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CONTENTS.

Australia, so richly endowed with mineral wealth, has added another precious metal to the list of her productions on an industrial scale. As in this country, grains of platinum have been found from time to time in prospecting for alluvial gold in various parts of Australia, and there is on record a solitary nugget of 268 grains, but no locality where platinum could be produced commercially. Now, however, about 1,200 ounces of crude platinum have been sent away from the Fifield District in New South Wales, and the work is still being carried on successfully. On another page we give an interesting report on the occurrence of platinum from the Records of the Geological Survey of New South Wales, recently received.

The continuance of the strike at Leadville must very shortly affect the smelting interests in Colorado, as without the regular supply of Leadville fluxing ores the various smelting companies cannot operate on anything like their usual scale. This would in turn affect the producers of siliceous and refractory ores, as without the means of smelting these there would be no market for them. A reduction in the tonnage of base bullion produced would very soon show its effects in the output of silver and lead by the refining companies, to such an extent in the case of the former that there are already whispers of a possible scarcity of silver for shipment abroad, and consequently a possible contingency of slightly higher prices. At present it looks as if all the predictions about the largely increased production of silver and gold in Colorado during the current year were to be nullified by the ably directed efforts of the labor leaders.

We referred in our issue of last week to a new process of electrical hardening, or perhaps more properly speaking, tempering of steel, invented by M. Taux. The results exhibited recently before a Committee of Engineers of Strasburg, specially appointed to investigate the matter, seem to make it quite worth the while of our intelligent toolmakers and the manufacturers of tool steel who are always in the van of improvements, and ready to take advantage of the work and experience of others, to investigate the subject further. It is stated that before this committee a drill hardened by electricity pierced a shell twice as quick as a drill of the best steel hardened in the ordinary way. The drill was closely examined afterward by means of a strong microscope, and not the least injury could be discovered. An electrically hardened circular saw cut iron bars with surprising ease. With a cold chisel similarly treated a steel bar 9½ in. was cut through, and the operation was repeated five times on the same bar. Then a cast-steel plate, ¼ in. thick, was cut with the chisel, the edge of which showed neither a fissure nor any other alteration afterward. An electrically hardened table knife cut iron wire of ⅛ in. diameter just as easy as a cotton string. The process is said to consist in the hardening of the red-hot steel objects in a bath traversed by an electric current.

The Robinson gold mine in the Transvaal has this year put itself far in advance of any other mine in that country, its reported output having been increased from 12,281 ounces in January to 20,343 ounces in June; and it is claimed that this rate can be maintained, if not increased, during the remainder of the year. The Robinson has always held a prominent place among the Witwatersrand mines both on account of its large output of ore and the high grade. Its reports show an average of about one ounce to the ton, while the general average of the mines is not far from 0·6 ounce. The mine, however, has a record for good work and economical management, its costs being among the lowest in the district. The increase in production this year is due to the bringing into work of new machinery, largely increasing the milling capacity.

Taking the product at the usual value of Witwatersrand bullion, the gross earnings of the mine for June amounted to about $343,000 and for the half-year ending with June to a total of $1,670,000. The Ferreira is the mine approaching the Robinson most nearly at present, but its June output was 6,925 ounces less, though its mill worked over 5,000 tons more ore than the Robinson.

Surplus Coal Supply.

Many have been the croakings as to the exhaustion of the coal measures in England and Scotland, and the consequent decadence of the commercial and manufacturing pre-eminence of the British Nation. Periodically we have a carefully elaborated calculation by some eminent scientist or statistician, showing and with apparently conclusive proof that in Great Britain coal will attain such and such a price at a stated future date and will consequently become only an article of luxury for the rich, a few years prior to the entire cessation of coal mining, owing to the absolnte exhaustion of the available supplies.

Even in Great Britain the period named by the most pessimistic of cal

culators is so far distant that the subject is really relegated to the realms of theoretical discussion, as long before that fatal date arrives the consumption of coal may be on a totally different and greatly reduced scale which would utterly and in the right direction "upset the apple cart" of the scientific statisticians; also even in England new coal fields may be developed not taken into account at the present time.

In this country the same conditions exist to a certain extent and predictions have been made as to when the exhaustion of certain districts will take place, but the very spectre even of apprehension as to the possibility of coal exhaustion has not raised his head. On another page in this issue, an interesting paper by Mr. W. Pearce, shows the practically unexhaustible supplies in the Northwest, which for centuries will suffice for a consumption equal to the present one of the whole of the United States, and for many times as long if simply drawn upon for the growing Northwest and West, supposing that all present sources of supply were exhausted.

Then, again, for the East Coast and Central States, were they compelled to look elsewhere for coal supplies, the able report by Mr. E. Gilpin, Jr., Canadian Inspector of Mines on the undeveloped coalfields of Nova Scotia, is quite sufficiently reassuring.

The western shore of Cape Breton alone seems to hold in reserve an enormous quantity of hitherto unworked coal of good quality, and it is important to bear in mind what Mr. Gilpin points out, viz: that all things being considered, a seam of coal about six feet thick can be worked as economically as a larger one and more cheaply than a smaller one. In almost all of the undeveloped portions of the Nova Scotian coal measures there are seams of about this thickness. Mr. Gilpin concludes as follows:

"As this paper is written with as much reference to the future as to the present status of the coal industry, it is fair to remember that coal seams with a much less thickness than 6 ft. often acquire more than a local value. From the recently published report of the investigation of the British Iron Trade Association into the conditions affecting the iron industries of Belgium and Germany, a reference can be given directly bearing on this point. The official reports of the Belgian Government show that the average depth of the Belgian coal pits was 1,400 ft., and the average thickness of the worked seam was 2.08 ft.

"In Germany, the same report states, the official returns show the average thickness of the worked seams to be 3·28 ft. It is plain from these figures that in these countries a large number of very thin seams must be worked to give so low an average thickness. Connected with this point the figures given by the report as to the cost of the coal at the pit head in these countries is interesting. The cost is in Belgian about $1.75, in Germany about $1.60 and in England about $1.45 per ton."

Mineral Resources of Madagascar.

Since the French protectorate has developed into an actual annexation of the island, with the avowed determination to hold it in perpetuity, the eyes of enterprising prospectors and mining men have been turned longingly toward Madagascar, the land of unknown and indefinite possibilities. Certainly there is plenty of room there for the finding of a good many things. Madagascar is not an ordinary, everyday sort of island, but is entitled to rank as a young continent, on its showing of 1,000 miles of length, extreme breadth of 350 and average breadth of 240 miles, with an area of about 240,000 square miles. This vast extent of territory has been explored only in the most superficial and imperfect manner, and by adventurous travelers, or traders, or military men and officials, but not by people keeping a lookout for "float" and "indications," and still less by any systematic surveys. The very fact of its being so little known would be an alluring attraction to prospectors, who always want a clear field.

Still it has long been known that Madagascar contains deposits of copper, iron and manganese ores, graphite, rock salt (already on important article of local commerce), niter, pyrites for making sulphuric acid, and some minor minerals. Coal-beds of excellent quality have been reported. Perhaps most important of all are the gold placers, which, according to recent cable advices, exist in many localities. The granitic structure of the mountains and the large bodies of quartz naturally point toward the probability of gold occurrences; but the reports indicate that the primary veins which must have fed the placers have not been discovered, and as to the size and richness of the placers themselves we have no definite information.

Everything goes to show that Madagascar is an exceptionally good field for prospecting, so far as the natural conditions are concerned. The climate of the interior plateau is good, and in the mountains (9,000 to 10,000 feet) even cool, though on the coast it is hot. There is plenty of timber and water, but transportation is thus far in a primitive stage.

But in spite of the self-evident need of a liberal, progressive regime and the encouragement of everything tending to develop and utilize the latent resources of their great acquisition, the statesmen directing the colonial policy of France have taken a decided stand against the intrusion of any foreigners—any other foreigners, that is—into Madagascar, the idea being, of course, to retain all possible advantages for their own countrymen. In the mining field it is hardly likely that French possessions would suffer from the entry of a few enterprising prospectors and capitalists of the Anglo-Saxon race. French colonization has not been so eminently successful elsewhere as to lead to the belief that it is self-sufficient and needs no stimulus from without. The home government and the colonial officials, however, have apparently set their minds on exclusiveness and intend to go it alone. For the time being, therefore, there is no encouragement for Americans to venture into Madagascar, otherwise so inviting.

The Mining Machinery and Supply Trade.

This is the busy season in the precious metal mining districts of northern latitude and high altitude, and, notwithstanding the continued dullness in the general business of the country and the damaging effects of a heated political campaign, it may be said that the mines are fairly active. It is also the time of greatest activity in the construction and erection of mining and metallurgical plants, for in many of the camps which are snowbound in the winter months transportation of machinery, timber, etc., is difficult or impossible until late in the spring, so that the delays incidental to road building, site grading, saw milling and other preliminary operations carry the actual installation of plant along into the late summer, fall and early winter months. This year a very large number of small and medium hoisting and pumping equipments are being set up or are still to be contracted for, while several very important metallurgical plants, especially in the line of gold amalgamating, cyaniding and chlorination works, are to be added to handle the increased tonnage from the many new gold mines which have reached a more or less productive stage. In connection with the heavy machinery of the mines and mills there is the usual corresponding demand for the numerous accessories and supplies going to make up a complete outfit.

The foundries and machine shops have been and are quite active, with a large margin of time ahead for filling orders before next winter, and then they will be engaged in preparing to increase stocks of standard patterns to meet the expected calls for the usual spring trade.

Taken as a whole, the position of the makers of and dealers in mining machinery and supplies, for the Western mines especially, is enviable as compared with that of the suppliers in many other branches of the manufacturing industry, and the more progressive men are taking advantage of it to push their trade.

In times of general business depression dealers and manufacturers seem to incline to one or the other of two opposite extremes of policy. We are referring now to all those who are engaged in the construction and handling of mechanical goods and supplies, and not merely to those interested especially or exclusively in the mining trade. Some of the ultra-conservative ones think it best to draw in their horns and cut down expenses as closely as possible, preferring to wait for a favorable turn in the general business situation. Some of them even curtail the only means of holding or extending their business, and call in their traveling men, close their branch agencies, and shut down their advertising, just at the very time when these instrumentalities are most needed. The result is that they drop behind and out of sight in the race, and on the revival of business are in no shape to compete with their more far-sighted rivals. The other policy is the one which wins in the long run. Those who keep their manufactures constantly before the attention of the prospective buyers, who seize upon every opportunity to avail themselves of whatever contracts are at the time open, and who look far enough into the future to plan out for extended operations at the earliest moment the conditions allow, will be in an advantageous position when more orders come in spontaneously, and meanwhile they get their full share, and more of it, of what business is going. Further than this, energy and push on the part of the wide-awake manufacturers and sellers undoubtedly have a stimulating effect upon timid buyers, so that the general course of trade is held from sagging so low as it otherwise might.

All this applies to the makers of machinery, etc., designed especially for the iron ore, iron and steel, coal and other industries which have not yet recovered from the set-back of three years ago, but which are bound to resume their normal status sooner or later. But it applies with far more force to the concerns dependent upon the flourishing gold-producing industry. In this particular field it is noticeable that very many foundries and shops which have hitherto missed their opportunity are endeavoring to seize upon the existing favorable conditions and work up a fair share of this trade. Gold mining has lately been more fortunate than almost any other occupation, and there is plenty of money ready to put into development and equipment of the mines, since it is being recognized that it is not a question of a mere spasmodic boom, with speculative flurries here and there, but that there is a substantial basis for a permanent and healthy growth. The advent of the new competitors will cause the older establishments to bestir themselves.

NEW PUBLICATIONS.

ELECTRIC LIGHTING. A PRACTICAL EXPOSITION OF THE ART. By Francis B. Crocker, E. M., Ph. D. New York, 1896. D. Van Nostrand Company. Vol. I., 450 pp. Price $3.

Professor Crocker, of Columbia University and Vice President of the American Institute of Electrical Engineers, has undertaken to cover the entire field of electric lighting from an engineering as well as practical standpoint. The first volume of this work has just appeared, and the subject will be completed in a second volume. The author has found a demand for a work which covers comprehensively the subject as a continuous whole rather than separate treatises on its component parts. In the present book an elementary knowledge by the reader of the simple principles of electricity and magnetism is presupposed, as such may be obtained from numerous books, and their exposition here would be repetition. The first volume relates in general to the generating plant and the apparatus used is so similar to that used in power stations or even metallurgical plants, that the information is applicable to them also. The second volume will be devoted to the apparatus for distributing the electric energy.

The author has produced a most comprehensive work, and one which will be duly appreciated not only by engineers and students, but by station superintendents and practical men, as well as those interested in the subject from a business standpoint only. The subject is taken up at the very foundation, and nearly half the present volume is devoted to steam boilers, steam engines, gas engines, water wheels and wind-mills as the sources of electrical energy, with a discussion of the various types of each in regard to their adaptability for this purpose. The entire apparatus of a station is considered, including storage batteries, switch boards, instruments and lightning arresters. The selection of location of plant, design of building and arrangement of apparatus are also discussed. The author cites numerous references to other authorities where a subject of minor importance is touched upon, and thus enables the student to follow up any such matters readily. The book is illustrated, and another feature which adds greatly to its value is its very complete index. The second volume of this work will be awaited with interest.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested. Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

Treatment of Asphalt Rock.

SIR: It would be a great favor if any of the readers of the ENGINEERING AND MINING JOURNAL who have had occasion to look into the methods of utilizing asphalt limestone, or extracting the asphaltum from the limestone matrix, would give me the benefit of their experience through your valuable columns. W. J. W.

Santa Fe Copper Company.

SIR: The undersigned, unfortunately a stockholder of the Santa Fe Copper Company, desires to obtain some information about the present status of the reorganization, which has been promised to be laid before the stockholders at any time during the past few years. What has become of the company's property? L.

NEW YORK, August 1, 1896.

Dry Concentration of Manganese Ores.

SIR: We have an immense deposit of manganese ore associated with conglomerate rock, which, after being finely crushed, is mostly lost in wet concentration; and I write to ask concerning dry concentrators suitable for the purpose. Will you, or some of your readers who have had experience in dry concentration, kindly enlighten me? F. H. S.

Boston Mining Stocks.

SIR: With the exception of the Boston and Montana copper stock there was hardly any business done during last week in the Bigelow Lewisohn mining stocks on the Boston Exchange. Is this not phenomenal? Will you or your Boston correspondent explain and give the reasons for such stagnation? Can it be that the public does not put any faith in the semi-official gossip any more? Of course, if we consider the collapse of Merced, of Butte and Boston, of Old Dominion and others, notwithstanding the grand reports which were given out "privately" by Boston and New York interested parties during the last 12 months, reports which were found out to be absolutely untrue, it can hardly be assumed that the public is eager to invest again in these securities. The lambs pocketed their loss, and the *bona fide* holders hold fast to their stock, waiting for another promised boom.

After the glowing statements last fall of strikes in the Merced, of $40 and $15 ore, it turned out that the ore ran $2.50 on an average and even less, and that a further sinking of 800 ft. to a 1,200-ft. level might be necessary, with a chance of striking nothing of value. Where is the money to come from to do this work, and where is the guarantee of success?

The Old Dominion stock is lower than before the strike, and there is no doubt that the statement of 90 million lbs. of copper in sight may be safely discounted to 10 or 15 millions lbs. according to a report on the mine from one of your trusted correspondents.

Nothing has been heard whether the assessment on the Butte & Boston has been paid by the stockholders on record. Nobody seems to sustain the market. The Tamarack, the grand "piece de resistance" of the "Bigelow Lewisohn combination," dropped six dollars a share on a recent small sale of fifteen shares! *Sic transit gloria mundi.* N.

NEW YORK, August 5, 1896.

"Steel"

SIR: I note in your issue of July 4th some criticism of "Steel," by H. H. C., whom I take to be Mr. H. H. Campbell, of Steelton.

I am pleased that the "little book" should be considered worthy of such kindly criticism by so high an authority; the questions he raises are important, the first, about the "wild" heat, to steel manufacturers, the other, about low steel, to engineers. If Mr. Campbell will read page 136 again he will see that I said of the first heat that it was "apparently dead," of the second that it was a "quiet" heat. Neither heat was boiling; neither of them was "wild," as he and I understand that term clearly.

Both heats foamed violently to the risk of a number of lives. I also say plainly that the effect was due to too much gas, and I believe still that the gas was derived from the magnesite, quietly, under pressure; and that the foaming was caused by the gas when the pressure was removed, just as lively beer foams when the cork is removed from a bottle of beer. I am no chemist, but I am informed by very able chemists that it requires a high and long-continued heat to remove carbonic acid from magnesite. The magnesite in question had been subjected to about a medium orange heat for 24 hours with no apparent reduction in the quantity of carbonic acid it contained. After that time the magnesite was subjected to nearly or quite a steel melting heat for 24 hours and the trouble did not recur.

I am not informed that dolomite requires any such excessive heat or time for the removal of its carbonic acid; as a matter of fact, we were then using dolomite both raw and burned, just as Mr. Campbell uses it, and we have continued the practice since, although for a time after these ebullitions we burned all of our delomite. I did not state that at the time we were making high-spring steel, about 100 carbon, if it had occurred to me to state this, and that we were melting down to 100 and not recarbonizing, Mr. Campbell would have understood better our astonishment at these extraordinary and dangerous exhibitions of gasification.

In regard to low steel, or more properly what steel-makers call "dead soft" steel, I am perfectly well aware that thousands of tons of it are made annually; that thousands of tons of it work well, and that engineers will persist in demanding low tenacity and high ductility, in the mistaken notion that they are securing great safety. I know, and I believe Mr. Campbell knows better than I, that much, not all, but much of that steel is red-short, short in the grain, unsound and weak, and that compared to well-made steel not melted below 12 nor recarbonized above 20 to 25 it is "generally worthless."

If I needed any rivet or boiler-plate steel, I should be glad to have Mr. Campbell make it for me. I should ask him, I would not require what I could not enforce, so I should ask him not to melt below 15 carbon, or 12 at the utmost, and not to recarbonize with his deoxidizing reagents above 20 or 25 at the utmost, then with low phosphorous, sulphur and silicon, and manganese under 30, with the bars and sheets with a good lively grain, neither over-heated nor over-worked, I would care for no farther inspection or tests. I would know that my boilers would be safer than if made of 50,000 lbs. 40% stretch steel.

The manufacturers' specifications for steel, published recently, make provision for all necessary tests except for red-shortness. In the absence of such test no purchaser can know whether his steel is reliable or not; 50,000 lbs. ultimate tenacity and 50 per cent. stretch means steel as weak as it can be made; it does not prove that the steel is either safe or sound.

In regard to the paragraph about the relative strength of crucible and open-hearth steel of even composition and high carbon, I believe I stated only facts, and that in another place open-hearth steel has been given full credit for all of its great achievements; as to the fellow who is, unknown to himself, using the "stuff that failed," that is a phase of the steel question that engineers need not discuss. Doubtless the unscrupulous drummer has many an unsuspecting gull in his nets, but a wise engineer will keep his fingers out of those meshes. WM. METCALF.

PITTSBURG, Pa., July 27th, 1896.

SIR: In answer to Mr. Metcalf it should be said that the additional information concerning the frothing heat is quite important, but it hardly proves the theory advanced. It is quite true that steel does often seem to contain very large quantities of gas, that are liberated like the dissolved gas of soda water or beer, but unfortunately we do not know the exact circumstances under which this ebullition occurs in unmanageable measure.

It is also true, as Mr. Metcalf states, that magnesite is decomposed with much more difficulty than dolomite, and that it would evolve some gas throughout the entire period of an open-hearth charge. This carbonic acid, however, would be in small amount, and would probably be immediately converted into carbonic oxide by the carbon of the metal, and it is difficult to see how this carbonic oxide could be so much more potent for evil than the carbonic oxide that is continually forming through the oxidation of the carbon by the flame and ore.

There is better opportunity for absorption when the gas rises through the metal than when it is formed near the surface, but we all know that a liquid will not absorb gas passing through it unless the conditions are favorable, while if the conditions are favorable the gas will be absorbed, even though it is formed near the surface. I must repeat that I do not know positively the cause of this particular disaster, but the magnesite theory does not seem to be a sufficient explanation.

As to the great question of the use of "dead soft" steel, I must confess a liking for this metal for many purposes. We have made very large quantities of it at Steelton, both in small and in large furnaces, and have rolled it into many forms, and sold it to many customers for many different purposes. We have yet to hear that it has the grievous faults assigned to it by Mr. Metcalf; that it is "red-short, short in the grain, unsound and weak." I think many other manufacturers have been equally fortunate, but it may be that some have not. If so let us condemn the manufacturer and not the material. H. H. CAMPBELL.

STEELTON, Pa., July, 1896.

German Export of Wire Nails.—The export of wire nails from Germany has been increasing very fast. England and Japan take the largest quantities; of the American countries, Argentina and Chile are the best customers.

ABSTRACTS OF OFFICIAL REPORTS.

The De Lamar Mining Company, Limited.

The fifth annual report and statement of accounts for the year ending March 31st have been presented. The revenue account for the year shows a credit balance of £82,628. Three quarterly dividends have been declared amounting to £60,000, and since the closing of the account a further amount of £20,000 has been divided, making £80,000 in all, being at the rate of 20% per annum on the capital.

All ordinary expenses have been charged to revenue. The Board has set aside out of revenue the sum of £2,500 for machinery renewals, etc., and also the sum of £510 4s. 1d., being amount expended in securing an option on the Alpine and other claims situated a short distance from the company's property. The balance carried forward to next account is £373 11s. 1d.

Upon capital account there has been expended £6,506 1s. 5d., representing an addition of 10 (ten) stamps to the milling power, and a Huntingdon mill of about 15 tons capacity per diem, together with a 50-ton plant for the Pelatan-Clerici process, and all necessary buildings, etc. The amount of unexpended capital is now £34,723 6s. 2d., and of the various reserve accounts £22,219 3s. 6d., together, £56,942 9s. 8d. Meantime, as in former years, this sum is largely employed in carrying the usual stocks of fuel and stores, amounting, as per inventory, to £29,651 2s. 6d.

The accompanying report by Captain Plummer, the manager, gives full particulars of the work done in all departments during the year.

The following are the results of the milling operations:

Mill in service, 30 stamps	350 days 5 hours.
Wet tons crushed	45,687 tons.
Dry "	41,117 "
Ore crushed per stamp per diem	3·818 " (dry).
Assay value of ore—	
Gold, 0.8875 oz., at $20 67 =	$18.34
Silver, 10.6756 oz. at $0,6653 =	7.06
	$25.40
Percentage saved according to assay	78·11 per cent.
" " " " bullion returns	76·57 "
Number of ounces pure gold produced	24,500 oz.
" " " fine silver	434,310 oz.
Total value of gold and silver	£161,543 5s. 5d.

Of shipping ores sent direct to the smelters there were produced 193·807 tons, yielding $90,762.83, or $468.31 per ton, of the value of £19,402 17s. 1d. The total product of the mine was thus £183,946 2s. 6d., obtained at a cost of £98,480 10s 10d.

The cost per ton of obtaining the above results, including development work and all expenses, was—mining, $6.31; milling, $5.83; or a total of $11.64 compared with $10.22 last year, which is accounted for by the harder rock encountered in some of the drives, the narrowing of some of the ore-bodies and the necessary retimbering of two or three of the principal thoroughfares in the mine. Included in the foregoing is the cost of obtaining shipping ore, viz.: $32,600.62, or 79 cents per ton on the total production.

The average price obtained for silver was 66·53c. per oz. as compared with 62·03c in 1894–95, showing a small recovery for the first time in the company's history. The ores treated have yielded less gold and more silver as compared with the previous year, viz.: 24,500 oz. gold against 29,671 oz., and 434,310 oz. silver against 368,048 oz. In value the result was 63·61% gold and 36·39% silver, against 72·82% and 27·18% last year. The mill has worked satisfactorily during the year, but owing to the harder character of the ore treated during two or three months the average per stamp per day has fallen to 3·818 dry tons. The production of shipping ores was 193·807 tons, averaging 468·31 per ton as compared with 267·690 tons the previous year, averaging $388.51 per ton.

The reserves of ore in the mine are estimated by Captain Plummer at 45,000 tons of the first-class, together with about 112,000 tons of second-class ores. As stated in his report he does not feel justified in hazarding an opinion as to values.

The Board fully expected that the 50-ton Pelatan-Clerici plant, which last summer it was decided to establish, in order to the more economical treatment of the ores, would have been completed and in operation by this time, but mechanical difficulties have from time to time arisen, causing delay and requiring alterations to be made, so that the plant is not yet in regular operation. The patentees and their engineers express themselves as confidently as ever as to the merits of the process, and the Board are therefore induced to hope that before long the desired results will be accomplished.

Artificial Insulators.—Various substances and mixtures have been proposed for replacing gutta-percha as an insulating material for cables, but although many of them are effectual in other particulars, none have, so far, rivalled it in point of durability under prolonged exposure to the action of sea-water. Paraffin alone is too brittle, but the plastic products of the incorporation of ozokerite with small quantities of caoutchouc form a medium which in insulating power and durability almost rival the latter substance in its pure state. The degree of insulation attained by Henly's cable, which is coated externally with ozokerite, is 5,000 megohms per knot. Nigrite, prepared by kneading together caoutchouc and the residue from the distillation of ozokerite, is far superior, both mechanically and as an insulator, to gutta-percha, and is less susceptible to heat than caoutchouc. The composition, consisting of a mixture of resin and heavy resin oils, used for the Brooks cable, has a high insulating power, several samples having indicated regularly 19,000 megohms per mile. Wray's composition, made from caoutchouc, silica, powdered alum and gutta-percha, is largely used in climates too hot for gutta-percha by itself, but is quickly attacked by sea-water. Latterly, attention has been directed to balata as a substitute for caoutchouc. This gum is obtained by tapping the balata tree, of which there are large forests in British Guiana and other parts of South America. There are two varieties—the red or "bullet tree," and the white, or true balata; they grow to a height of 90 ft. to 100 ft., and can yield about 2¼ lbs. of gum in a year without overtaxing their strength. The liquid gum soon hardens on the surface, which is then removed, and this continues till the whole has solidified. For insulating purposes balata gum is, says the *Journal* Society Chemical Industry, inferior to caoutchouc, but it makes a good waterproofing material, and is highly suitable for driving-belts.

THE CONCENTRATION OF IRON ORE.—II.

Written for the Engineering and Mining Journal by Wm. B. Phillips.

(*Continued from page* 106.)

The Wetherill Concentrating Process, discovered and patented by Mr. J. Price Wetherill, General Manager of the Lehigh Zinc & Iron Company, South Bethlehem, Pa., was designed, originally it seems, for the treatment of zinc ores of Franklin, N. J. On these ores it has been eminently successful. So much so, in fact, that a large new concentrating plant has been built at Franklin and is now about to be put into operation.

The extension of the process to the concentration of iron ore neither naturally nor artificially magnetic, has been rendered possible not only by the labors of Mr. Wetherill himself, but also and particularly by the assiduous care of Mr. H. A. J. Wilkens, the general manager of the Wetherill Concentrating Company, and Mr. H. B C. Nitze, assistant geologist of North Carolina: It is understood that these gentlemen have in course of preparation a paper dealing with the results of their experiments, and the general professional public awaits with interest what they have to say. The few remarks made by Mr. Wilkens at the Pittsburg meeting of the Institute on the nature of the process were received with undisguised concern, for they seemed to open new and hitherto untried avenues of commercial success, bringing into use materials heretofore thrown aside as practically worthless.

I must confess to no inconsiderable degree of incredulity when it was proposed to concentrate, magnetically, an iron ore typically non-magnetic. But after exhaustive tests under varying conditions, conducted personally and most carefully, I became convinced that it could be done. The proof that it could be done lies in the fact that it was done, day after day, on a variety of ores, and with a regularity and certainty of product that left but little room for improvement. The ore was subjected to no preliminary treatment whatsoever, save drying, crushing and sizing. It was not heated beyond the temperature necessary to dry it thoroughly, had no reducing or other gas passed over it, and was, chemically, the same ore that was mined and sent to the furnaces every day. The tests included trials on the ore as taken from the stock house, and trials on low-grade ore of the same general nature but unfit for use on account of the high content of siliceous matter. There can be no doubt, whatever, that non-magnetic ore can be concentrated magnetically without other preliminary treatment than drying, if need be, crushing and sizing. By what agency this is brought about must be left for those to discuss who explain to us the nature and methods of work of magnetic currents, as to what is really meant by a saturated magnetic field, magnetic permeability or susceptibilty, induced magnetism, etc., etc., as applied to the separation of iron ore from sand, etc., is beyond the purpose of these brief articles.

Whatever it may be, it is a force easily brought into operation, easily controlled and capable of bringing about very important results. It makes no difference, commercially, whether the magnetic force brought into play through the agency of a dynamo and transmitted through copper wires to the pole pieces of a magnet acts in and through a saturated field or not. It may be magnetic permeability, or magnetic susceptibility, acting along lines of latent magnetism whose spacial relations are physical rather than chemical. This view would bring the matter into close connection with the theory of structural magnetism in natural magnetite and tend to increase the evidence against the purely chemical theory of magnetism depending on the admixture of ferrous and ferric oxides. The amount of ferrous oxide in the Clinton ores experimented with is extremely small, rarely exceeding two-tenths of one per cent., and unless this substance is capable of affecting very large proportions of ferric oxide (which may be the case, so far as we know), we seem to be confined to the structural theory. Iron-bearing substances, which do not contain a trace of ferrous oxide, can be separated from accompanying material by means of a strong magnetic current acting across narrow spaces, the so-called saturated field.

We shall have to alter some of our conceptions as to the nature of magnetism as applied to iron ores. For instance: We took a lot of dried Clinton ore, known as soft red, crushed it in a No. 3 Gates crusher, passed it between chilled iron rolls, and screened it over a 40-mesh revolving wire screen and through a 15-mesh. As charged into the hopper of the Wetherill Inclined Magnet Machine it had the following composition: Metallic iron, 39.20; insoluble matter, 40.16. Running the machine at amperes and 100 volts we obtained:

	Iron.	Insol.
Heads, 52.4% with	56.40	17.10
Middlings, 6.9% with	38.85	41.35
Tails, 40.7% with	16 70	74.10

Gain of heads in iron, 43.8%; loss of insoluble matter, 57.4%; number of tons of raw, dry ore for 1 ton of 56.4% concentrates 1.91. These results were not obtained at one single operation, and I give below the course of the test:

Raw ore—iron, 39·20: insoluble, 40·16. Heads and middlings, 10 amp. 100 volts, 59·3%, with 54·10% of iron and 18·80% of insoluble.

Tails, corresponding to the above, 40·7%, with 16·70% of iron and 74.10% of insoluble.

The first heads and middlings were repassed at 8 amp., and we obtained two products, viz.: middlings, 4% of the original ore, with 31·40% iron and 52·20 insoluble; and heads and middlings, 55% of the original ore, with 54·10% iron and 18.70% insoluble.

Finally these second heads and middlings were repassed at 6 amperes, 100 volts, and two products obtained, viz., middlings, 2·9% of the original ore, with 46·30 iron and 30·50 insoluble, and heads (final), 52·4% of the original ore, with 56.40 iron and 17·10 insoluble. We could have stopped with the first heads and middlings, and have had 59·3% of the original ore, with 54·10 iron and 18·80 insoluble. In practice it would be advisable to do so, for the iron in the final heads was 56·40, but the loss in weight was 6·9%. To lose practically 7% in weight in order to get 2·3% in iron would be very doubtful economy. We may say, therefore, that from an ore of 39% iron and 40% insoluble we obtained at the first pass 59% of concentrates carrying 54% of iron and 18·8% of insoluble. The gain in iron was 38%, the loss in insoluble was 53%, and the number of tons of raw, dry ore for one ton of concentrates would be 1·69. This is certainly

an excellent showing. At the first operation to increase the iron by 38%, and diminish the insoluble (siliceous) matter by 53%, and convert 59% of a worthless ore into a very good ore, is a result in the highest degree important and encouraging.

The material that passed through the 40-mesh screen was 33% of the ore crushed, and contained iron, 49.40; insoluble, 26.50. It is noteworthy that the fines from these low-grade ores are much richer in iron thon the coarser stuff. They carry from 49% to 54% of iron, even when the original ore carries only 37% of iron. The ferruginous portion of the ore is softer than the more sandy portions, and it is possible to effect a very considerable concentration merely by crushing and screening over a 40-mesh screen. The amount of material passing through a screen of this fineness varies from 25 to 35%, so that we may expect to get from 49% to 54% of iron in ¼ to ⅓ of the ore simply by crushing and screening. There is a slight increase of iron in the material passing through screens finer than 40-mesh, but not enough to warrant their use. We decided to use the 40-mesh and to call everything passing through this screen "fines." Over the inclined Wetherill this material can be concentrated still further. I select the following illustration:

Fines through 40 mesh, iron, 49·40; insoluble, 26·50; heads from above, 12·6%; 10 amperes 100 volts, iron, 55·30; insoluble, 17·12; middlings, 22·8%, iron, 51·75; insoluble, 21·10; tails, 64·6%, iron, 45·80; insoluble, 30·35; gain of heads in iron, 11·9%; loss in insoluble, 35·4%.

Numerous experiments with this and similar material failed to convince us that it would be profitable to attempt its concentration. It could probably be briquetted at once to better advantage, or mixed with the heads from another part of the process. It is already a better ore, so far as concerns its content of iron, than most of the soft ore used in the Birmingham District.

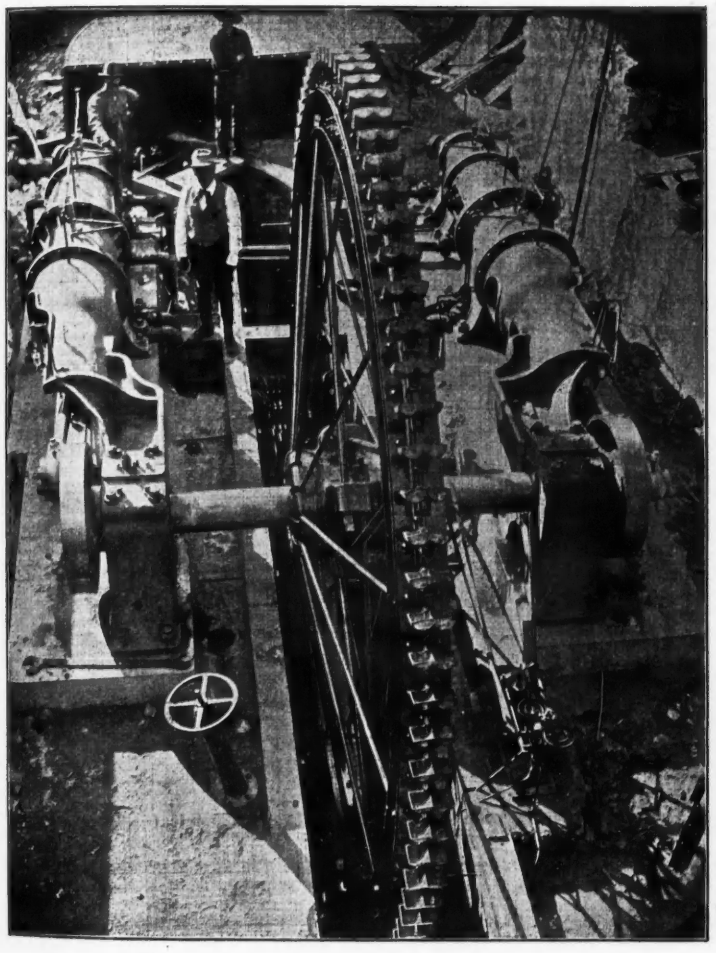


FIG. 1.

