¼	46½	45½	16,598
Am. Sm. & Ref. pf,U.S.	100	98	.....	97	96¾	96½	.....	97	96¾	97	.....	96½	.....	1,682
Col. Fuel & I., Colo.	100	88½	88¼	88¾	88	88¼	87	88⅜	87	88	86	86¾	84	5,420
Col. & H. C. & I., Colo.	100	16¾	.....	16½	.....	17⅛	.....	16¼	16	16	.....	15⅜	.....	850
Int'l S. Pump, U.S.	100	.....	.....	47⅞	47	48	.....	.....	.....	48	.....	48	47	1,200
Int'l S. Pump pf, U.S.	100	89	86	88	.....	89	86	.....	.....	90	86	90	86	200
Mong. R. Coal, Pa.	100	13	12⅛	13¼	13	13⅛	13⅛	13⅛	13⅜	.....	.....	.....	.....	7,619
Mong. R. Coal pf, Pa.	100	43¾	.....	43½	43¼	43½	43¼	43½	43	.....	.....	.....	.....	613
National Lead, U.S.	100	16¾	.....	17	16¾	17	16½	.....	.....	16	.....	16	.....	400
National Lead pf, U.S.	100	.....	.....	81	79	81	79	.....	.....	80	78	.....	.....	100
National Salt, U.S.	100	32	.....	32	.....	32	.....	32	.....	32	.....	32	.....	
National Salt pf, U.S.	100	69	61	69	61	69	61	69	61	69	61	69	61	
Pittsburg Coal, Pa.	100	28	27⅛	28	27½	27¾	27½	27½	27⅜	.....	.....	.....	.....	1,157
Pittsburg Coal pf, Pa.	100	93	92¾	92¾	92½	92¾	.....	92¾	92½	.....	.....	.....	.....	1,491
*Pressed Steel Car, Pa.	100	42	41¼	42½	41⅝	42½	42	42⅛	41⅝	42	41	41	.....	6,475
Republic I & S., U.S.	100	16¼	15⅝	16¼	16	16¼	16	16⅛	16	17½	16⅛	17	16¼	19,530
Republic I.&S.,pf,U.S.	100	69⅛	68⅛	69	68¼	69	68⅝	69	68⅜	70	69	69⅜	68¾	7,310
Sloss-Shef S. & I., Ala.	100	30	29	30¼	29½	30½	30	30	.....	30¼	30	30	.....	1,400
Sloss-ShefS.&I.pf,Ala.	100	82	80	83	82	.....	.....	82	.....	82½	82¼	.....	.....	1,215
Standard Oil, U.S.	100	700	690	700	690	700	690	700	690	695	690	685	675	10
Tenn. C. I. & R. R., Ala.	100	66¼	64⅜	67¼	65¾	66⅞	66	66¼	66	66⅝	64¾	64¾	63¼	30,975
U.S.Steel Corp., U.S.	106	44⅜	43¼	45⅛	44¼	45⅝	47⅛	46⅜	45⅜	46¾	45	44⅜	43⅜	610647
U.S.Steel Corp.pf,U.S.	100	94¼	93⅜	95¼	94⅜	95⅜	95⅛	97	95¼	97¾	96⅛	95½	94	46832o
Va.-Car Chem., U.S.	100	63⅜	63	62½	62	62½	.....	62¼	.....	62½	62	.....	.....	1,60o
Va.-Car Chem. pf,U.S.	100	123⅝	.....	†121½	.....	.....	.....	.....	.....	122	121⅛	121½	.....	15o

Total sales 1,443,942 shares. † Ex-dividend.

PHILADELPHIA, PA. §

Name and Location of Company.	par val	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 6. H.	Jan. 6. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.	Sales
Am. Alkali	$50	.....	.....	.....	.....	.50	.....	.38	.....	.38	.....	.38	.31	2,050
Am. Cement	10	.....	.....	6.38	.....	.....	.....	.....	.....	.....	.....	6.25	6.00	460
Beth. Iron, Pa.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Beth. Steel, Pa.	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cambria Iron, Pa.	50	.....	.....	.....	.....	.....	.....	48.25	.....	48.25	48.00	48.00	.....	218
Cambria Steel, Pa.	50	25.88	24.63	25.88	25.63	25.88	25.38	25.75	25.25	28.00	25.50	26.00	25.75	28,037
Susq. S. & S., Pa.	10	.....	.....	1.88	.....	.....	.....	1.88	.....	.....	.....	1.75	.....	280
United Gas I., Pa.	50	117	116⅝	.....	.....	115⅝	.....	116	115	116	115¾	.....	.....	324

§Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia, Pa. Total sales 31,369 shares.

MEXICO. Dec. 28.

Name of Company.	Shares.	Last div'd	Prices. Bid.	Prices. Ask.
Durango:				
Ca.Min. de Penoles.	2,500	$60.00	$3,700	$3,900
Augustias, Pozos	2,400	5.00	65	70
Guananjuato:				
Cinco Senores y An., aviada	2,000	15.00	235	240
Cinco Senores y An., aviada	400	10.00	185	195
Providencia,SanJuan de la Luz	6,000	2.00	150	170
Guerrero:				
Garduno y Anexas.	7,200	.....	30	50
Hidalgo:				
Amistad y Concordia.	9,600	1.56	48	50
Carmen, aviada.	1,100	.....	100	.....
Ca. Real del Monte.	2,554	.....	550	750
El Encino, aviador	1,120	.....	40	50
Guadalupe Fresnillo y Annexas.	1,000	.....	180	200
La Blanca, aviada.	1,536	.....	340	350
La Blanco, aviada.	768	.....	220	240
Maravillas y An., aviador.	1,680	.....	175	200
Maravillas el Lobo.	1,000	.....	300	400
Palma y An., aviador.	1,800	.....	15	25
Sta. Gertrudis y An., aviador	9,600	.....	6	8
Sta. Gertrudis y An., aviador	28,800	0.50	58½	60
Santo Tomas Apostol aviador	5,100	.....	9	10
San Rafael y An., aviada.	1,200	12.00	740	760
San Rafael y An., aviada.	1,200	8.00	370	390
Soledad, aviada.	980	.....	280	290
Sorpressa, aviada.		5.00	270	285
Mexico:				
Alacran	2,400	.....	$40	$50
La Esperanza (El Oro)	3,000	$10.00	960	1,000
Socovon de S. Fern.	2,500	.....	20	30
Michoacan:				
Luz de Borda, aviador	3,000	.....	10	13
Luz de Borda, aviada	1,000	.....	5	7
San Luis Potosi:				
Concepcion y An.	3,000	.....	120	130
El Barreno, aviador.	2,000	2.00	30	35
Sta. Maria de la Pa.	2,400	15.00	585	590
Santa Fe.	2,400	.....	20	30
San Diego y Annexas.	2,400	4.00	65	70
Zacatecas:				
Candelaria y Pinos	2,500	.....	320	330
San Carlos y Annexas	2,500	10.00	395	400
Sta. Maria de Gaud.	2,500	10.00	*300	305
Miscellaneous:				
Bartolome de Medina	2,000	2.00	45	50
Guadalupe Hacienda	10,000	2.00	215	225
La Luz Hac. (Pachuca)	6,000	.....	30	35
La Reina (Chihuahua)	192	.....	2,500	3,500
Naica (Chihuahua)	100	.....	2,450	2,550
Natividad (Oaxaca) aviador	1,800	4.00	400	500
National (Oaxaca) aviador	1,800	4.00	400	500
San Francisco Hac.	6,000	1.00	196	220
Santa Ana Huantla Morelos	4,000	.....	50	70
Union Hacienda.	3,000	5.00	190	220

BOSTON, MASS.

Name of Company.	par val	Shares listed.	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 6. H.	Jan. 6. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.	Sales.
Adventure Con., c	$25	100,000	21.00	20.00	20.25	19.50	20.00	.....	20.00	.....	20.00	19.75	.....	.....	887
Aetna Con., q	5	100,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Allouez, c	25	80,000	3.25	.....	.....	.....	3.13	.....	3.25	3.00	3.13	3.00	.....	.....	805
Amalgamated, c	100	1,500,000	70.50	69.00	71.38	69.38	71.00	70.00	71.38	69.50	72.00	71.00	71.63	70.50	16,142
Am. Gold Dreg.	5	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Am. Z. L. & Sm.	25	60,000	11.75	10.00	11.75	.....	11.25	.....	11.75	.....	11.00	.....	.....	.....	1,320
Anaconda, c	25	1,200,000	.....	.....	30.88	30.75	.....	.....	.....	.....	.....	.....	.....	.....	35
Arcadian, c	25	150,000	.....	.....	4.50	.....	.....	.....	4.00	.....	4.50	.....	.....	.....	5
Arnold, c	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Atlantic, c	25	40,000	.....	.....	27.50	25.00	27.50	.....	.....	.....	28.00	.....	.....	.....	125
Baltic	25	100,000	40.00	36.50	39.00	38.00	38.00	37.50	37.00	36.00	37.00	.....	37.00	36.00	3,150
Bingham, Cons.	50	150,000	.....	.....	24.00	.....	24.50	24.00	24.00	.....	24.50	.....	.....	.....	480
Bonanza Dev.	10	300,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Boston, q.	10	100,000	2.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Breece	25	200,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
British Columbia	5	200,000	.....	.....	.....	.....	9.50	.....	.....	.....	.....	.....	.....	.....	10
Cal. & Hecla, c	25	100,000	605.	600.	580.	.....	596.	.....	596.	580.	600.	595.	595.	590.	60
Catalpa	10	300,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Centennial, c	25	90,000	.....	.....	14.00	.....	13.50	.....	13.50	.....	13.25	13.00	12.88	.....	1,535
Central Oil	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cochiti, g.	10	193,750	.....	.....	1.93	.....	.....	.....	.....	.....	.....	.....	2.00	.....	225
Cons. Mercur, g.	5	1,000,000	1.38	.....	1.75	.....	.....	.....	1.75	.....	1.75	1.63	1.75	1.63	3,735
Con. Zinc & L. M. S.	10	110,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Copper Range, c	25	100,000	57.50	54.00	58.00	56.50	57.00	.....	56.00	55.00	56.50	.....	55.50	.....	1,100
Daly-West	10	300,000	.....	.....	.....	.....	.....	.....	30.00	.....	.....	.....	.....	.....	100
Dominion Coal	100	150,000	56.00	52.50	55.50	54.25	55.50	54.50	56.00	55.00	56.75	56.50	56.25	55.50	8,497
Dominion Coal, pf	100	30,000	116¼	.....	116¼	.....	116¼	116	116	.....	.....	.....	.....	.....	71
Elm River, c	12	100,000	.....	.....	2.00	.....	.....	.....	.....	.....	.....	.....	2.00	.....	150
Franklin, c	25	100,000	13.25	13.00	13.00	.....	13.50	.....	15.50	.....	13.50	.....	13.25	13.00	219
Guanajuato Cons.	5	385,000	5.75	5.00	5.88	4.93	5.50	5.00	5.50	5.00	5.25	5.25	5.38	5.00	8,073
Humboldt, c	25	40,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
I. Royale Con., c	25	150,000	21.50	.....	22.00	21.00	21.75	.....	21.00	.....	21.50	.....	.....	.....	500
Mass. Con., c	25	100,000	18.75	17.50	19.50	18.00	18.88	18.50	18.75	18.25	18.50	18.00	18.00	17.50	4,056
Mayflower, c	25	100,000	.....	.....	2.50	.....	2.50	.....	2.50	.....	.....	.....	2.50	.....	100
Michigan, c	25	100,000	10.00	9.50	10.50	10.00	10.50	10.00	10.88	10.00	12.00	11.00	12.00	10.75	5,617
Mohawk, c	25	100,000	32.00	31.25	31.50	29.50	30.25	30.00	30.50	29.75	31.00	30.00	30.25	29.75	2,930
Mont. C. & C.	25	200,000	.....	.....	3.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	50
Mont'l & Boston	5	570,000	.....	.....	3.75	3.00	4.00	3.00	4.25	3.63	4.25	3.50	.....	.....	7,646
National.	25	100,000	.....	.....	.....	.....	.....	.....	11.50	.....	.....	.....	.....	.....	50
N. E. Gas & Coke.	100	100,000	5.00	.....	.....	.....	.....	.....	.....	.....	5.25	5.00	.....	.....	
Old Colony, c	25	100,000	3.00	.....	.....	.....	3.00	.....	3.00	.....	3.50	3.00	.....	.....	243
Old Dominion, c	25	150,000	24.50	24.00	24.50	23.50	24.00	.....	.....	.....	23.50	23.00	.....	.....	1,095
Osceola, c	25	93,000	83.00	81.50	83.25	81.00	82.50	82.00	81.00	80.00	82.50	82.00	83.00	80.50	1,858
Parrot, s. c	25	229,850	30.00	29.00	30.00	.....	.....	.....	30.00	29.88	30.00	.....	30.00	.....	278
Phoenix Con., c	25	100,000	.....	.....	.....	.....	.....	.....	4.25	4.00	.....	.....	.....	.....	30
Quincy, c	25	100,000	140.	.....	140.	135.	140.	.....	135.	.....	135.	.....	.....	.....	239
Rhode Island, c	25	100,000	.....	.....	.....	.....	2.50	.....	3.00	.....	3.00	2.75	.....	.....	385
Santa Fe, g. c	10	250,000	3.50	3.25	3.50	3.25	.....	.....	3.25	3.00	.....	.....	.....	.....	1,280
Shawmut Oil	25	50,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Tamarack, c	25	60,000	.....	.....	265.	.....	.....	.....	265.	260.	260.	.....	.....	.....	155
Tecumseh, c	25	80,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Trimountain, c	25	100,000	34.00	31.50	.....	.....	34.50	.....	50.00	.....	.....	.....	.....	.....	279
Trinity, c	25	160,000	15.00	14.50	14.88	14.63	14.63	.....	14.50	14.00	14.50	14.00	14.50	14.25	1,005
Union C. L.	25	80,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
United States, g.	25	250,000	15.25	14.00	15.50	14.50	14.88	14.50	14.50	.....	14.25	.....	14.38	14.25	2,619
U. S. Oil.	25	100,000	11.75	11.25	11.13	.....	.....	.....	11.50	.....	11.50	.....	.....	.....	345
Utah Con., g.	5	300,030	23.75	23.50	24.00	23.00	23.00	.....	23.00	22.50	23.00	22.75	23.00	22.50	2,647
Victoria, g.	25	100,000	5.50	5.00	5.25	.....	.....	.....	5.50	5.00	5.50	5.00	5.00	.....	1,807
Washington, c	25	60,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Winona, c	25	100,000	.....	.....	.....	.....	.....	.....	1.75	.....	1.75	.....	.....	.....	130
Wolverine, c	25	60,000	50.75	50.25	51.50	51.00	50.00	.....	50.00	49.50	50.38	50.00	50.00	.....	1,085
Wyandot, c.	25	100,000	.....	.....	.....	.....	.....	.....	.....	.....	1.13	.....	1.00	.....	100