(To be Continued.)

Carborundum Manufacture at Niagara.—The daily output of the Carborundum Company, which is operated by electric power from Niagara, has reached 4,000 lbs.

Mining in Spain.—The Compagnie Royale Asturienne des Mines has lately issued its report for 1895. It shows the production at the mines of the company in Spain during last year as compared with 1894 to have been as follows:

	1895.	1894.
Calcined calamine	29,448 tons	29,298 tons
Galena	2,328 "	3,222 "
Zinc	18,181 "	18,995 "
Lead	3,337 "	4,638 "
Coal	511,007 hectolitres	504,864 hectolitres
Silver	1,999 kg.	4,546 kg.

THE NORTH STAR MINING COMPANY'S POWER PLANT, CALIFORNIA.

The paper read by Mr. Arthur de Wint Foote, C. E., at the meeting of the American Society of Civil Engineers, to which we are indebted for the illustrations, recently convened in San Francisco, elicited much interest and no small amount of discussion.

The paper referred to makes a very elaborate and exhaustive report upon the operation of the compressed air transmission plant of the North Star Mine in Grass Valley, Cal., a brief description of which, compiled from this report, we here present.

The power station consists of a Pelton wheel, 18 ft. 6 in. in diameter (see Fig. 1), attached direct to the shaft of a Rix Duplex Air Compressor compound tandem type. The initial cylinders are 18 in. and the second cylinders 10 in. diameter with a 24-in. stroke.

The wheel is built up of angle iron plates riveted together to break joints, and is held concentric with the shaft, with 12 pair of radial spokes

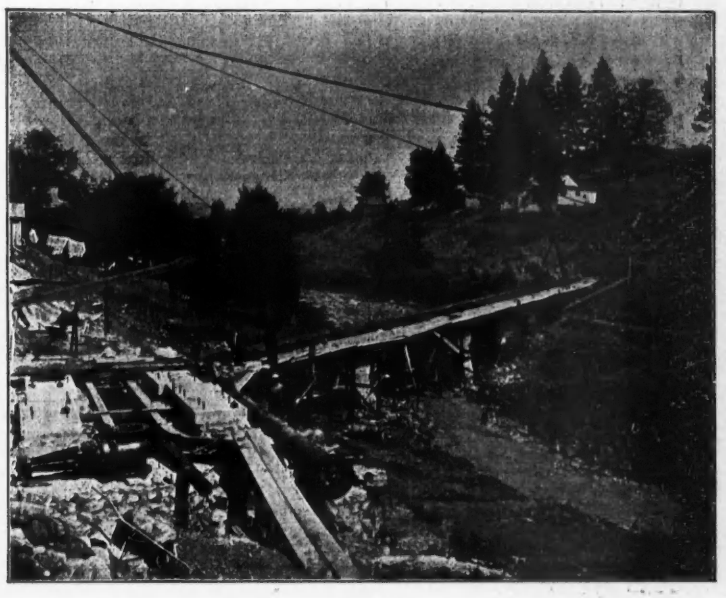


FIG. 2.

FIG. 3.

of 1¼ in. rod iron, secured by nuts to the cast-iron hub. The driving force being applied to the rim, is transferred to the hub by four pairs of 2-in. iron rods, so arranged as to form a truss. The wheel weighs 10,500 lbs., and runs at 110 revolutions under 750 ft. head, developing upwards of 300 H. P. It is made of this large diameter for the purpose of giving proper speed to the compressor under the high head in this case available. The water is applied to the wheel through a variable nozzle controlled by a hydraulic regulator, which maintains a uniform speed on the wheel with a variation from full load down to 25% of same, making its operation absolutely automatic as well as economizing the water supply, no more being used at any time than required for the work.

The construction of the wheel, as will be seen, forms an ingenious mechanical combination, altogether novel and without precedent, affording an ample factor of safety with a very peripheral velocity. The water supply is brought to the wheel through 2¼ miles of 22-in. riveted pipe, affording sufficient capacity to develop 800 H. P. This is at present running a 100-H. P. pneumatic hoisting engine and a 75-H. P. compound pump besides other pumps, drills, forges, etc.

A 6-in. lap-welded pipe conveys the air at 90 lbs. pressure from o

power-house to the company's Stockbridge shaft on Massachusetts Hill, 800 ft. distant and 125 ft. higher.

The line of the pipe is quite crooked, both horizontally and vertically, partly because it was necessary in locating it to follow a county road. The trench was dug with plows and scrapers, except where too stony, and the joint holes were dug by hand. The joint holes cost fully as much as the trench, for the reason that many of them reached down to the harder and rockier stratum below the soft surface material. The trench was about 10 ft. wide on top, 4 to 5 ft. on the bottom and 4 ft. deep. The joint holes were 4 to 5 ft. long and 3 ft. deeper than the trench. The total cost of all the work of burying the pipe, including covering a large portion of it with stone from the mine dumps, and cement masonry wells for the valves and for sustaining the pipes around bends, amounted approximately to $6,756.27. This was done on company account, after refusing bids, the lowest of which would have amounted to about $8,500.

An aqueduct of cement masonry across Wolf Creek at the power-house is not included in this estimate, but was built on company account. As shown in Figs. 2 and 3, it was first built up to grade; the pipe was then laid upon it and afterward covered, so that the pipe is now in the center at the tops of the arches, where the masonry section is 4 ft. square. The piers of this aqueduct are carried down to the bed-rock of the creek some 8 or 10 ft. below its water level. The lower portion of the center piers was built up of cement concrete, but the remainder of the bridge is built of the rough stone hauled from the mine dumps in the vicinity, and Portland cement and sand mixed one to three. Very little hammering was allowed, mortar being cheaper than masons. The center arches are of 33-ft. span, and the other two of 24 ft. and 28 ft., the length of aqueduct over all being 153 ft. The rock and sand each cost 75c. per yard delivered; common labor, $2.50 per day; masons and foreman, $4 per day. The entire cost of the bridge was $1,435; as it contains about 180 cu. yds., the cost per yard was about $8. It is thought that this will prove cheaper in a few years than any other mode of carrying the pipe across the creek.

The report above referred to shows that repeated tests on this wheel made by the most approved methods and checked up very closely, give the remarkable efficiency of 93% at full load, also an average efficiency of something over 90% for ½, ¼, ¾ and full loads. The suggestion has been made that the extraordinary efficiency here shown is accounted for in part by the unusual dimensions of the wheel. This, however, was shown to be incorrect, as equally high efficiencies have been obtained on Pelton wheels of much less than ⅓ this diameter.

The efficiency of compression and transmission from water wheel to motors, not including cost of reheating, is given as 79%, making a most favorable showing for the plant as a whole, under the conditions installed. The application here described is also of interest as showing the remarkable flexibility of the Pelton system and facility of adaptation to all varying conditions.

THE OCCURENCE OF PLATINUM IN NEW SOUTH WALES.*

Platinum has been found associated with gold and gemstones in the sea beaches between the Richmond and Clarence rivers, and occasionally small parcels have been saved by miners working in these localities for gold.

From a scientific point of view, perhaps the most interesting platiniferous deposits are those at Little Darling Creek and Mulga Springs, near Broken Hill. Here the metal is found in ironstone, ferruginous claystones and decomposed gneiss. Samples assayed in the Department of Mines Laboratory by Mr. J. C. H. Mingaye yielded from traces up to 1 oz. 9 dwts. of platinum per ton. Some of the samples contained small quantities of gold and silver, and the ironstone was generally more or less impregnated with carbonates of copper. No platinum could be seen in the ore: experiments made to determine the condition in which it is present have resulted in failure, while attempts at concentration have only been partially successful. During 1892 the writer made an examination of the deposits in the field. The figure below, which illustrates their general mode of occurrence, is reproduced from his report.

Until the recent discovery of alluvial deposits in the vicinity of the newly surveyed townships of Fifield and Platina, there had been no production of platinum upon a commercial scale in New South Wales. These townships are situated about 26 miles northeast of Condobolin, and 54 miles northwest of Parkes, and are distant from one another one and a half miles.

During the last two decades it would appear that the country around Fifield has been intermittently prospected for alluvial gold, and a little platinum must from time to time have been obtained, though there is no record of this metal being discovered prior to 1887.

In this year Mr. J. F. Connolly, who received aid from the government to prospect the district, reported having discovered alluvial platinum, and presented a sample to the geological museum. Nothing appears to have been done in the way of further developing the field until 1893, when Messrs. Fifield, Rand and party discovered rich alluvial gold near the site of the present township of Fifield. Upon news of the discovery becoming known a rush set in to the district, and the lead which is now being worked was found soon afterward.

The sedimentary formations represented are slates of Silurian (?) age and fossiliferous sandstones and limestones of either Devonian or Siluro-Devonian age. The Silurian slates are intruded by diorite.

The "lead," or ancient water-course, which yields the gold and platinum-bearing drift, runs in a north and south direction for a little over a mile. It is from 60 to 150 ft. wide. The drift containing the precious metal is overlain by from 60 to 70 ft. of loam, with occasional bands of barren quartz drift. The platinum and gold occur in small, well water-worn grains, and are practically confined to the crevices in the bedrock and the dirt within a few inches of the bottom. Occasional nuggets have been obtained which have weighed from a few grains up to 8 dwts.

The washdirt is first of all puddled in machines worked by horses. During this process the soft layer of bedrock which is broken down with the drift is pulverized, and any metal which may be attached to it set free. The clean gravel is afterward washed in ordinary sluice-boxes, and the gold and platinum obtained. The gold is extracted by amalgamation with mercury and crude platinum left behind. The latter realizes at the present time, upon the fields, 24 shillings per ounce. It contains about 75% of platinum, the balance being chiefly platinoid metals and iron.

An analysis by Mr. J. C. H. Mingaye, F. C. S., analyist and assayer to the Mines Department, gave as follows: Platinum, 75·90%; iridium, 1·30%; rhodium, 1·30%; palladium, traces; osmiridium, 9·30%; iron, 10·15%; copper, ·41%; gold, nil; lead, traces; siliceous matter, 1·22%; total, 99·48%. The ratio of platinum to gold in round figures is from 3 to 1 up to 6 to 1.

It was suggested to me that the platinum might have been derived from a reef or reefs in the vicinity of the field. A consideration of the general mode of occurence of platinum would perhaps cause one to discredit such a theory, and the ascertained facts seem to me to disprove it altogether. The dividing line of the Bogan and the Lachlan River watersheds passes through Fifield, and the platinum deposits have been followed up one side of the ridge and down the other. So one or more of the supposititious reefs should be located upon the highest ground; yet, notwithstanding all the sinking and driving that has been carried out, no reefs had been found. Moreover, the grains of metal appear to be uniformly waterworn.

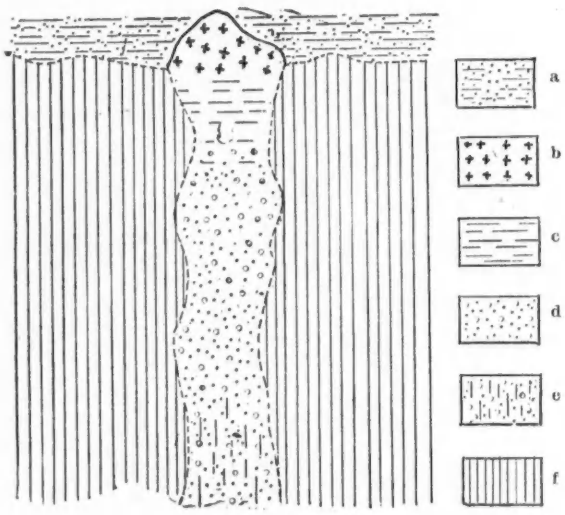
Dry seasons have prevailed since the discovery of the field, and its development has been much retarded in consequence. The washing of dirt has sometimes been completely suspended for many months at a time on account of the shortage of water. At the present time 7,000 loads of washdirt are dumped around the various shafts awaiting treatment.

About 1,200 oz. of crude platinum have already been sent away from this field, and, including the deposits in the immediate vicinity of Fifield and outside the Fifield-Platina lead proper, the gold won has totaled about 1,800 oz.

A few of the parties have already worked out all the "pay dirt" from their claims, while others have a year or 18 months' work in sight.

A consideration of the circumstances connected with the origin of the platinum and the fact that it has been found in small quantities over a wide area of country has made me of opinion that other platiniferous leads are to be found in places under the flats in the district. Prospecting for such leads, however, would be a very tedious operation, since the flats are for the most part of great extent, and there is nothing upon the surface to indicate the path of the gutters below.

Small quantities of drift yielding a payable quantity of platinum, associated with gold and tin (cassiterite) have been mined about 10 miles northeast of Fifield, near the village of Burra Burra.



a, Loam; b, compact ironstone; c, ferruginous clays; d, granules of quartz, with kaolin; e, decomposing gneiss and schists; f, gneiss and schists.

Ideal Section of Platinum Deposit Near Broken Hill, N. S. W.

The Rubies of Burma and Associated Minerals.—In the Philosophical Transactions Professor Judd, with C. B. Brown, gives a detailed account of some minerals collected by the latter when carrying out, under orders from the Secretary of State for India, an investigation into the long-known ruby mines of Burma. The gems are for the most part washed out of alluvial material filling hollow basins and clefts in a limestone rock, but their original situation, as proved by Mr. Brown, is in the rock itself. This is a hard, crystalline limestone, interbedded with gneiss, and by breaking some of it to fragments Mr. Brown obtained in 10 days 14 rubies from 1½ cu. ft. These were, of course, injured much by the jarring necessary to break up the stone, but they showed that by better methods the gems could be obtained in larger quantity.

Professor Judd says: "The limestone which the rock in Burma most closely resembles is undoubtedly that of Orange County, N. Y., and Sussex County, N. J., which is associated with the remarkable deposits of zinc ore at Franklin Furnace." "The general conclusion to which we have been led concerning the origin of the rubies of Burma is as follows: Pyroxene gneisses abound with an unstable basic feldspar, which is easily converted by minute quantities of hydrochloric acid under pressure into a scapolite, this in turn breaking up into various hydrated aluminum silicates and calcite."

* Abstract of Report by J. B. Jaquet, Government Geological Surveyor, New South Wales.

THE MINERAL FUELS OF MANITOBA AND THE NORTHWEST TERRITORIES.

By William Pearce.

The interest taken in this question is owing to the fact that a considerable portion of the Northwest at present available for settlement is to a large extent a treeless plain, and the centers of population are now largely supplied by coal, and this supply must year by year fill a larger percentage of the consumption.

The first coal excitement that occurred since Manitoba and the Northwest became a field for settlement was in 1873, when several coal claims were surveyed on the Souris River, a few miles above the mouth of Plumb Creek. What gave rise to that excitement, short as was its existence, was the discovery of drift lignite, brought, no doubt, from the upper reaches of the Souris River. In 1876-77 there were several applications having in view the development of coal mines made along the Rousseau River, some few miles north of the International Boundary, caused by the discovery of a bituminous matter very much resembling coal, the product probabably of a vegetable destillation and action of the water thereon. The same material has been found in the Rainy River and within a few months some attention has been paid to prospecting for coal in that region. As a matter of interest it might be mentioned that the writer of this was informed by the late United States Consul Taylor, that in the earlier maps issued in connection with the promotion of the Northern Pacific Railway scheme was one showing a large coal deposit in Northern Minnesota, in the vicinity of Lake Rousseau, and one of the arguments in favor of the route then promoted was this supply of coal. The first coal excitement in this country that attained considerable proportions was in 1879, when in the neighborhood of the Roche Percee on the Souris River, several thousand acres were staked out as coal claims and applications made therefor. Many traveled night and day so as to get ahead of rivals. Excepting three pits, no developments have taken place, and probably not 500 acres thereof have been acquired as coal lands. These claims were nearly all in the interest of parties then residing in Winnipeg or vicinity. To open up a colliery on a scale sufficient to produce, approaching the minimum of cost, and constructing permanent works, necessitates an outlay of many thousand dollars.

It is alleged that coal has been found on Pemmican Island in Lake Winnipegoosis, supposed to have been brought from the Porcupine Mountains to the west of the northerly portion of said lake. Lignitized wood is found along the Swan River, but so far in not sufficient quantity to give it any commercial value. The Pemmican Island find was probably this substance.

We now come to what is no longer a matter of speculation, although at very many of these points the size or condition of the fields have not yet been determined, yet enough is known to warrant the assertion that the supply is practically inexhaustible. Many years ago there was known to be in the Northwest Territories south of the 56th parallel of north latitude 50,000 square miles of coals, exclusive of the lignites along the Souris River, and it was estimated that each square mile would average from 4,500,000 to 12,000,000 tons. We will assume 5,000,000 to be the average. The total output of the United States for the year 1888 equals nearly 130,000,000 tons, so that there is a sufficient known supply in the Northwest Territories to last, at that rate of consumption, a period of 1923 years; sufficient to calm the apprehensions of the pessimistic or nervous on the subject.

The coals of the territory under discussion have been classed by the Geological Surveys Department of Canada into lignites, lignitic coals, bituminous and semi-anthracite and true anthracite. The latter can be described as having, as far as known, its southern edge at the Kananaskis River in about the latitude of 50° and 50′ north and longitude of 115° and 10′. It extends in a northwesterly direction to a latitude of 52° and 30′ and longitude of 116° and 30′, having a mean breadth of several miles and containing a very large number of seams varying from 2 to 10 or 12 ft. in thickness, and in some places very much more than that; but the larger seams have not as yet been developed sufficiently to demonstrate whether those immense thick seams are true veins or only a smaller seam folded.

One peculiarity of these coal formations is that as one goes west the quality improves; thus, the lignites vary in analysis as follows:

The lower grade being in the easterly fields, the higher in the westerly: Hygroscopic water, 26% to 13%; vol. combustible matter, 30% to 32%; fixed carbon, 30% to 51%; ash, 8% to 4%. The lignite coals: Hygroscopic water, 11% to 5%; vol. combustible matter, 37% to 27%; fixed carbon, 43% to 59%; ash, 9% to 9%. The bituminous coals: Hygroscopic water, 5% to 2%; vol. combustible matter, 27% to 23%; fixed carbon, 53% to 63%; ash, 15% to 12%. The semi-anthracite and true anthracite: Hygroscopic water, 1% to 1%; vol. combustible matter, 11% to 7%; fixed carbon, 81% to 89%: ash, 7% to 3%.

One who had not studied the question would be pardoned for thinking that at the present day scientific research had advanced to such a stage, that, given the analysis of coal, its relative value as a heat producer could be at once determined; but such is far from being the case. There is, however, a universal consensus of opinion that the moisture is an injury and must first be driven off before combustion can take place, and it requires about ½% of fixed carbon to drive off 1% of moisture. The ash, excepting where it is a very large percentage, say upwards of 10%, may be safely considered as being merely that percentage or amount of waste matter. It is to be observed, however, that when it is a considerable amount it may in many cases prevent by smothering perfect combustion, thereby diminishing the value of the fixed carbon by a considerable amount. Further, there is certain to be a loss by imperfect combustion and a falling into the ash pan of a certain quantity of the fixed carbon. The loss is relatively very much higher in the wetter than in the drier coals and further in the former there is very considerable loss before reaching the furnace by disintegration caused by the evaporation of moisture. Many lignites which in cold, frosty weather are valuable fuels, cannot be utilized as such at all after having been exposed for any length of time to the action of a warm or moderatly warm atmosphere.

The value of the volatile combustible matter is very difficult to determine. Unless when in the ordinary dwelling a large amount of stovepipe is utilized for heating purposes, a condition that does not conform well with desirable sanitary conditions; the larger part goes out of the chimney, warming the neighborhood to some extent, but doing practically no service to the party who has to furnish it. Probably in that way at least 60% of it is lost. Even a larger percentage is lost in locomotives where the grate surface must necessarily be limited and the exhaust severe. In stationary boilers this loss can be avoided to a large extent and many ingenious devices have been tried to effect that purpose; among the latest and one for which very beneficial results are claimed is the machine-fed boiler, by which the raw coal is brought in under that in the process of combustion. It is claimed that this matter is thereby largely utilized, being to a considerable extent absorbed in promoting combustion of the live coals. Again, this matter varies considerably in different coals; where it comes in contact with an excess of moisture in coal, it goes largely out of the smokestack in the form of a heavy black smoke, giving out in its passage little or no heat.

Outside of a very few settlers located in the vicinity of these coal outcrops and what was brought in for blacksmithing purposes, the first coal consumed in Manitoba was Pennsylvania anthracite, imported in 1872 or 1873 by the Provincial Government of Manitoba and a few individuals, including the late Hon. H. G.B. Bannatyne, Captain Donaldson and others, and the cost laid on the river bank was $26 per ton. The first coal stove imported in Manitoba was by Captain Donaldson, manufactured in Philadelphia, and at that time and for many years afterward it was contended that the Canadian coal stove was a fraud. The quantity then imported was probably 50 tons.

The first Canadian coal produced in Manitoba or the Northwest was brought in in 1880 from Roche Percee by Hugh Sutherland, Esq.; the quantity was about 50 tons.

It was not until 1885, after the completion of the railway from Dunmore to Lethbridge, that Canadian coals figured to any considerable extent as a fuel supply here. In 1887, the fields at Canmore and Anthracite were opened up. The Lethbridge, Canmore and Anthracite are the three chief fuel supply fields supplemented by the Souris lignites and those of Edmonton to a small extent, beyond local competition. The Knee Hill coal mines supply a very considerable quantity, probably 2,000 tons per annum, to Calgary and vicinity, and occasional seams are worked also and supply the demand in their vicinity, at Sheep Creek, High River, vicinity of Pincher Creek, on the St. Mary's River, Milk River Ridge, Crowfoot, Medicine Hat and at several points in the Cypress Hills, Wood Mountains and Souris River.

A line can be drawn roughly defining the southerly and westerly limit of the portion of Manitoba and the Northwest within which there is a very considerable percentage of timber growing, in many cases sufficient to last for generations and in many places a little care and protection would soon increase the quantity. It is true that within said tract, notably a considerable part of the Red River plateau, there are extensive areas absolutely devoid of timber; but no point is very many miles from a fair supply thereof. In what may be termed the treeless portion, nature has been bountiful in supplying the best possible substitute for wood as a fuel and in 80% of that district there is no point which is not within a few miles of a coal mine.

For the purposes of this paper, the Winnipeg prices of fuel may be cited for the following years:

	Can. Anthracite.	Amer. Anthracite.	Can. Bituminous.	Amer. Bituminous.	Lignite.
1876	0	$24.00	0	$24.00	0
1881-2	0	19.00	0	19.00	0
1883-4	0	14.25	0	14.00	0
1884-5	0	10.50	0	9.00	0
1885-6	0	10.25	$8.25	9.00	0
1891-2	0	10.50	7.50	8.50	0
1893-4	$9.00	9.50	8.00	8.50	$5.00
1895-6	8.50	8.25	6.50	7.25	4.25

West of Winnipeg the quantity of foreign coal consumed is inconsiderable, and for other than railway purposes no foreign soft coals are utilized, and the prices as you go west gradually decrease, so that in the vicinity of the mines, as at Edmonton, Knee Hill Creek, St. Mary's, Pincher Creek, Sheep Creek and High River it is obtained at pit mouth from $1 to $2.50 per ton. It requires but an increase of population which means a proportionate increase in consumption to very materially reduce the price of these fuels. If the country had ten times the present population there is no doubt the cost would be reduced by 30%.

In many parts of Europe lignites, inferior to most, and not exceeding any of ours in value, are rendered valuable for domestic purposes at a small cost, by being pressed into briquettes; but so far we seem to be lacking a cheap commodity to supply the adhesive property necessary in their manufacture, the material there used being largely composed of distillation obtained at gas works. It is worthy of consideration and experiment whether the very inferior grades of refuse of our wheat would not produce a paste which, by mixing with some substance, say sawdust, to give sufficient porosity to the mass, could not with advantage be utilized in the Souris and other lignites. In England and some other countries the screenings and dust are made into briquettes.

If there were railway communication with the vast petroleum tar deposits along the Athabasca and Peace rivers probably the manufacture of briquettes could be at once inaugurated. It might be well to direct your attention to the waste in mining, which sometimes runs as high as 70%, and of that waste 70 to 80% could be profitably utilized in the manufacture of briquettes. In the Pennsylvania anthracite fields it is estimated that not more than 40% of the coal mined reaches a market; the remainder is practically waste.

Some recent experiments with the culm heaps which have been accumulating for the past century around the various mining pit mouths of Pennsylvania would seem to strongly indicate a bright prospect for this article which has hitherto been a waste and a source of expense for its removal to the mining companies. In fact, many now assert that there is latent in those heaps a force many times that of Niagara Falls, and which can furnish power at a smaller cost than the world-renowned cataract.

The total consumption of coal for Manitoba and the Northwest Territories for 1895 was as follows:

	Tons.
Anthracite	55,000
Semi-bituminous and bituminous	178,000
Lignites	12,000

Of the anthracite 70% was foreign, and of the bituminous 30%, while the lignites were wholly Canadian. Of the semi-bituminous about 80% were used for railway locomotive purposes. It will thus be seen that our fuel outlook is on the whole bright and hopeful.

Natural Gas.—At Medicine Hat, Langevin and Cassells, natural gas has been struck by boring. Along the foot-hills there are several points where gas comes out in the shape of a spring. At Calgary an attempt was made to find gas: but when a depth of nearly 1,500 ft. had been reached, the funds played out and the diamond drill and several hundred feet of expensive steel piping lie on the bottom of the hole and may be had for the taking away. If the geological section as worked out by the Geological Surveys Department is even approximately correct, the gas bearing strata of Calgary would not be reached under 2,500 to 3,000 ft. There is a most reasonable probability of Central Alberta and Western Assiniboia being underlaid with huge reservoirs of natural gas, and it may extend great distances both north and south, and possibly also to the east.

Petroleum.—In both northern and southern Alberta exudations containing petroleum are found; but the localities have never been tested thoroughly, in fact, it may safely be stated that so far the tests have been nil; but there are the best of reasons for believing that this valuable mineral can be obtained in large quantities.

ELKHORN MOUNTAIN AND ROCK CREEK DISTRICT OF THE BLUE MOUNTAINS, OREGON.

Written for the Engineering and Mining Journal by Robert W. Barrell.

This district in Eastern Oregon is at present attracting considerable attention from parties wishing to invest capital in mining property. For many years it has been known that there were many mineral-bearing veins in this section, but the general opinion seems to have been, up to four or five years ago, that they were of comparatively little value.

A few veins have been worked in a desultory fashion for from 10 to 15 years, but very little real mining work has been accomplished except in the last three to four years. The district lies 15 to 20 miles northwest from Baker City in a spur of the Blue Mountain system. This spur is about 15 miles in length, running east and west between the Powder River, on the east and north and Sumpter valley on the south. Geologically it is composed of several parallel granite axes—comparatively close to each other, running in a general easterly and westerly direction, or, more properly perhaps of one granite axis—which in places has not, as yet, been exposed by erosion where there are slight folds in the granite.

The mineralized belt lies to the south of this coarse crystalline granite axis. So far as prospected, the veins all lie within a belt of rock from 600 to 1,000 ft. in width. This belt is easily traced along the whole length of the spur, the many decomposed strata within it causing the mountain slopes over which it passes to be comparatively smooth and covered to quite a depth with soil and decomposed rock, while on both sides the slopes are both rugged and barren of soil. The soil over the mineralized belt is reddish in color, owing to the oxidation of the iron pyrites, while on the north the granite axis is light gray, and on the south the strata are very much darker in color.

The strata on the south are evidently of great thickness. They are greatly up-tilted and form the mountains for several miles south of the mineralized belt. They are composed chiefly of quartzites and schists indiscriminately intermingled with granite strata, which pass in many places into rocks indistinguishable from syenites, diorites or aphanites. These strata show no sign whatever of dyke or eruptive formation, as in many places the same stratum will pass from quartzite or schist into some of these varieties of rock without any plane of division whatever between them. They are evidently completely metamorphosed sedimentary strata similar to the quartzites and schists, but differently metamorphosed.

The rocks of the mineralized belt consist also of these quartzites and schists (mica, chlorite and talc all occurring), with every now and then a stratum of granitic rock. These granitic strata, either owing to their position or composition, having evidently been the origin of the mineral-bearing veins which appear to be of the class known as "Fahlbands," or strata mineralized by substitution. Mineralized waters have found their easiest passage next to or in these strata. The feldspars have been decomposed to form the clay gouges along the walls of the vein, while mineralized quartz has been substituted for the rest of the stratum. This is shown in many places when the mineralization has not been complete and the vein material will change to a granitic rock partially decomposed.

There are several different series of veins occurring in the mineralized belt, at least three and probably more.

The first series—to the south of the granite axis—is in the first granitic stratum, and lies against the solid granite axis, which thus becomes its footwall. In this district the granite axis is nearly perpendicular especially on the higher portions of the mountains. On the Blue Mountain Mining Company's property on Elkhorn Mountain the granite axis actually becomes a hanging wall, but not for any great distance, and remains nearly perpendicular.

In this first series of veins, small quantities of high-grade ore have been found on a number of properties over a distance of several miles along the belt, but no bodies of any large size have been discovered. The ores so far as worked have been more oxidized than those of the other belts.

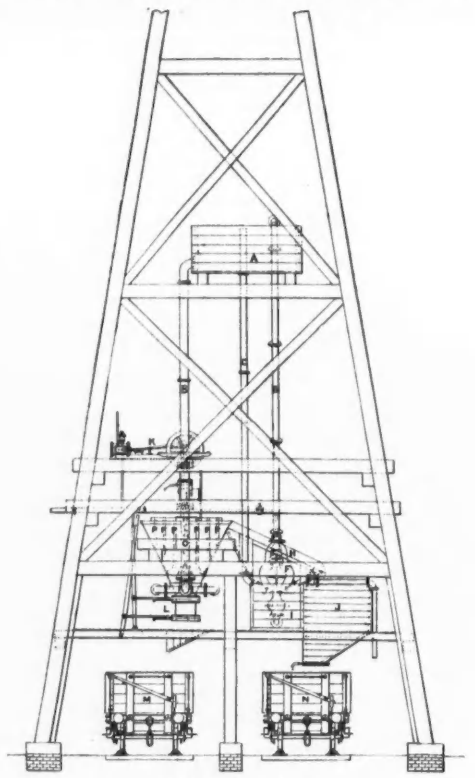
The second and third series of veins south of the granite are the ones upon which the paying mines are principally at work. These veins continue running parallel with each other, and also with the contact of the granite axis with the stratified rocks and keep several hundred feet apart. It has been thought in places that the vein passed from one strata to another through a fissure in the intervening strata, as in some places what is evidently the same series of veins appears to be closer to the granite axis than it is in others. However, no mine yet developed has shown any such displacement of the veins from one stratum to another, and so the varying distance apart of the veins on the surface is probably due to the variation in the dip of the strata, and to a slight variation in the thickness of the intervening strata themselves.

The veins generally contain an abundance of clay gouge and talc along the walls, in places the whole vein becoming such material, but when so are practically barren of all value. When ore chutes occur, and not too close to the surface to be oxidized, the ores are auriferous pyrites, with smaller amounts of galena, zinc blende, copper pyrites, gray copper and traces of many other sulphides in a quartz gangue. Besides iron pyrites, galena is the only sulphide in this district that occurs in any appreciable quantity.

At the surface the ores are oxidized and the gold mostly free, but no amount of such ore has been found as the mountains are wet, and at a depth of 100 ft. or less below the croppings all oxidation comes to an end, only a small percentage of the gold being left in a free state. So far the chutes of ore show persistence in depth, although no great depth has yet been obtained on any mine, 400 ft. being about the maximum. The size of ore chutes developed vary in length from a few feet to several hundred, in width from a few inches up to many feet, but in depth they are entirely undetermined, as far as I am aware of no ore chute has as yet been dug out in depth.

On the Chloride mine considerable silver ore has been mined, consisting principally of chloride near the surface, which in a short depth was replaced by ruby silver and argentiferous galena and blende. With this exception all the ores of this section have been exclusively gold.

The line of contact between the granite axis and the mineralized belt, as has been before stated, is straight in general direction, but has the



FRONT ELEVATION.

COAL WASHING PLANT.

form somewhat of saw teeth, the angles over the points being anywhere from 180° to about 90°, and the points and indentations, sometimes a thousand feet or more beyond or within the straight line of contact.

The veins follow these turns, and consequently are frequently found to bend at quite sudden angles. On account of this the veins pass out of side lines instead of end lines of nearly all the claims, which were supposed originally to be located in the same direction as the vein.

The granite axis passes on the east from the Powder River valley over the summit of Elkhorn Mountain across Rock Creek, over Chloride Mountain, forming high peaks of from 8,000 to 9,000 ft. elevation, to Cracker Creek, beyond which it undoubtedly passes into the main backbone of the Blue Range, which runs slightly east of north and west of south. The mineralized belt also continues this entire distance, and more or less pay ore has been so far discovered along the entire length, occurring here and there in chutes, but the bodies of workable size, so far, have been near the two ends of this belt, on Elkhorn and Chloride Mountains at the eastern end, and at Cracker Creek near the western end.

The geological age of the Blue Mountains is considered the same as the Sierras of California, which were formed at the close of the Jura-Trias. When the lava flood from the Cascades took place, the Blue Mountain range was high enough to stop the flood passing from the west to the east of them, and consequently on this, their eastern slope, all of the older formations are exposed, while to the west of them to the Cascades it is a continuous lava field.

I will say, in conclusion, that I consider this a very favorable field for capital to invest in mining, and with careful management there should be many paying mines developed in this district.

This section is especially favored in many ways, and should be able to treat its ores at as low a cost as anywhere in the West. There is an abundance of excellent timber for all purposes everywhere throughout the district; a constant water supply sufficient to furnish both power and water to all the plants that will ever be erected, and, besides this, a comparatively mild climate. There is a heavy snow fall, but with a little foresight the inconvenience that this occasions may be overcome, the snow being really a great benefit, for the supply of water which it fur-

nishes during the summer and fall when the weather is dry. The mountains are in general rugged and steep, passing in a few miles from an elevation of 3,000 ft. in the Powder River valley to an elevation of 8,500 ft. on the summits of Elkhorn and Chloride mountains. The creeks all fall from 300 to 1,000 ft. to the mile. The wagon roads are good, and the railroad only from 12 to 16 miles distant, and freight and hauling charges reasonable. Ore can be shipped from the mines to Tacoma, Wash., including treatment and all other charges, for from $16 to $20 per ton.