Official Quotations, Boston Stock Exchange. Total sales, 84,164 shares.

ST. LOUIS, MO.* Jan. 6.

Name.	Shares.	Par	Bid.	Ask.	Name.	Shares.	Par	Bid.	Ask.
Am.-Nettie, Colo.	300,000	$10	$1.10	$1.20	Doe Run Lead Co.	10,000	$100	$128.00	$135.00
Catherine Lead, Mo.	50,000	10	3.45	3.75	Granite Bimet, Mt.	1,000,000	10	2.70	2.80
Central Lead, Mo.	10,000	100	130.00	135.00	K. & Tex. Coal, Mo.	25,000	100	44.00	45.00
Columbia Lead, Mo.	50,000	10	12.50	13.00	Renault Lead, Mo.	30,000	10	9.00	10.00
Con. Coal, Ill.	50,000	100	20.00	22.00	St. Joe Lead, Mo.	300,000	10	17.00	21.00

*From our Special Correspondent.

SPOKANE, WASH. Jan. 3.

Name of Company.	Par Val.	B.	A.	Sales.	Name of Company.	Par Val.	B.	A.	Sales.
Black Tail.	$1	.09¾	.11¼	.....	Princess Maud.	$0.10	.02½	.03½	8,000
Crystal.	1	.02½	.07	.....	Quilp.	1	.25	.28½	1,000
Deer Trail Con.	1	.02½	.03	.....	Rambler Cariboo.	0.25	.60	.70	.....
Gold Ledge.	1	.01⅝	.03	.....	Reservation.	1	.02¼	.03¾	12,000
Lone Pine-Surp. Con.	1	.05½	.06¼	.....	Sullivan.	1	.08	.10½	.....
Morning Glory.	0.10	.01⅜	.02⅜	.....	Tom Thumb.	1	.16¾	.19	.....
Mountain Lion.	1	.22	.28	.....					

SALT LAKE CITY.* Jan. 4.

Name of Company.	Location.	Shares.	Par Val.	Quotations. High.	Quotations. Low.	Sales.
Ajax.	Tintic	300,000	$10	$0.64¾	$0.56	21,700
Anchor	Park City	150,000	10	.....	.....	.....
Bullion Beck	Tintic	100,000	10	.....	.....	.....
Carisa.	Tintic	500,000	1	.75	.54½	32,700
Con. Mercur.	Mercur	1,000,000	5	1.44	1.42	1,400
Creole.	Park City	150,000	1	1.00	.50	.....
Daly.	Park City	150,000	20	.....	.....	.....
Daly-West.	Park City	150,000	20	30.50	29.75	450
Dexter.	Tuscarora	200,000	5	.....	.....	.....
Eagle & B. Bell.	Tintic	250,000	1	1.00	.80	.....
Grand Central.	Tintic	250,000	1	3.75	3.00	.....
Horn Silver.	Frisco	400,000	25	2.20	2.00	.....
L. Mammoth.	Tintic	150,000	1	1.20	1.20	200
Mammoth.	Tintic	400,000	25	1.40	1.30	.....
May Day.	Tintic	400,000	.25	.68¾	.60	26,900
Ontario.	Park City	150,000	100	10.00	8.00	.....
Sacramento	Mercur	1,000,000	5	.13	.12½	2,000
Silver King	Park City	150,000	26	.....	.....	.....
Star Con.	Tintic	500,000	1	.28	.25¼	12,100
Swansea.	Tintic	100,000	5	.....	.....	.....
So. Swansea.	Tintic	300,000	1	.60	.40	.....
Showers Con.	Tintic	400,000	5	.48	.16	.....
Sunshine.	Mercur	250,000	10	.17	.17	500
Tetro	Tintic	500,000	5	.16	.14	5,700
Tesora	Tintic	400,000	1	.....	.....	.....
U. Sunbeam.	Tintic	150,000	1	.46	.30	.....
Uncle Sam.	Tintic	500,000	1	.79½	.78¼	18,600
West Mng. Glory	Tintic	500,000	.10	.04¾	.04½	3,000
Victor	Tintic	500,000	1	.47	.44½	500
Yankee Con.	Tintic	500,000	1	3.79	3.40	800
Ben Butler.	Bingham	500,000	1	.15½	.14¾	9,500
Boss Tweed.	Tintic	250,000	1	.63	.56	.....
California.	Park City	300,000	1	.78	.68½	53,600
Century	Park Valley	150,000	1	.70	.34	26,200

*By our Special Correspondent. Total sales, 253,345 shares.

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.

Name of Company.	par val	Dec. 28. H.	Dec. 28. L.	Dec. 30. H.	Dec. 30. L.	Dec. 31. H.	Dec. 31. L.	*Jan. 1. H.	*Jan. 1. L.	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Sales
Acacia	$1	.12⅜	.11⅝	.12¼	.11½	.12⅜	.12			.13	.12½	.14	.12½	2,000
Alamo	1	.14	.12⅞	.14	.12⅞	.14	.12⅞			.13¾	.12⅞	.13¾	.12⅞	
Am. Con	1	.04½	.03	.04½	.03	.04¼	.03½			.04½	.04	.04		
Anaconda	1	.26½		.20⅝		.26½				.26⅝		.26⅝		1,000
Anchor	1	.02		.02		.02				.02		.02		
Antelope	1			.01¼		.01¼								
Aola	1	.03¼	.03	.03⅜	.03½	.03⅜	.03¼			.03¼	.03½	.03¼	.03	2,000
Argentum Jr	1	.08	.06¾	.08	.06	.07½				.08	.06	.08	.06½	1,000
Banner	1	.01¼		.01¼		.01¼				.01¼	.01	.01⅜	.01½	1,000
Battle Mt. C.	1	.17	.15¼	.16⅝	.15¼	.16¼	.15¼			.16⅛	.15⅛	.16¼	.15	2,000
Black Bell	1	.09	.08	.09	.08	.08¾	.08¼			.08¼	.08	.08		1,000
Blue Bell	1	.12	.10							.10¼	.09⅞	.10¼	.09	6,000
Buckhorn	1	.02¼	.01⅞	.02⅛		.04	.02⅛			.02⅛	.02¼	.02½	.02	6,000
But'fly Ter	1	.20	.17	.20	.17	.20	.17			.20	.17	.20	.17	700
Cadillac	1	.01¾		.01⅜		.01¾				.02		.01¼		
Cent'l Con	1	.06		.06½	.06	.06				.06⅛	.06	.06¾		2,000
Champion	1	.03¾	.03½	.03¼	.03½	.03½				.03¼	.03½	.03¼	.03½	2,000
Chicolo	1	.01		.01⅜	.01	.01				.01⅛	.01	.01⅜	.01⅛	
C. K. & N	1	.03⅜	.03½	.03¼	.03⅜	.03¼	.03⅜			.03⅛	.03⅜	.03½	.03⅜	39,000
C. C. Colum	1													
C. C. G. Ext	1	.06¼		.06½	.06	.08	.05			.06		.06		1,500
C. C. & Mn	1	.05	.04⅞	.05	.04¾	.05	.04⅞			.04⅞	.04¾	.05	.04⅝	4,000
Cr'de & C. C.	1	.03½		.04	.03½	.06	.03⅝			.03½		.03		
C. C. Con	1	.10¼	.10	.12⅜	.12	.10½	.10¼			.11⅛	.10⅞	.11¼	.11	30,000
Dante	1	.04⅞	.04½	.05	.04⅝	.04⅞	.04½			.05	.04½	.05⅛	.04⅞	3,000
Dr. Jack Pot	1	.44⅛	.43¾	.44	.43	.43¼	.43			.44½	.43½	.43⅝	.42½	19,750
Eclipse	1													
Elkton, Con	1	1.27	1.26½	1.28¾	1.27	1.26½	1.26			1.20	1.18	1.16	1.15½	66,502
El Paso, G	1	.57⅞	.57½	.58½	.58¼	.58⅛	.58½			.55⅛	.55¼	.56⅜	.56	61,150
Fanny Rawlings	1	.14		.14		.14				.14		.14		
Findley	1	.12⅛	.11¾	.10	.09¾	.10⅜	.10⅛			.12	.11⅞	.12	.11⅞	200100
Gold Dollar	1	.09¾	.09¼	.08⅞	.08	.09	.08¼			.09	.07¾	.08¼	.08	6,500
Gold Cycle	1	.62	.61	.62	.61	.61⅞	.61			.62	.61½	.63½	.63	13,500
Gold Fleece	1	.40	.35	.40		.42	.40			.45	.41½	.48	.45	8,300
Hayden, G	1													
Ingham, Con	½													
Ironclad	1	.06	.05	.05⅛	.05	.05½	.05			.05⅛	.04⅜	.05¼	.04⅞	5,000
Isabella	1	.35	.34¾	.34		.33½	.33			.32	.31	.31½	.31	58,400
Jack Pot	1	.38	.33	.33		.36	.33			.36	.32	.35	.32	
Josephine	1													
Key West	1	.01¼	.01	.01¼		.01¼				.01¼		.01¼		
Lexington	1	.05¾	.05½	.05¼	.05⅝	.05¾	.05½			.06	.05⅜	.06	.05⅝	1,000
Magnet, R	1	.02	.01½	.01⅞	.01½	.02	.01⅝			.01¾	.01½	.02	.01½	5,000
Margaret	1	.01½		.01⅜		.01½				.01⅝	.01¼			
Margery	1													
Midway	1	.03⅜	.03⅜	.03¾	.03¼	.03¼				.03¼		.03⅞	.03¼	
M. J. T	1	.01¼		.01¼		.01¼						.01¼	.01	
Mobile	1	.01⅜	.01½	.02		.01¾	.01⅜			.01¾	.01¾	.01¾	.01½	
Moll Dwyer	1	.02⅛	.02	.02¼	.01¾	.02¼	.02½			.02⅛	.01⅞			4,000
Mol. Gibson	1	.17½	.15½	.16		.16				.15½		.16		1,000
Monarch	1	.02½	.02	.02½	.02	.02⅜	.02			.02		.02¼	.02	
Montreal	1											.02¼		
Moon A'c'r	1			.22	.20	.20				.21	.19	.21	.19½	2,000
Morn'g Star	1	.03⅝	.03⅜	.03⅜	.03½	.03⅜	.03½			.03⅝	.03½	.03⅜	.03¼	1,000
National	1	.02⅜	.02¼	.02⅝	.02¼	.02⅜	.02⅜			.02¼	.02⅛	.02¼	.02	10,000
Nellie, V	1	.04⅜	.04	.04⅜	.04¼	.04⅜	.04⅝			.04⅛	.04	.04	.03⅞	7,000
New Haven	1	.04⅜	.04	.04¼	.03⅞	.04¼	.04			.04⅛	.04	.04⅛	.04	1,000
Olive Branch	1	.02¼	.02⅛	.02¼	.02⅛	.02¼	.02			.02⅛		.02¼	.02	4,000
Oriole	1	.02		.01⅞	.01½	.02	.01½			.02	.01½	.02	.01½	
Orphan	1													
Pelican	1													
Pharmacist	1	.05	.04½	.06	.05⅛	.06	.05½			.06	.05	.05½	.05¼	
Pilgrim	1			.04¼		.04								
Pinnacle	1	.09				.09	.07			.08¼		.08	.06	
Pointer	1	.03¼	.03	.03½	.03	.03¼	.03			.03¼		.03		4,000
Portland	1	2.90	2.77	2.80	2.75	2.80	2.75			2.80	2.75	2.80	2.75	3,100
Prince Alb	1	.03½		.04	.03½	.03½				.03¾	.03½	.03⅜	.03½	500
Princess	1	.02½		.02¼		.02⅛				.02½		.03	.02¾	
Progress	1	.04	.03½	.04	.03⅝	.04	.03⅝			.03⅝	.03½	.04	.03½	
Republic	1	.03¾	.03	.03⅝	.03¼	.03¾	.03½			.04	.03¼	.03½		3,000
Rob. Burns	1	.01½								.03		.02		
Rose Maud	1	.05¼		.05¼	.05	.05¼	.05⅛			.05¼	.05	.05⅜	.05	9,000
Rose Nicol	1	.04⅞	.04	.05	.04⅛	.05	.04⅜			.04⅛	.04	.05	.04	
Silver Gold	1													
Uncle Sam	1	.02⅛		.02¼	.02	.02¾	.02			.02¼		.02¼		1,000
Vindicator	1	1.24	1.19	1.24	1.21	1.21½	1.20			1.24	1.22	1.24	1.20	
Va. M	1	.04½		.04½		.04½								
Work	1	.09⅛	.09	.09⅝	.09⅛	.09½	.09¼			.09		.99		

Total sales 609,002 shares. *Holiday.