TENNESSEE COAL, IRON AND RAILROAD COMPANY'S COAL WASHING PLANT

Written for the Engineering and Mining Journal.

Coal washing machinery has in the past four or five years been extensively employed in the Southern States, and more especially in connection with the coking plants of Alabama. When coal that is to be sold is washed, the removal of slate, clay and other earthy matter leads to an increased efficiency of the fuel which renders the higher priced coal really the cheaper, since the customer can afford to pay the higher price because in buying a given weight of coal he is not paying coal rates for ash and for impurities which are worse than merely negative drawbacks. Where coal washing is practised, it may be assumed that the operators have convinced themselves that the increased expense of producing a marketable product is more than offset by the gain in selling price. There are also cases where the percentage of impurities runs so high that the coal would not be salable at any price wirhout preparation by washing. The practice has the further advantage of classifying the finer sizes and utilizing slack. But in washing run-of-mine bituminous coal preparartory to coking, whether the mines and ovens are under the same ownesship and management or not, there comes in the very important consideration of purifying the coal from sulphur, etc., so as to obtain a metallurgical fuel that is chemically satisfactory, in addition to the physical requirements.

The many different systems of coal washing may be grouped according to the manner in which the water is used, the principal modes being—the fall of the material in still water; separation under the influence of an upward and a downward current (jigging); separation by means of a horizontal current and an inclined bed, producing a sliding or rolling transport of the material; and separation by the influence of a rotating current. The controversy on theoretical grounds between the advocates of different systems and the competition between the makers of rival machines have naturally been very keen, owing to the great importance of the matter.

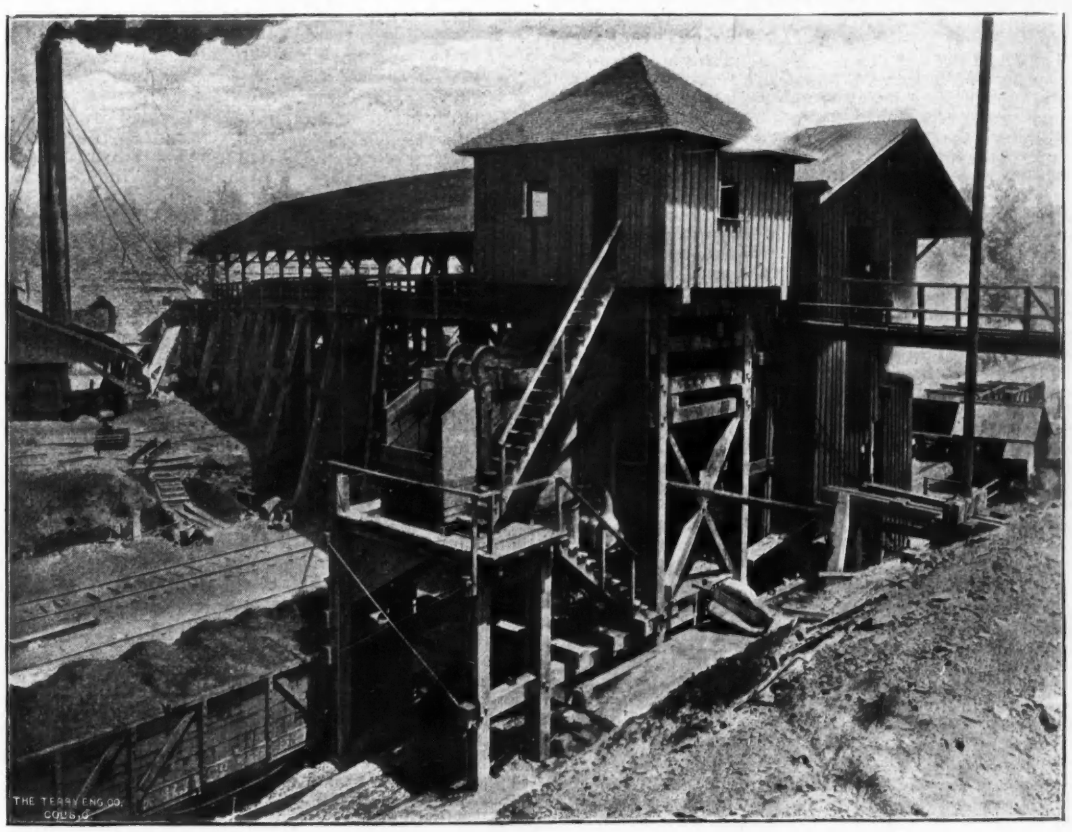
An example of some recent installations is shown in the accompanying illustrations of the Robinson coal washing plant erected by the Tennessee Coal, Iron and Railroad Company, at their No. 2 slope, near Birmingham, Ala. While this is but one of four Robinson coal washing plants in daily use by this company, it illustrates the style of plant, which is quite common where this type of washer is used. In this plant, the run-of-mine coal is brought in pit cars from the slope, at the far end, into the tipple house. The coal is dumped in the usual manner over screens, the lump and nut coal passing into the car; the small or slack coal, which at this plant amounts to some 400 tons per day, is discharged into a hopper, from which it is taken by conveying machinery into the washer. The outline front elevation will be of interest, as it shows the relative position of the washer, pump, reservoir and other parts which go to make up a complete plant.

The Robinson washer, as it is now made by the Jeffrey Manufacturing Company, consists principally of a well-built cone, constructed of heavy plate steel, having at its lower end a specially arranged water jacket. Inside this cone is a rotating shaft, which is provided with arms and blades, and actuated by power from the head. This agitator is made of wrought iron or steel, firmly secured, revolving at the rate of about eight revolutions per minute. The blades projecting down into the cone keep the material in a constant state of agitation. The lower end of the cone is fitted with valves operated by means of levers.

The water tank or reservoir is arranged overhead and the water is fed down through pipes connected with the water jacket, out of which the water passes into the washer through various openings, so as to supply it equally on all sides. The force of the water is regulated by means of the valves, so that the prssure is made to correspond with the character of the coal that is being washed. The overflow water is collected in a suitable tank, and by means of a pulsometer pump is again forced up into the reservoir for further use.

In operation the coal is discharged into the washer, and as it passes down it meets the upward flow of the water, and the clean or good coal is forced upward with the current and out with the overflow. The heavier materials or impurities, such as the pyrites, slate or bone coal, being of greater specific gravity than the good coal, are not carried up with the water, but pass down and settle into the lower chambers. The good coal passes out with the overflow over inclined perforated chutes into the cars, while the refuse material which collects in the lower chamber is removed whenever there is sufficient accumulation. A supplementary settling tank is sometimes advisable, because in treating some grades of coal there is a loss of a portion of the finer product, which passes off with the overflow. On that account, the overflow is made to enter into a supplementary collecting chamber, known as the Ramsey sludge, which saves a large percentage of the very fine coal that would otherwise be lost.

In order to demonstrate the efficiency of the washer before contracting for complete plants, the manufacturers (the Jeffrey Manufacturing Company) have erected a 400-ton washer at the works at Columbus, O., where coal may be sent for testing purposes.



Coal Washing Plant at No. 2 Slope, Tennesee Coal, Iron and Railroad Company.

A Swedish Mining Plant.—An electric station of the greatest importance to Swedish mines is that of the iron mine at Graengesberg, which has been in operation without interruption for two years. The longest distance of transmission is 14 km., or about 8¾ miles. Four turbines working under a head of 45 m., are direct-connected to four three-phase alternating generators, from which the current passes through step-up transformers, and is raised to a potential of 9,000 volts per transmission. The power is used in operating various machinery at and around the iron mines.

Electrical Copper Company (Limited).—This company was registered in London on May 23d, with a capital stock of £500,000 in 150,000 preference and 350,000 ordinary shares of £1 each, to acquire certain patents and inventions relating to the industrial electrolysis of metals, to acquire any other patents, licenses, concessions, etc., relating to the manufacture or treatment of copper or other metals or substances, and to use, develop, work and deal with the said patents and patent rights. The first subscribers, with one share each, are: H. M. Matheson, C. A. Fould, E. Dumoulin, A. McKechnie, R. M. Moir, R. Lorimer and L. S. Johnson. The first directors are: H. M. Matheson, A. Fould, W. Jacks, A. McKechnie, R. M. Moir and E. Dumoulin.

SOME MINERALS FOUND IN THE REPUBLIC OF GUATEMALA.

Written for the Engineering and Mining Journal by John Rice Chandler, Ph. D.

The principal sections of the republic may be divided thus :

The silver-lead bearing, in the departments of Huehuetenango, San Marcos, Alta Vera Paz, Baja Vera Paz, Quiche and Santa Rosa.

The silver-chloride bearing, in the departments of Santa Rosa, Chiquimula and Guatemala.

The gold bearing: Yzabel and Guatemala.

The geologic formation of the country contains syenites and coarse granites under the volcanic cappings in the ravines of Chiantla and Canoas. Schists, highly silicious, are the principal country rocks of Quiche and Baja Vera Paz departments.

Hornblende granites of great hardness and beauty in the range north of Huehuetenango. Limestone and sandstone of every variety are found in San Cristobal range, San Juan, Sacatepiquez and Chiantla. The Chiquimula range is principally composed of blue magnesian limestone.

Kaolins and clays are abundant and both the finer grades for pottery, as well as those for brick making, are found in pretty much every section; the San Juan, Chinantla and Antigua varieties yield a tenacious light yellow to red and brown product.

Mineral fuels consist of lignite, semi-bituminous and petroleum. I have had occasion to examine these and give below some idea of the range by analysis. The lignite in the Department of Santa Rosa is found in the sandstone formation in seams 3 to 4 m. thick, alternating with impure sandstone.

The analysis gave: Fixed carbon, 54·50; water, 22·50; ash, 3·50; volatile, 19·50.

Specimens of lignite from Yzabel gave: Fixed carbon, 58·60; water, 20·10; ash, 2·05; volatile, 19·25.

This was said to be found in the cretaceous (?) formation, between limestone and sandstone in small seams 2 to 4 in. each near the southern border of the lake and on the Rio Dulce.

Brown coal is found near Guatemala in sandstone in small seams 2 to 4 in. thick, lying nearly horizontal.

None of these beds have been explored to any depth and all examinations have merely been on the surface croppings, generally where erosion has uncovered the vein. The preliminary analysis of this brown coal gave : Carbon, 62·00; hydrogen, 5·50; oxygen, 22·50: nitrogen, ·60; sulphur, 1·50; ash, 4·90.

Petroleum and asphaltum have been diligently looked for, but few samples of any worth have been brought to light. An asphaltum specimen found in the valley of Pinula melted at 95° and is reported to occur in sandstone and impure limestone.

Iron ore is found as magnetite in the departments of Santa Rosa and Baja Vera Paz, but is not worked; also as hematite in Santa Rosa. Limonite, brown hematite is also found often in stalactitic forms. Iron sesquioxide 85%, with siderite in the limestones and clays near Jutiapa.

Copper ore in form of chalcopyrite and bornite pure, accompanied as usual by azurite and malachite is found in the San Cristobal Range in limestone and slate; other localities, Quiché, Canovas, Guatemala. None of these leads, however, are worked for want of transportation facilities. The Quiché district was evidently worked by the aborigines, many copper hatchets, ornaments and a bell (?) having been discovered in the mine workings underground.

Lead ore as galena is found pure and intermixed with zinc and carrying silver. The large blocks of galena combined with cerussite, found in the ancient mines in the Chiantla, Santa Cruz and Cunen districts, yield 80% pure lead. Many of these mines were worked as open quarries by the Spaniards and the Indians before them. The silver product ranges from 2 to 60 oz. per ton.

Nearly all these ores are found in limestone, sometimes of the magnesian variety ; seldom in porphyry or granite.

Most of the bullets used by the natives for centuries have been manufactured from the Chiantla lead ores. They still use the old Castilian "ovens" for smelting purposes.

Solid blocks of galena are often found in the vicinity of Quiche and Chiantla, weighed from 1,000 to 1,500 lbs. and the Alotepeque leads are mostly pure galenas.

The silver production from these lead ores will be treated under "Ag."

Zinc is mixed in blende or black jack of the miners, with variable proportions of lead in the Chiantla and San Cristobal lead districts. The calamines and franklinites are confined to the Santa Cruz lead mines.

Tin as cassiterite or stream tin has been found in small quantities in the bed of the Rio Grande and Motagua, often associated with the gold placers. Assays have given 66%, 69.5% and 74.6% tin. Tin pyrites are reported in the granites of Quezaltenango.

Mercury is found in the metamorphosed limestone about Quezaltenango and Atitlan. The deposits are irregular, producing native mercury in small quantities. They have been known to the Indians for many hundreds of years.

Cobalt and nickel are reported from Alta Vera Paz and Alotepeque. Turquoise, the Chalchihuites of the Indians, is said to come mostly from the metramorphic limestones of Santa Cruz, and mined almost entirely by the aborigines.

Common salt is obtained from springs north of Coban and in the Magdalenas, which were worked formerly by the Indians and are now in the hands of the municipalities.

Silver ore as silver-bearing galenites are formed in the limestones and slates of Chianlta and Huehuetenango. Average assays gave (per ton of 2,000 lbs.): No. 36, Ag. 21 oz., Pb. 61·5%; No. 108, Ag. 39 oz., Pb. 79%; No. 119, Ag. 621 oz., Pb. 53%. The lead carbonates are found in irregular limestone deposits and these gave: Ag. 22·5 oz., 86 oz., 199 oz., 278 oz. and 693 oz.

The chlorides of silver associated with lead carbonates and galenas in Santa Rosa and Chiquimula districts yielded Ag., 325 oz., 792 oz. and 982 oz. per ton. Of the working mines, El Rosario and San Rafael are good examples in the Santa Rosa district. The major part of the ores are carbonates, chlorides and sulphides. The deposits are not continuous, the percolation of mineral waters seeming to have effected serious changes in the limestone strata.

Besides the remains of old workings in the Chiantla and Huehuetenango districts, the traditions of the aborigines point to the existence of mines of silver, copper and gold centuries ago.

The gold placers of the Rio Grande and Motagua have been worked in a desultory manner from time immemorial. The gold is found in the shape of scales imbedded in the quartzose sand and silt of the rivers under the coarser sand.

The yield is from 3c. to $1 per cubic yard. Coarse gold weighing ½ to 1 oz. is found occasionally. The quality ranges from 14 to 18 K. fine.

RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

Specially Reported for the Engineering and Mining Journal.

The Jury Decides as to Negligence.—In an action by an employee for injuries resulting from being crushed between a car running on a tramway in a mine and the wall of the tunnel through which it passed, it appeared that the brakes were on the sides of the car, and had to be operated by a person moving alongside; that the tramway (between which, as originally located, and the walls of the tunnel, there was sufficient room at all places for brakeman to move along without danger in operating the brakes) had been recently straightened, to adapt it to a new motive power, so that in places there was not sufficient room for the safe performance of the brakeman's duties. The evidence for the injured party, which was contradicted, showed that he was at the time acting within the line of his duty as brakeman, and that other employees as well as himself did not know that the place was dangerous; that men had been, and were at the time of the accident, engaged in widening other places of a similar dangerous character; and that the place of casualty was widened after the accident; and there was no evidence that, by reasonable diligence, it could not have been widened before. The Court of Appeals held that the question of negligence was for the jury.—Baker vs. Maryland Coal Company (35 Atlantic Reporter, 10) Court of Appeals, Maryland.

Construction of Natural Gas Lease.—Under a lease for a term of years, "or so long as gas or oil is found on the premises" providing for the payment of a specified rental "each year in advance for every well from which gas is used off the premises," the lessee is liable only so long as he uses the gas; and upon the failure of the well, or if it becomes impracticable to use gas from it, the lessee is released from all liability.—Indianapolis Gas Company vs. Terers (44 Northeastern Reporter, 549), Court of Appeals, Indiana.

Negeigent Blasting.—Where parties by negligent blasting on their premises, loosed the soil of another, so as to cause erections thereon to fall, they are liable for the expense incurred by such party in putting back such erections in the same condition in which they were, where there was no evidence to show that such amount was unreasonable.—Denken vs. Canavan (39 New York Supp. Reporter, 1,078), Supreme Court of Appeals Term, 1st Department.

Liability of Mine Owner.—Certain contractors erected a boarding camp upon mining property where they were engaged in mining, under contract with the owners of the property; and by permission of the contractors certain parties occupied the camp and boarded the workmen of the contractors. Subsequently the contractors abandoned the contract and premises, and these parties intended and attempted to remove their camp, but were delayed by reason of the severity of the weather, dangerous sickness of a member of the family, and financial inability in obtaining another place. The owners resumed possession of the mining property, and stored a large amount of dynamite in a building located on it, within 33 ft. of the boarding camp; and about three weeks afterward this dynamite, while being heated by the company—the owners—exploded, damaging the personal property in the camp. Prior to the explosion the company had notified the campers that if they remained there they would do so at their own risk, but gave them no notice to remove from the camp, and took no legal steps to compel them to do so. The company stored the dynamite about three weeks before the explosion, and while the camp was still occupied by the parties bringing the suit for damages. The court held : (1) That under the facts appearing in the case, the parties remained in possession of the camp as bare licensees, and the question of whether they had reasonable opportunity to remove from the camp with their property before the time of the explosion was a question for the jury. (2.) While they were in actual possession of the camp as licensees, the company would be liable for damages to their property resulting from the explosion of the dynamite, if the explosion was caused by the want of ordinary care and skill in its management, although in the lawful possession of the company owning the property at the time. Clarkin vs. Biwabik-Bessemer Company (67 Northwestern Reporter, 1,020), Supoeme Court of Minnesota.

PATENTS RELATING TO MINING AND METALLURGY.

United States.

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

WEEK ENDING JULY 28TH, 1896.

564,858. Electric Metal-Separator. Harvey H. Whitacre and Andrew C. Wolfe, Wellsville, Ohio. Filed November 8th, 1895. The combination with a pipe or conduit, or a series of magnets radiating therefrom, a supporting-ring for the magnets, and converging fingers projecting toward the center of the pipe, but terminating a sufficient distance therefrom to permit of an unobstructed channel therethrough whereby a considerable obstruction is presented to the material treated, but whereby an unobstructed passage is left at the point where the magnetic attraction is strongest for a strong current of the material.

564,705. Mining Machine. Frrncis M. Lechner, Columbus, Ohio. Filed July 5th, 1894. The combination with the single end plate of a sliding frame, of a guide-strip of greater width than the thickness of the plate removably secured to the edge of the plate to form a T-shaped track, and a traveling endless cutting-chain having T-shaped grooves formed in some of its links in which grooves the T-shaped track is received.

564,758. Mining Machine. George F. Myers, Pittsburg, Pa., assignor to the American Mining Machine Company, same place. Filed March 13th, 1895. The method of bearing in, which consists in cutting a horizontal slit in the coal or like substance, simultaneously cutting another slit inclined at an angle to the horizontal slit, allowing both slits to practically intersect each other and removing the core left between them.

PERSONAL.

Mr. D. J. Nelson has resigned his position as superintendent of the Pittsburg and Tennessee Copper Company at Ducktown, Tenn. Mr. Hugh Ferguson is now in charge.

Mr. Wm. D. L. Hardie, until recently with the Hardie Coal Company at North Birmingham, Ala., has gone to Lethbridge, Alberta, Canada, as superintendent of the coal mines at that place.

Mr. Frank Nicholson, mining engineer and metallurgist, has gone on a 10-day trip to Bonito, Mont., on professional business. After completing his work there he will take a trip to Mexico.

Mr. H. C. Frick is in Europe. He will meet on the Continent Mr. Thomas Lynch, general manager of the H. C. Frick Coke Company, and a tour will be made of Belgian and German coking districts.

Col. Geo. D. Wick, vice-president of the Union Iron & Steel Co., of Youngstown, O., was elected president of the Mahoning Valley Iron Company at the annual meeting of the company at Youngstown July 22d.

Mr. George Lowe, who for a number of years has been general superintendent of the Pullman Iron & Steel Company, at Pullman, Ill., has been employed to succeed Levi Dibbins, resigned, as superintendent of the rolling mill of the United States Car Company.

Mr. Russell L. Dunn, mining engineer, of California, has been engaged by a syndicate of Paris bankers to examine the placer districts on the Amoor River, Siberia. He will sail from New York for Paris at an early date and will proceed, via Moscow and Irkutsk, to his destination, a point in Siberia 2,000 miles from the Pacific Ocean.

Mr. W. E. Sutton has been appointed superintendent of the mines at Monte Cristo, Wash. He was a classmate of President Butler at Columbia, and an old acquaintance of Superintendent Godsholl, of the Reduction Company, in Colorado. Mr. Sutton was for several years chief engineer of the famous Molly Gibson mine at Aspen, Colo., and for two years past has been connected with the engineering department of the Southern Pacific.

OBITUARY.

Charles M. French, for many years manager of the Pennsylvania Drop Forging Company, died at Pittsburg, Pa., last week.

Prof. J. Alden Smith, a well-known mining expert of Colorado, died on July 17th at Magnolia, Colo., aged 66 years. At the time of his death he was prospecting for the purpose of writing a thesis on the geological formation of that section of Boulder County.

William G. Audenreid, formerly a well-known coal and iron operator, and for 20 years a director of the Bank of North America, died recently at Germantown, Pa. Mr. Audenreid was president of the Philadelphia Milling Company, and at the time of his death a prominent member of the Philadelphia commercial world.

Peter Pearse Parrott, a well-known iron manufacturer, died at his home in Arden, Orange County, N. Y., on July 30th. He was eighty-five years old, and was born in Portsmouth, N. H. His father, John Fabian Parrott, was a representative in Congress, and served two terms as United States Senator from New Hampshire. The late Mr. Parrott was his youngest son. At the former's iron works were manufactured the famous Parrott guns for the Government.

The Right Hon. Sir William Robert Grove, D. C., LL. D., P. C., F. R. S., died in London on August 2d. He was born in Swansea, Wales, on July 11th, 1811. He was educated at Oxford, taking the degree of A. M. in 1833. Ill health temporarily prevented him pursuing the legal profession and he interested himself in electricity. In 1839 he invented the powerful voltaic battery which bears his name, and the gas battery. From 1840 to 1847 he was professor of experimental philosophy at the London Institution. Becoming a Q. C., in 1853, Mr. Grove was for some years the leader of the South Wales and Chester circuits. He was knighted on February 21st, 1872, shortly after his elevation to the bench as a Justice of the Common Pleas. He held that office until November, 1875, when, through the operation of the Judicature act, he became a Judge of the High Court of Justice. When he retired in 1887, he was made a member of the Privy Council. Several important discoveries in electricity and optics were made by Sir William; and in a lecture delivered in 1842, he first advanced the theory of the mutual convertibility of the various natural forces—heat, electricity, etc., and of their all being modes of motion, or forms of persistent force. He was a Fellow of the Royal Society and a member of the academies of Rome and Turin; Knight of the Order of the Rose, Brazil, etc.

INDUSTRIAL NOTES.

The Oliver Coke and Furnace Company has blown out 300 ovens at Uniontown, Pa.

All the rolling mills at Niles, O., are to resume work at once, giving employment to about 2,000 men.

The Philadelphia & Reading Railroad Company has given a contract for 500 freight cars to the Depew Car Works.

J. Findlay & Co., Vancouver, B. C., announce their intention of establishing a plant for the manufacture of mining machinery.

Soho Furnace, of the Pittsburg Iron and Steel Engineering Company, at Pittsburg, Pa., is being cleaned out and will be relined.

The Denver Engineering Works are installing at a Southern Colorado coal mine an electric pump to raise 1,000 gals. of water per minute.

The Washington Coal and Coke Company has fired up 85 new ovens at the plant at Elwell, Pa., giving employment to an additional 100 men.

Work has been begun on the big traveling crane for the Eddy Valve Works at Waterford, N. Y. The crane will have the capacity to move 200,000 lbs.

The Laidlaw-Dunn-Gordon Company, of Cincinnati, O., has received a third order from the Schoen Manufacturing Company for a 1,500 lb. high-pressure pump.

The Central Iron Works, of Harrisburg, Pa., has received an order from the American Tube and Iron Company, of Middletown, Pa., for 1,500 tons of iron plates.

The Bradford (Pa.) Enameling Company has been organized for manufacturing enamel ware, and will place a line of new machinery. The capital stock is $100,000.

The Penn Bridge Company, of Beaver Falls, Pa., has put on a night turn. This was found necessary in order to fill its many orders. The company now has in its employ nearly 400 men.

The Tyler Tube and Pipe Company, of Washington, Pa., recently made a large addition to its plant, consisting of two lap weld furnaces, which are said to be the largest in the country.

A ballistic plate, weighing twenty-one tons, a part of the side armor of the Russian battle ship "Rostislar," was shipped on August 5th by the Bethlehem Iron Company to Admiral Virchowsky, commander of the port at St. Petersburg.

The stockholders of the Glasgow Iron Company, at Pottstown, Pa., by unanimous vote have agreed to increase their capital stock from $200,000 to $300,000. It is understood this action is preliminary to increasing the capacity of their steel plant mill.

H. K. Porter & Co., of Pittsburg, Pa., have, in addition to many orders from firms in the different States, contracted to build engines for parties in South Africa, West Indies, Hayti, Trinidad and San Salvador. They have sent engines to nearly every civilized country.

The Buckeye Engine Works, at Salem, O., have given notice of a 10% reduction in wages, to take effect on August 1st. The reduction will affect all the employees of the company, including the salaried officials. Dullness in business is assigned as the cause of the reduction.

At the works of the Pennsylvania Steel Company, Steelton, Pa., the iron and steel foundries are crowded with orders. The bridge construction and machine department have many orders ahead, and the frog, switch and signal department is running with day and night turns.

The blast furnace of the Watts Steel and Iron syndicate (Ky.) closed down July 15th, to remain idle for two months. The low market prices of iron made this action necessary. The production of the furnace greatly exceeded the consumption. About 300 men were thrown out of employment.

The Ohio Valley Fire Clay Company's works, at Toronto, O., are shut down indefinitely, in compliance with orders from the Central Sewer Pipe Company. It is said one edict has gone out to close down all combine plants. Those outside the combine will probably run steadily until the first of the year.

The Washburn-Moen Manufacturing Company has filled an order from the Tiger-Poorman mines at Burke, Idaho, for 1,500 ft. ⅛ × 5⅛-in. wire rope, and four flat ropes for the Pearl del Monte Company, Pachuca, Mexico. The latter is made of specially prepared plow-steel wire, with a tensile strength of 275,000 lbs. to the square inch.

The Baldwin Locomotive Works have recently completed large locomotive orders for Russia roads, 60 engines and 50 tenders having been shipped during the last two or three weeks from Philadelphia. The works are busier than they were at this time last year, the work in progress including 25 locomotives for the Lehigh Valley, 20 for the Baltimore & Ohio and five for the Erie road.

As the result of the competition for naval gun forgings Commodore Sampson, Chief of Ordnance, has recommended the acceptance of the Midvale Steel Company's bid for the six-inch guns at $240,000 and for the four, five and eight-inch guns to the Bethlehem Iron Company at $135,000. It is found that the average price per pound for these forgings is below 26c., while the last forgings, made under contract, cost from 28 to 29c.

The Jeffrey Manufacturing Company, of Columbus, O., has taken up the manufacture of the Robinson patented coal washing machinery. There are many in daily use in this and foreign countries, and it is conceded to be a most efficient and simple washer. Points of special advantage are: Its simplicity, compactness, low cost of installation, low cost of operation, economy in the use of water, and its washing of coal that is not closely sized.

The Ingersoll-Sergeant Drill Company has received an order from the Pennsylvania lines for four half-duplex air compressors of the class "G" pattern, with Myer valve gear. The steam cylinders are 10 in. in diameter; air cylinders 10¼ in. in diameter; stroke 12 in. These compressors will be located as follows: One at Columbus, O.; one at Denison, O; one at Indianapolis, Ind., and one on the Vandalia road at Terre Haute. The Big Four has also ordered a similar compressor for its Brightwood shops.

As the result of a cut of 25c. in wages of 400 boys, the Chicago Shipbuilding Company, employing 2,500 persons, finds its works tied up. One thousand men, riveters, went out voluntarily in sympathy with the boys, and the remaining 1,100 are unable to work without the co-operation of the others. The boys are not organized, but had talked their grievances over with the riveters, 1,000 of whom are in the employ of the company, and when the boys announced their intention to strike to Superintendent Babcock, the latter found a strike of 1,400 of the company's employees on his hands. The superintendent endeavored to reason with the boys and men, but they were obdurate.

The boys positively refused to acquiesce in the reduction of 25c. per day, and the riveters asserted they would do no work if new boys were employed. Work has been entirely suspended among the entire force of 2,500 men and boys.

The Edward P. Allis Company, of Milwaukee, Wis., is building a large chlorination and sampling mill for Colorado, to cost about $200,000. The sampling plant has a 200-ton crusher, two sets 36 in. × 14 in., Reliance rolls, small rolls, grinders, etc., with a 100-H. P. Reynolds-Corliss engine. The mill proper includes six sets, 30 in. × 14 in. rolls, with Berthelet separators and conveyors; three 14 ft. × 100 ft. Ropp furnaces, ten 6 ft. × 12 ft. chlorination barrels, sand filters, precipitation tanks, gas generators, filter presses, melting furnace, etc. The power for the reduction plant is furnished by a 300-H. P. Reynolds-Corliss engine, with four 60 in. × 20 ft. boilers. There will be an electric light plant and various other improvements.

The Brown Hoisting and Conveying Machine Company, of Cleveland, O.—General Eastern Office, Havemeyer Building, New York—have just received an order from Fried. Krupp, at Essen, Germany, for a complete hoisting and conveying plant for their blast furnace at Rheinhausen. This plant consists of three standard Brown Overhead Bridge Tramways, to be operated by electricity, each machine having independent winding drums and electric motors. The Brown Hoisting and Conveying Machine Company are to furnish all the working parts, including the sheaves, engines, motors, hoisting and conveying machines, etc., in fact, everything but the bridges proper, which will be built in Germany, the Brown company sending a man abroad for that purpose. There will be three Elwell-Parker motors used of about 60 H. P. each. The entire plant is to be in operation during the early part of 1897.

The contract for the new bridge, to take the place of the railroad suspension bridge now spanning the Niagara River, has been awarded to the Pennsylvania Steel Company, Steelton, Pa. The new bridge will have a span of 550 ft. between piers, with short spans connecting the main span to the bluffs. It will have two floors, the upper one for two railroad tracks and the lower one for carriages, trolley cars and pedestrians. The piers will be of masonry built on the limestone about half-way up the sides of the bluff. The superstructure will require 2,780 tons of steel plates and angles, 109 tons of steel castings, 91 tons of steel I-beams and pins and 15 tons of iron rods and turnbuckles. The bridge is designed for a load on the railroad floor of two consolidation engines, with 40,000 lbs. on each pair of drivers, followed by a train of 3,500 lbs. per lineal ft., and at the same time the highway floor is to support a live load of 3,000 lbs. per ft.

The Manufacturers' Street Railway Company, of New Haven, Conn., has purchased the first electric locomotive of any considerable size that was built in this country and the first practical electrical locomotive in the world. It was exhibited by the General Electric Company, at the Chicago Exposition, 1893, and has a rated draw-bar-pull of 7,000 lbs. It is equipped with an air brake, and is being prepared for shipment from the Schenectady works. Its total weight is 30 tons, and it will be utilized to haul freight cars from the junction of the New York & New Haven Railway at Cedar Hill to manufacturing establishments located along the water front at some distance from the freight yards of the Consolidated Road.

The freight cars will be hauled directly into the yards of the manufacturers, and the loads will be collected by the electric locomotive and hauled to the main line of the N. Y., N. H. & H. R. R. where they will be taken up by the steam locomotive for transportation to their destination. The length of

the line along which this locomotive will run is nearly two miles, the maximum grade against the load being about 2¼%.

The new highway bridge across the Connecticut River, connecting Middletown with Portland, Conn., is now swung by electricity. The electrical equipment consists of four G. E. 800 motors. Two of these are connected with the swinging mechanism, one working and the other being held in reserve. Of the other two, one is located under each end of the turning span to raise it from the fixed piers before the third motor begins to swing it. The bridge span is 450 ft. long—the longest single-span highway bridge in the world. Previous to the installation of this electrical equipment by the General Electrical Company, fifteen men were required to start the bridge and eight men to swing it.

MACHINERY AND SUPPLIES WANTED.

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

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

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

GENERAL MINING NEWS.

CALIFORNIA.

AMADOR COUNTY.

Union Consolidated.—The 300 ft. shaft at this quartz mine is being sunk 700 ft. deeper. It is said a second 30-stamp mill is to be added.

CALAVERAS COUNTY.

(From Our Special Correspondent.)

Lockwood.—This mine, near West Point is well equipped with machinery. The double-compartment shaft is down 300 ft. on a 24-in. vein of ore, which runs over $100 in gold and 2 oz. of silver. This mine has been a good producer.

North Star.—At this mine, at Makelumne Hill, a fine lot of machinery is being put in, including an air compressor and power drills.

EL DORADO COUNTY.

(From Our Special Correspondent.)

Esperanza, Garden Valley and Pleasant Hill.—These claims, 12 miles north of Placerville, have been sold to Mrs. S. S. Lighfoot, of Chester, Eng., for $150,000. The ledge on the 200-ft. level is said to be 60 ft. in width. The free milling value of the ore is $5.50 per ton. There are 550 ft. of levels and cross-cuts below the water level.

MARIPOSA COUNTY.

(From Our Special Correspondent.)

Bankers' Group Gold Mines.—This company, incorporated with a capital of $1,000,000, was organized for the purpose of operating the Mason, Deloss, Bonanza, Queen, Mayflower, Banker, Sunrise, Buckingham and Mariposa mines, located about 12 miles northeast of Mariposa. The directors are H. Z. Burkhardt, Wm. McCracken, B. R. Keith, Robert E. Turner and W. S. Zeiller; head office, San Francisco. There is a 10-stamp mill on the property. It is the intention of the company to bring in power from the electric plant now in course of erection on the Merced River, eight miles distant.

NEVADA COUNTY.

(From Our Special Correspondent.)

Brunswick Consolidated Gold Mining Company.—The following letter, dated July 23d, was received by the manager of this company from the superintendent, Mr. C. H. Morgan: "I have just shipped 100.85 oz. gold, cleaned from the plates in 2¾ days, equal to 22 tons ore. The battery must contain quite a sum. The mine is the same as usual. We lost 44 hours from Saturday night to Monday night in the mill run, which was closed down for repairs. The above run ended to-day at noon. I shipped 75.60 oz. (net, $1,254.48), from the run commencing noon, July 16th, and ending 11 p. m. on July 18th. These big returns are from ribbon rock in the stopes over 800 entirely. The concentrators and feeder are in; am trying to get new sills under the battery before starting the 10 stamps." The net returns for the 50·87 oz. gold shipped on July 16th amounted to $853.84.

Gold Hill.—This mine, one and one-half miles west of Nevada City, has been cleaned out and retimbered. The machinery is being placed in position and the mine will soon start up.