Colorado Springs (*By Telegraph.*)

Name of Company.	par val	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 6. H.	Jan. 6. L.	Jan. 7. H.	Jan. 7. L.	Jan. 8. H.	Jan. 8. L.
Acacia	$1	.13	.11½	.14	.12⅜	.14	.12⅜	.13½	.12⅛	.12⅛	.12¼	.12½	.12
Alamo	1	.13¾	.12⅞	.13¼	.12⅝	.13⅝	.12⅞	.13⅞	.12⅞	.13¼	.12⅞	.13¾	.12⅝
Anaconda	1	.28	.26⅜	.28	.26⅜	.28	.26¼	.28	.26½	.28	.26⅛	.30	.27⅛
Argentum	1	.08	.06	.08	.06½	.08	.06¾	.08	.06	.08	.06⅜	.07	.06⅞
Battle Mt	1	.16⅛	.15⅜	.16¼	.15	.16	.15⅜	.16	.15	.16	.15	.16	.15⅛
Butterfly Ter	1	.20	.17	.20	.17	.20	.17	.20	.17	.20	.17	.20	.17½
Cripple Creek Con	1	.11⅛	.10⅞	.11¼	.11	.11¼	.11	.10⅛	.10⅛	.10	.09¾	.09⅝	.09
Dr. Jack Pot	1	.44⅛	.43⅛	.43⅝	.42½	.43	.42½	.40¼	.40	.40⅛	.40¼	.04½	.04
El Paso	1	.55½	.55¼	.56⅜	.56	.58⅛	.57¾	.57⅛	.57	.57⅜	.57¼	.59	.58¾
Elkton, Con	1	1.25	1.18	1.16	1.15½	1.18⅛	1.18¼	1.16⅛	1.16	1.16	1.15½	1.17⅛	1.16½
Fanny Rawlings	1	.14	.11	.14	.11	.14	.11	.15	.11	.15	.11	.15	.11
Findlay	1	.12	.11⅞	.12	.11⅞	.12	.11⅞	.12	.11⅞	.12	.11⅞	.12	.11⅞
Gold Dollar	1	.09	.07¾	.08¼	.08	.08⅛	.08	.08	.07½	.08¼	.07½	.08	.07⅜
Gold King	1	.60	.40	.45	.40	.55	.40	.55	.40	.60	.40	.60	.40
Golden Cycle	1	.62	.61½	.63½	.63	.64⅛	.63½	.66¼	.66	.68	.66⅜	.68	.67
Golden Fleece	1	.45	.41½	.48	.45	.48	.46½	.55	.50	.54	.51	.58	.54
Hart	1	.06	.04	.06	.04	.06	.04	.06	.04	.07	.04	.06	.04
Ingham, Con	1												
Isabella	1	.32	.31	.35	.32	.31⅞	.31¾	.31½	.31	.31¼	.31	.31¼	.30
Jack Pot	1	.36	.32	.35	.32	.35	.32	.35	.30	.35	.32	.36	.33
Keystone	1	.09	.08¼	.08¼	.07⅝	.08	.07¾	.09	.07½	.08¼	.07½	.08¼	.07½
Last Dollar	1	.55	.45	.56	.45	.61	.45	.55	.45	.59	.50	.47	.41
Lexington	1	.06	.05⅝	.06	.05⅝	.06	.05⅝	.06	.05⅝	.05¾	.05⅝	.05¾	.05⅝
Mollie Gibson	1	.16½	.15½	.18	.16	.20	.16	.19	.16	.17½	.16	.17	.16
Moon Anchor	1	.21	.19	.21	.19½	.21	.19½	.20½	.20	.24	.20	.22	.20
Nugget	1	.14	.13	.13⅜	.13	.14	.13½						
Orphan	1												
Pharmacist	1	.06	.05	.05⅜	.05¼	.05¾	.05¼	.05⅜	.04⅞	.05¼	.04¼	.05⅜	.04⅞
Pinnacle	1	.08¼	.07	.08¼	.07	.07⅞	.07	.07¼	.07	.07⅝	.07	.07⅜	.07
Portland	1	2.80	2.75	2.80	2.75	2.80	2.75	2.77	2.70	2.76	2.73	2.76	2.74
Vindicator, Con	1	1.24	1.22	1.25	1.20	1.23⅞	1.22	1.24	1.23¾	1.23¾	1.22	1.22½	1.20
Work	1	.09½	.09	.09½	.09	.09½	.09¼	.09½	.09	.09¾	.09½	.09¾	.09½

MONTREAL, CANADA.

Jan. 3.

Name of Company.	par val	H.	L.	Sales	Nome of Company.	par val	H.	L.	Sales
Big Three	$1	.01¼			Montreal-London	$0.24	.02½		
California	1	.04½	.04		Noble Five	1			
Can. Gold Fields	0.10				Novelty	1			
Deer Trail Con	1	.03½	.02¼		North Star		.27	.26	
Evening Star	1	.04	.02		Payne	1	.15	.14½	
Golden Star	1	.04¼	.03		Rambler-Cariboo	1			
Gold Hills Dev	1	.01⅜			Republic Con	1			
Knob Hill	1				Slocan-Sovereign	1	.02¼		
Monte Christo	1	.02			Virtue	1	.23	.21½	
Montreal, G. F	1	.02½			War Eagle	1			

LONDON.

Dec. 23.

Name and Country of Company	Author-ized Capital.	Par value.	Last dividend. Amt.	Last dividend. Date	Quotations. Buyers.	Quotations. Sellers.
	£	£. s. d.	s. d.		£. s. d.	£. s. d.
Alasks-Treadwell, g., Alaska	1,000,000	5 0 0	1 6	Oct,, 1901	4 0 0	4 10 0
Anaconda, c. s., Montana	6,000,000	5 0 0	8 2	Oct., 1901	5 13 9	5 16 3
Copiapo, c., Chile	200,000	2 0 0	2 6	Dec., 1901	2 2 6	2 7 6
De Lamar, g. s., Idaho	400,000	1 0 0	2 0	Dec., 1901	5 0 0	6 0 0
El Oro, g., Mexico	1,000,000	1 0 0	1 3	July, 1901	1 6 3	1 8 9
Enterprise, g., British Col	200,000	1 0 0			13 9	16 3
Frontino & Bolivia, g., Columbia	140,000	1 0 0	3 0	July, 1901	1 0 0	1 2 6
Hall, Mg. & Sm., c. s., British Col	325,000	1 0 0			8 6	9 6
Le Roi, g., British Col	1,000,000	5 0 0	5 0	Nov., 1899	4 6 3	4 8 9
Le Roi No. 2, g., British Col	120,000	5 0 0	5 0	July, 1901	2 17 6	3 0 0
Montana, g. s., Montana	660,000	1 0 0	6	April, 1899	3 9	4 3
Mountain Copper, California	1,250,000	5 0 0	5 0	Oct., 1901	3 12 6	3 17 6
Stratton's Independence, Colorado	1,100,000	1 0 0	1 0	Oct., 1901	10 0	12 6
St. John del Rev., g., Brazil	600,000	1 0 0	1 0	June, 1901	17 6	18 9
Utah Con., g., (High. Boy), Utah	300,000	1 0 0	5 0	May, 1901	4 0 0	4 10 0
Ymir, g., British Col	200,000	1 0 0	1 0	Nov., 1901	2 3 9	2 6 3
European:						
Linares, l., Spain	45,000	3 0 0	7 0	March, 1901	2 10 0	3 10 0
Mason & Barry, c., sul., Port'g'l	420,000	1 0 0	12 6	May, 1901	3 5 0	3 10 0
*Rio Tinto, c., Spain	1,625,000	5 0 0	£1 15s	Nov., 1901	39 17 6	40 2 6
*Rio Tinto, pref., Spain	1,625,000	5 0 0	2s 6d	Nov., 1901	5 17 6	6 2 6
Tharsis, c., Spain	1,250,000	2 0 0	12 0	May, 1900	5 2 6	5 7 6
Australia and New Zealand:						
Assoc. Gold Mines, W Australia	500,000	1 0 0	1 6	Jan., 1900	2 7 6	2 13 0
Br'ken Hill Pr'p., s., N. S. Wales	384,000	8 0	1 0	Nov., 1901	1 11 6	1 12 0
*Great Bo'd'r Pr'p., W. Australia	175,000	2 0	6	Jan., 1902	1 0 6	1 1 0
Hannan's Brownhill, g., W. Australia	140,000	1 0 0	7 6	Oct., 1900	3 1 3	3 3 9
Ivanhoe Gold C'p., W. Australia	1,000,000	5 0 0	4 0	Oct., 1901	7 8 9	7 11 3
Kalgurlie, g., W. Australia	120,000	1 0 0	rts.	Oct., 1899	3 11 3	3 13 9
Lake View Cons., g., W. Australia	250,000	1 0 0	5 0	Oct., 1901	6 6 3	6 8 9
*Mt. Lyell M. E. R. I., c., Tasmania	900,000	3 0 0	4 0	Jan., 1902	3 16 3	3 18 9
Mt. Morgan, g., Queensland	1,000,000	1 0 0	6	Dec., 1901	4 3 9	4 6 3
Waihi, g., New Zealand	330,000	1 0 0	2 6	Dec., 1901	5 8 9	5 11 3
Indian:						
Champion Reef, g., Colar Fields	234,169	10 0	7 8	Jan., 1902	5 15 0	5 17 6
Mysore Gold, Colar Fields	265,000	10 0	3 2	Nov., 1901	5 16 3	5 18 9
Nundydroog, g., Colar Fields	242,000	10 0	1 6	Nov., 1901	1 15 0	1 17 6
Ooregum, g., Colar Fields	290,000	10 0	1 6	Dec., 1901	2 7 6	2 10 0
Ooregum, pref., g., Colar Fields	240,000	10 0	1 6	Dec., 1901	2 16 3	2 18 9
African:						
British S. Africa, ch'd S. Africa	5,000,000	1 0 0	rts.	May, 1899	3 7 6	3 10 0
Cape Copper, S. Africa	600,000	2 0 0	8 0	Jan., 1902	4 5 0	4 10 0
Cape Copper, pref., S. Africa	150,000	2 0 0	8 0	Jan., 1902	4 2 6	4 7 6
City and Sub'n (New), g., Transvaal	1,360,000	4 0 0	3 0	Aug., 1899	6 15 0	6 17 6
Crown Reef, g., Transvaal	120,000	1 0 0	18 0	Nov., 1899	15 12 6	15 17 6
De Beers Con., d., Cape Colony	3,950,000	5 0 0	£1	Sept., 1901	39 8 9	39 11 3
Ferreria g., Transvaal	90,000	1 0 0	3 0	Aug., 1899	22 5 0	22 15 0
Geldenhuis Est., g. Transvaal	200,000	1 0 0	10 0	Aug., 1899	7 5 0	7 7 6
Henry Nourse, g., Transvaal	125,000	1 0 0	10 0	Aug., 1899	9 1 3	9 3 9
Jagersfontein, d., Orange F. S	1,000,000	5 0 0	6 0	Dec., 1900	22 10 0	22 15 0
Joh'n'b'g Con. Invet., S. Africa	2,750,000	1 0 0	2 0	Nov., 1899	2 13 9	2 16 3
Jubilee, g., Transvaal	50,000	1 0 0	5 0	Aug., 1899	6 7 6	6 12 6
Langlaagte Est., g., Transvaal	470,000	1 0 0	3 0	Sept. 1899	3 16 3	3 18 9
May Con., g., Transvaal	290,000	1 0 0	0 6	Aug., 1899	4 16 3	4 18 9
Meyer & Charlton, g., Transvaal	100,000	1 0 0	8 0	July, 1899	6 0 0	6 2 6
Namaqua, c., Cape Colony	200,000	2 0 0	4 0	Dec., 1901	3 15 0	4 0 0
Primrose (New), g., Transvaal	300,000	1 0 0	6 0	Aug., 1899	4 10 0	4 15 0
Rand Mines, g., S. Africa	1,795,956	5 0	15 0	Aug., 1899	11 2 6	11 3 9
Robinson, g., Transvaal	2,750,000	5 0 0	8 0	Aug., 1899	10 0 0	12 2 6
Sheba, g., Taansvaal	1,100,000	1 0 0	0 6	July, 1899	1 3 9	1 6 3
Sim. & Jack Frp., g., Transvaal	5,000,000	5 0 0	4 0	July, 1899	7 2 6	7 5 0
Wolhuter, g., Transvaal	860,000	4 0 0	2 0	Feb., 1899	4 17 6	5 0 0
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c.—Copper. d.—Diamonds. g.—Gold. l.—Lead. s.—Silver. *Ex-dividend.