Metropolitan.—This old quartz mine, at Moore's Flat, 20 miles from Nevada City, is being prepared for active operations. Twenty men are at work now, but more will be employed as soon as the machinery arrives. One of the new Merrill quartz mills, the first of its kind in that country, is to be set up. The mine has 2,000 ft. of tunnels in it already, and it is estimated that there are 25,000 tons of rock in sight. It is generally a low-grade ore, running about $5 to the ton, though a little of it promises as high as $20.

PLACER COUNTY.

(From Our Special Correspondent.)

South Yuba Company.—This company has commenced work on the new storage dam at Clipper Gap. This dam, which will be 42 ft. high, 426 ft. long, and 150 ft. wide at the base, is to be built of rock and earth. The reservoir will cover 40 acres, with a capacity of 160,000,000 gals. of water.

PLUMAS COUNTY.

(From Our Special Correspondent.)

Four Hills.—At this mine, six miles southwest of Johnsville, 15 men are employed. A quartz ledge of good milling quality, from 8 to 12 ft. in width, was recently developed in the lower tunnel. Mr. Moodie, the superintendent and principal owner of the property, is now on the ground.

SAN BENITO COUNTY.

New Idria.—The Napa and Ætna Quicksilver Mining companies have acquired this quicksilver property, consisting of four claims. The company is organized under Wyoming laws, with $500,000 stock in 100,000 shares, $5 par, full paid and unassessable. The trustees and officers are the same as those of the Napa and Ætna companies. The mine has produced as much as 1,500 flasks of quicksilver per month. The mine has been open suitable for operations for the past 16 months, and new works adjoining the shaft have been erected.

SAN DIEGO COUNTY.

Golden Cross Mining Company.—A strike of rich ore is reported in the Golden Crown mine, one of the company's group at Hedges. In the 300-ft. stope there is now uncovered between 7 and 8 ft. in thickness and about 40 ft. in length a vein of very rich ore. Samples from it assayed $170, and an average sample, taken from top to bottom of the face, assayed $58.50. The indications are that this ore chute crops on the surface some 450 ft. from the point where it has been opened at the 300-ft. stope.

SHASTA COUNTY.

(From Our Special Correspondent.)

Harrison Gulch.—Eight claims in this gulch, 65 miles, southwest of Redding, owned by Fowler, Rhoads & Benton, have been sold to Capt. J. H. Roberts, of Sacramento, for $110,000. A 20-stamp mill will be put up at once. From the development of the property it is estimated that there is $500,000 worth of free milling ore in sight.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

Cardinell.—At this mine, near Tuttletown, a rich strike on the 100 ft. level has been reported.

COLORADO.

ARAPAHOE COUNTY.

United Coal Company.—The International Trust Company has applied to the District Court for permission to foreclose its first mortgage for $500,000 on the properties of this company, on account of default in interest payments. The court is asked to decree that $127,000 worth of receiver's certificates, issued to the miners in payment of wages, shall not be a prior lien, and no debts be paid until the mortgage is satisfied.

DOLORES COUNTY.

Rico Concentrating Works.—These works finished a run of Argonaut ore recently, says the Rico *News-Sun*, which demonstrates that the concentrator will be a success under the supervision of W. W. Oliver. The first class concentrates showed a saving of 96.4% of the original lead values. The second class concentrate is principally iron pyrites and carries considerable of the silver values. The zinc slimes caught in the settling tank contained very little value.

EL DORADO COUNTY.

Martin Gravel Mine.—This mine, about three miles west of Sheep Ranch, is running at its full capacity with a force of 30 men. There is pay gravel in sight to keep a 5-stamp mill in operation for several months.

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From Our Special Correspondent.)

Brodie Cyanide Mill.—This mill is evidently growing in favor. A few months ago it was generally idle on account of scarcity of ore; now it is always at work, and gives general satisfaction. The new 40-ft. Pearce Turret Furnace will soon be at work, as the machinery is now on the ground. Mr. John E. Rothwell, of Denver, is superintending the construction of the furnace.

Elkton.—During the past five months this mine has sold ore to the value of $32,000 in gold per month. The expenses each month have been a little over $10,500. In the treasury there is a balance of $70,000, and dividends of $30,000 have been paid. Before October 1st the reserve in the treasurer's hands will, it is estimated, be $100,000. A new compressor and a new boiler have been added to the plant and paid for during the past five months. The second level has been extended into the Walter ground 167 ft., and yields low-grade ore. The third level has been driven into the Walter ground 135 ft., and has yielded several cars of 2½ to 3 oz. ore, of sufficient value to bear all the expenses of running the drift 300 ft. Both of these drifts are being worked one shift by rock drills. The first level yields the usual quantity of ore. It will be of interest to many to know that above the first level of the Elkton and the Walter, $500,000 worth of ore will have been taken out before the 1st of January, 1897, with several blocks of reserves still intact.

Garfield Grouse.—This property, on Bull Hill, is being worked under the superintendence of Wm. Trevorrow for the Bankers' Mining & Milling Company, a Denver corporation, and employs 18 men. The company owns 350 ft. of the vein.

Ida May.—This property is now equipped with a steam hoist. The shaft has been sunk to 250 ft. and a drift is now being extended north. This property has been continuously at work since May, 1892, and it begins to look now as if the four owners will be rewarded for their outlay and perseverance.

Ingham.—This mine, on Raven Hill, now gives employment to 16 men, who ship on an average two tons of ore per day. In the bins at the present time there are 10 tons of first-class ore, carrying from 8 to 12 oz.; also 20 tons of second-class or $40 ore. Developments are being pushed at the 100 and 170-ft. levels and a raise is being put through from the Mattie D. tunnel to the 170-ft. which will ventilate the ground and render large blocks available for stoping.

Isabella.—But few camps in the State can show so many good plants of machinery as can this district, and each of the large mines is trying to make improvements on its predecessors. Mr. Freeland, general manager of the Isabella group, is building a shaft-house and erecting a steam plant, compressor, etc., on the Lee shaft, which is intended to be the main working shaft of the company's properties, the vein being opened 1,300 ft. to the southeast and a further distance to the northwest. The shaft will be vertical, with two compartments. The boiler is walled in, the temporary hoist, equal to a capacity of 800 ft., is fixed, the compressor is on the ground and will soon be at work, as the shaft will be sunk with all speed below its present depth, 65 ft. If the present plans are carried out in their entirety, this shaft-house for economy and general efficiency cannot be surpassed in the State, although there are hundreds of more expensive shaft buildings.

Joe Dandy.—This mine, on Raven Hill, is being worked by the owners, the lessees not having found it a very profitable investment.

Lucky Gus.—This shaft has been sunk 450 ft. and gives employment to 33 men. The surface works are showing well. The returns from this property for July were very satisfactory indeed, and the many "pannings" recall Pike's Peak claim in June, 1893, when often $20 worth of gold was taken from a pan. Bull Hill, or, at least, this part of the hill, has produced some very rich mud between the cracks of the Brecciated rocks.

Katherine.—At this property, owned by the Nugget Company, they are still crosscutting at the 412-ft. level west, and have intersected two veins or dikes carrying but little value.

Raven Company.—This company is doing considerable work on its several properties. A contract was let to a Mr. Campbell to drive the Raven Hill tunnel 800 ft. from its present face 600 ft. from mouth. The course of the tunnel has been changed. At the mouth of the tunnel is a four-drill compressor The machinery for the new shaft on the top of the hill, which is supposed to strike the tunnel at a depth of 800 ft., has arrived, and will soon be at work.

Sacramento.—Owing to the discovery of ore on the Specimen and Lucky Gus, this property, on Bull Hill, will soon be a hive of industry. Applications have already been made for several leases, to work continuously.

Specimen.—This mine has made some phenomenal strikes recently. A shaft has been sunk 35 ft. and not a bucketful of waste has been hoisted. The lessees on the south end of the claim have made what is reported as one of the richest discoveries made on the hill for the year—12 in. of ore averaging from $500 to $1,000 per ton. The lessees pay 20% royalties.

GILPIN COUNTY.

(From Our Special Correspondent.)

Washout on Railroad.—The Union Pacific, Denver & Gulf Railroad, which connects this district with Denver, was last week visited by a severe flood, which to a great extent demolished the track for a distance of seven miles, between Golden and the Forks of the Creek. At first it was feared that communications would be cut off for a month or more, but rapid progress has been made with the construction of a temporary track, and it is now expected that freight trains will be able to pass by the end of next week. The situation is, however, sufficiently serious already; no shipments of ore or concentrates can be made, and many mines have had to shut down for want of coal. Fortunately most of the large producers, and all the mills, were fairly well prepared for the emergency, and can hold out for some days yet.

Perigo.—An important strike of pay ore is reported to have been made in one of the drifts in this old mine, at one time a large producer.

North.—This mine, on the southern slope of Quartz Hill, is to be closed down. It has been worked patiently to a depth of 600 or 700 ft. by the owner, a resident of Philadelphia, but has never shown up any pay and is known to have been poor at surface. It is very rare for anything of value to be found in a claim in this district unless good pay was found in the surface gossan.

Great Mammoth.—An addition is being built to the shaft-house on this mine, and the Gilpin County Tramway has put in a switch to it.

GILPIN COUNTY.

Cuba Gold Mining Company.—The main shaft of the Aurora mine, in Russell Gulch, worked by

this company, is now about 250 ft. in depth. Fourteen men are employed, and the smelting ore yields from $50 to $150 per ton.

LAKE COUNTY.

(From Our Special Correspondent.)

THE LEADVILLE STRIKE.—At this writing, August 3d, the strike status is the same, and there are no signs of a speedy settlement. On Tuesday the Weldon injunction case will be heard in the district court. The mine has been working steadily, but under injunction. No shipments have been made, though considerable ore is in the bins.

BIG FOUR MINING COMPANY.—The Chicago owners were evidently not satisfied with the action of manager Woodward in closing down the Big Four mine in conjunction with the other $3 a day mine managers. As a result Mr. Woodward resigned, and Mr. Welsh was installed as superintendent. Under the management of the latter the property was started up last week on the $3 scale, and is now being operated with 25 to 40 men.

TWIN LAKES SECTION.—From this section of Lake County comes very good news of activity and results. The chief discussion at present is the strike on Bartlett Hill, where the Bartlett Brothers are said to have uncovered a 6-ft. vein, which has 1 ft. of high-grade gold ore, the balance being all low-grade milling ore. The assays give values from $7 to $300 in gold per ton. The ore is an irony quartz and porphyry and readily pans gold.

In the Colorow, Alta and others, lodes located adjoining the Bartlett, good finds are being made and the outlook is very encouraging.

MT. ELBERT SECTION.—To cut the veins of the Gordon, Little Joe and other mines of this section a big tunnel for drainage, exploration and development is being run into the mountain. Superintendent Booco, of the tunnel company, received word that the machinery for an electric power plant will arrive this week, which will be used for drilling. The tunnel, when completed, will be 2,000 ft. in length.

RED MOUNTAIN SECTION.—Geo. Hopkins has three shifts a day working on the Bwlchgoch group. He is working to get at a body of gold-bearing iron sulphides and copper-stained quartz.

MONARCH MINING COMPANY.—These people are sinking a new shaft, and their engineers have been working 12-hour shifts at $4 per day. The Engineers' Union demanded that the shifts be reduced to eight hours and when this was refused the engineers quit and the mine was closed. The property will be reopened by August 10th and the few feet of further sinking necessary will be done in eight-hour shifts.

BELLE OF GRANITE.—In my last letter I called attention to the litigation over this lode. Since that time a temporary injunction has been granted restraining the defendants, Parker and the Inverness Mining Company, from shipping, selling or settling for any ore heretofore shipped. The Arkansas Valley smelter is also restrained from settling for any ore received from plaintiffs.

(Special to the Engineering and Mining Journal.)

LEADVILLE, COLO.—*By Telegraph*, August 5th, 1896.—W. H. Griffith was to-day appointed receiver of the Weldon mine by the District Court. It is thought that this settlement of the squabble among the owners will be an indirect means of ending the long and disastrous strike here. The wages to be paid at the Weldon were also fixed by the court.

PARK COUNTY.

CHICAGO.—The first shipment of ore has been made from this mine, near Alma, to Denver, and returns give values of 49½ oz. in silver, 4% in lead and a heavy trace in gold. The vein is about 2 ft. in thickness in that class of ore.

VIKING GOLD MINING AND MILLING COMPANY.—This company is having a carload of high-grade ore packed down for shipment to Denver. The Viking mine is located near the head of the Platte, and for the past year, it is said, has been shipping some of the best ore produced in the Consolidated Montgomery district.

PITKIN COUNTY.

LITTLE ANNIE MINING COMPANY.—A special annual meeting of the stockholders of this company was held last week. The following directors were elected: Wm. S. Nelson, of Denver, and S. I. Hallett, E. W. Young, T. E. Beans and Abe Mecklenburg, of Aspen. The new board elected Albert Smith, of Denver, president, and E. W. Young, secretary. Mr. Young resigned the directorship and Ben Ferris was elected to fill the place. Mr. Beans resigned and M. Gerstle was elected in his stead. Mr. Mecklenburg resigned and Albert Smith was elected to fill the vacancy.

PLACER COUNTY.

YANTGRAF.—This quartz mine, near Newcastle, has 60 men on the pay roll. The 20-stamp mill runs continually. The mill is supplied with four concentrators, which handle a ton of sulphurets per day.

SAN MIGUEL COUNTY.

JAPAN MINING COMPANY.—This company is having a 35-ton capacity mill built at the Japan mine and in the future the output will be treated on the ground before shipping down. Jigs and Cornish rolls will be used and a building 40×65 ft., with three floors, will be put up to house the machinery.

GEORGIA.

FULTON COUNTY.

It is reported that a deposit of fine asbestos has been found on the property of the late Dr. H. V. M. Biller.

IDAHO.

ELMORE COUNTY.

IDA ELMORE.—The diamond drills ordered some time ago for this mine at Rocky Bar have arrived and are now in position. This mine has a 50-stamp gold mill, the largest in the State.

LEMHI COUNTY.

GOLD DUST MINING COMPANY.—This company, which is a Salt Lake incorporation, will before the end of the season have a 10-stamp mill in operation upon its property located near Leesburg. The machinery is to be furnished by the Colorado Iron Works. The development consists of a 75-ft. shaft and 300 ft. of drifts, all in ore. The vein is 73 ft. wide, with 20 ft. of pay ore that averages $13 in gold. There is an abundance of wood and water, and the mine can be cheaply operated.

KENTUCKY.

ROCK CASTLE COUNTY.

SWIFT.—What is believed to be the celebrated silver mine of this name has been discovered on Roundstone Creek, 35 miles south of Richmond. The ore is combined with lead and is said to yield $65 a ton.

CARTER COUNTY.

The Cannel coal mines, under control of several different companies, have resumed operations. These mines employ about 300 men, and have been idle nearly all the Summer.

KNOX COUNTY.

EAST JELLICO COAL COMPANY.—This is the only company that has developed the Dean semi-cannel coal at Artemus. The coal is very hard and mines in large blocks. The vein which this company is developing is 7 ft. thick, with a 4-in. hard clay parting in the center. The coal makes a light smoke and is exceedingly low in sulphur, phosphorus and ash. It is a very profitable yard coal, as it does not mash up and slack by exposure to the elements. The Jellico company has built about 3¼ miles of railroad, including an iron bridge across the river, and has the mines equipped with the latest improved machinery. They own several acres of valuable coal land.

MARTIN COUNTY.

It is reported that a gas well has been struck on the Marrowbone field. The well is the property of a Dayton (O.) company. Several Pennsylvania companies have lately shipped tools to that region and will bore at once.

MICHIGAN.

COPPER.

CALUMET & HECLA MINING COMPANY.—Work is being actively pushed on the new hoisting plant at No. 5 Calumet shaft. The plant is modeled largely upon the lines of the new plant at the Red Jacket vertical shaft, and will have a tall house of red stone, 19 ft. wide and 412 ft. long. No. 5, which was lean and bunchy in its early days, much as the North Tamarack opened, is now the richest portion of the mine. Work at the Red Jacket vertical shaft is at a standstill.

GRATIOT COUNTY.

A discovery of oil at a depth of over 160 ft. is reported near the village of Ashly. D. D. Whitsell, of Alma, has rented the Carter farm, on which the discovery was made for a term of five years and will at once begin putting down a test well.

MINNESOTA.

(From Our Special Correspondent.)

Iron-ore shipments from this State are at last showing a falling off, the total for this week being much less than for some time this year. But the total for the year to August 1st is 2,370,000 tons, about 645,000 tons more than for the same time a year ago. For the month of July the shipments from the State were 858,125 tons, far more than for any preceding month in its history. From Duluth there have been shipped to August 1st a total of 1,206,000 tons, from Two Harbors, 1,067,000, and from Superior about 100,000 tons. A year ago the shipments from Duluth were 720,000 tons to this same date, from Two Harbors, 1,012,000, and from Superior nothing. But vessels are now laying up and few, except those with contracts, are in operation. The lower lake docks are filled with ore and some of the mines have closed entirely and about all others have reduced their working force.

MESABI RANGE.

(From Our Special Correspondent.)

OLIVER MINING COMPANY.—This is the only company that is keeping up its record of shipments, and at this mine the Drake-Stratton Company has stopped stripping, throwing 200 men out of work.

WASCODA.—At this exploration, near Mountain Iron, there are two drills in operation. The indications are for a rich find of ore.

ALWORTH EXPLORATION COMPANY.—This company has found ore in a number of holes in section 28, town 58 20, where E. J. Longyear is drilling. The surface is from 10 to 25 ft., and the ore seems to be of a depth of from 100 to 200 ft., mostly high grade and Bessemer.

VERMILLION RANGE.

(From Our Special Correspondent.)

MINNESOTA IRON COMPANY.—This company has reduced its Soudan shipments to about 2,500 tons a day.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The value of the district output last week was about $7,500 less than for the week ending July 25th. The top price paid for the best grade of zinc ore was $21.50 per ton, and the average price was $19 per ton. The output of ore was lighter than usual, owing to the exceptionally hot weather. The surplus ore has nearly all been sold and shipped. Lead sold at $15 per 1,000 lbs. with 50c. added for hauling. The St. Louis lead market dropped to $2.60 per 100 lbs. for pig lead, the lowest quotation for eighteen years. Between two and three million pounds of lead ore are being held in the district for higher prices. There will be a larger output and better prices for ore this coming week. The amounts reported are as follows: Joplin zinc, 872,110 lbs.; lead, 180,280 lbs.; value, $11,515. Webb City zinc, 148,050 lbs.; lead, 27,700 lbs.; value, $1,821. Carterville zinc, 1,076,720 lbs.; lead, 122,120 lbs.; value, $12,144. Galena, Kan., zinc, 2,580,000 lbs.; lead, 429,000 lbs.; value, $28,579. Aurora zinc, 675,000 lbs.; lead, 50,000 lbs.; value, $4,594. Mt. Vernon zinc, 157,140 lbs.; value, $1,574. Alba zinc, 84,000 lbs.; value, $840. Oronogo lead, 17,100 lbs.; value, $218. Totals for the district: Zinc, 5,593,290 lbs.; lead, 826,200 lbs.; value, $60,985.

ALBA MINING COMPANY.—This company started up its pumps, which are lowering the water rapidly. As soon as the water is out they will start to drift at 175 ft. on a large face of ore in hard ground. Mr. H. M. Cornell is the Manager of both leases and has the mines running and in good shape.

GOLD BUG COMPANY.—This plant, on the Free Coinage lease, is mining steadily on rich dirt and making 7 tons of zinc ore every 10 hours. They are cutting two drifts at 135 ft. on a large face of ore in timbering ground.

NEW YORK COMPANY.—At Alba, this company has bought the 12-acre lease and mining machinery of the old Standard. The water has been pumped out and the two steam jig plants are running steadily on rich dirt. Last week they produced and sold two carloads of zinc ore for $840. The Pee Wee Mining Company, on this lease, has opened up a fine jack prospect at 80 ft. The company is composed of capitalists from New York City, hence the name.

PRAIRIE BELLE COMPANY.—This company's plant on the Horse Shoe lease started July 30th and produced more than a carload of zinc ore. They are drifting at 145 ft. on a 16-ft. face of zinc ore in flint and selvedge ground.

REED & COMPANY.—On the Luke & Company's lease, this company's plant is mining steadily on rich dirt and producing more than two carloads of zinc ore every week. They are drifting at 138 ft. on a large face of ore in timbering ground with strong water which they remove with an 8-in. pump.

STEERS & LEAR LEASE.—Col. T. J. Steers and Geo. Lear have leased 40 acres of the Lear and Lichliter land, about a quarter of a mile from the celebrated Midway mines. They have laid it out in mining lots and have one producing shaft and four prospect shafts going down on the lease, in two of which they are getting good indications at 70 ft. It is easy work sinking in open ground. The Laura Mining Company is drifting at 116 ft. on a 20-ft. face of lead and zinc ore in open ground and strong water which they easily remove with a 10-in. lift pump. Last week they made their first shipment of 6 tons of zinc ore and 6,000 lbs. of lead.

ZENITH COMPANY.—This plant started up last week after experiencing much difficulty in handling the water. They are drifting at 140 ft. on a large face of zinc ore in hard ground and strong water. They are just opening up their drift and will put a larger force of men in the ground and expect to produce 40 tons of ore each week.

LAWRENCE COUNTY.

(From Our Special Correspondent.)

AURORA MINES.—The Hayes City mine is coming to the front, the output for last week having amounted to 68,000 lbs. of zinc ore, with every prospect for a better record the present week. This mine has been in operation for about five years.

BLACK LAND.—What promises to be one of the best strikes in that portion of the camp is now being opened up at the old Honaker mine on this land at a depth of 110 ft.

ELLIOTT LAND.—After making a big strike of water on the Elliott land a few days age, another hole was started by the Wheat & Loy drill, which is down to a depth of about 65 ft. The sinking has met with remarkably good results so far, as the finest kind of lead ore, mixed with some silicate, was struck at a depth of 30 ft. and continued to improve down to 50 ft., the drillings showing up very rich in lead. The hole will be put down to quite a depth in the hope of striking a lower vein of ore.

REED & HALL LANDS.—This ground presents a lively appearance at present. New prospect shafts can be seen going down in every direction, and some of them have already struck pay dirt. At Bakers & Company's shafts a wash place has been put up and the work of cleaning ore was begun last week.

About 10 tons of silicate will be the yield from Hinton & Company's mine, while an output of 12 or 15 tons of that ore will be obtained at the old Christian mine.

SCOTT & SEBURN.—In a run of a day and a half at the No. 2 shaft, on the Minor & Rogers land an output of 46,000 lbs. of silicate of zinc was made. The value of the output was $250, which is a record hard to beat by any other mine in the southwest district. They are sinking another shaft east of No. 2 shaft.

STOTT CITY.—The C. C. C. mining syndicate of Chicago, Ill., is putting up a fine steam concentrating plant at Stott City, under the supervision of Gen. A. Harner, of Wentworth. The plant, when completed, will be one of the best in Southwest Missouri. The shaft is now down 120 ft. and rich zinc ore is being taken out. It is expected that the plant will be completed by August 15th.

MONTANA.

DEER LODGE COUNTY.

(From Our Special Correspondent.)

THE PORPHYRY DYKE.—It will be remembered that this dyke, which lies at the junction of Lewis and Clarke, Jefferson and Deer Lodge counties, was opened up last year. It cannot be said to have fulfilled expectations. Gold, about 700 fine, is found all through it, and some seams were very rich. But these would not pay to work separately, and to break down all the ore, though it could be broken and delivered at the mill for 10c. a ton or less, could not be made to pay. So the mills belonging to the Pauper's Dream Mining Company and the Merrill Mining Company shut down, and remain so. The mill of Mr. Moses Manion is running, at least occasionally.

Before the Pauper's Dream closed down Mr. Patrick Largey, the principal owner of the stock, thought he would try crushing the rock in a cylinder with balls. He took as his pattern some small cylinders and balls brought out by Mr. A. K. McClure, of Philadelphia, many years ago, to reduce the ore of the Oro Cache, a rich gold mine near Virginia City, in which he was interested. Mr. Largey had the cylinder made 10 ft. long and 6 ft. in diameter and in one day's run crushed 86 tons of rock running the pulp through a King amalgamator. The balls used weighed two tons. The result was so satisfactory that the company is now having constructed two cylinders, lined with chilled iron, which can be removed when worn, 15 ft. long and 7 ft. in diameter, the balls in each to weigh 8 tons. It is believed that with these machines, driven by a 30-H. P. engine, 300 tons a day can be crushed. The rock will be prepared in two rock crushers, passing from the coarser to the finer, with a screen and a carrier to take back the coarse material that does not go through the screen. The experiment will be watched with great interest. The expense of the cylinders is not stated, but the one put in as an experiment cost about $700.

THE ZOZEL DISTRICT.—This mining region lies some eight miles northeast of Deer Lodge City, and is in the foothills of the main range of the Rocky Mountains. The country rock is called bird's eye porphyry. The strike of the veins is variable, some being north and south and others east and west. The north and south veins dip to the west, and the east and west veins dip to the north. The veins are not large, averaging not over 4 ft. in width, and the ore bodies average about 18 in. The ore is galena, much of it very rich in silver, and carrying some gold. There is considerable iron pyrites in the veins, which also carries gold. At depth the gold in the ore has greatly increased and the amount of silver carried in the ore steadily increases also.

EMERY.—This the best developed mine in the camp, the shaft being down 350 ft. It is claimed that the country rock and the occurrence of the ore is very similar to that of the Ontario, Utah. The strike of the vein is north and south. Machine drills are being used in the mine.

ARGUS.—This shaft is down 100 ft. and the vein is looking well and producing ore. The Bonanza shaft is down 65 ft., and there is every promise that it will be the best mine in the camp. The vein has a strike north and south. A tunnel has been driven on the Hidden Hand 100 ft. This is a flat lead, but it is in the same kind of rock and carries the same kind and grade of ore as the other mines of the camp. There are between 20 and 30 other claims in the camp that are being worked more or less, and it is expected that the Zozel district, which was practically abandoned in 1833, will be one of the great producing camps of the State. Already the work there is adding to the business of Deer Lodge City, and the old town is looking up again.

JEFFERSON COUNTY.

EVA MAY.—This mine is shipping regularly concentrates and ore. A good body of high-grade ore was recently encountered in one of the lower levels. The ore is shipped direct to the smelter, not needing to be run through the mill.

HOPE.—This mine, mill and other property at Basin was sold recently at sheriff's sale under an attachment. The property was bid in by George Hill, of the First National Bank of Helena, for $70,000, the amount of the company's overdraft at the bank. It is said that the property will resume work with W. R. Willis, of New York, as manager.

LITTLE NELL.—Work is progressing at this mine at the 450-ft. level. Levels have been started on each side of the shaft. The tunnel on the west side is in 30 ft., and the one on the east side 20 ft. Stoping will be commenced in a few weeks on that level and after it is under way the work will be commenced to lower the shaft 100 ft. The mine is said to be shipping about a car of ore a week.

STEPHENSON GROUP.—A development tunnel is being driven on the ground near Winston, to cut two leads. About 165 ft. have been finished, and it will take 100 ft. more to reach the desired point.

LEWIS & CLARKE COUNTY.

PEERLESS JENNY.—This mine, 5 miles above Rimini, has been started up again after lying idle a number of years. A new shaft 300 ft. deep has been sunk, and the hoist has been overhauled and repaired. Recent assays of the ore are reported to give 2,000 oz. of silver and from $60 to $80 in gold to the ton.

(From Our Special Correspondent.)

The stringency in the money market and the difficulty of raising money has resulted within the past 10 days in attachments being laid on some well-known properties, notably the Diamond Hill Mining Company, owned and operated by Jno S. Miller and the Ontario owned in Helena and New York.

The attachment on the Diamond Hill was laid by Tom Cooney, one of the former owners, for $22,000. He having sold his interest in 1895 to Jno S. Miller, this to enforce the contract of sale. It is expected that this matter will be satisfactorily adjusted as the property itself is a large and valuable one. The present owner has not been very successful with his present milling facilities in saving the gold in the ore.

The Ontario is admitted to be one of the best gold mines in Montana, but the company has been handicapped with debt and has only recently been able to ship their concentrates (on account of bad roads) of which they had on hand about 1,000 tons. The attachments growing out of an old debt contracted when the present company bought out the interest of Wm Dyer, was laid by the Merchants National Bank and L. H Hershfield, amounting to $36,000. This will quite likely soon be adjusted, as the property is in good condition, both as to development and equipment and in the hands of a financially strong company would make a great record with good business management.

Messrs. F. H. Pings and J. W. Kirby, of Marysville, have invented and perfected a new concentrator, which they claim is cheaper and better than any concentrator on the market, and which will cost but little. They have modified forms also, that they claim can be successfully applied to placer mining, and the quantity of water needed is small compared to sluicing or hydraulicing.

NEBRASKA.

It is reported that a deposit of almost pure sodium carbonate has just been discovered in the western part of the State. The solution, which contains 91% pure sodium carbonate (worth $25 per ton), bubbles and foams up from a depth of 690 ft. It crystallizes by natural evaporation.

NEVADA.

LINCOLN COUNTY.

DE LAMAR MINING COMPANY.—A large block of gold is reported to have been found recently in the last crosscut of No. 10 tunnel of the De Lamar. It was imbedded in a rock of somewhat different character than that generally known to mining men.

STOREY COUNTY.

SILVER CITY GOLD AND SILVER MINING COMPANY.—Among the shipments which arrived in Gold Hill recently was a carload of crude oil consigned to this company, which recently equipped its plant with gasoline engines. The crude oil will be manufactured into gasoline. The gasoline will take the place of all other fuel formerly used at the Silver City mill, where the machinery will be run, it is calculated, at a cost of $4 per day for fuel. This is the first shipment of crude oil ever unloaded on the Comstock.

WHITE PINE COUNTY.

MACARONI.—About two carloads of silver lead ore are shipped from this mine, at Hamilton, each week.

NEW MEXICO.

GRANT COUNTY.

W. H. Newcomb has 12 men employed mining iron ore on Legal Tender Hill, almost within the city limits of Silver City. Several teams are employed hauling the ore to the depot, where it is shipped to the smelters at El Paso. Two carloads per day are being sent out.

TURQUOISE MINES.—These mines, at Azure, 12 miles from Silver City, are employing about 20 men at present, under the superintendency of Prof. Felix Vogel. It is said that these mines are now the greatest producers of turquoise in the world.

SANTA FE COUNTY.

MIDNIGHT.—The whim for this mine has been put in place and commenced hoisting work. The third shift has been put on in the lower drift and the 45-ft. level is also being worked. Air pipes are being put in and track in both levels. Twenty men are at work, which, it is said, is the largest force employed on any single claim in the district up to the present time.

NEW YORK.

CATTARAUGUS COUNTY.

It is reported that gold has been discovered in the hills south of the river, near Salamanca. Specimens of the rock were assayed and found to yield 4½ oz. to the ton. Further prospecting is being done.

OSWEGO COUNTY.

BENSON MINES.—Owing to the low price of ore and the depressing condition of the iron trade, these mines, near Pulaski, have been shut down, throwing 300 men out of employment. The concentrating plant will be run for a short time, until the ore already mined has been worked up.

OHIO.

CARROLL COUNTY.

Two holes have been put down on the E. A. Thompson farm, near Malvern, and a 6-ft. vein of coal was found at a depth of 265 ft. The coal has been examined and pronounced to be similar to that of the Massillon vein. Another test will be made, and if successful, a shaft will be put down.

MARION COUNTY.

It is reported that oil has been struck at Larue and is flowing at the rate of 50 bbls. per day.

PENNSYLVANIA.

ANTHRACITE COAL.

BOSTON RUN COLLIERY.—A large body of water, which had collected in a mine breach through the the recent heavy rains, broke into this colliery, belonging to the Philadelphia and Reading Coal and Iron Company, near St. Nicholas. All the men at work escaped.

CROSS CREEK COAL COMPANY.—This company, which began prospecting at Old Buck Mountain, at Hazleton, over a year ago, last week decided to rebuild the old town and commence operations in earnest. Fifteen years ago this mine was abandoned by the Buck Mountain Coal Company. The town was then thriving and had a population of 1,000 persons. Since then the houses have been torn down and the place deserted. The Cross Creek Coal Company will begin by erecting 50 houses. Work at the mines will be pushed vigorously. Electricity will be largely used in the operation of the plant. The old company gave the place up believing there was no more coal available. Eckley B. Coxe believed that the mountains there were still valuable, and he began prospecting shortly before his death. The old town will be rebuilt at once.

LEHIGH VALLEY COAL COMPANY.—All collieries operated by this company will work on three-quarter time during August.

LEHIGH COAL AND NAVIGATION COMPANY.—Commencing August 3d all collieries throughout the Panther Creek Valley owned and operated by this company resumed operations. They will be worked four days this week.

BITUMINOUS COAL.

It is reported that a big coal deal has been effected at Ligonier, whereby Mathias Soxman, the Latrobe operator, and a number of other capitalists have obtained control of a field in the northern end of Ligonier Valley. The new vein is 9-ft. one, and a test of the coal shows that it is of good coking quality. The new concern has leased and optioned several thousand acres of this land and will open up works soon. It is thought that the Mellons, the owners of the Ligonier Valley road, are interested in the development of the new field. The road will be extended into the region.

SOUTH DAKOTA.

LAWRENCE COUNTY.

ANSE TIPPIE.—The shaft is down about 30 ft. in this mine and is reported to be running through solid ore that assays from $8 to $10 a ton.

RICHMOND.—Twenty-five men are now employed on this mine, at Galena, and are breaking down large quantities of ore, carrying chlorides and horn silver. Coke is being delivered at the smelter, which will be blown in shortly.

SOUTH DAKOTA.

PENNINGTON COUNTY.

CONSOLIDATED APEX MINING COMPANY.—It is reported that 20 stamps are now dropping on this company's ore, 60 tons of which go through the hoppers each day.

UTAH.

BOX ELDER COUNTY.

It is reported that discoveries of free-milling gold ore have been made about 15 miles from Terrace and that many locations have been made.

JUAB COUNTY.

CENTENNIAL EUREKA.—The shaft at this mine in the Tintic district is said to be the deepest in the state. It has now reached a depth of 1,535 ft.

EMERALD MINING COMPANY.—This company is now sinking the old Diamond shaft, which is about 300 ft. southeast from the new shaft they began last February. They have a body of ore in the face that carries values from $16 to $20.

SOUTHERN EUREKA.—Report comes from this property to the effect that they have struck a good grade of silver-lead ore in their prospect shaft at a depth of 65 ft. The company is so sanguine of the future of the property that they have placed an order for a 35-H. P. hoisting plant, a duplicate of the South Swansea, and the preparatory work for placing the same has already begun.

SALT LAKE COUNTY.

BINGHAM COPPER COMPANY.—This company has

increased its force upon the Starlus and Nast and Benton groups, at Bingham, and all of the miners are now engaged in the extraction of good ore. An important strike of high-grade gold ore is reported as having recently been made in a 65-ft. winze, sunk at a point 700 ft. from the mouth of the tunnel and at a vertical depth of about 700 ft. On the Nast property a good vein of rich galena ore was recently opened up.

TOOELE COUNTY.

EAST GOLDEN GATE.—Preparations are being made at this mine to put down a hole with a churn drill. As the work progresses the fine dust taken from the bottom of the hole will be inclosed in locked boxes and forwarded to the office of the company at Salt Lake City, where it will be assayed.

The derrick has been erected on the upper structure of the shafthouse, and is about 75 ft. in height. The present contract calls for 1,000 ft. from the bottom of the shaft, which is down 370 ft. It is said the company is prepared to add another 1,500 ft. to this in case the looked-for values are not struck before, thus making in all 2,500 ft. in addition to the present depth of the shaft on the property. The engine, hoisting apparatus and tackle are all in place, and the drill has been adjusted and is ready for the bit to be attached, when the work will be commenced and prosecuted by two shifts, night and day.

UTAH COUNTY.

LIVE YANKEE.—It is reported that this property, situated near American Fork, is now producing about 150 tons of ore each week and that the character of the same is such that the property is to be considered as doing right well.

The ore carries gold, silver and some lead, the gold being found in a pyritical state. A tunnel is being driven to cut the vein, which will be done at a distance of about 500 ft. the same being well under way.

WASHINGTON.

GRAND PRIZE COMPANY, NEAR TRAIL CREEK.—On July 20th Superintendent Liljegraw struck a new lead on this company's mines, says the *Daily Record*, British Columbia. The vein runs parallel with another ledge, which he found recently in this property. A single shot revealed as nice looking copper ore as is found on the surface of any property in this region. Size and extent of the ledge is yet to be determined. The force will be increased as fast as men can be put to work to advantage.

KING COUNTY.

GREAT NORTHERN COAL MINING AND MINERAL COMPANY.—This company, operating near Skykomish, reports that it has struck the main body of coal, a 5-ft. vein of good quality. The miners are now in 70 ft. in the slope. The mine is favorably located to run the coal down a gravity track three-quarters of a mile to the Great Northern Railroad. The company is capitalized at $500,000. Among the men in the syndicate owning the mine are C. K. Green, William Bennison, E. Weinham and J. Ticklenberg.

PIERCE COUNTY.

HYDRO SMELTING AND REFINING COMPANY.—This company, of Tacoma, has been incorporated with a capital of $1,000,000, for the purpose of reducing iron and all precious minerals by a new patent process, and at a very limited cost of reduction.

SKAGIT COUNTY.

The first shipment of asbestos from Lyman has been made. Seventy-five tons, to complete the contract, will be taken from the mines across the river from Lyman. There are now 15 horses employed packing from the mine to the river and from there it is hauled on a wagon to the railroad.

SNOHOMISH COUNTY.

O & B MINING AND MILLING COMPANY.—This company has been incorporated, with a capital of $500,000. They have leased the O & B mine in Monte Cristo district, and bonded the same for $30,000. Work will commence on this property immediately, the mine being already open, the tram and machinery having been put in place. The company has also purchased a half interest in the Q. T. in Silver Creek, and the Humming Bird, near the O. & B. The former mine is less than a half mile from the O & B. In this there is said to be a pay streak of 14 in., which is reported to assay $56.23 gold and $8.60 silver.

PRIDE OF THE MOUNTAINS.—Twenty-one cars of concentrates and three cars of ore from the new lower workings of this mine, at Monte Cristo, have been shipped to the Everett smelter in 14 days, which beats the record in the history of the Monte Cristo mining district. The value of the trainload was about $56,000.

STEVENS COUNTY.

COMSTOCK.—This mine has a ledge 8 ft. wide and is said to assay from 35 to 90% copper and $40 per ton in gold. It is principally owned by Seattle people.

WEST VIRGINIA.

GREENE COUNTY.

NATURAL GAS COMPANY.—It is reported that this company has commenced wild-catting. It is down 1,200 ft. with an important test well on the Cook farm, Richhill Township, located near Graysville and the old Harvey well. On the County farm, in the same Township, the same company is drilling another important test well at a depth of 800 ft.

MASON COUNTY.

H. E. Spillman, of Parkersburg, W. Va., one of the stockholders of the Consumers' Coal and Mining Company, at Spillman, which mines were but recently abandoned, is preparing to start a fire-brick, tile and coping works at that point that will employ about 125 men and have a large capacity.

MONONGALIA COUNTY.

SOUTH PENN OIL COMPANY.—In Fairfield district this company and Ira Dewitt have completed their No. 15 D. J. Eddy and have a 30-barrel producer.

RITCHIE COUNTY.

PITT OIL COMPANY.—One mile southwest of Oxford this company, of Pittsburg, has completed a wildcat, dry in all sands.

TYLER COUNTY.

COAST & COMPANY.—In the Bullman district this company's well, on the S. O. Martin farm, is reported flowing at the rate of 15 bbls. an hour. The new strike will give new life to the west side of the pool and place the territory to the west that was condemned when the Henderson No. 7 came in dry in a better light. The Bullman pool has a daily output of about 1,600 bbls., and will be somewhat increased by the new strike on the Martin farm.

WYOMING.

ALBANY COUNTY.

VIRGINIUS.—Charles S. Crysler is pushing work very rapidly on this mine. He has been enlarging the old shaft and putting in heavy square timbers. This shaft is following the vein at an angle of 35° and it is the intention to sink it 300 ft. Recent tests show the ore to be rich.

CARBON COUNTY

KING.—The work in this mine, also in the Seminoe district, consists of some 700 ft. of tunnels and drifts. The ore body varies from 12 to 50 in. in width, with an average of about 30 in. Assays made on this property show an average of $20 per ton in gold.

PENN.—This mine, in the Seminoe mining district, situated some 40 miles north of Rawlins, on the line of the Union Pacific Railroad, is owned by the Dupont estate. The main tunnel is now in 165 ft. at which point a shaft has been sunk to a depth of 135 ft. below the tunnel and 240 ft. below the surface of the ground. At a depth of 170 ft. below the surface drifts have been run on the ore body for a distance of 100 ft. in each direction, also drifts have been run for the same distance at the bottom of the shaft. The ore averages about $20 per ton gold and carries more or less copper. A 10-stamp mill has been erected on the property, but owing to the refractory character of the ore only from $3 to $4 per ton is being saved. Arrangements have been made for a throrough examination of the ore for the purpose of ascertaining the best method of treating it.

(From Our Special Correspondent.)

SEMINOE DISTRICT.—Development work is progressing rapidly on the Penn mine, owned by the Dupont estate. The main tunnel is now in a distance of 165 ft., at which point a shaft has been sunk to the depth of 135 ft. below the tunnel and about 240 ft below the surface. At a depth of 170 ft. drifts have been run on the ore body for a distance of 100 ft. in each direction and also for the same distance at the bottom of the shaft. The ore body is from 3 to 5 ft. wide, between well-defined walls and mill tests made at different points on the ore body give an average of $20 per ton gold with more or less copper.

The ore is being treated in a 10-stamp mill by amalgamation, but owing to its refractory character less than 25% of the values are being saved. Arrangements have been made for a practical examination of the property for the purpose of ascertaining the best method of treating the ore. When this is determined proper machinery will be erected to operate the mine on a large scale.

The work on the King mine consists of about 700 ft. of tunnels, shafts and drifts. The ore body varies from 12 to 50 inches in width while the average width is about 30 inches. Mill runs made on the ore give about $25 per ton gold.

JOHNSON COUNTY.

BURLINGTON MINING COMPANY.—It is reported that a party of Lincoln, Neb., men. who have been inspecting the gold-bearing property of this company, near Buffalo, have in consideration of an interest in the mine contracted to put up a 60-ton stamp mill on the property within 90 days. The mill is to be of the latest design and the cyanide process will be used in treating the ores. The contract requires the investors to mine 1,800 tons of ore for the first mill run.

LARAMIE COUNTY.

It is reported that the Granite Canyon gold mines are to be worked by an English syndicate. A carload of supplies, consisting of tents, groceries, mining tools, powder, etc., has arrived at Granite Canyon, and a force of men have been engaged for mining work to be prosecuted by the new company. A contract has been made with the owners of four of the best prospects there on the basis of the company receiving a deed for three-fourths of each claim, the original owners to retain one-fourth.

SWEETWATER COUNTY.

SWEETWATER COAL MINING COMPANY.—This company has made important improvements in its loading and rescreening plant which enables it to load coal whose preparation is excellent. The capacity has been increased to about 150 cars per day, insuring the prompt filling of all orders.

FOREIGN MINING NEWS.

ARGENTINE REPUBLIC.

According to the Panama *Star* and *Herald* it is reported on good authority that large gold-bearing deposits have been found in the Nequen District, Argentine Republic. The discoverer of the mines will go at once to the United States to raise capital to work them.

AUSTRIA.

GALICIA.

STANDARD OIL COMPANY OF GALICIA.—This company is now offering its shares in London, the capital stock being £1,000,000, of which £700,000 are to be paid for the property. This includes two tracts, 218 acres in all, in the Schodnica district in Galicia, on which there are already 44 producing wells, besides 15 others under the drill. The wells are connected by a pipe-line 21 km. long with a refinery owned by the company at Drohobycz, which is situated close to the State railroad line.

BRAZIL.

DIAMOND MINING.—According to a consular report there is a great difference in the opinion of men who have had experience in diamond digging in this State. Some contend that the industry is in its infancy, that there has been only surface mining in the most primitive way, and that when mining is done scientifically, diamonds will be found in large, paying quantities; while others argue that the cream has been taken and only the "skim-milk" remains. The principal or most important fields that have been worked are on the Serra (mountain) das Lavras Diamantinas and Serra da Sincora. In the above-named mountains are the headwaters of the River Paraguassu. In the deep pools of this river, at the foot of the mountains, the miners dive to the bottom and bring up diamonds. Recently an American imported some diving suits for his men. He tells me that when the water is low in the river, he anchors a boat, sends his divers down, and fills the boat with earth from the bottom, then washes it to get the diamonds and carbon. A few months ago, a carbon was found at Roncador, near Lencoes, which weighed over 3,000 karats, and was sold here for about $25,000 and shipped to Europe. On the Serra Itaraga, near Salobre, in the southern part of the State, are found the finest diamonds. These are among the oldest and most important fields, and they are still being worked. Diamonds and carbon have been found at several other places in the State, but not developed.

BRITISH COLUMBIA.

ROSSLAND.

(From Our Special Correspondent.)

BLACK BEAR.—Development work on this property which is close to the Josie and understood to belong to the Le Roi Mining and Smelting Company, is being pushed with great vigor. The property is easily accessible, and as it lies close to the main road to Rossland is very much visited. Considerable quantities of rock have lately been removed, and the tunnel which is now being excavated will be continued until the ledge is tapped. The management has a well-defined plan and is confident of striking pay ore soon.

Your correspondent will pay an especial visit to South Belt the coming week. In this belt are the Crown Point, Lily Mayflower, Hill Top, Deer Park, the Tiger group, R. E. Lee, Maid of Erin and the Hattie, Blue Bird, besides a number of others. The prospects of the mines in the South Belt have improved considerably during the past few weeks.

EVENING STAR.—The strike recently made on this property has naturally led to inquiries as to its situation. The Evening Star is situated on the Monte Cristo Mountain. For some time previous to last fall the property was not worked, but in September a small force of men under Mr. James Cronan, late manager of this mine, and now of Hale & Norcross, were engaged in development work, and the prospects were considered good. Little or no development work was done until the present management took charge, which has resulted in the uncovering of a vein of free milling ore. The true ore is described as an arsenical iron sulphide in a fine looking quartz gangue. The Evening Star will soon become a shipper.

WHITE BEAR.—This is situated about a mile from the town of Rossland and quite close to the Northport and Rossland road and is one of those mining properties which has shown mineral from the grass roots. It is here that the mineral so far is very much of white iron, but as depth is gained, there are indications of a change and the grade shows a decided improvement. The present management is sinking a shaft which is already between 30 and 40 ft. in depth. The company has erected log houses for men's quarters and blacksmith's shop and development work is progressing with much activity.

CENTRAL AMERICA.

COSTA RICA.

(From an Occasional Correspondent.)

There is considerable new development in both mining and mechanical work, but you can imagine how isolated a man can be in Central American forests from the lack of communication and other conveniences of civilized life.

I am planning and putting in water powers and machinery over a considerable section of country here, including some new mines and some new de-

velopment of old properties, as well as one case of reopening of ancient ground (probably Aztec).

The mining industry is on the gain here as everywhere, some American and English capitalists coming in under intelligent management, and there is good prospect of profitable work especially on the rich but refractory ores of the Pacific slope of Costa Rica.

CHILI.

It is reported that a company composed of foreign capitalists has been formed to work the placer gold diggings in Southern Chili.

HUNGARY.

Petroleum springs have been discovered on the Szedisty property near Temesvar, in the southeastern corner of Hungary, near the Danube and the Balkan provinces, some 70 miles from the capital of Servia.

ITALY.

The British Vice-Consul at Spezia, in a report on the Carrara marble industry, says that last year the production of the quarries was 108,951 tons of ordinary and statuary marble, and 52,360 tons of sawn and worked marble.

The different kinds of marble in the market from the Massa Carrara quarries are statuary or Carrara, properly so called; Sicilian, veined, dove and peacock. There are a few colored quarries, but their product is insignificant. Massa produces some colored marble. There is a quality of marble, perhaps the most rare, and for some purposes the most beautiful, known as "pavanazzo," or peacock. It has a creamy ground with blood violet or purple markings or veins. Of the Sicilian (biancochiaro) blocks of almost any size can be obtained. It is only a question of transport. Blocks weighing as much as 40 tons have been seen at Carrara. A quarry of red marble has lately been worked near Garfagnana.

The main valleys in which the quarries lie are the Ravaccione and Fantiscritti. To reach the Ravaccoine a long valley of quarries has to be passed, at one end of which, named Crestola, the finest statuary marble is excavated, while at the other end the commonest "Sicilian" is found. Two explanations are given for naming the ordinary biancochia o marble "Sicilian." One is that during the French occupation of Italy it was sent to Sicily and thence to England; the other that the vessels loading marble afterward went to Sicily to complete their cargoes with fruit, etc.

The number of quarries is estimated at 645, of which 387 are worked. Of these about 229 give Sicilian, 27 statuary, 22 veined, 7 dove, and 2 peacock marble. The quarries give work to 4,500 quarrymen, whose wages range from 8f. to 2f. a day. Another 1,000 men work in the towns, at the sawmills, studios, etc, as sawyers, carvers, rubbers and polishers.

The conditions of labor in the marble district have undergone little change. Wages are much the same as they were 20 years ago, but the purchasing power has decreased, owing to the heavy taxation and enhanced cost of living. Remedial measures to remove or mitigate the grievances that gave rise to the riots in 1894 were proposed before they were quelled, but there has not been time to carry them all into effect. One of them, a fund to provide against accidents and their consequences, has been raised by the addition of a small percentage to the tax levied on the output known as "pedaggio." The sum thus raised during 1895 was £1,950 and five houses were built at the quarries to render first aid.

Accidents and injuries are of daily occurrence. The serious ones are between 70 and 80 yearly, and those terminating fatally are about eight per annum. The quarryman's life is not a pleasant one. He leaves his home often in the small hours of the night, so as to be as his work soon after daylight, and his fare is very poor and scant.

MEXICO.

GUANAJUATO.

SANTA BRIGIDA.—The big Cornish pump in this mine, in the Pozos district, is one of the most important improvements in that district. The pump cost about $100,000, and will drain several other mines adjacent to the Santa Brigida. The ores of the mines in this district are high grade, and large quantities of them are treated there by the patio and other processes. The workings of the different mines range from 100 to 500 ft. in depth.

HIDALGO.

All of the principal mines at Pachuca have been compelled to close owing to their workings being flooded with water. Nearly four thousand miners have been thrown out of employment, and the companies operating the different properties have suffered heavy losses.

SONORA.

Report comes from Hermosillo that the Amarallis and Grand Central mines, two of the largest mines of the Minas Prietas Company, have been sold to an English syndicate for $1,000,000 in gold. Negotiations are also pending for the sale of still larger Creston and La Colorado mines.

TASMANIA.

MT. LYELL MINING COMPANY.—Cable dispatches to London give the following statement: Manager Sticht reports that one furnace began work on July 10th. In four days' work 420 tons of ore were treated, the assays giving 4⅛% copper, 3·75 oz. silver and 0·1 oz. gold per ton. The results of this treatment showed a total product of 80 tons matte, containing 38,428 lbs. copper, 1,840 oz. silver and 40 oz. gold. This shows an actual average of 4·1% copper, 4·38 oz. silver and 0·02 oz. gold per ton. The manager expects to make regular monthly returns hereafter.

LATE NEWS.

FRANKLIN JUNIOR.—The shaft on the Osceola lode at this mine, Houghton, Mich., caught fire on the evening of Aug. 5th. Fortunately no miners were underground. The fire was extinguished after destroying the small shaft-house and charring the timbers in the upper part of the shaft. The loss is less than $1,000.

(Special to the Engineering and Mining Journal.)
BY TELEGRAPH.

Cripple Creek, Colo., August 5th.—Brodie cyanide mill shipped to-day over 400 oz. gold, the result of six days' work.

(Special to the Engineering and Mining Journal.)

LEADVILLE, Colo., by telegraph, August 6th, 1896.—In the Weldon case Judge Owers appointed W. H. Griffith, editor *Herald-Democrat*, as receiver with instructions not to discriminate against union or non-union labor and to pay $3 a day to all men under ground and at the collar of the shaft and $2.50 to all other men on the surface. The union demanded $3 a day all the way through, but readily accepted the court's decision. The first arrest for violence since the strike occurred to-night. A non-union engineer was beaten by union men. His assailants were arrested by order of District Judge Owers and will be given the full penalty of the law.

The labor trouble at the works of the Brown Hoisting and Conveying Machine Cumpany, which was supposed to have been settled last week through the mediation of the State Board of Arbitration, broke out afresh last Saturday, and now the situation in Cleveland is worse than ever. Five companies of militia and 100 policemen are continually on duty guarding the works of the company and escorting the non-union employees from the company's shops in the evening. The strikers have declared a general boycott against the product and supplies of the company, and two emissaries have been sent throughout the country to embarrass the company in securing contracts and transporting goods In the meantime the company has about 200 men at work, where formerly 685 men were employed. The cause of the second strike seems to have been a misunderstanding on the part of the strikers regarding the terms of settlement. Although the agreement entered into by the company and the men in the presence of the State Board of Arbitration said nothing about representation by shop committees, and the Browns said emphatically they would not recognize any committee, the majority of the men say they were of the opinion that such a concession was made by the company in addition to and independent of the terms of the settlement. The indications are that the struggle will be long and bitter. Meantime the other iron industries of the city are suffering. It was thought early this week that a general strike of all the union men of the city would be declared, but adverse action was taken on that proposition at the meeting of the Central Labor Union Wednesday evening.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, August 7.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending August 1st, 1896, compared with the corresponding period last year:

	1896. Week.	1896. Year.	1895. Year.
Pennsylvania Railroad	57,720	1,998,271	2,106,818

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

Shipped East and North:	1896. Week.	1896. Year.	1895. Year.
Allegheny, Pa.	40,551	1,358,599	2,179,639
Barclay, Pa.	1,180	24,055	.....
Beech Creek, Pa.	76,978	1,782,152	1,681,710
Broad Top, Pa.	5,883	240,162	240,941
Clearfield, Pa.	64,073	2,868,590	2,071,692
Cumberland, Md.	.....	12,085,054	1,580,873
Kanawha, W. Va.	.....	†1,795,610	1,601,754
Phila. & Erie	5,103	44,471	30,638
Pocahontas Flat Top	.....	*2,083,645	1,386,900
Totals	193,768	12,282,368	10,774,127

* For year ending July 18th.
† For year ending July 14th.
‡ For year ending July 25th.

Shipped West:	1896 Week.	1896 Year.	1895. Year.
Monongahela, Pa.	13,845	596,326	462,533
Pittsburg, Pa.	27,856	1,167 851	1,033,130
Westmoreland, Pa.	28,101	1.146,254	1,033,259
Totals	‡69,802	2,910,431	2,531,922
Grand totals	263,570	15,192,799	13,306,049

Production of coke on line of Pennsylvania Railroad for the week ending August 1st, 1896, and year from January 1st, 1896, in tons of 2,000 lbs.: Week, 76,074 tons; year, 2,587,882; to corresponding date in 1895, 3,294,843 tons.

Anthracite.

The anthracite-coal trade shows no improvement since our last report, and practically no new business can be recorded. It appears to be the midsummer vacation season for the trade as well as for the consumers. What little is being mined is moving smoothly and is consumed by those who find it necessary to make purchases at this time. No large contracts for the future are being made, most buyers now holding off with the intention to purchase later on in lots to suit their requirements. But little coal is coming to tidewater just now, as most dealers there have a sufficient stock on hand to meet the demands of consumers for some time to come. Western shipments are heavier, as previously reported. It is said that certain mines in the Lackawanna and Wyoming valleys are to work 20 days each month from this time on. This would be a decided increase in activity over that which has existed for some months past.

Bituminous.

The soft-coal market on the Atlantic seaboard continues in a very dull condition, and August bids fair to show very small tonnages. The dullness is on all grades of coal, the better grades feeling it practically as much as the lower, if not a little more, as of late they have been receiving a few more orders than the lower grades of coal, and now that dullness is universal, the comparative feeling is worse with the higher than with the lower grades. The cause for this increased dullness is attributed to the further closing down of the manufacturing concerns in the East, and fairly good shipments being made of late to these concern who have not been making full time, and who therefore presumably have fairly large stocks of coal on hand, and under the circumstances would prefer to take the chances against the combination figures, believing that there is little likelihood of an advance over the present prices. What business is being done is going nearly all either to points around Cape Cod or to New York harbor, the Sound ports receiving little or no coal. Of course, there is more or less effort being made for quotations off the combination figures, but these prices are held to pretty well, and where lower prices are being made it all results from lower ocean freight being offered along with the f. o. b. price, bringing the ultimate cost lower than heretofore with higher ocean freight rates. In regard to the association itself, there is little that an outsider can glean, though it is understood that suggestions of cutting down shipments have been made, yet we hardly see how any order of that kind could be fulfilled better tean by the present situation. There has been some gossip regarding the Boston & Maine Railroad contract. Various kinds and qualities of coal are reported as having been taken as part of this railroad's contract, though there is no certain information as to just what has been done. Outside of this latter business few, if any, contracts or parts of contracts have been closed during the week, and the signs are now that the purchases will probably be made during the rest of the season as the coal is needed.

All-rail trade continues at a lower tonnage than usual for this time of year, with slight chance of much improvement.

Transportation from mines to tide is excellent as would be expected from the railroads having such a small quantity to handle. Car supply is up to all demands and railroads could supply many more if requisitions were made for them, they having quite a large number of empties on sidetracks.

In the coastwise vessel market there is no change to report. Freights are at a minimum, vessels in good supply, and orders few and far between, with little likelihood of advance in rates in the near future.

We quote current rates of freight from Philadelphia: To Bo ton, Salem, Portland and the Sound ports, 50@55c.; Portsmouth, 50c.; Wareham, 75c.; Lynn, 60@75c.; Newburyport, 60c.; Dover, 90c. alongside and towage; Saco, 75c. alongside and towage; Bath, 50@55c.; Gardiner, 60@65c. and towage; Bangor, 50c. Five and ten cents above these rates are asked from Norfolk, Newport News and Baltimore.

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

NOTES OF THE WEEK.

Mention was made in our last report of bids that had been accepted by the Bureau of Equipment of the United States Navy for coal to be furnished to the steamships and to be delivered at various harbors along the Atlantic seaboard. The Davis Coal and Coke Company was the lowest bidder for 2,000 tons of coal for New York and Boston harbors, but it has been decided not to accept this bid. In making this ruling Commodore Chadwick has failed to adhere to precedent in the awarding of contracts to coal bidders, having in this case considered the quality of certain coals as shown by the department records and been governed by them in making the award. For New York harbor he has recommended the acceptance of the bids of Messrs. Peale, Peacock & Kerr, and of Offerman & Company. Even with the loss of this 2,000-ton contract, the Davis Coal and Coke Company remains the most successful of the bidders.

The Davis Coal and Coke Company has been awarded the contract to supply the Morgan Steam-

ship Line with coal for the next year. The contract goes into effect at once.

An order has been signed by Judge Goff in the United States Court, says the Baltimore *News*, in the suit of the Mercantile Trust Company, of New York against the Baltimore & Ohio Railroad Company, ratifying the agreement made last April between the Consolidation Coal Company and the Baltimore & Ohio Railroad Company, and authorizing the receivers, Messrs. John K. Gowen and Oscar G. Murray, to execute the agreement, by which the Consolidation Coal Company contracted with the receivers of the railroad company to build 200 coal cars to be used in the transportation of the output of the Consolidation Coal Company's mines.

The agreement provides that the cars are to be built by the coal company, according to specifications furnished, and to the satisfaction of the railroad's general manager. When completed they are to be used exclusively for the transportation of coal from said mines and the railroad is to pay a mileage of six mills per mile. The term of the lease is 10 years and it is agreed that when the payment for the mileage received by the coal company for the use of the cars, plus 5½% interest thereon, amount to the sum equal to the actual first cost of the cars, plus 5½% interest, and the repair bills paid, also plus 5½% interest, then the cars become the absolute property of the railroad company.

Buffalo. August 6.

(From Our Special Correspondent.)

The anthracite coal trade is without any new features relative to supply, demand and quotations. Bituminous business continues quiet at unchanged prices, with ample supply for all requirements of the manufacturers, etc.

The bottom has fallen out of the lake-freighting business. Many vessels are laying up and numbers leaving our port light every day. A general rate of 20c. per net ton of coal now rules for all ports on the lakes. Parties interested in the lake trade do not anticipate any improvement for many weeks, especially as coal is very scarce on the docks.

Messrs. Ellsworth, Morris & Company, a large coal-operating concern in Ohio, have decided to cut their coal by electrical machinery.

On Monday last the new 800-ft. government lock at Sault Ste. Marie was formally opened. The approaches have been completed to a width of 60 ft., and there is a depth of 10 ft. below and 22 ft. above the lock.

The shipments of coal westward by lake from Buffalo from July 26th to August 1st, both days inclusive, aggregated only 51,225 net tons, distributed to 11 points as follows: 15,151 tons to Chicago, 9,700 tons to Milwaukee, 5,500 tons to Duluth, 5,315 tons to Toledo, 12,700 tons to Superior, 500 tons to Gladstone, 400 tons to Sault Ste Marie, 500 tons to Huron, O.; 500 tons to Green Bay, 560 tons to Lake Li den, and 400 tons to Saginaw. The rates of freight were 30 @25c. to Chicago and Milwaukee, 25c. to Duluth, Huron, Toledo, Sault Ste. Marie, Superior, Green Bay and Gladstone, and 30c. to Saginaw and Lake Linden. Closing dull, with downward tendency in freight.

The following statistics of the coal trade of Buffalo, N. Y., were compiled by Mr. William Thurstone, secretary of the Merchants' Exchange of that port: "Receipts and shipments of coal by railroad are not reported by request. Receipts by lake for three years past, none. Shipments of coal westward by lake for month of July, 249,615 net tons, as compared with 299,660 net tons in 1895 and 318,672 net tons in 1894; for the season to August 1st, 1896, 893,798 net tons, as compared with 829,829 net tons in 1895 and 1,045,079 net tons in 1894.

"The receipts of coal by canal for the month of July, 1,387 net tons, as compared with 1,633 net tons in 1895 and 3,199 net tons in 1894; for the season to August 1st, 8,897 net tons, as compared with 1,973 net tons in 1895 and 4,984 net tons in 1894. The shipments of coal by canal for month of July 491 net tons, as compared with 1,144 net tons in 1895 and 1,942 net tons in 1894; for the season to August 1st, 731 net tons as compared with 3,392 net tons in 1895 and 2,042 net tons 1894. The aggregate shipments by lake thus far this year show an increase over 1895 of 63,969 net tons and a decrease under 1894 of 151,281 net tons.

"Freights on coal by lake from Buffalo during July, 1896, to points named, were 50@40@30@25c. to Chicago, 45@25c. to Milwaukee, 25c. to Duluth and Lake Superior ports, 35@30c. to Saginaw, 40@25c. to Green Bay, 35c. to Sheboygan, 25c. to Toledo, 40c. to Racine, 25c. to Bay City. During July, 1895, the rates were 55c. to Chicago, Sheboygan and Racine; 45c. to Milwaukee and Green Bay, 35@40c. to Saginaw, 30@25c. to Bay City, and 25c. to Lake Superior ports, Toledo and Detroit.

"The distribution of coal by lake westward this season to August 1st was to the following places: 335,225 net tons to Chicago, 268,595 net tons to Milwaukee, 99,210 tons to Duluth, 13,925 tons to Racine, 13,375 tons to Green Bay, 4,490 tons to Kenosha, 200 tons to Oscoda, 7,895 tons to Bay City, 10,015 tons to Saginaw, 24,920 tons to Toledo, 3,910 tons to Lake Linden, 600 tons to Grand Haven, 6,744 tons to Ft. William, 1,750 tons to Marinette, 2,525 tons to Hancock, 800 tons to Cheboygan, 7,750 tons to Ashland, 77,650 tons to Superior, 2,670 tons to Sault Ste. Marie, 2,100 tons to Pt. Arthur, 16,134 tons to Manitowoc, 5,200 tons to Gladstone, 400 tons to Ontonagon, 100 tons to Alpena, 300 tons to Manistique, 500 tons to Huron, O.; 670 tons to Portage, 650 tons to Sheboygan, 300 tons to Bay Mills, 1,150 tons to Pt. Huron, 2,125 tons to Michigan City, and about 30,000 tons to miscellaneous ports by vessels from Tonawanda, not reported at the Buffalo Custom House.'

Pittsburg. Aug. 6.

(From Our Special Correspondent.)

Coal.—The river to the lower ports has been at a boating stage all week, but there was no coal shipped; in fact, the lower markets are so well supplied that there is no demand at present.

There is more trouble for the miners; the number of operators who want a lower rate is growing larger, and it will be difficult to avoid a strike. The miners and their leaders have worked hard to stop the trouble, but at present appearances indicate that they will be overwhelmed, a large portion of the district being idle at present. It is a low estimate to put the number of strikers at 1,500. This will be materially increased during the week. At Houstonville, near Canonsburg, the miners' officials started a camp on Monday. It is reported that some of the men are working at the 60-cent. rate. The late heavy rains seriously interfered with many of the coal mines. The Anderson, Eclipse, Nottingham and others along the Baltimore & Ohio road were so badly injured that they were closed down, and operations suspended for repairs.

A new and valuable vein of coal 11 ft. thick was discovered 200 ft. below the bed of the river near Bridgeport, O., by the drilling of an oil well on the Allen farm; it will be worked by shafting. The railroad situation is very much mixed; the demand continues very poor all round, the operators being forced to make great concessions to secure trade, insist on lower rates and advertise for new men to take the place of old miners who refuse to work at reduced rates.

Connellsville Coke.—The outlook for the coke trade is far from being favorable. There was a large falling off both in demand and shipments. The depression in the iron business continues to be seriously felt among the coke producers. With the unsettled outlook it would be difficult to make anything like a safe prediction. The long shutdown of rolling mills has caused a big surplus of iron, keeping down prices and forcing a reduction of wages. Talk of a reduction in the price of coke has been revived, but there seems small likelihood that this will be accomplished, the operators preferring to have the coal in the hills rather than sell coke at a low figure. The Oliver Coke and Furnace Company shut down 300 ovens, leaving only 200 out of 639 in blast. The shutdown is due to a decrease in orders resulting from the banking of furnaces. Uniontown.—The officials received notice from the headquarters at Sharon that the company's furnaces had been banked and no more coke will be needed. The coke plant of the Stewart Iron Company shut down on Monday indefinitely; the plant was badly damaged by water.

Summary of the region for the week: Production amounted to 96,555 tons, a decrease compared with the preceding week of 4,661 tons. In the running order of the ovens in blast, 4,393 ovens made six days; 5,460 ovens five days, and 70 ovens four days, an average of 5.33 days.

The coke shipments from the region amounted to 5,444 cars, against 5,986 cars the preceding week; decrease 542 cars. Distributed as follows: To Pittsburg and river points, 2,005 cars; to points east of Pittsburg, 871 cars; to points west of Pittsburg, 2,568 cars. Total, 5,444 cars.

The furnaces of the Dunbar Furnace Company were banked last night and will be closed indefinitely for repairs. Two hundred men are thrown out of employment. Over 500 laborers are now idle in this section. An epidemic of diphtheria has broken out at Morrell, a coke town north of Dunbar. Several deaths have resulted.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Aug. 7, 1896.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending Aug. 9, 1895. F'ces.	Tons.	Week ending Aug. 7, 1896. F'ces.	Tons.	From Jan., '95. Tons.	From Jan., '96. Tons.
Anthracite.	39	21,501	39	24,100	643 279	790,740
Coke...	133	142,804	130	155,950	4,224,260	4,846,164
Charcoal...	17	3,731	23	6,600	122,217	165,925
Totals....	189	168,036	192	186,650	4,989,756	5,802.829

It is generally recognized that the future of the iron and steel markets depends largely on the political question to be decided at the coming election. Certainly consumers are holding back, simply buying from hand to mouth, to take care of what small business they have on hand. The general market in iron and steel during the past week was practically featureless. At the steel combination meeting at the Holland House, referred to in our issue of last week, some thirty firms were represented. Although the meeting was secret it was afterward learned that all the mills agreed to maintain the pool price on billets. This action on the part of the mills met with the approval of the trade generally, as a cut at this time would tend to still further demoralize the market.

The Brooklyn contract for steel water pipe was awarded to Contractor McNeal. This will give an order for something like 13,500 tons of steel plates which must come into the Pittsburg market. It is more than likely that the Carnegie Company will furnish the steel.

Pig Iron.—Few enquiries developed in the pig-iron market during the week; a few small sales only took place. Curtailing the production by the furnaces has helped to keep prices firmer than they would otherwise be, and it is not expected that any reduction in prices will take place unless for a very large lot, and such orders are not in sight at present.

Latest quotations for tidewater delivery are as follows: No. 1 Northern, $12@$13; No. 2 Northern, $11.75@$12.25; No. 2 plain, $10.75@$11; gray forge, $10.75@$11. No. 1 Southern we quote $11.25@$11.50; No. 2 Southern, $10.75@$11; No. 3 Southern, $10.50@$10.75.

Cast-Iron Pipe.—The only transaction in cast-iron pipe during the week was the final disposition of the Fifth avenue contract for 15,000 tons which the Warren Foundry Company of Easton secured.

Spiegeleisen and Ferro-Manganese.—No business of any importance is reported. Prices nominally $19.50@$20 per ton for foreign spiegeleisen, and $47 @$47.50 for ferro.

Steel Billets and Rods.—The maintaining of pool prices met with general approval, but it did not seem to increase the demand, and few sales are reported in this market. Prices unchanged $21 75 New York delivery. Rods, $29.