PARIS.

Dec. 19.

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	1,680.00	1,630.00
" " Firminy	"	"	3,000,000	500	200.00	2,320.00	2,325.00
" " Huta-Bank	Russia	Iron and Steel		500		3,280.00	3,210.00
" " la Marine	France	Steel mfrs	20,000,000	500	65.00	1,375.00	1,365.00
Anzin	"	Coal			320.00	5,475.00	5,421.00
Boleo	Lower Cal	Copper		500	176.00	2,100.00	1,905.00
Briansk	Russia	Coal and Iron		500		378.00	363.00
Champ d'Or	S. Africa	Gold	3,375,000	25	3.75	30.00	36.00
Courrieres	France	Coal	600,000	300	90.00	2,380.00	2,320.00
Dombrowa	Russia			500	75.00	998.00	998.00
Dourges	France	"	12,000,000	500	10.00	24,700.00	24,700.00
Dynamite Centrale	"	Explosives		500	19.00	550.00	582.00
Escombrera-Bleyberg	Spain	Lead		500	50.00	760.00	731.50
Fraser River	Brit. Col'mb	Gold	250,000	25		4.00	3.50
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	94.50	94.00
Laurium	Greece	Zinc and Lead	16,300,000	500	25.00	345.00	336.00
Malfidano	Italy	Zinc	12,500,000	500	12.50	410.00	430.00
Metaux, Cie. Fran. de	France	Metal dealers	25,000,000	500	22.50	370.00	365.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	35.00	835.00	849.00
Napthe Baku	Russia	Petroleum				261.00	350.00
Napthe Nobel	"	"				499.00	499.00
" " parts	"	"				9,475.00	9,475.00
Nickel	N. Caled'nia	Nickel	10,000,000	250	20.00	494.00	487.00
Penarroya	Spain	Coal, etc		500	55.00	1,025.00	1,000.00
Rebecca	Colo'do, U. S.	Gold	5,000,000	25		1.25	1.25
Salines de l'Est	France	Salt		500	6.00	289.00	265.00
Salines du Midi	"	"		500	40.00	800.00	855.00
Vielle Montagne	Belgium	Zinc	9,000,000	30	30.00	545.00	565.00

TORONTO, ONT.

Name of Company.	par val	Dec. 30. H.	Dec. 30. L.	Dec. 31. H.	Dec. 31. L.	Jan. 2. H.	Jan. 2. L.	Jan. 3. H.	Jan. 3. L.	Jan. 4. H.	Jan. 4. L.	Jan. 6. H.	Jan. 6. L.	Sales
Ontario:														
Golden Star	1	.02		.02½		.02½		.02½		.02½		.02½		
British Columbia:														
Cariboo McK	1	.18½	.15	.20	.17½	.19	.18	.21	.18½	.23	.19	.21	.16	2,500
Center Star	1	.31½	.30	.32	.31	.35	.32½	.37	.34½	.36	.33	.37	.32½	
Crows, N. C	25	80.00	76.00	80.00	75.50	80.00	75.50	80.00	76.00	80.00	76.00	78.00	74.00	
Deer Trail	1	.02¾		.02⅞	.02½	.03	.02½	.03	.02½	.03	.02½	.03	.02	
Fairview	1	.04½	.03½	.04¾	.03½	.04¼	.03¾	.04¾	.03⅞	.04½	.03½	.04½	.03½	5,000
Morrison	1					.04	.02¾	.04	.02½	.04	.02¾	.04	.02¾	3,000
Mt. Lion	1			.28	.21	.28	.21	.28	.21	.28	.21	.28	.21½	
North Star	1	.27½	.25	.27	.25½	.29	.25	.27	.25	.26	.24	.26	.24	4,000
Payne	1	.27	.20	.26	.25	.26	.25	.27	.25	.27	.25	.26	.24	2,000
Rambler	1	.69	.63	.68	.64½	.70	.64	.70	.64	.70	.65	.70	.64	
Republic	1	.04	.03¾	.04¾	.03¾	.04¼	.03¾	.04	.03½	.04	.03¾	.04¼	.03½	1,000
Virtue	1	.28	.23	.26	.22	.26	.22	.26	.21	.28	.23	.26	.24	
War Eagle Cons	1	.11	.10	.11	.10	.11	.10			.11		.11	.09½	
Winnipeg	1	.05	.03	.05	.03	.05	.03	.05	.03	.05	.03	.05	.03	1,500
Wonderful	1	.03		.03		.03		.03		.03		.03		2,000
Develop. Co														
Can. G. F. S	1	.04	.03½	.04¼	.03¾	.04¼	.03½	.04¼	.03	.04¼	.03¼	.04¼	.03½	

Total sales, 21,000 shares.

CHEMICALS, MINERALS, RARE EARTHS, ETC. CURRENT WHOLESALE PRICES.

Abrasives—	Cust. Meas.	Price.
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF..	lb.	$0.08
Grains	"	.10
Corundum, N. C	"	.07@.10
Chester, Mass	"	.04½@.05
Barry's Bay, Ont	"	.07½@.09¼
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	"	.01½
Grains, in kegs	"	.02½
Crude, ex-ship N. Y.: Abbott (Turkey)	lg. ton	26.50@30.00
Kuluk (Turkey)	"	22.00@24.00
Naxos (Greek) h. gr	"	.26.00
Garnet, as per quality	sh. ton	25.00@35.00
Pumice Stone, Am. powd	lb.	.01@.02
Italian, powdered	"	.01½
Lump, per quality	"	.04@.40
Rottenstone, ground	"	02½@.04½
Lump, per quality	"	.06@.20
Rouge, per quality	"	.10@.30
Steel Emery, f.o.b. Pittsburg..	"	.07
Acids—		
Boracic, crystals	"	.10¾@.11
Powdered	"	.11¼@.11½
Carbonic, liquid gas	"	.12½
Chromic, crude	"	.20
Hydrofluoric, 36%	"	.06
48%	"	.05
Best		.25
Sulphurous, liquid anhy	"	.08
Alcohol—Grain	gal.	2.55
Refined wood, 95@97%	"	.60@.65
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
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—		
Carbonate, lump		.08¼@.08½
Powdered	"	.09@.09¼
Muriate, grain	"	.05⅞
Lump	"	.08⅝
Nitrate, white, pure (99%)	"	.12
Phosphate, com'l	"	.09
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, 96%	"	.12
Com'l gray	"	.07
ulphuret com'l	"	.16
Arsenic—White	"	.03 1/16@.03⅛
Red	"	.06¾@.07¼
Asphaltum—		
Ventura, Cal	sh. ton	32.00
Cuban	lb.	.01½@.03½
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—		
Carb. 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	"	.05½