Merchant Iron and Steel.—No very large sales or contracts are reported and prices are practically the same. The action of the billet pool in sustaining billet prices will prevent any shading or cutting of prices in finished steel. Prices are quoted as follows: For common bars 1·10@1·20c.; refined bars, 1·25@1·50c.; soft steel bars, 1·25@1·35c. Other quotations are: Steel hoops, 1·50@1·60c.; steel axles, 1·65@1·80c.; links and pins, 1·65@1·75c.; tire steel, 1·80@1·95c.; spring steel, 2@2·20c. All prices are for delivery on dock, New York.

Plates.—There is nothing of special interest to record in the plate market and no change in prices is reported. Prices are as follows: Universal mill plates are 1·45@1·55c. For other sorts we quote: Tank, 1·40@1·50c.; boiler shell, 1·45@1·55c.; good flange, 1·65@1·75c.; firebox, 2@2·40c. Charcoal iron plates are 2·25c. for shell, 2·75c. for flange, and 3·25c. for best firebox. Rivets are 2·15@2·25c. for steel and 3@3·25c. for iron.

Structural Iron and Steel.—Business in structural work continues good and most of the mills turning out structural steel are quite busy and will probably continue so, as new structures are constantly going up. There is no change in prices since last report. Latest quotations are as follows: Angles, 1·45@1·50c.; channels, 1·70@1·80c.; tees, 1·60@1·65c.; beams, 1·70@1·80c. in quantities, with a slight advance for small lots.

Wrought-Iron Pipe.—There is no change in this market, which is unusually dull. No substantial orders are in hand and only a few unimportant sales occurred during the week. Discounts are reported as follows: Out of stock, 1¼ smaller black, 57, 10, 10, 10, 10; 1½ larger black, 67, 10, 10, 10, 10; 1¼ smaller galvanized, 52, 10, 10; 10, 16; 1½ larger galvanized, 55, 10, 10, 10, 10. The above discounts are slightly steadier in large lots and for mill shipments.

Nails.—The mills report business quiet and demand very light. The pool price is still maintained at $2.55 for wire nails. For cut nails $2.30 per keg is quoted, f. o. b. Pittsburg.

Steel Rails and Rail Fastenings.—No transactions are reported for last week, not even an inquiry coming into the market. It was the intention of many of the large roads to relay extensively this year, taking advantage of present prices, but business depression and the uncertainty as to the future have caused a postponement, the New Haven road being the only Eastern road to purchase rails in any quantity. Prices maintained at $28.75 per ton at tidewater, with girder rails at $28 to $30, same delivery.

Old Rails.—A few small sales reported. Prices quoted are $12.50@$13.50 for old iron rails, and $11@ $12 50 for old steel rails. Old rails for relaying purposes are held at $19@$22, all New York harbor delivery.

Scrap Iron.—A few sales are reported for the week. Prices unchanged at $10@$11.50 per ton for good machinery scrap. Ordinary cast-iron scrap $9@$10; and stove-plate and mixed, $6@$7.50.

Cleveland, O. Aug. 5.

(From Our Special Correspondent.)

Iron Ore.—The sale of Standard Bessemers during the past week has been so small that it hardly deserves mention. The leading iron firm of the city said to-day that at present there was no indication that the market would improve. There has been quite a movement of non-Bessemers, however, during the past few days, and it is the belief of the dealers that the business will increase when some of the mills resume after the mid-summer shutdown. The condition of the general iron market, however, will not improve in this city until after the election, it was said to-day by one of the members of the firm of Pickands, Mather & Co. The ore quotations are the same as those given last week. Standard Bessemers are $4, non-Bessemer hematites $3 and $3.25, and Mesabi non-Bessemers $2.45 and $2.60.

The lake freights are the same this week, not-

withstanding the fact that a large number of vessels have been tied up during the past ten days. The owners do not take the same view of the situation as they did formerly, however. They are of the opinion that the rate will strengthen within two or three weeks.

Pig Iron.—There is absolutely nothing being done in pig iron, the mills in this section being closed for repairs. There has been no change in the prices since the last letter, the following being the quotations at the offices: Lake Superior charcoal, $13.50 and $14; bituminous coke, No. 1, foundry, $12.25; No. 2, $11.75; Ohio Scotch, No. 1, $12.25; No. 2, $11.75; Bessemer pig, $12.25.

Philadelphia. Aug. 7.

(From Our Special Correspondent.)

Pig Iron.—There is a disposition in pig-iron circles to hide news and deny the facts, but after some patient hunting it transpires that two or three parties and possibly more have been to market to find what sort of iron they can get at certain named prices they are willing to pay. Certain Northern makes are preferred instead of Southern brands, which are freely offered and in some instances crowded on possible buyers. Good forge irons can be had at $10; foundry is $12.50 for No. 1 and $11.50 to $12 for No. 2. There is very little being done in foundry irons. Some things are watched for curtailment and opening of fall orders. Just now the entire market is dull, but something might happen suddenly.

Steel Billets.—People who must have steel can get it at less than the combine price of $21.50.

Bars.—Mills have not permitted stocks to grow. Steel bars sold well this week, as high as 1·50; but for iron, demand is slow.

Nails.—Prices wholesale and retail remain where they were. Business is not particularly active.

Skelp.—No news from manufacturers. Quotations have not been openly reduced.

Sheet.—The card rates remain the same, but there is no new business.

Merchant Steel.—Business has fallen off since last week.

Plate.—Bids are out for considerable work, both inside and outside our territory, and manufacturers are waiting. Tank, 1·40; universals, 1·45; shell, 1·55; flange, 1·60.

Structural Material.—Precisely the same condition exists in this branch. Angles are 1·40, beams and channels, 1·70@2.

Steel Rails.—Repair lots is all that our people speak of as selling. No changes expected in the rail situation until general business conditions are better.

Old Rails.—No success has attended the efforts of some parties to make deals in old rails for new.

Scrap.—Yard men are refusing to pile up more scrap, except at prices that make it hardly worth handling. Choice railroad is worth $13, and cast steel scrap about $11. Old car wheels, $12.

Pittsburg. Aug. 6.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business since our last has shown no improvement; dealers appear to have lost confidence in the raw and manufactured product. As a matter of fact the iron industry is helped but little by the settlement, which gives puddlers in Western Pennsylvania and the Ohio region an advance in wages, because the demand is so light that few mills can run at the association's price, 1@2c. Steel rails and American steel were the features of interest at the New York meeting of the billet pool for the purpose of patching it up; it is well known that most of the business transacted was below pool prices. A fair business is doing in steel rails to Eastern and Western roads on the basis of $28. The roads are generally buying in moderate quantities as they can use the rails. A New England road last week gave an order for 20,000 tons, being the largest contract that the mills have received since January 1st. The Premier Steel Company, of Indianapolis, that was a large purchaser of Bessemer pig a short time since, has taken an initial steel-rail order, 10,000 tons, for the Louisville & Nashville road.

This introduces a new element of strength, with apparently a full consciousness of capacity to cut the trade. Pittsburg during the past six months has shipped by the Ohio River from Pool No. 1 65,000 tons steel rails to the Western and Southern ports, and 10,000,000 lbs. of iron and nails.

The combination pool is composed of 27 firms; Pittsburg is largely represented. Southern irons are pressed for sale at extremely low figures.

Steel Billets.—No business is being done, as the pool prices are regarded as prohibitory; some change in quotations is expected at an early day. The first of August statement of production is waited for with a good deal of interest. There are at present a large number of furnaces banked and undergoing repairs; some of them are making ready to resume operations, so that the near future will see an increased number of furnaces in operation. The production report for August 1st is waited for with considerable interest, as there is a wide difference of opinion on that subject.

Transactions have been very much restricted. Bessemer, the last reported, shows a slight advance; the undertone of the market is gaining strength. The result imminent will be an improved trade. Last Bessemer sales, $11.60@$11.75, Pittsburg; Ohio Valley Furnace, $11—which is equal to Pittsburg price, steel billets, pool price, August, $20.25; middlemen varying from $18.90 to $19 50; Grey Forge and foundry irons dull and neglected.

MUCK BAR.

Tons.		Cash.
500	Neutral, deliv'ed, Pitts	$20.00

STEEL WIRE RODS.

800	5 Gauge, deliv'ed, Pitts	$25.00

COKE SMELTED, LAKE AND NATIVE ORE.

1,000	Bessemer, Aug., Pitts	$11.40
1,000	Bessemer, Aug., Pitts	11.30
1,000	Bessemer, Aug., Pitts	11.75
1,000	Bessemer, Aug., Pitts	11.30
700	Bessemer, Aug., Pitts	11.60
500	Grey Forge, spot, Pitts	9.75
300	Grey Forge, Valley	9.00
100	No. 2 Foundry, August, Pitts	11.25
100	No. 2 Foundry, August, Pitts	11.00
100	No. 2 Foundry, August, Pitts	11.50
100	No. 2 Foundry, August, Pitts	11.25
50	No. 1 Silvery, August, Pitts	14.25
50	No. 2 Foundry, August, Pitts	13.25
50	No. 2 Foundry, August, Pitts	11.50
50	No. 2 Foundry, spot, Pitts	11.40
40	No. 2 Foundry, spot, Pitts	11.35

CHARCOAL.

Tons.		Cash.
50	Cold Blast, Pitts.	$23.00
50	No. 2 Foundry, Pitts	16.00
25	Cold Blast, Pitts.	23.00

BLOOMS, BILLETS AND SLABS AT MILL.

1,000	Blooms, Aug., at mill	$19.80
600	Billets, Aug., at mill	19.50
500	Billets, Aug., at mill	18.90
500	Billets, Aug., at mill	20.25
350	Billets, Aug., at mill	19.60

SKELP IRON.

1,500	Sheared, Pitts.	$1.35 4 m.
350	Wide grooved, Pitts	1.22½ 4 m.
250	Narrow grooved, Pitts	1.22½ 4 m.

	SPELTER.	Cash.
60	Pure, Pitts	$3.75

SCRAP AND OLD RAILS.

450	Iron Rails, deliv. Youngstown	$15.00
100	Steel pipe, net, Pitts	11.00
100	Steel Rails, mixed lengths	12.50

FERRO-MANGANESE.

50	80 per cent. delivered, Pitts	$49.00

SHEET BARS.

675	August, Pitts	22.25

METAL MARKET.

NEW YORK, Friday Evening, August 7, 1896.

Gold and Silver.

Prices of Silver per Ounce Troy.

August.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in £1.	August.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in £1.
1	4·88¾	31⅜	68⅝		5	4·88¾	31⅜	68⅝	
3	4·88¾	Hol	68⅝		6	4·89	31 5/16	68⅛	
4	4·88¼	31⅜	68⅝		7	4·89	31 5/16	68½	

The market has been inclined to weakness on disappointing advices from India, closing at 31¼.

Shipments continue large, more than supplying demand for Eastern exchanges.

The United States Assay office in New York reports the total receipts of silver at 73,000 oz. for the week.

Gold and Silver Exports and Imports, New York

For the week ending August 6th, 1896, and for years from January 1st, 1896, 1895, 1894, 1893 and 1892:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$117,000	$125,237	$863,630	$26,391	E. $829,022
1896..	40,327,798	17,494,397	22,114,713	1,388,102	E. 43,560,012
1895..	35,963,632	24,246,440	24,909,781	1,084,075	E. 35,545,948
1894..	81,281,301	11,543,335	22,021,306	1,023,564	E. 90,735,708
1893..	69,225,427	26,882,420	20,125,593	1,553,010	E. 60,915,590
1892..	51,809,862	6,338,600	13,359,466	1,330,683	E. 57,450,045

Gold and Silver Exports and Imports.

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

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
June.	$6,915,066	$899,325	$13,470	$95,681	E. $5,933,530
1896..	42,935,551	25,233,959	260,979	709,977	E. 17,252,594
1895..	35,231,438	25,994,946	318,469	830,994	E. 8,723,967
SILV.					
June.	4,347,778	1,206,951	95,638	1,379,246	E. 1,857,219
1896..	29,927,230	6,163,065	685 554	8,616.181	E. 15,839,568
1895..	23,897,427	4,312.425	35,202	6,075,803	E. 13,544,401

This statement includes the exports and imports at all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Average Monthly Price of Silver

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

Month.	1896.		1895.		1894.	
	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.	London. Pence.	New York. Cents.
January	30·69	67·13	27·36	59·69	30·81	66·63
February..	31·01	67·67	27·47	59·90	29·18	63·43
March	31·34	68·40	28·33	61·98	27·28	59·49
April.....	31·10	67·92	30·39	66·61	28·95	62·92
May.....	31·08	67·88	30·61	66·75	28·69	62·96
June	31·46	68·69	30·47	66·61	28·68	62·59
July..	31·45	68·75	30·48	66·75	29·82	62·45

FINANCIAL NOTES OF THE WEEK.

The market has been characterized by distrusts much aggravated by the collapse of the Moore Bros. speculation in Diamond Watch and New York Biscuit shares. The result has been a calling and a liquidation on a falling market all the week. The extent of the distrust is such that it is very difficult to borrow long time money or to discount commercial paper.

We learn from Boston that owing to the unsettled condition of finances and the uncertainty regarding the future of the American money standard, the European capitalists who hold options on four idle copper mines in the Lake Superior district, will drop the deal when the options expire next month. The consolidation would have interested nearly $1,000,000 capital, and would have given steady employment to 600 men.

Imports of gold into France for the month of June amounted to 55.900,492f., and the exports from that country to 3,482,713f. Imports for the six months ended June 30 were 172,993,583f., and the exports 76,166,342f.

The statement of the United States Treasury on Thursday, August 6th, shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

	July 30.	August 6.	Changes.
Gold	$109,175,965	$110,014,165	I. $838,200
Silver	39,068,434	38,134 607	D. 933,827
Legal tenders	68,220,675	67,186,546	D. 1,034,129
Treasury notes, etc..	34,525,932	34,374,912	D. 151,020
Totals	$250.991,066	$249,710,230	D. $1,280,776
Govt. bank deposits.	16,409,617	16,308,368	D. 101,249

The net gold reserve shows an unsatisfactory shrinkage considering the combined efforts of national banks and exchange houses to replenish and protect it. At the close of business yesterday the net balance was below $110,000,000, and to-night, after deducting withdrawals for Canada, etc., it should be about $109,400,000.

The total deposits in gold made by the banks of the leading cities of the United Ssates in aid of the Treasury have amounted to about $28,000,000, of which New York has contributed $18,761,820, Philadelphia, $2,912,800; Chicago, $2,134,187 and Boston, $2,227,700.

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

	Gold.	Silver.	Total.
Bank of England	$235,720,000	.....	235,720,000
1895	190,480,000	.....	190,480,000
Bank of France	414,760,000	$251,130,000	665,890,000
1895	410,070,000	251,900,000	661,970,000
Imp. Bank of Germany	.....	.....	224,840,000
1895	.....	.....	254,490,000
Austro-Hungarian Bank	137,480.000	64.475,000	201,955,000
1895	102,600,000	66,649,000	169,249,000
Netherlands Bank	13,170,000	34,573,000	47,743,000
1895	21,418,000	34,806,000	56,224,000
Belgian National Bank	.....	.....	19,308,000
1895	.....	.....	20,827,000
Bank of Spain	42,028,000	56,605,000	98,633,000
1895	40,021,000	60,595,000	100,616,000
Bank of Italy	60,690,000	10,350,000	71.040,000
1895	60,175,000	10,295,000	70,470,000
Imp. Bank of Russia	480,215,000	.....	480,215,000
1895	325,120,000	.....	325,120,000

The above returns are of date August 6th, except the Bank of Italy, which is dated June 10th, and the Bank of Russia, whose return is dated June 1st-13th. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending August 1st, gives the following

totals, comparisons being made with the corresponding weeks in 1895 and 1894:

	1894.	1895.	1896.
Loans and discounts	$182,301,500	$509,327 000	$469,535,900
Deposits	581,556,000	574,304,500	485,014.000
Circulation	9,812,100	13,163,000	14,800,000
Specie	90,546,900	65,474,800	46,254,700
Legal tenders	123,895,800	119,018,500	92,727,400
Total reserve	$214,442,700	$184.493,300	$138,982,100
Legal requirement	145,389,000	143,326,122	121,253,500
Surplus reserve	$69.053,700	$41,167,178	$17,728,600

The following statement from the Bureau of the Mint shows the coinage executed at the mints of the United States during the month of July, 1896:

Denomination.	Pieces.	Value.
Double eagles	145,910	$2,918,200
Silver dollars	1,062,000	1,062,000
Half dollers	60,000	30,000
Total silver	1,122,000	$1,092,000
Five cent	248,000	12.400
One cent	860,000	8,600
Total minor	1,108,000	$21,000
Total coinage	2,375,910	$4,031,200

Shipments of silver from London to the East for the year up to July 23d are reported by Messrs. Pixley & Abell's circular as below:

	1895.	1896.	Changes.
India	£2,193,330	£1,913,578	D. £279,752
China	1,100,767	574,413	D. 526,354
The Straits	503,403	517,532	I. 14,129
Totals	£3,797,500	£3,005,523	D. £791,977

Arrivals for the week this year were £251,000 in bar silver from New York and £30,000 from Chile, a total of £281,000. There were no shipments of silver from London this week.

Domestic and Foreign Coins.

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

	Bid	Asked.
Mexican dollars	$0.53½	$0.54½
Peruvian soles and Chilean pesos	.48½	.49½
Victoria sovereigns	4.90	4.94
Twenty francs	3.88	3.92
Twenty marks	4.78	4.85
Spanish 25 pesetas	4.78	4.85

Other Metals.

Copper.—The general tendency of the market has been a downward one, but the excellent demand for copper for export secures for this metal an exceptional position. Some forced sales of copper, notably of electrolytic, have been reported at quite low prices, but as soon as these few lots which had been pressed on the market for several days were out of the way a much better tendency developed, and rather higher prices have been paid since.

With the exception of Lake copper, of which the smaller companies have some spot stocks, copper for immediate and August shipment is rather scarce and this fact alone shows the good position in which the article finds itself.

The volume of business for export was quite large, but home trade has been rather limited. Several lots of Lake copper were sold on the New York Metal Exchange at from 11·15@11·10c, but outside there were no buyers above 11c. Electrolytic copper in cakes, wire bars or ingots, we have to quote 10⅝@10⅝c., and cathodes from 10⅝@10½c. Casting copper has been firmly held at 10⅝@10½c. Arizona copper is not obtainable for near-by delivery. Exports continue on a very heavy scale.

In London a great deal of interest was centered in the g. m. b. market, which opened at £49, but gave way somewhat later to £48 7s. 6d.@£48 10s. for spot, and £48 5s.@£48 7s. 6d. for three months prompt, which prices, when compared with fi sorts, show that there is actually a scarcity in the speculative brands. Heavy prompts are said to become due in August, and the owners of spot copper can easily exact a premium of from 5s. to 10s. It is, however, not thought that this state of affairs will continue very long, as it will prevent the consumption of unrefined pig copper, which will cause stocks to accumulate, and then the speculative transactions will receive a check. Should values advance about £1 more, it will pay to deliver what we may call consumer's copper on g. m. b. contracts.

Refined sorts have been rather depressed, but, while for the past two or three weeks sales have been almost impossible, a large business followed on account of American copper being quite freely offered for sale at materially reduced prices.

The statistics for the second fortnight in July show a decrease of 1,000 tons.

Tin.—Prices have been slightly lower, but a very good consumers' business has been done from day to day, and the deliveries are quite heavy. We have to quote 13·45@13·55c.

The London market has declined, and the closing quotations are £60 2s. 6d.@£60 5s. for spot and £60 12s. 6d.@£60 15s. for three months prompt, but exhibits some strength at these figures. The statistics for the month of July show an increase of 2,000 tons.

Lead has again made a record, and sales have been made during the last few days at 2·80c. New York and 2·57½c. St. Louis, a price never before recorded. These unprecedentedly low prices ought o have a twofold effect. First of all the stimulation of consumption, and secondly the reduction of production. Considering the unsatisfactory state of business in general, we dare not look with too hopeful eyes at the former, but unless our advices from the West are deceptive, the latter condition will soon be felt.

The London market is fairly steady at £10 17s. 6d. @£10 18s. 9d. for Spanish and 5s. more for English.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: "Lead weak and prices decline almost daily. Latest quotations here are 2·55c. for common and 2·60@2·62½c. for argentiferous. The demand is exceedingly light and it appears the lower prices go the harder it is to find buyers."

Spelter is very flat, and is now obtainable at 3⅞c. New York and 3.65c. St. Louis. Consumption is very poor, and galvanizers especially complain. It is, however, reported that somewhat larger sales have taken place for export somewhat below the prices ruling in this country.

The foreign market is dull.

Antimony is very dull and depressed; Cookson's 7c., U. S. Star 6¾c. and Hallett's 6½c.

Nickel.—Business is rather light, but prices are firmly held, and we continue to quote 34@35c. per lb. for ton lots and 36@38c. for smaller orders. London prices are 13½@14¼d. for large orders and 14¼@16d. per lb. for small lots. The New York price is on a parity with London, allowing for the United States duty of 6c. per lb. on the metal.

Platinum.—Demand is steady and prices are again a little higher, say $14.50@$15.50 per oz., New York. London quotations are 57s. 6d.@59s. per oz.

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

Quicksilver.—The price is unchanged at $35.50 per flask, New York. The London quotation is also unchanged at £6 7s. 6d. per flask, with the same price from second hands also.

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

Aluminum:	
No. 1, 98% pure rolling ingots, per lb	50@55c.
No. 1, " ingots for re-melting, per lb	48@53c.
No. 2, 94% pure, " " "	38@42c.
Ingots from scrap, per lb	35@40c.
Aluminum-nickel casting metal, per lb	40@45c.
Bismuth, per lb	$1.30@$1.75
Phosphorus, per lb	50@55c.
Platinum, per oz	$14@$15
Tungsten, pure, powder per lb	70c.
Tungstic acid, per lb	45c.
Ferro-tungsten, 60% in ton lots, per lb	60c.

Imports and Exports of Metals.

New York.*	Week, Aug. 1. Expts.	Impts.	Year, 1896. Expts.	Impts.
Aluminum lbs.			10,000	1,569
Antimony ore....short tons			10,000	2,491
" regulus... casks		184		1,371
Brass, old.....short tons.	25		167	59
Copper, fine .....long tons	†1,269	59	45,221	4,410
" matte .... " "	†96		9,729	1,756
" ore..... " "		2,612		4,592
" sulphate.. " "			4,431	
Iron ore..... " "				
" pigs, bars, rods..... " "	256	192	309	4,584
Iron pyrites..... " "				1,200
" sulphate..... " "				610
Ferro-mangan'se " "				499
Ferro-silicon..... " "				
Manganese ore.. " "		372		2,094
Spiegeleisen..... " "		723		22,135
Lead ore..... " "				
" pigs and bars " "	†700	†780	4,436	24,312
Magnolia metal... " "	25		42	
Nickel..... " "			491	30
Steel, billets, rods. " "		706		16,990
Tin..... " "		1990		9,211
Tin and black plates, boxes.		27,392	30	521,139
Zinc (spelter).....long tons	†57		1,156	12

* Metal Exchange Reports. † Week ending Aug. 6.

Philadelphia.††	Imports. Week, July 30.	Year, 1896.
Antimony, casks		102
Copper ore, long tons	4,800	19,081
Ferro-Manganese, long tons		380
Ferro-Silicon		60
Iron ore, long tons	3,700	157,230
" pig " "		400
" and steel scrap, long tons		618
Manganese ore, long tons		4,564
Spiegeleisen " "		134
Tin " "	5	341
Tin and black plates, boxes		27,073

†† From New York Metal Exchange Reports.

Baltimore.**	Week, Aug. 6. Exp.	Imp.	Year, 1896. Exp.	Imp.
Bismuth metal, cases				52
Chrome ore..... long tons			40	4,894
Copper, fine..... " "	1,358		19,533	
" matte..... " "			500	
" sulphate.. " "	35		2,014	
Iron ore ..... " "		4,527		244,069
" pigs, bars, ingots, blooms. " "				2,076
Iron oxide..... bags				300
" pyrites.....long tons			150	
Ferro-manganese " "				1,357
Ferro-silicon..... " "				70
Lead..... " "	99		2,947	
Limestone.....short "				2,743
Manganese ore ...long "				6,518
Spiegeleisen ..... " "				415
Steel..... " "			18	
Steel wire, bundles				6,453
Tin, long tons			107	238
Tin and black plates, boxes				105,194
Zinc (spelter) long tons			211	

**From our special correspondent.

Average Monthly Prices of Metals

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

Month.	1896.	1895.	1894.	1893.	1892.
Copper:					
January	9·87	10·00	10·13	12·13	11·00
February	10 34	10·00	9·63	12·00	10·00
March	11 03	9·75	9·81	11·88	10·38
April	10·98	9·75	9·50	11·38	11·50
May	11·15	10·25	9·80	11·00	11·63
June	11·67	10·63	8·94	11·00	11·86
July	11·40	11·25	9·00	10·88	11·50
Tin:					
January	13·02	13·25	20·16	19·99	20·50
February	13·44	13 35	19·60	20·30	20·00
March	13·30	13·20	19 09	20·71	20·25
April	13·34	14·00	19·75	20·81	20·50
May	13·54	14·65	20·21	19 96	20·80
June	13·59	14·15	19·75	19·76	22·00
July	13·63	14·40	19·22	19·15	21·00
Lead:					
January	3·08	3.10	3.19	3·87	4·20
February	3·19	3 12	3·31	4·22	4·12
March	3·14	3·12	3 37	3·96	4·21
April	3·07	3·08	3·43	4·08	4·15
May	3·03	3·16	3·39	3 89	4·22
June	3·03	3·25	2·31	3·77	4·16
July	2·96	3·25	3·50	3·68	4·13
Spelter:					
January	3·75	3·28	3·56	4·39	4·69
February	4·03	3 20	3·85	4·39	4·69
March	4·20	3·23	3·89	4·28	4·89
April	4·19	3·30	3·62	4·38	4 68
May	3·98	3·50	3·47	4·41	4·79
June	4·10	3 65	3·40	4·27	4·71
July	3·97	3 75	3·43	4·13	4·78

CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, August 7.

Heavy Chemicals.—This market continues in the same dull condition that it has been for some time, and the prospects for improvement at an early day are very poor. The depression in other lines of business is felt in this one also, and as this depression is pretty sure to continue several months, a more active chemical market cannot be expected during that time. Buyers are very "shy" about taking hold, which is really not to be wondered at, for just at this time there is no incentive for them to attempt to do a large business. There appears to be a hitch in the agreement expected to be made by the domestic makers of alkali that may be real and caused by reasons not given to the public, or else fictitious to meet their own requirements. As this is the time when prices should be fixed for 1897, something definite ought to be forthcoming soon. Quotations are as follows: Caustic soda, 60%, $2.22½@$2.42½; 70, 74@76%, $2.12½@$2.37½ per 100 lbs. Alkali, 58%, 80@85c. for 50-ton lots and over, and 90c.@$1 for smaller quantities; 48%, $1.20@$1.40 for jobbing lots. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.65@$1.75 per 100 lbs. Bicarb. soda, English, 1·50@1·60c.; American, bulk, $1.50@$3.50 per 100 lb. Sal-soda, English, 70@72½c.; American, 65c. (in barrels), 80c. (in kegs) per 100 lbs.

Acids.—There has been only a slight change in this line, so slight, however, that business is still considered very quiet. No large orders have been received, but it is gratifying to note that small orders are becoming more numerous. The trade in general is still of the hand-to-mouth description. Buyers are not giving any large contracts ahead, and sellers certainly have no reason for making them under such conditions. Consumers combine, as a rule, to buy only such quantities as they require for immediate use. It does not seem likely that the trade will brighten materially in the near future.

Quotations show no change, and are as follows: Acetic acid (in barrels), $1.25@$1.40; muriatic acid, 18°, 75c.; 20°, 75@85c.; 22°, $1.10@$1.25, according to make and quantity. Nitric acid, 36°, $3.25@$4.36; 40°, $4@$4.50; 42°, $4.50 @$5.50. Oxalic acid, $7.25 ex-

dock and $7.50 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@95c., 10@15c. higher for small quantities. Chamber acid, $6@$6.50 per ton at factory. Blue vitriol, $4@$4.25, according to grade and order.

Brimstone.—There have been no arrivals of Sicilian brimstone since our last report; but several steamers are due in about 15 days. Their arrival is expected by some people as likely to lower the price, but that this expectation will be realized is not at all certain. Best unmixed seconds are still quoted at $20 per ton, but as no brimstone is now on hand the price is really nominal so far as effecting a sale for immediate delivery.

Fertilizing Chemicals.—Nothing worthy of note has occurred during the past week, the dullness being as prominent in this line as in all others. No definite information could be obtained in reference to the reported deal among fish scrapmen. It is said the object was not so much to raise prices as to keep them firm in the dull market. We quote: Sulphate of ammonia, gas liquor, $2.25@$2.27½; bone, $2.15@$2.20 per 100 lbs. Dried blood, high grade, $1.55@$1.60 per unit, low grade, fine ground, $1.40@$1.42½ f.o.b. Chicago. Azotine, $1.65@1.70 basis New York. Concentrated phosphate (30% available phosphoric acid), 60c. per unit. Acid phosphate, 13% @15%, av. P_2O_5, 54@65c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, P_2O_5, 87½@90c. per unit. Acidulated fish scrap, $9@$9.50, and dried scrap $18.50@$19 f. o. b. fish factory. Tankage, high grade, $18½@$19; low grade, $17½@$18. Bone tankage, $21; ground bone, $22@$22.50. Bonemeal, $19.50@$23.

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

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

Muriate of potash: The new prices are 1·78c. at New York and Boston; 1·79½c. at Philadelphia, Baltimore and Norfolk, and 1·81½c. at New Orleans for 80@85% (basis of 80%), in lots of 50 tons and upward.

Kainit.—Quotations for 1896 are as follows: New York, Boston, Philadelphia and Baltimore, $8.80 per ton; Norfolk, $9.15, and New Orleans, $9.30 per ton, for 25 tons and upward. Sylvinit at the same ports is quoted at 36½c., 37½c. and 38c., respectively.

Nitrate of Soda.—The prices quoted are 1·77½@1.80c. for spot, according to quantity; 1·80c. to arrive, and 1·82½@1·85c. for futures.

Report comes from Valpariso, Chili, that the nitrate combination has resolved to limit the export for the current year to a little more than 20,000,000 Spanish quintals. The nitrate exported in July from Iquique was 40,242,000 kilos.

Liverpool. July 29.

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

There is no life in trade so far as heavy chemicals are concerned, while at the same time values are nominally unchanged.

Soda ash in poor demand. We quote spot range for tierces as to market, about as follows:

Leblanc ash, 48%, £4@£4 5s. per ton; 58%, £4 5s.@£4 10s. per ton, net cash. Ammonia ash, 48%, £3 5s. @ £3 10s. per ton; 58%, £3 10s.@£3 15s. per ton, net cash; bags 5s. per ton less. Soda crystals receive a fair amount of attention and steady at £2 7s. 6d. per ton, less 5% for barrels, and 7s. less for bags. Caustic soda lifeless, but values are nominally unaltered, and nearest spot range as to market, we quote as follows: 60%, £6 5s.@£6 7s. 6d. per ton; 70%, £7 5s.@£7 7s. 6d. per ton, net cash; 74%, £8 5s.@£8 7s. 6d. per ton; 76%, £9@£9 5s. per ton, net cash.

Bleaching powder flat and hardwood offered at £6 12s. 6d.@£7 per ton, net cash, according to destination. Chlorate of potash very slow of sale, and 4¼d.@4½d. per lb. is nominal spot range. Bicarb. soda keeps firm at £6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allowances for larger packages. Sulphate of ammonia dull and prices favor buyers. We quote good gray, 24%@25%, £8 2s. 6d.@£8 7s. 6d. per ton, less 2½% for double bags f. o. b. here, as to quality.

Nitrate of soda easier at £8@£8 2s. 6d. per ton, less 2½% for double bags f. o. b. here, according to quality. Carb. ammonia, lump, 3d. per lb.; powdered, 3½d. per lb., net cash.

MINING STOCKS.

Complete quotations will be found on pages 142 and 143 of mining stocks listed and dealt in at:

New York.	Aspen, Colo.	St. Louis.
Boston.	Colorado Springs.	Paris, France.
Philadelphia.	Duluth, Minn.	Mexico.
Baltimore.	Helena, Mont.	Shanghai, China.
Pittsburg.	Salt Lake, Utah.	Valparaiso, Chile.
Denver, Colo.	San Francisco.	London, England.

Cleveland, page 140.

NEW YORK, Friday Evening, August 7th.

The lack of business and utter stagnation in the mining stock market is shown by the paucity of transactions.

There were during the past week only 9,770 shares as compared with 31,740 shares in the previous week. Continued activity is noticeable in Iron Silver stock, which, since the recent decision in the case of the Sierra mine has advanced considerably in price, but which advance seems to have reached its limit for the present. Continued progress is reported in the Brunswick mine and the stock continues to be one of the most active on the list. The excitement caused by the stock of the Bedford Consolidated (the Montana Prospect) jumping from $2.50 to $7 per share on the 1st inst., was caused by a conspiracy on the part of several of those interested in the stock who, knowing that the stock was all locked up, gave orders to sell and then refused to deliver the stock when called upon, which made it necessary for it to be bought in under the rule on account of the party selling, which caused the price of $7 to to be reached.

The Comstocks have been very quiet during the past week, with one sale of 1,000 shares of Comstock Tunnel at 8c. Mr. Franklin Leonard, president of the Comstock Tunnel Company, who has just returned from an eight months' trip to the company's properties in Nevada, in an interview with the representative of the *Engineering and Mining Journal*, stated that the prospects of the company are brighter than they have been for some time. At the regular monthly meeting of the directors, which will be held on August 20th, in New York, Mr. Leonard will present a number of propositions looking to the further improvement of the company, among which will be the erection of a mill at the mouth of the tunnel; also to the reorganization of the company's interests in Nevada. He also stated that the affairs of the company in Nevada were on a first-class basis, being practically free from debt. The tunnel has now been driven four miles, and now is upon the Savage property. It also has about three miles of lateral tunneling. Plans have been drawn for a town site.

Best & Belcher records transactions of 500 shares at 95c. Consolidated California & Virginia shows one sale of 70 shares at $1.85. Gould & Curry was also traded in to the extent of 200 shares at 70c. There were also sales of 400 shares of Sierre Nevada at 65@60c., the latter prices being the last sale. One hundred shares of Union Consolidated were traded in at 50c. Ophir was also traded in to the extent of 100 shares at $1.

Of the California stocks traded in during the past week Brunswick Consolidated was the only one opening at 21c. and closing at 22c., with sales of 1,500 shares.

The following sales of Colorado stocks were made in the Cripple Creek group: 1,400 shares of Anaconda were dealt in at 53@58c., closing price being 55c. Mount Rosa records sales of 400 shares at 13c., and Pharmacist 300 shares at 8@10c. Of the other Colorado stocks Iron Silver was the most active, opening at 80c. and declining to 70c., with sales of 600 shares. Leadville shows transactions of 1,000 shares at 12c. and Small Hopes was also traded in at 65c., with sales of 200 shares.

Bedford Consolidated, the Montana prospect, records one transaction of 2,000 shares at $7.00. This stock is closely held, as is shown above.

Boston. Aug. 6.

(From Our Special Correspondent.)

There has been but little doing in mining stocks the past week, and prices generally show a declining tendency. Boston & Montana sold at $78 early in the week and settled down to $73½ to-day, the lowest for several months. The dealings until to-day were light, but a good deal of stock was pressed on the market, causing the decline. Old Dominion has ruled quiet and steady with sales at $12 to $12¾. Calumet & Hecla sold at $300. Quincy declined to $107 and Tamarack to $70. The dealings in the balance of the list were very light. Franklin sold at $10@$8½, Kearsarge at $10, Osceola at $23, Wolverine at $6, Butte & Boston at $1½@$1⅝. Tamarack, Jr., sold at $8.

There was nothing doing in gold stocks, except Pioneer, which sold up to $4¼@$4½, closing at $3¾. Santa Ysabel declined to $8 on small sales. At the afternoon call Quincy declined to $106, and Atlantic to $15; balance of the list unchanged.

BY TELEGRAPH.

Boston, August 7th, 3 p. m.—Boston & Montana, $67; Old Dominion, $10½, Quincy, $105; Tamarack, $70.

Cleveland. August 5.

(From Our Special Correspondent.)

Prospective investors made inquiries at the offices of some of the brokers during the last week for mining stocks, which indicates that interest is again being taken in the securities. A few minor changes in the quotations were announced to-day, Minnesota stock going up a point, being the most important to Cleveland investors. The quotations follow:

Name of Company.	Par val.	August 5. Bid.	Ask.
Aurora	$25	$6.00	$8.00
Biwabik	100	32.00	34.00
Champion Iron Company	100	10.00	30.00
Chandler	25	34.00	35.00
Cincinnati Iron	25	10.00	13.50
Cleveland-Cliffs Iron Co.	100	45.00	.....
Jackson Iron Co.	25	70.00	75.00
Lake Superior Iron Co.	25	30.00	31.00
Lake Superior Consolidated	100	20 00	21.00
Minnesota	100	57.00	59.00
Pittsburg & Lake Angeline	25	75.00	.....
Republic Iron Co.	25	18.00	.....

Salt Lake City. Aug. 1.

(Special Report of James A. Pollock.)

Practically little change was recorded by the mining stock market during the past week, the entire list, with few exceptions, remaining about the same as during the previous week. The number of buyers in the field was not large, nor was the number of sellers. Indications to-day are that the bottom has been reached all along the line.

Only a limited amount of business was done in Ajax, although quotations were not shaded materially. Shipments from the properties are regular and the class of ore satisfactory. Anchor continued strong compared with its record of the past several weeks, although there were not many buyers. The properties are reported to be looking quite well again. Alliance and Bogan did nothing. Bullion Beck stock continues strong and was in demand at last week's figures. The offerings of Centennial Eureka continued very light, although there was an increase in the number of would-be buyers. Shipments from the properties are being slightly increased and the showing of ore is good.

One of the directors visited the Dalton mines last week, and upon his return reported that the showing of ore was very good and that shipments could be maintained when once commenced. There was no material change in the stock. Daly West was in strong demand and recorded a material advance, the selling prices being higher than ever before in the history of the company. Very little business was done in Daly, although the offerings were not heavy.

Practically nothing was done in Eagle, East Golden Gate or Four Aces. Galena was quite strong upon good reports from the mines. No legal opinion is expected in the Marion-Geyser suits before the next thirty days, and until the first decisions are rendered the Geyser will continue to cut little figure in the market. Horn Silver continued very quiet, with very few buyers or sellers in the field. Shipments from the properties are quite satisfactory and the mill is doing good work. The showing of ore is reported to be fully as good as for several years past.

Mammoth pays its regular monthly dividend of 5c. per share August 1st. The stock was materially lower during the week. The properties are reported to be looking well in the deep. Dealings in Mercur were not extensive, with the offerings of stock remarkably light. An expert who inspected the properties this week declares that the company has ore reserved now developed sufficient to maintain its present output for more than four years, with every day's development work showing up new ore bodies. Ontario paid its July dividend of 10c. per share in New York on the 29th. There was only comparatively light business done in the stock, with the quotations remaining firm. Overland is reported to be looking better than ever.

Silver King continued to be held practically out of the reach of would-be buyers. The company is doing extremely well and the usual dividend of 25c. per share comes on August 7th. Contracts for the new leaching tanks to be put in at the Sunshine mill, in order to increase its capacity to nearly 200 tons, are being let. Sellers were not numerous, although there was little change in the quotations. The mines are reported to be in excellent condition. Swansea was again shaded somewhat. Late reports from the Utah are to the effect that the ore showing is highly gratifying. Tetro is pushing development work energetically.

San Francisco. Aug. 1.

General Walter Turnbull, president of the Gold Mining Exchange, has just completed his semi-annual report in which he reviews the work of the Exchange for the first six months of its existence.

"In view of the exceedingly stringent times," says the report, "we may well feel congratulated upon the success thus far attained and upon our present healthy financial condition. Much of the work has been purely educational of the importance of the gold-mining industry. The suspicion which naturally attaches to all mining enterprises is being gradually overcome by the policy of making expert examination of mines before placing their securities before the public."

It further states that the course of free public lectures has proven very popular, and in future lectures it is proposed to give each mining section an opportunity for representation. Some handsome contributions have been received from influential sources to aid in these efforts.

The Exchange rooms have become popular headquarters for the meeting of mining men, where access is had to considerable general information.

Although the Exchange was not opened formally till April 6th, seven mines have been listed for the sale of development stock, being at the rate of over two a month. Negotiations are under way for the sale of several of these mines outright, consequent upon the advertising and standing given them by the daily quotations of stock.

A number of other properties have been bonded to the Exchange for direct sale, and information has been secured concerning over 70 claims and mines in different parts of the coast, which are offered for sale or development.

Most inquiries from investors are for developed, dividend-paying mines, which are not generally for sale and some difficulty is being experienced in making investors aware of the possibilities attendant upon the development of good prospects.

British Columbia.

(From Our Special Correspondent.)

ROSSLAND, July 25.

There has been a slight revival in the business of mining stocks in the week which closes to-day.

This revival can hardly be called "marked" because the midsummer season is not yet over, nor has there been anything to make a general advance, such as, no doubt will take place in September and October. By that time there will be something to justify an active demand and rising quotations, since it seems very probable that in many of the propositions in this camp, in which much development work is going on, strikes of a more or less important character will be made from time to time, and these naturally will be followed by an advance of the quotations. So far as the investor, whether actual or intended is concerned, he may feel very sure that the strike must be a reality before it can affect the quotations. The tendency to protect the investor on all sides is a very noticeable one, and the fact that the investor is often a very knowing individual with plenty of mining experience, or in the absence of it protects himself with expert knowledge, ought to secure all reasonable safety.

There are rumors of great deals—of the probable sale of two of the largest mines in the camp. These rumors are periodically revived, and then disappear as suddenly as they were created. There are, doubtless, those in the camp who are continually mixing fact with fiction—a spirit of exaggeration which is said to accompany western progress and enterprise.

A genuine event of the week, undoubtedly, has been the strike at the Evening Star, the particulars of which are given in another place—by which its stock has risen from 13 to at least 18c. "It is strikes like these," said an experienced mining superintendent, "that mark in a distinct manner the progress of the camp. They occur very often unexpectedly—they are frequently a surprise—and show, to some extent, the nature of the gold branch of the mineral industry."

There is a marked increase in the outside activity of the camp, such as railway construction and development work. There is also great activity in the matter of timber clearing, while the shipment of ore has greatly increased since the last report.

The Crown Point is now shipping about 25 tons of ore a day. The Iron Mask is also shipping, and quantities of ore are being shipped from the Iron Horse. The present outlook is a steady increasing of ore, with a similar increase in the output capacity of the Trail Creek smelter. There is still very much to be done before even the most conservative output of the camp, as predicted in the earlier part of the year will be reached, but it is possible to reach it if the present progress continues without interruption.

London. July 25.

(From Our Special Correspondent.)

The mining stock market has not been very active during the past week, but prices have kept steady and the general flatness has been relieved by one or two interesting features. In the South African section the chief interest has centered in Chartered. The trial of Dr. Jameson here and the inquiry at the Cape have depressed the market and the continued difficulties with the Matabele have caused a disinclination to buy. Wherever any offers of shares for sale are made the inside ring always buy up, and thus the price is not allowed to fall below £3. The Transvaal gold shares have shown a fairly lively tone, on account of inside buying of deep-level stocks. The companies operating the deep level mines and borings and the trust companies owning shares in these companies have all plucked up and shown some strength. The news which I have received from the mining engineers shows that the results now obtained are much more promising than many had been led to expect from the first returns at Geldenhuis Deep. In a short time I shall be able to send information about these deep levels which will be of considerable interest to American mining men. Another feature of the market has been the briskness in Barnato stocks. This is caused by the approaching visit of Mr. Barnato and the expectation that his scheme for consolidating his various interests will enable profits to be made by market manipulations.

The West Australian market has not been active; and there has been no buying and only a very little speculation. Rumor announces that an extraordinarily rich strike has been made at Bayley's Reward, but this lacks confirmation as yet. A very bad effect has been made by the practical break up of the Calvert companies, e. g., the Consolidated Gold-fields of West Australia; Mr. Calvert seems to have lost all interest in West Australia, and in his shareholders, and is devoting his time to some geographical exploring expeditions to be sent out into the northern territories of Australia. As Mr. Calvert was one of the first and most persistent boomers of West Australia, it is a pity that he should now leave the colony, and his own shareholders in the lurch. Another feature of the West Australian section has been the decision of the Londonderry company to reorganize as an exploring company.

Other sections of the mining market have not been very prominent. New Zealanders are for the time quiet, but they are gradually increasing in importance and promise to become a very prominent feature of the market in a short time. Americans have been quiet also, on the approach of the holidays, but there is strong evidence that British Columbia is coming forward, and that English interests in Mexico are increasing.

The directors of the Poorman Gold Mines, Limited, are actually proposing to reconstruct their company and to raise more capital to continue work. It is surprising that, after the continued failures and after the exposures made by the ENGINEERING AND MINING JOURNAL two years ago, any shareholder can be persuaded to throw any more money away. The scheme is now to form a new company with a capital of £100.000 in 1,000,000 shares of 2s. each. Of these shares 867,200 are to be issued to shareholders in the present company, one new share of 2s. to be given for each old 5s. share; of the 2s., three-quarters to be credited as fully paid, and 6d. has to be paid up in cash. The remaining 132,800 shares are to be held in reserve. In this way about £21,000 is expected to be raised, that is if all the shareholders pay up the 6d. per share, which if they are wise they won't. What is to be done with the new capital is not stated.

I hear that the Dolcoath mine, in Cornwall, is progressing very favorably and that there is every expectation of a dividend being paid shortly. The new machinery introduced has already effected a great saving of time and expense. Another mine to be converted to the limited liability is the Basset, and the directors have decided to spend £25,000 in sinking a new shaft and buying modern machinery. It really looks as if Cornish mining were going to acquire a new lease of life.

A new British Columbian mining company has been brought before the public this week. This is the "Cottonwood River Alluvial Gold Mining Company," and its capital is £65,000, but the purchase price is not mentioned. The prospectus states that 15,000 shares are now offered for subscription, but it also states that the whole issue has been privately subscribed, and that the prospectus is only advertised for public information, somewhat contradictory statements. The company is to acquire three alluvial claims near the Cottonwood and Fraser rivers which are now owned by Mr. Charles Tetley. No information is given as to the exact location of the claims or as to their nature, so that the public information referred to in the prospectus does not amount to anything. It is a great pity that all the companies so far brought out in London to operate in British Columbia are devoted to placer mining only, and that the gold quartz and pyritic ore mines are not being brought before the English public. It is to be feared that the inevitable failure of these placer companies will do much harm to the province or at least will injure those who are intending to bring good propositions before the English public.

Paris. Aug. 2.

(From Our Special Correspondent.)

The stock market has been even quieter this week than last, and there have been no events of moment to record.

In the copper stocks there is a perceptible pause in the speculation, and apparently the leaders are waiting for events. The Berlin operators are doing nothing just now in Rio Tintos, and the other stocks are quite in sympathy. I must except Boleo, for which there seems to be a demand even at the present high prices.

There is a slight reaction in the metallurgical shares, which still leaves them at a high level; this seems to be justified by the prospects.

The increased imports of raw materials and the gain in exports of manufactures and in postal parcels—which are largely made up of small manufactured articles—are matters of congratulation as showing improved conditions of trade.

While we are on foreign trade, I may say that there has been a great deal of talk about Chinese and Japanese competition with Europe, of which many manufacturers profess to be afraid. They ask—these people—where will Europe be if those vast populations, accustomed to work for a trifling sum, are supplied with European or American machinery? They will be able to fill our markets with products which can be sold at prices far lower than they can be made in Europe, and the Western traders will be ruined.

It seems to me that they alarm themselves needlessly, these good people. In the first place, events in the East move slowly, and it will take many years, even in Japan, to equip factories with machinery and to teach the laborers it uses. Moreover, all history has taught us that as the producing power of a laborer rises, so do his wants and demands. When the Chinaman can operate a Jacquard loom or a steam hammer, he will no longer be a coolie living on rice and satisfied with a *sou* a day. The present supply of labor is enormous, it is true, but its unit of producing capacity is very small, and the resulting output is not great.

Permit me to digress for a moment. It was my fortune to visit Russian Turkestan, when General Annen Roff was building the Trans-Caspian Railroad, and I passed some time with the chief of the technical staff, a veteran engineer, who had visited many countries and studied railroad building in them all as a commissioner from the government. The result of his observations was that practically the nominal daily rate of wages made no difference; in all countries the unit of value of work—that is the amount of actual work to be purchased for a given amount of money—is very nearly the same. I think that many others will corroborate the statement.

Let our manufacturers be at ease; the true danger of the future from China is not, it seems to me, industrial, but political. When the country has passed under Russian control, as it probably will, Russia will then have this great population to draw upon for its armies. With such a supply of men, obedient to authority, easily drilled, quick to learn the use of arms and having all the Oriental contempt for death, the Czar will be master of the world.

AZOTE.

MEETINGS.

Calumet & Hecla Mining Company, at 12 Ashburton Place, Boston, Mass., August 19th.

Carbon County Gold Mining and Milling Company, at its office in the city of Laramie, Wyo., on August 29th, at 10 a. m.

Horace Greeley and Sacred Mining and Milling Company, at the office of the company, Room 507 McCornick Block, Salt Lake City, Utah, on August 29th, at 2 p. m.

North Pacific Mining and Transportation Company, at the office of the company, Room 5, 632 Market street, San Francisco, August 17th, at 1 p. m.

Rockingham Gold Mining and Milling Company, at the office of the company, 75 Railroad Building, Denver, Colo., August 22d, at 2 p. m.

ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dinq.	Sale.	Amt.
*Anita Gold	Cal	16	Aug. 25	Sept. 15	.07
*Baltic Gravel	"	2	Sept. 2	" 19	.00¾
Best & Belcher	Nev	60	Aug. 6	Aug. 27	.25
Channel Bend	Cal	3	July 31	" 22	.05
*Con. Imperial	Nev	37	Aug. 27	Sept. 22	.01
Eureka Con	Utah		July 8	" 5	.10
Fogus	Nev		" 11	Aug. 15	.10
Gold Bar	Cal		" 13	" 20	.02
Granite Hill	"	15	" 29	" 19	.05
Hale & Norcross	Nev	109	Aug. 14	Sept. 4	.15
Hartery Con	Cal	19	" 3	Aug. 22	.02
Jamison	"	8	" 10	" 31	.05
Kentuck Con	"	12	June 22	" 12	.05
Leo	Mont.		" 23	" 14	.00½
Lucky Bill	Utah	20	Aug. 17	Sept. 15	.02
Marguerite	Cal	3	July 28	Aug. 28	.10
*Orient Gold Placer	Cal		Aug. 26	Sept. 5	.50
*Orleans	"		" 24	" 21	.10
*Rocky Peak Gold	"		" 24	" 21	.02
*Ruby, G. & S.	S. D.	9	Sept. 1	" 19	.01
West Cable	Utah	6	Aug. 17	" 17	.01
*Ybara Gold	Mex	5	" 31	" 15	.15

DIVIDENDS.

NAME OF COMPANY	Current Dividends. Date.	Amount.	Paid since Jan. 1, 1896.	Total to date.
Ætna Con			$20,000	$60,000
Alaska-Mexican			34,200	137,031
Alaska-Treadwell			200,000	2,875,000
Anaconda			750,000	
Aurora Iron			50,000	700,000
Bangkok-Cora Bell			6,000	107,510
Big Six			2,500	2,500
Boston & Mont	Aug. 20	450,000	1,050,000	4,475,000
*Bullion Beck & Ch			110,000	2,060,000
*Calumet & Hecla			1,500,000	45,850,000
*Cariboo			32,000	95,000
*Centennial-Eureka			240 000	1,770,000
C. O. D			5,000	25,000
*Dalton & Lark			75,000	75,000
Dominion Coal			600,000	
Elkton Con			20,000	65,000
Florence			54,390	89,348
*Galena			21,000	41,000
Gold Coin	Aug. 10	20,000	65,000	80,000
*Golden Fleece			126,000	527,179
Gold & Globe Hill			19,500	28 875
Hecla Con			30,000	2,130,000
Highland			25,000	3,159,918
*Homestake			219,750	5.931,000
*Hope			10,000	
Horn Silver			50,000	5,130,000
Iowa			20,000	20,000
Iron Mountain			30,000	440,000
*Isabella			135,000	157,550
*Jackson				
Le Roi			100,000	175,000
*Mammoth	Aug. 1	20,000	20,000	1,090,000
*Mercur			125,000	475,000
*Minnesota Iron			495,000	3,240,000
*Mont. Ore Pur. Co.			280,000	440,000
Moon-Anchor			18,000	18,000
Moose			6,000	186,000
*Napa Con			50,000	790,000
*Ontario			105,000	13,280,000
*Osceola Con			125,000	2,072,500
Ottaqueachy			1,000	1,000
Portland			120,000	743,000
Quincy	Aug. 17	1300,000	700,000	8,370,000
*Silver King			262,500	712,500
Slocan Star			100,000	100,000
Small Hopes			25,000	3,275,000
*Smuggler-Union			100,000	100,000
*Tamarack			150,000	4,320,000
Union			23,500	73,000
*Utah			15,000	147,500
*Victor			140,000	605,000
Victor M. & L			12,000	42,000
War Eagle			25,000	157,500
Wasp			26,000	26,000
Totals		$790,000	$8,524,340	$16,481,111

* June dividend paid. ‡ Extra dividend of $2 included.

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

STOCK QUOTATIONS.

BOSTON, MASS.*

Name of Company.	Location.	Par val.	July 31 H.	July 31 L.	Aug. 1 H.	Aug. 1 L.	Aug. 3 H.	Aug. 3 L.	Aug. 4 H.	Aug. 4 L.	Aug. 5 H.	Aug. 5 L.	Aug. 6 H.	Aug. 6 L.	Sales.
Allouez	Mich.	25							.50						500
Arnold	"	25													
Atlantic	"	25											16 00	15.00	125
Bost. & C. C	Colo.	1													
Bost. & Mont.	Mont.	25	77.50	76 00	78.00	76 13	76.75	75.63	75.75	75.13	76 00	75.25	75.00	72.75	9,623
Butte & Bost.	"	25					1 50						1.63	1 :0	230
Cal. & Hecla	Mich.	25	300		300		300								41
Centennial	"	25													
Dominion Coal.	N. S.	100	8 90		8 38	8.00	8 00	7 88	8 00	7.50	7.50	6.75	7.50	6.25	7,053
" pref.	"	100	82 00	80.00											455
Franklin	Mich.	25					10.00						9.00	8.50	90
Gold Coin	Colo.	1													
Illinois Steel	Ill.	100	49.50												100
Kearsarge	Mich.	25					10.00								220
Lake Sup. Iron.	"	25													
Merced	Cal.	15											5.00	4.75	130
Minnesota (Ir.)	Minn.	100													
Napa	Cal.	7													
National	Mich.	25													
Old Dominion	Ariz	25	12.50	12.25					12 00		12.75	12.50			2,700
Osceola	Mich.	25					23.25		23.75				23.00		145
Pioneer	Cal.	10	3.75	3.63	3.75		4.50	4.00	4.50	4.25	4.25		4.00	3.63	900
Pontiac	Mich.	25													
Quincy	"	25			108		107		108	107	107		106		184
do. scrip	"								78.00				76.00		20
Santa Rosa	Cal.	10													
San. Ysabel (G.)	"	5	8.00										7.25	7.00	445
Tamarack	Mich	25	70.00				75.00	73 00							95
Tamarack, Jr.	"	25					9.00		8.00				9.00	8.50	85
Tecumseh	"	25													
Westingh. E.&M	Pa.	50							24.25				24.00	23.00	180
do. pref.	"	50	49.00										49.50	49.00	61
do. scrip	"														
Wolverine	Mich.	25	6.25				6.50		6.00		6 00				545

* Official quotations Boston Stock Exchange. Total sales, 23,927.

INDUSTRIAL COAL AND COAL RAILROAD.*

Name of Company.	Par value.	Aug. 1 H.	Aug. 1 L.	Aug. 3 H.	Aug. 3 L.	Aug. 4 H.	Aug. 4 L.	Aug. 5 H.	Aug. 5 L.	Aug. 6 H.	Aug. 6 L.	Aug. 7 H.	Aug. 7 L.	Sales
Balt. & Ohio	100					15½		15⅝		16	15	15	14⅛	2,000
Ches. & Ohio.*	100							12⅞		12⅝	15⅝	12½	12⅛	1,700
Col.C.& I.Dev	100													
Col. Fuel & I.	100			18¾				17⅝				17	14⅝	1,425
Col.,H.V.&Tol	100							15				14	13⅝	600
do. pref.	100													
Col. & H.Coal	100													
Del. & Hud. C	100	120		119⅝						117⅝		117	115	1,229
Del., L. & W.	50	150		150	149¼	149⅝				149	145	143	140	1,55
General Elec.	100	24⅜	24	24⅛	23⅞	23⅝		23¾	23⅛	23½	23¼	22¼	21⅛	11,064
Lake Erie&W	100					14⅛	14	14⅜		14		13⅛	13	8 0
do. pref.	100			62¼		61⅛		61⅜		61	60⅛	58¼		820
Morris&Essex	100													
Nat'l Lead	100									19	17⅜	17¼	16½	2,800
do. pref.	100			82	8 ½	81	80½			80¾	79⅝	79⅝	76	163
N. J. Central	100	93	92½	92⅛		92¼	91⅛	92¼	92	91½	90½	9 ¼	88⅛	3,735
N. Y.,L.E.&W	100													
do. pref.	100													
N.Y.,Ont.&W.	100							12⅛		12		11¾	11⅛	1,300
N.Y.,Susq.&W	100			7⅛						7⅛	7⅛	7		400
do. pref.	100			18				18		18	17½	16¼	15¼	1,400
Norfolk & W.	50													
do. pref.	50													
Phila. & Read.	50	10⅜		10⅛	10¼	10⅛	10	10¼		10⅛	9⅛	9¼	8⅛	11,320
Tenn. C. & I.	100	17¼	16⅛	16	15⅜	15⅝	15½	16	15⅛	15⅛	15	14⅝	14	6,830
do. pref.	100													
Wheel. & L. E	100	7⅜	7	7⅛	7	7¼	7	7⅛	6⅞	6⅞	6⅛	6⅛	5⅝	16,730
do. pref.	100	25¼	25											200

* Official quotations N. Y. Stock Exchange. Total shares sold, 66,066.

NEW YORK.*

Name of Company.	Location.	Par val.	Aug. 1 H.	Aug. 1 L.	Aug. 3 H.	Aug. 3 L.	Aug. 4 H.	Aug. 4 L.	Aug. 5 H.	Aug. 5 L.	Aug. 6 H.	Aug. 6 L.	Aug. 7 H.	Aug. 7 L.	Sales
Adams	Colo.	10													
Ajax	Utah	10													
Alamo	Colo.	1													
Alice	"	1													
Alliance	Utah	1													
Amer. Flag	Colo	10													
Anaconda	"	5			.53				.58	.56	.55				1,400
Andes	Nev.	100													
Argentum-Jun.	Colo.	2													
Bedford Con	Mont.				7.00										2,000
Belcher	Nev.	100													
Best & Belcher	"	100							.95				.90		500
Bodie Con	Cal	100													
Bullion Beck&C	Utah	10													
Bulwer	Cal.	100													
Breece	Colo.	25													
Brunswick	Cal.	2			.21		.22		.22		.22				1,500
Centennial Eur.	Utah.	50													
Chollar	Nev.	100													
Chrysolite	Colo.	50													
Comstock T.	Nev.	100							.08						1 000
do. bonds	"	100													
Con. Cal. & Va.	"	100							1.85						70
Con. Imperial	"	100													
Creede & C. C.	Colo.	1													
Cripple C. Con.	"	1													
Crœsus	"	1													
Crown Point	Nev.	100													
Dalton	Utah	25													
Daly	"	20													
Deadwood Ter.	S. Dak	100													
Dunkin	Colo.														
Father de Smet.	S. Dak	100													
Gold Coin	Colo.	1													
Golden Fleece	"	1													
Gould & Curry	Nev.	100			.70										200
Hale & Norcross	"	100													
Homestake	S. Dak	100													
Horn Silver	Utah.	25													
Iron Silver	Colo.	20	.8	.75	.75				.70		.70				600
Isabella	"	1													
King & Pemb.	Ont.	10													
Lacrosse	Colo.	10													
Leadville Con.	"	10			.12										1,000
Little Chief	"	50													
Mexican	Nev.	100													
Mollie Gibson	Colo	5													
Mono	Cal.	100													
Mt. Rosa	Colo.	1					.13		.13						400
Occidental Con	Nev.	100													
Ophir	"	100											1.00		100
Pharmacist	Colo	1					.08		.10						1,300
Phœnix	Ariz.	1													
Portland	Colo.	1													
Potosi	Nev.	100													
Rover	Utah.	10													
Savage	Nev.	100													
Sierra Nevada	"	100					.65		.60						400
Silver King	Utah.	20													
Sm. Hopes Con.	Colo.	20									65				200
Specimen	"	1													
Standard Con.	Cal.	10													
Tetro	Utah	1													
Union Con	Nev.	100					.50								100
Utah Con	"	100													
Victor	Colo.	1													
Work	"	1													
Yellow Jacket	Nev.	100													

* Official quotations N. Y. Stock and Con. Stock & Petroleum Exchanges.
Total shares sold, 9,770.

COLORADO SPRINGS, COLO.†

Name of Company.	Par val	July 27. B.	July 27. A.	July 28. B.	July 28. A.	July 29. B.	July 29. A.	July 30. B.	July 30. A.	July 31. B.	July 31. A.	Aug. 1. B.	Aug. 1. A.	Sales.†	Sales.*
*Ajax	$1														
Alamo	1	.03⅜	.04	.03⅝	.04	.03⅜	.04⅛	.04	.04¼	.03⅛	.04	.03⅝	.04	3,500	1,590
*Am'ric'nC	1														
Anaconda	5	.55	.56	.55⅛	.56⅛	.54	.57	.53	.55	.54	.55	.52	.56	400	200
Aola	1														
Arg'ntumJ	2	.52¼	.53¼	.52⅛	.53	.51⅛	.52⅜	.51	.51⅛	.50¾	.51	.51	.51¼	9,800	7,400
Bankok	1														
*Bankers	1					.09⅛	.10	.09⅛	.11			.09⅞	.10		7,000
Banner	1				.05		.05						.04		
*Ben Hur	1					.02	.02⅛	.02	.02¼	.04⅛	.05⅛	.04⅞	.05		21,500
*Blue Bell	1							.04⅝	.05	.04½	.04⅞				2,000
Bob Lee	1	.007	.009	.006	.008½	.007	.007½	.006¾	.007⅛	.007	.007⅛	.006⅛	.007	2,500	2,500
Bost. & C.C.	1														
*Buckhorn	1							.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼		2,800
*Colo.C.&M	1					.03⅛	.03¼	.03⅛	.03⅛	.03¼	.03⅛				2,000
Columbine	1														
Copper M	1					.008				.009		.01	.01⅛		2,400
Cr. & C. C.	1			.04⅝	.04⅞	.04⅜	.04⅛	.04¼	.04⅜	.04¼	.04⅛	.04⅜	.04⅛	76,000	28,500
C. C. Con.	1	.12	.12¼	.11⅝	.11⅞	.12¼	.12½	.12¼	.12⅜	.12⅜	.12⅝	.12½	.12⅝	14,500	11,000
Cr.Cr.Exp.	1		.12¼				.12¼		.12¼				.12¼	500	
Crœsus	1	.008	.009⅛	.009	.009½	.009	.01	.008	.01	.009	.009½	.009	.009½	15,000	
*Dante	1														
Des Moines	1	.02½	.02⅞					.02⅜	.02¾	.02½	.02⅞	.02⅜	.02¾		4,900
*Enterprise	1									.05¾	.06⅛				2,000
Fanny R.	1	.05⅛	.07			.05⅛	.06⅛	.05⅛	.05¼	.05⅜	.06⅛	.05⅜		2,000	2,000
Favorite	1	.06	.07	.06	.07		.07								2,000
Franklin	1	.004	.005					.004	.005	.004½	.005	.005	.006	4,000	5,000
*Garfield-G	1					.03½		.03⅜	.03⅜	.03⅜	.03⅝	.03½			16,000
*Gold. Age.	1														
*Gold.E'g'e	1					.01¼	.01½		.01⅛		.01½	.01¾			4,500
Gold Fl'ce.	1	.92½	1.15	.94	.95	.90	1.00	.90	1.00	.94	.96	.92		1,450	1,300
Gold & Gl.	1		.18	.16	.17⅛		.18		.18				.17¼	500	
*Gold King	1														
*GoldStand	1					.04	.04¼			.04	.04⅛				4,000
*Gould	1							.05⅜	.06¼						500
*Grotte	1					.008		.007½	.008½						15,000
Henrietta	1														
Humboldt	1														
Ida May	1														
Ingham,C.	½		.18		.18		.15				.15		.15		
*Iron Clad.	1											.04½	.04⅝		47,000
Isabella	1	.54¼	.54½	.54	.54½	.53½	.53⅝	.53⅝	.53¾	.53¼	.54	.53⅜	.54	11,550	7,850
do.stamp.	1	.53	.54	.53⅞		.53¼	.53⅛	.53	.53¼	.53	.53¼	.53¼	.53⅛	11,700	550
Jack Pot	1	.03⅝	.03¾	.03⅝	.03¾	.03⅝	.03¾	.03¾	.03⅞	.03⅝	.04	.03⅝	.04	20,000	3,000
Jefferson	1														
*Keystone	1											.02¼	.02⅝		4,000
Ladessa	1											.003			5,000
*L'nc'lnB'y	1														
*LottieGib.	1														
*Marion	1	.004		.005	.007½	.004½	.006	.005	.007½	.004½	.005⅛	.004½		20,000	
Matoa	1	.07	.09¾	.04½			.10	.08		.07	.11⅛				
Mollie G.	5	.54		.53⅛	.56	.45	.50	.48⅛	.51	.49	.55	.49		3,100	1,600
*Monarch	1														
Mt. Rosa	1	.12	.12⅜	.12¼	.12⅜	.11⅞	.12¼	.11¾	.12	.11⅞	.12	.11⅞	.12	3,000	3,000
*Mutual	1							.02¾							
*Nugget	1														
*Ophir	1							.06¼	.06⅛	.06⅜	.06½	.06¼	.06⅜		6,500
Oriole	1	.02	.02⅛	.02		.02	.02¼		.02⅛	.02⅛	.02⅛	.01¾	.02⅛	2,000	3,000
*Orphan B.	1														
*Pappoose	1														
Pharmacist	1	.08⅜	.08⅞	.08¾	.09¼	.08⅞	.09	.08⅞	.09	.08⅞	.09	.08¾	.08⅞	39,000	17,000
Portland	1	1.39	1.40	1.45½	1.47½	1.36	1.38	1.38	1.39½	1.28½	1.29¼			12,000	7,100
*Princess	1														
*Reno	1											.01¾	.02¼		1,000
*Sacram'to	1					.03⅝	.03¾	.03⅛	.03¾						3,900
*Silver St.	1														
Specimen	1	.09⅛	.10⅛	.09⅞	.10	.10⅛	.10¼	.10	.10⅛	.10	.10⅛	.09¾	.10⅛	6,000	4,000
*Sq'wMt.T.	1					.02	.02⅛					.02	.02⅛		14,000
*Temonj	1														
Trachyte	1	.02⅝	.03	.03		.02¾	.03	.02¾	.03	.02¾		.02¾	.03		
Union	1	.33⅛	.34	.34	.35	.32¼	.33	.32⅝	.32¾	.32⅝	.32⅞	.33	.33½	27,750	18,050
*Virginia M	1														
Work	1	.09⅛		.09	.09⅛	.08⅛	.09¼	.08¾	.08⅞	.08¼	.09	.08⅛	.08⅞	9,000	4,000
Total shares sold: Listed														295,250	288,750
" " Unlisted														61,650	412,750

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

ST. LOUIS, MO. Week ending July 28.

Name of Company.	Company's Office.	Par Value.	Bid.	Asked.	Last Dividend.
Central Lead	St. Louis, Mo	$100	$50	$60	
Con. Coal	" "	100	19	21	March, '96, 1 p. c.
Doe Run Lead	" "	100	.90	.95	June, '92, 2 "
Granite Mtn		25	1 50	1 75	
St. Joe Lead	New York	100	8.50	9 25	July, '96, 1½ p. c.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	Aug. 1.	Aug. 3.	Aug. 4.	Aug. 5.	Aug. 6.	Aug. 7.
Alta	Nev.	100	.11	.10	.10	.10	10	
Belcher		100	.37	.39	.37	.35	.33	
Best & Belcher	"	100	.61	.89	.92	89	.86	.86
Bodie Con	Cal.	100	.53	.50	.59	.47	.46	.45
Bulwer	"	100	.32		.31	.30	.26	.25
Chollar	Nev.	100	2.40	2.70	2 90	2.55	2.35	2.30
Con. Cal. & Va.	"	100	1.70	1.80	1 90	1.75	1.70	1.70
Crown Point	"	100	.40	.38	.40	.39	.34	.34
Gould & Curry	"	100	.71	.75	76	.70	65	62
Hale & Norcross	"	100	1.15	1.20	1.25	1.15	1.05	1 05
Mexican	"	100	.58	.56	.62	.59	.56	56
Mono	Cal.	100	.20		.17	.19	.20	.15
Ophir	Nev.	100	1.05	1.00	1.15	1.05	1.00	.99
Potosi	"	100	1.15	1.30	1.35	1.20	1.05	
Savage	"	100	.73	.76	.80	70	.69	.67
Sierra Nevada	"	100	.56	.64	.65	.60	.54	.51
Union Con.	"	100	.47	.45	.52	.47	.46	.46
Utah	"	100	.10	.10	.10	.10	.09	
Yellow Jacket	"	100	.43	.40	.49	.39	.35	.37

* Official telegraphic quotations, San Francisco Stock Exchange.