Barium –	Cust. Meas.	Price
Oxide, Am. hyd. cryst	lb.	$0.02¾
Sulphate (Blanc Fixe)	"	.02
Barytes—		
Am. Crude, 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. or Ala. mines:		
First grade	lg. ton	5.50
Second grade	"	4.75
Bismuth—Subnitrate	lb.	1.40
Subcarbonate	"	1.65
Bitumen—"B"	"	.03½
"A"	"	.05
Bone Ash	"	.02¼@.02½
Borax	"	.07¼@.07½
Bromine	"	.40
Cadmium—Metallic	"	1.40
Sulphate	100 lbs.	2.00@2.50
Calcium—Acetate, gray	"	1.25
" brown	"	.85
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@.80
Best	"	1.00
Cement—		
Portland, Am., 400 lbs	bbl.	1.70@2.00
Foreign	"	1.65@2.25
"Rosendale," 300 lbs	"	.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12
White	"	.13½
Chalk—Lump, bulk	sh. ton	2.45
Ppt. per quality	lb.	.03¾@.06
Chlorine—Liquid	"	.30
Water	"	.10
Chrome Ore—		
(50% ch.) ex-ship N. Y	lg. ton	24.75
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	"	.06
Best	"	.20
Copperas	100 lbs.	.35
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
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@.13¼
Feldspar—Ground	sh. ton	8.00@9.00
Flint Pebbles—Danish, Best	lg. ton	14.75
French, Best		11.75
Fluorspar—		
Am. lump, 1st grade	sh. ton	$14.40
2d grade	"	13.90
Gravel and crushed, 1st gr	"	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		12.

Graphite—Am. f.o.b. Providence, R. I., lump	Cust. Meas. sh. ton	Price 8.00
Pulverized	"	30.00
German, som. pulv	lb.	.01¼@.01½
Best pulverized	"	.01½@.02
Ceylon, common pulv	"	.02¾@.03½
Best pulverized	"	.04@.08
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
Infusiorial 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	"	.07¾@.08
Brown	"	.06
Nitrate, com'l	"	.06½
" gran	"	.08¼
Lime—Com., abt. 250 lbs	bbl.	.80
Finishing	"	.90
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.	.75@.95
Manganese—Powdered, 70@75% binoxide	lb.	.01¼@.01½
Crude, pow'd. 75@85% binoxide	"	.01½@.02¼
85@90% binoxide	"	.02¼@.03¼
90@95% binoxide	"	.03¼@.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
Mineral Wool—		
Slag, ordinary	sh. ton	19.00
Selected	"	25.00
Rock, ordinary	"	32.00
Selected	"	40.00
Nickel—Oxide. No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.20@.21
Oils—Black, reduced 29 gr.:		
25@30, cold test	gal.	.09¾@.10¼
15, cold test	"	.10¾@.11¼
Zero	"	.11¾@.12¾
Summer	"	.09¼@.09¾
Cylinder, dark steam ref	"	.08¾@.10¾
Dark, filtered	"	.11¼@.15¾
Light filtered	"	.14¾@.17¾
Extra cold test	"	.21¾@.26¾
Gasoline, 86°@90°	"	.14@.19
Naphtha, crude, 68°@72°	bbl.	9.05
"Stove"	gal.	.12
Linseed, domestic raw	"	.59@.60
Boiled	"	.62
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	"	.04½@.05¼
English flake	"	.08¼
Glassmakers'	"	.07⅞@.08¼

Paints and Colors—	Cust. Meas.	Price
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	"	.08@.08¼
Foreign, as to make	"	.08¼@.11⅛
Paris green, pure, bulk	"	.12½
Red lead, American	"	.05½
Foreign	"	.07½@.08¼
Turpentine, spirits	gal.	.37¾
White lead, Am., dry	lb.	.04¼@.04½
American, in oil	"	.05¼@.05¾
Foreign, in oil	"	.07¼@.09⅛
Zinc, white, Am., ex dry	"	.04⅜@.04⅞
American, red seal	"	.06½
Green seal	"	.07
Foreign, red seal, dry	"	.05¾@.08
Green seal, dry	"	.06¾@.09
Potash—		
Caustic, ordinary	"	.04⅞@.05
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst	"	.08¼
Powdered or gran	"	.14
Bichromate, Am	"	.08¼
Scotch	"	.08¼@.09
Carbonate, hydrated	"	.04@.04¼
Calcined	"	.03½@.03¾
Chromate	"	.35
Cyanide (98@99%)	"	.24@.25
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.	.12¼@.12¾
Prussiate, yellow	"	.13¼@.13⅝
Red	"	.37@.37¼
Sulphate, 90%	100 lbs.	2.11
96%	"	2.14
Sylvinit	unit	.39½
Quartz—(See Silica).		
Salt—N. Y. com. fine	sh. ton	2.00
N. Y. agricultural	"	1.50
Saltpetre—Crude	100 lbs.	3.50@3.55
Refined	"	4.37½@4.62½
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
Silver—Chloride	oz.	.65
Nitrate	"	38½
Oxide	"	85.@1.10
Sodium—		
Bichromate	lb.	.06¼
Chlorate, com'l		.08⅛@.08¾
Hyposulphite, Am	100 lbs.	1.60@1.65
German	"	1.70@1.90
Peroxide	lb.	.45
Phosphate	"	.02½
Prussiate	"	.10½@.11
Silicate, conc	"	.05
Com'l	"	.01
Sulphate, com'l	100 lb.	.77½
Sulphide	lb.	.01¼
Sulphite crystals	"	.02½
Sulphur—Roll	100 lbs.	1.85
Flour	"	1.90
Flowers, sublimed	"	2.15
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous, best	"	10.20
French, best	100 lbs.	1.25
Italian, best	"	1.62½
Tar—Regular	bbl.	1.90
Oil barrels	"	3.80
Tin—Crystals	lb.	.20@21½
Oxide	"	.42
Uranium—Oxide	"	2.25@3.00
Zinc—Metallic, ch. pure	"	.07@.09⅝
Carbonate	"	.15
Chloride	"	.05
Dust	"	.05⅝@.05¾
Sulphate	"	.02⅛@.02¾

THE RARE EARTHS.

	Cust. Meas.	Price
Boron—Nitrate	lb.	$1.50
Calcium—Tungstate (Scheelite)	"	.80
Cerium—Nitrate	"	11.00
Didymium—Nitrate	"	35.00
Erbium—Nitrate	"	40.00
Glucinum—Nitrate	"	20.00
Lanthanum—Nitrate	"	30.00
Lithium—Nitrate	oz.	.80
Strontium—Nitrate	lb.	06⅞@07
Thorium—Nitrate 49@50%	"	5.00
Uranium—Nitrate	oz.	.25
Yttrium—Nitrate	lb.	40.00
Zirconium—Nitrate	"	8.00

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