BALTIMORE, MD.* Week ending Aug. 6.

Name of Company.	Location.	Par value	Bid.	Ask.	Name of Company.	Location.	Par value	Bid.	Ask.
Balt. M. & S.	N. C.	5			Howard C.&C	Md.	5		
Conrad Hill.	"	10			Lake Chrome	"	5		
Con. Coal	Md.	100		32½	Ore Knob	"	10		
G. Cr'k Coal.	"	100	100		Silver Valley.	N. C.	5		75

* Official quotations Baltimore Stock Exchange

BRITISH COLUMBIA.* Week ending July 17.

Name of Company.	Par value.	Selling price.	Name of Company.	Par value.	Selling price.
Boundary Creek:			Trail Creek (cont.):		
Old Ironsides Leasing	$1	$0.14	Knight Templar	$1	$0.12
Trail Creek:			Le Roi	5	6.00
Butte	1	.05	Lily May	1	.12½
Caledonia Con.	1	.06	Little Darling	1	.05
Carriboo (Camp McK.)	1	.24	Mayflower	1	.15
Commander	1	.25	Monte Cristo	1	.20
Crown Point	1	.20	Nest Egg	1	.11
Deer Park	1	.06½	O. K	1	.30
Evening Star	1	.18	Palo Alto	1	.10
Eureka Con	1	.06	Phœnix	1	.10½
Gold Hill	1	.08	Poorman	1	.12
Good Hope	1	.06	Rossland Gold	1	.05
Grand Prize	1	.05	San Jaquin	1	.10
Great Western	1	.14	St. Elmo	1	13
Green Crown	1	.08	St. Mary	1	.06
Helen	1	.13	Silverine	1	.10
High Ore	1	.08	Virginia	1	.28
Imperial	1	.05	Vulcan	1	.02
Iron Mask	1	.80	War Eagle	1	1.65
Jo Jo	1	.03	W. Le Roi & Josie	1	.13
Josie	1	.48	White Bear	1	.15
Jumbo	1	1.10			

* From our special correspondent.

LONDON.

July 24.

NAME OF COMPANY.	Country	Product.	Capital stock.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
				£ s. d.	s.d.		£ s. d.	£ s.d.
N'th Americans:								
Alaska-Mexican....	Alaska....	Gold...	£200,000	1 0 0	0 4.8	Feb., 1896	1 11 3	1 13 9
Alaska-Treadwell..	" ...	" ...	1,000,000	5 0 0	1 0	June "	5 0 0	5 5 0
De Lamar.....	Idaho......	Gold& silver	400,000	1 0 0	1 0	May, 1896	14 6	15 6
Harquahala.........	Arizona ..	Silver.......	300,000	1 0 0	0 6	Nov., 1894	2 6	3 6
Holcomb Valley ...	California	"	135,000	5 0	..		9	1 3
Idaho...............	Idaho. ...	Gold&silver	50,000	5 0	0 6	Jan., 1893	4 6	5 6
Jay Hawk....	Montana .	Silver	285,000	1 0 0	0 6	Dec.. 1892	9	1 3
Montana............	" ..	Gold&silver	660,000	1 0 0	0 3	June, 1896	5 6	6 6
New Guston.........	Colorado..	Silver.	110,000	1 0 0	1 0	Dec., 1892	2 6	5 0
Palmarejo	Mexico....	Gold&silver	800,000	1 0 0	.....	....	1 9	2 3
Plumas-Eureka.. ..	Colorado.	Gold	281,250	2 0 0	0 9	Apr., 1896	8 9	11 3
Poorman...........	Idaho..	Gold&silver	213,038	5 0	scp.	Oct., 1895	6	1 0
Richmond..........	Nevada.. .	G'ld,sil.,le'd	270,000	5 0 0	1 0	Dec., "	1 2 6	1 7 6
Sierra Buttes.......	California	Gold.........	245,000	2 0 0	0 6	Apr., 1896	6 3	8 9
Springdale.	Colorado..	"	200,000	4 0	0 2	Sept.,1894	1 0	1 3
S'th Americans:								
Colomb. Hydra'lic	Colombia.	Gold.........	75,000	1 0 0	1 0	July, "	7 6	10 0
Frontino & Bolivia.	"	"	140,000	1 0 0	0 6	Jan., 1896	18 9	1 1 3
St. John del Rey...	Brazil.....	"	562,000	1 0 0	xn	" 1895	15 0	17 6
Copper:								
Anaconda.	Montana.	Cop. & Sil. .	6,000,000	5 0 0	2 0	May, 1896	6 17 6	7 0 0
Cape Copper........	So. Africa	Copper......	600,000	2 0 0	2 0	June "	2 10 0	2 15 0
Copiapo... ...	Chile......	" .	200,000	2 0 0	2 0	May, "	2 10 0	2 15 0
Mason & Barry.....	Portugal..	Cop.& sulph	1,050,000	1 0 0	2 6	" "	3 2 6	3 7 6
Rio Tinto...........	Spain......	Copper.. .	3,250,000	10 0 0	12 0	" "	23 17 6	24 10 0
Tharsis	"	Sulpr &cop'r	1,250,000	2 0 0	4 0	April, "	5 17 6	6 2 6
Australians:								
Bayley's Reward...	W.Au't'lia	Gold	480,000	1 0 0	0 4	Dec., 1894	3 6	4 6
Broken Hill Prop'r.	N.S.Wales	Silver... ..	384,000	8 0	1 0	June, 1896	2 8 9	2 11 3
Mt. Morgan Gold...	Qu'nsland	Gold.... ..	875,000	17 6	0 6	" "	3 10 0	3 15 0
South Africans:								
British S.Africa Co	So. Africa.	Lands &Ex.	2,500,000	1 0 0	xrts.	July, 1895	2 18 9	3 1 3
City & Suburban...	Transvaal	Gold.........	85,000	4 0 0	10 0	" "	4 10 0	4 15 0
Crown Reef..	"	"	120,000	1 0 0	10 0	Apr., 1896	11 2 6	11 7 6
De Beers Con.......	CapeCol'y	Diamonds...	3,950,000	5 0 0	22 0	July, "	30 0 0	30 5 0
Ferreira.......	Transvaal	Gold........	90,000	1 0 0	13 0	Mar. "	20 10 0	21 10 0
Geldenhuis Estate.	"	"	200,000	1 0 0	6 0	July, 1895	3 12 6	3 17 6
Jagersfontein......	OrangeF.S	Diamonds...	1,000,000	5 0 0	10 0	Apr., 1896	11 2 6	11 7 6
Langlaagte Estate.	Transvaal	Gold.........	500,000	1 0 0	5 0	Feb., "	5 5 0	5 0 0
Modderfontein. ...	"	"	1,000,000	4 0 0	rgts.	May, 1895	5 12 6	5 17 6
Primrose (New)....	"	"	280,000	1 0 0	5 0	Feb , 1896	5 2 6	5 7 6
Robinson...... ..	"	"	2,750,000	5 0 0	8 0	" "	9 2 6	9 7 6

PARIS.

Week ending July 24.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr	Fr	Fr.
Acieries de Creusot.. ...	France.....	Steel mfrs..	27,000,000	2,000	100.00	1,900.00	1,900.00
" " Firminy....	"	" " ..	3,000,000	500	85.00	1,600.00	1,600.00
" " Fives-Lille..	"	" " ..	12,000,000	500	35.00	755.00	750.00
" " la Marine...	"	" " ..	20,000,000	500	37.50	910.00	920.00
" " Longwy....	"	" " ..	....	500	35.00	800.00	840.00
Aguas Tenidas...........	Spain.	Iron pyrites	10,000,000	500	25.00	236.00	236.00
Anzin.......	France-. ..	Coal........	....	....	160.00	4,690.00	4,700.00
Boleo	Lower Cal..	Copper	....	500	65.00	1,430.00	1,415.00
Briansk..................	Russia .	Coal & Iron	....	....	....	1,377.50	1,380.00
Bruay.....................	France	Coal..	3,000,000	400	700.00	23,900.00	23,490.00
Callao.....................	Venezuela.	Gold	32,200,000	125	....	6 50	6 50
Cape Copper....	S. Africa....	Copper.......	....	50	1.50	64.00	64.25
Champ d'Or	" ...	Gold...... ..		25	....	56 50	50.00
Courrieres..............	France	Coal..........	600,000	300	160.00	4,600.00	4,665.00
De Beers Consolidated..	S. Africa....	Diamonds ..	98,750,000	125	15.63	777.50	790.00
Dombrowa	Russia	Coal...	....	500	....	542.50	540.00
Dynamite Centrale......	France	Explosives..	....	500	25.00	520.00	515.00
Fraser River....	Brit. Col'mb	Gold	....	....	....	46.50	41.00
Huanchaca............ .	Bolivia	Silver.	... .	125	5.00	82.00	80.00
Huta-Bankowa.	Russia......	Iron & steel	....	....	.....	2,630.00	2,700.00
Langlaagte Estates.....	S. Africa....	Gold . ..	11,750,000	25	11.25	138.00	133.50
Laurium...	Greece......	Zinc & lead.	16,300,000	500	40.00	630.00	635.00
Lautaro ....,.....	Chile........	Nitrates.....	......	125	. . .	160.00	154.00
Malfidano....	Italy	Zinc	12,500,000	500	44 90	1,060.00	1,050.00
Metaux, Cie. Fran. de...	France	Metal d'lers.	25,000,000	500	37.50	530.00	525.00
Mines d'Or de la Russie.	Russia......	Gold..	.....	....	. .	1,005.00	1,010.00
Mokta-el-Hadid..........	Algeria. . .	Iron. . . .	18,312,500	500	40.00	755.00	760.00
Nickel	N.Caled'nia	Nickel	12,720,000	500	30.00	152.00	151.00
Paccha-Jazpampa......	Chile.........	Nitrates...	....	....	....	30.00	30.00
Penarroya....	Spain..	Coal, etc....	....	500	52.50	1,445.00	1,365.00
Rebecca......	Colo'do,U.S.	Gold........	....	....	....	27.00	24.00
Rio Tinto	Spain.... ..	Copper.....	81,250,000	250	10.05	607.00	604.50
Robinson	S. Africa. ..	Gold.....	....	125	12.50	240.00	241.00
Saint Elie.	Fr. Guiana..	"	4,000,000	25		20.50	20.00
Salines de l'Est	France	Salt.........	.. . .	500	27.00	325.00	310.00
Sels Gem.de la Rus. Mer	Russia......	" etc	. ...	....	....	640.00	685.00
Tharsis	Spain..	Copper.. ...	....	50	8.75	149.00	146.25
Vielle Montagne.. . ..	Belgium	Zinc	9,000,000	80	30.00	513.00	505.00

MEXICO.

Week ending July 23.

NAME OF COMPANY.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Amistad y Concordia	Hidalgo.........	9,600	$0.59	....	$8	$10
Angustias...	Guanajuato....	2,400	10.00	....	420	380
Arevalo y Anexas....	Hidalgo.	....	10.00	....	220	220
Asturiana y Anexas..	Zacatecas.......	2,500	10.00	....	410	400
Bartolome de Medina	Hidalgo.........	2,000	3.50	....	220	200
Carmen..... ..	"	1,100	7.75	....	400	400
Castellana y SanRam	Tepic...........	2,448	3 00	....	170	170
Cerro Colorado..	Chihuahua......	15,000	....	$1.00	10	10
Cinco Senores y An..	Guanajuato....	2,000	15.00	....	780	860
Concepcion y Anexas	S. Luis Potosi..	2,700	....	....	180	180
El Oro................ ..	Guanajuato....	500	....	....	80	80
Guadalupe............	"	10,000	2.00	....	180	180
Luz de Maravillas....	Hidalgo.........	1,400	. .	....	110	110
Pabellon........	"	1,000	27.89	....	180	180
Purisima de los Com.	Zacatecas........	2,400	....	....	10	10
Real del Monte.......	Hidalgo..	2,554	10.00	....	850	850
Rosario y Anexas....	Durango........	4,800	....	....	70	70
San Francisco...	Hidalgo.........	2,000	6.00	....	425	425
S. Ped. Chalchihuites	"	1,000	2.00	....	100	100
San Rafael y Anexas	"	1,200	20.00	....	500	500
do. free stock.	"	1,200	14.00	....	350	350
Sta. Maria de la Paz..	S. Luis Potosi..	2,400	.....	....	150	180
Soledad	Hidalgo.......	960	7.50	....	360	360
Sorpresa..............	"	960	5.00	....	200	200
Trinidad...............	Guanajuato...	2,000	....	....	90	90
Tlauzingo.............	Puebla....... ...	2,400	....	....	30	30
Union.	Hidalgo.........	2,000	8.00	....	425	425
Zaragoza............	"	1,100	....	....	15	15
Zomelahuacan (gold)	Vera Cruz	5,000	....	....	100	100
Zona Min. de Pozos..	Guanajuato....	2,400	... .	1.50	50	50

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

VALPARAISO, CHILE.*

July 2.

NAME OF COMPANY.	Capital.	Share value Nominal	Share value Paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat	$3,300,000	$100	$100	0½ per cent.	$34	$35	$34½
Caracoles	315,000	100	100	5 "	25	30	30
Descub. de Huantajaya...	1,000,000	100	100	3 "	14	16	15
Huanchaca de Bolivia....	8,000,000	25	25	4 "	46	48	46½
Oruro....	800,000	200	200	....	540	550	540
S. Agustin de Huantajaya	1,500,000	100	100	2½ per cent.	30	35	35
Todos Santos	2,000,000	100	100	1 "	17	17½	18
Nitrate Cos:							
Agua Santa................	3,000,000	50	50	4 "	156	157	155
Antofagasta..............	2,000,000	200	200	5 "	145	150	148
Union	3,000,000	200	500	. ...	49	50	50

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

SHANGHAI, CHINA.*

June 26.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad..	China	45,000	$5	$5	Oct., 1894..	$0.25	Taels 2 41
Punjom Mg. Co., Ltd.	"	60,000	4	3.75	....	....	" 11.68
do. pref	"	30,000	1	1	....	....	" 2.85
RaubA'lian G.Mg. Co.	"	200,000	£1	138 10d.	Dec., 1893..	0.21	" 4 02
Sheridan Con.Mg. Co.	Colorado,U.S	20,000	Taels 100	Taels 100	....	....	" 3.50

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

DENVER, COLO.*

NAME OF COMPANY.‡	Par val.	July 27. B.	July 27. A.	July 28. B.	July 28. A.	July 29. B.	July 29. A.	July 30. B.	July 30. A.	July 31. B.	July 31. A.	Aug. 1. B.	Aug. 1. A.	Sales.
L'd Mines														
Anaconda...	25	.54	.56	52	.56½	54	55½	.48	.56	46	.55	51	54	6,975
Bankers.. ..	1	.09¾	.10⅛	.09⅞	.10⅛	.09⅞	.10⅛	.09⅝	.10⅛	.09⅞	.10⅜	.10	.11	7,500
Bangkok..	1	.05¼	.07	.05½	.06½	.05⅛	.06⅛	.05	.06⅝	.06	.06¼	.06	.06⅛	1,100
Big Six. ..	1													
Gar.-Grouse	1	.03⅝	.03¾	.03½	.03¾	.03⅝	.03¾	.03⅝	.03⅝	.03¼	.03¾	.03⅝	.03⅝	4,800
Golden Fl	1	.91	.92	.92	00	.75		.90	1.00	.92	.96	.90	.95	6,600
Gold Stand.	1	.03⅞	.04⅛	.04	.04¼	.04	.04⅜	.04¼	.04⅝	.04	.04⅛	.04	.04⅛	19,500
Insley.	1													
Iowa	1	.45	.54	.45	.55	.45	55	.47	.55	.50	55	.49	.55	3,850
Ironclad....	1	.03½	.04¾	.03⅝	.04⅛	.04	.04⅛	.04	.04⅛	.03⅞	.04⅛	.04⅛	.04¾	32,500
Isabella.....	1	.54	.54½	.53⅞	.54⅛	.53¼	.54½	.53¼	.54⅛	.53⅝	.54¼	.53¾	.54½	11,900
Jefferson...	1	.15	.16½	.15	.15¾	14	.15¾	.15	.16	.15	.15¾	.14½	15	1,000
Lincoln Boy	1			.001¼	.001⅛	.001⅛	.001¾			.001		.001¼	.001¼	27,500
Mollie G....	5	.55	.59	.53¼	.54	.52½	.57½	.48	.55	.42½	.52	49	53	2,100
Mt Rosa....	1													
N. Zealand.														
Ph'rmacist.	1	.08¾	.09⅜	.09	.09¼					.08⅞	.09⅛	.08¼		1,000
Peoples. ..	1													
Puritan.		.004	.004½	.004¼	.004¼	.004⅛	.006	.004	.006	.004¼	.005	.004	.004¼	68,000
List. Pr.	1													
Agate... ...	1	.002	.004	.002½	.002¾	.002¼	.003	.002½	.003	.002½	.002¾	.002½	.003	53,000
Aola.......	1	.009	.011	.009	.010	.008½	.010	.009¼	.009¾	.009¼	.010	.009½	.010½	29,000
Big Johnny	1	.001¾	.003	.002		.002	.003	.001½	.002¼	.002½	.003	.002¼	.003½	4,000
Blue Jay....	1		.003	.002¾	.003	.002¾	.003	.002	.003	.002¼	.002¾	.002	.002½	39,000
Cannon Ball	1	.005½		.005½	.006½	.005½	.007	.005½		.005½		.005		57,000
Cosmo.....	1									.05	.07½	.04	.07	15,000
C.C.Imp'ri'l	1	.002¾	.005	.002½	.005	.002½	.005			.002½	.005	.002½		40,000
Defender...	1	.006	.007	.006	.007	.006	.007	.006½	.007	.006	.006¾	.006¼	.006¾	11,000
Dixie.......	1	.002	.002½	.002	.002½	.002	.002½	.002		.002	.001	.002	.002½	39,000
Eclipse.....	1	.002½	.003½	.002½	.003½	.001½	.005	.002	.003½	.002	.004½	.003½	.004	13,000
Elsie ..	1													
Finance	1	.006	.008	.006½	.009	.006¾	.009	.005	.008	.006	.007½	.005	.008	1,000
Forest R....	1													
Gene Field.	1	.002	.002½	.001¾	.005	.001	.002¼	.001¾	.002¼	.002¼	.003	.002¼	.004	6,000
G.Wash't'n	1	.001⅛	.002	.001½		.001⅛	.002		.002	.001½	.002	.001½	.002	10,000
Gold Field.	1			.002½	.003	.002½	.003½	.002½		.002½	.002¾	.002½	.003	18,000
Gold Queen	1												.001	2,000
Gregory....	1	.002½	.002¾	.002½	.003	.002½	.002¾	.002¼	.002¾	.002	.002¾	.002¾	.003	52,000
Henrietta .	1	.005	.008	.007½	.008	.005	.008	.006		.007½	.008	.005		2,000
Illinois	1	.004½	.006	.005	.010	.005		.005½		.005¾	.008	.006	.008	1,000
Internat'l...	1	.001¼	.002¾	.001¼		.001¼				.001½	.002	.001¼	.002	22,000
Justine......	1	.004¼	.005	.003½	.004½	.004				.004½	.004¾	.004½	.007	15,500
Kimberly...	1													
Pilgrim. ...	1													
Millionaire	1													
Q'n Victoria	1	.007¾	.008	.007		.007½	.008½			.007½	.009	.006¾	.009	6,000
Reno . .	1	.01	.02			.01⅛	.02	.01¾		.01⅜	.02	.01⅛	.01⅞	3,500
Royal Age..	1	.002	.002½			.002½	.002½	.002½	.003	.002½		.002½	.003	28,000
T. Bone.....	1											.001		7,000
Unity. ...	1					.003	.003¼	.003	.003½	.002¾		.003	.003¼	1,000
Unl. Act.														
Ætna.......	1	.003½	.004½	.004		.004	.005	.004½	.005	.004½	.004¾	.004¼	.005	7,000
Alamo .	1	.03½	.03⅞	.03½	.03⅞	.03¾	.03⅞	.03¾	.04	.03⅝	.04	.03⅞	.04	6,000
Argentum-J	2	.53	.54	.52		.51¾	.52½	.50	.55	.51	.52	.51½	.51½	1,300
Ben Hur....	1	.04		.01¾	.05½	.04⅝	05	.04⅝	.05	.04¾	.04¾	.04¼	.04⅞	34,500
Chimborazo	1	.003¼	.006			.004½	.006	.004		.005	.006	.005	.006	6,000
Colo.C.& M.	1	.03		.03¼	.03⅝	.03½	.04	.03¼	.03⅜	.03	.03¼	.03⅛	.03½	6,000
Creede&C.C	1	.001¾	.004¾	.04½	.04⅝	.04¼	.04⅛	.04¼	.04½	.04¼	.04⅛	.04⅝	.04¾	14,700
C. C. Con.	1													
C. K. & N....	1													
Gold Stone..	1	.003⅛	.004¾			.003	.004⅛		.004¾			.005		1,000
Jack Pot....	1	.03⅝	.03¾	.03⅝	.03⅞	.03⅝	.03⅞	.03⅝		.03⅞	.04	.03⅜	.04¼	21,000
Portland . .	1	1.41	1.45	1.38	1.44	1.40	1.42	1.37	1.41	1.37½	1.41	1.30¾	1.31	3,900
S'cram'nto	1													
Union Gold	1	.34	.34½	.32	.33	.32½	.33½	.32	.33	.32	.33	.32¾	.33¾	1,800
Wh. of For.	1													
Virg'nia M.	1	.01⅛	.01½	.01		.01⅛	.01½	.01¼	.01½	.01⅛	.01⅛	.01⅛	.01½	16,000
Work..	1	.09⅝	.10⅝	.09	.09¼	.08¼	.09¾	.08½	.09½	.08¾	.09	.08⅜	.09	5,000

*Official quotations Colo. Mg. St'k Exch. Sales, listed, 664,325; unlisted, 124,200; total, 788,525.

SALT LAKE CITY, UTAH.*

Week ending Aug. 1.

STOCKS.†	Par value.	Bid.	Asked.	Actual selling price.	STOCKS.†	Par value	Bid.	Asked.	Actual selling price.
Ajax.	$10	$0.75	$0.80	$0.75	Horn Silver.....	25	$1.00	$2.25	
Alliance.........	1	.20	.30		Little Pittsburg	....	.01⅛	.02¾	$.01⅛
Annie		.10	.5		Malvern.........		.13	.25	.25
Am. Nat. Gas....		.02	.03		Mammoth ...	25	3.05	3.15	3.05
Anchor...........	20	1.50	1.75	1 55	Mercur....	25	6.25	6 50	6.35
Bogan	1	.20	.22½	.20	Morgan.........	125	.37	.40	.40
Brick Con........		.60	.65		Ontario.........	100	11.00	12.00	11.60
Bullion Beck & C.	10	6.50	6.75	6.75	Overland.......		.45	.50	.50
Centen'l Eureka.	50	65.00	75.00		Rover	10	.40	.50	.45
Dalton...	5	.03¼	.04	.03¼	Silver King.....	20	17.00	18.50	17.75
Dalton & Lark...		.40	.50		Sioux Con......	10	1 85	2.25	
Daly	20	7.00	7.25	7.15	Sunshine..	10	2.50	2.70	2.65
Daly West..	20	8.35	8.50	8.40	Swansea. .. .		2.10	2.25	2.15
Eagle......	10	.08	.10	.10	So. Swansea....		.65	.67½	.65
Four Aces........		.20	.22½	.22	Tetro...........	1	.07	.08½	.08¾
Galena...........	10	2.00	2.10	2.05	Utah Con.......		.70	.90	.85
Geyser		.70	.85		Utah...........	1	1 65	1.85	1.80
Herschel..		10	12½						

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

PHILADELPHIA PA.*

NAME OF COMPANY.	L'ca-tion.	Par Val'e	July 30. H.	July 30. L.	July 31. H.	July 31. L.	Aug. 1. H.	Aug. 1. L	Aug. 3. H.	Aug. 3. L.	Aug. 4. H.	Aug. 4. L.	Aug. 5. H.	Aug. 5. L.	Sales
Cambria Iron.	Pa.	50	35.00				35.00								125
Choc.&Gif.Ctfs	I.T.	50	5.25		5.25		5.50		5.50		5.25		5.13		580
Hunt & Br.Top.	Pa.	50													
" pref.	"	50							48.75				48.75		25
Lehigh C. & N.	"	50	40.00	39 00	39.00	38.00	39.00	38.00	38 00	37.5	39.00	38.00	39.00	38.00	160
Lehigh Valley.	"	50	30 75	30.50	31.00	30.50	31 00	30 25	30.75	30 25	30.50	30.38	30.50	30.38	358
Penna. R. R....	"	50	50 88	50 50	50.75	50.38	50.88	50.75	51.00	50.75	50.75	50.63	50.75	50.50	2,358
Penna. Salt ...	"	50													
Penna. Steel...	"														
" pref	"														
UnitedGasImp	"		64.00		64 88	64 25	65.00		64.88	64 38			64.75	64.25	803
Welsb.of Can	Can.		1.88	1.75			1 50		1.63	1.50	1.50		1.50		687
Welsbach Com	Pa.				17.50	14.50			17.00						89
" pref.	"		59 00												10
Welsb'h Light.	"		36 50	36 00	40.50	38 00	40.00		39.00	38.88			37 00	36.00	808

* Official quotations Philadelphia Stock Exchange. Total sales, 6,003.

HELENA, MONT.*

Week ending July 31.

NAME OF COMPANY.	Location.	Company's office	Par value.	Bid.	Asked	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	Butte, Mont.	$1	$1.50	$1.75	....	....
Bald Butte	L. & Clake Co.	Helena "	1	2 00	2 50	500	$2.00
Bi-Metallic	Granite "	St. Louis, Mo.	5	....	......	......	....
Combination....	" "	" "	10	.40	50	......	....
Granite Mt	" "	" "	....	1.50	1.75	......	....
Helena & Victor	Missoula "	Helena, Mont.	5	25	.30	......	....
Helena & Frisco	Shoshone "	" "	.....	2.00	3.00	......	....
Iron Mountain..	Missoula "	" "	10	.41	.42½	3,000	.41 to .42½
Judge...... ..	Meagher "	" "	....	.09	.10	1,000	.10
Merrill (Gold)..	Jefferson "	Butte "	1	.....	......	....	....
Ontario..	DeerLodge "	Helena "	1	....	......	....	....
Yellowstone....	Meagher "	" "	5	.15	.17½	1,000	.17¾

* Special Report of Samuel K. Davis. Total shares sold, 5,500

PITTSBURG, PA.*

Week ending Aug. 4.

NAME OF COMPANY.	Loca-tion.	Par val	Bid.	Ask.	Selling price.	NAME OF COMPANY.	Loca-tion.	Par val	Bid.	Ask.	Selling price.
COAL:						NAT. GAS:					
Mansfield.........	Pa.	50	....	.....	....	Allegheny..	Pa.	100	....	....	....
N.Y. & C. Gas C.	"	50	40	..	. ....	Chartiers Val.......	"	100	5	....	....
MINING:						Manufacturers.	"	100	. .	....	....
Ent'prise	Colo.	5	....	.....	....	Peoples' Nat. Gas.	"	50	.....	....	....
Lustre.	Mex.	10	9	10¼	....	Peoples' Pipeage..	"	25	14	15¼	....
Silverton	Colo.	10	..	......	....	Pennsylvania......	"	50	3	....	....
MISCELLANEOUS:						Philadelphia.	"	50	18	18½	....
Carborundum...	Pa.	100	. ...	......	....	Wheeling	W.V.	50	18	18½	.....

* Official quotations Pittsburg Stock Exchange.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c	Colo..	$1,500,000	150,000	$10	*				$693,500	Oct...	1895	.04
2	Ætna Cons., q	Cal ..	500,000	100,000	5	*				60,000	June.	1896	.10
3	Alaska-Mexican, g	Alask	1,000,000	200,000	5					137,031	April.	1896	.10
4	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				2,875,000	July..	1896	.25
5	American Belle, g. s. c.	Colo..	2,000,000	400,000	5	*				50,000	April.	1891	.12
6	Argentum Juniata, s.l.g	Colo..	2,600,000	1,300,000	2	*				156,000	Oct...	1895	.03
7	Aspen Mg. & S., s. l.	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
8	Atlantic, c	Mich.	1,000,000	40,000	25					700,000	Feb..	1891	1.00
9	Aurora, i	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
10	Bald Butte	Mont.	250,000	250,000	1	*				437,500	Dec..	1895	.03
11	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
12	Bates Hunter, g. s.	Colo..	1,000,000	1,000,000	1	*				67,500	Dec..	1891	.00¾
13	Belcher, s. g	Nev..	10,400,000	104,000	100	$3,286,420	April.	1896	.25	15,397,200	April.	1876	1.00
14	Belden, F. E., m	N. H.	500,000	100,000	5	*				217,000	Jan..	1896	.04
15	Belle Isle	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10	300,000	Dec..	1879	.25
16	Big Six, g. s	Colo..	500,000	500,000	1					2,500	May..	1896	.00½
17	Bi-Metallic, g. s	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
18	Bodie Cons., g. s	Cal ..	10,000,000	100,000	100	714,990	July..	1893	.15	1,677,572	Dec..	1894	.25
19	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				4,475,000	Aug..	1896	3.00
20	Brotherton, i	Mich.	2,000,000	80,000	25	*				120,000	Mar..	1893	.50
21	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10					150,000	Oct...	1888	.06
22	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					45,850,000	July..	1896	5.00
23	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	1,770,000	July..	1896	1.00
24	Central, c	Mich.	500,000	20,000	25	100,000	Oct...	1861	.65	1,970,000	Feb..	1891	1.00
25	Charleston, p. r	S. C..	1,000,000	10,000	100	*				140,000	Dec..	1893	2.50
26	Chrysolite, s. l	Colo..	10,000,000	200,000	50	*				1,650,000	Dec..	1884	.25
27	Clay County, g. s. c	Colo..	60,000	60,000	1	*				52,000	Nov..	1891	.02
28	C. O. D., g	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
29	Cœur d'Alene, s. l	Idaho	5,000,000	500,000	10					340,000	June.	1893	.06
30	Confidence, g. s.	Nev..	2,496,000	24,960	100	1,629,486	Dec..	1895	.30	277,680	April.	1889	1.00
31	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	441,800	April.	1896	.30	3,898,800	Feb..	1895	.25
32	Cons. New York, g. s.	Nev..	10,000,000	100,000	100	168,000	Jan..	1896	.05	10,000	Feb..	1893	.10
33	Coptis, g. s	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
34	Cortez, Ltd., s. g	Nev..	1,500,000	300,000	5					735,000	Feb..	1893	.15
35	Dalton & Lark, s. l	Utah.	2,500,000	2,500,000	1					75,000	July..	1896	.00½
36	Daly, s. l	Utah.	3,000,000	150,000	20					2,850,000	May	1893	.25
37	†Deadwood-Terra, g	S. D..	5,000,000	200,000	25	*				1,140,000	Sept..	1892	.05
38	De Lamar, g. s	Idaho	2,000,000	400,000	5	*				2,094,100	April.	1896	.25
39	Derbec Blue Gravel, g	Cal ..	10,000,000	100,000	100	110,000	June.	1893	.10	280,000	Aug..	1891	.10
40	Dexter, g. s	Nev..	1,000,000	100,000	10	8,000	June.	1892	.08	100,000	Aug..	1893	.33
41	Elkton, g	Colo..	500,000	500,000	1					65,000	June.	1896	.02
42	Elkhorn, s	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
43	Enterprise, g. s	Colo..	2,500,000	500,000	5	*				825,000	May	1893	.25
44	Eureka Cons., g. s. l	Nev..	1,000,000	50,000	20	555,000	July..	1896	.10	5,112,500	Jan..	1892	.25
45	Evening Star, s. l	Colo..	500,000	50,000	10	*				1,437,500	Dec..	1889	.25
46	Florence, s	Mont.	2,500,000	500,000	5	*				89,348	May..	1896	.02
47	Franklin, c	Mich.	1,000,000	40,000	25					1,240,000	Jan..	1894	2.00
48	Gold Coin, g. s	Colo..	1,000,000	200,000	5	*				80,000	Aug..	1896	.10
49	Golden Fleece, g. s	Colo..	600,000	600,000	1	*				527,179	July..	1896	.03
50	Gold & Globe, g	Colo..	750,000	750,000	1					28,875	June.	1896	.00 3/10
51	Gold Rock, g. s. c	Colo..	500,000	500,000	1	*				28,750	Dec..	1891	.01
52	Gould & Curry, g. s	Nev..	10,800,000	108,000	100	4,785,600	April.	1896	.15	3,826,800	Oct...	1870	.50
53	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
54	Granite, s. l	Idaho	500,000	200,000	2.50	*				83,400	Nov..	1890	.10
55	Gt. West'n Quicksilv., q.	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
56	Hale & Norcross, g. s	Nev..	11,200,000	112,000	100	5,742,000	Jan..	1896	.15	1,822,000	Aug..	1888	.50
57	Harquahala, g	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
58	Hecla Cons., g. s. c. l	Mont.	1,500,000	30,000	50	*				2,130,000	Feb..	1896	.50
59	Helena & Frisco, s. l	Idaho	2,500,000	500,000	5	*				425,000	April.	1895	.02
60	Holmes, s	Nev..	10,000,000	100,000	100	345,000	Mar..	1890	.25	75,000	April.	1892	.25
61	Homestake, g	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	5,931,000	July..	1896	.25
62	Hope, s	Mont.	1,000,000	100,000	10	*				592,252	Jan..	1895	.10
63	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,130,000	Jan..	1896	.12½
64	Iowa	Colo..	1,000,000	1,000,000	1					20,000	June.	1896	.01
65	Iron Mountain, s. l	Mont.	5,000,000	500,000	10	*				440,000	May..	1896	.01
66	Iron Silver, s. l	Colo..	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
67	Isabella, g	Colo..	2,250,000	2,250,000	1					157,500	July..	1896	.01
68	Jack Rabbit, g	Cal ..	10,000,000	100,000	100	118,000	April.	1894	.02	260,000	April.	1891	.10
69	Jay Hawk, g	Mont.	1,425,000	285,000	5					33,375	Dec..	1892	.12
70	Kearsarge, c	Mich.	1,000,000	40,000	25	190,000	Oct...	1887	1.00	120,000	Dec..	1895	1.00
71	Kennedy, g	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
72	Leadville Cons., s. l	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
73	Little Chief, s. l. i-o	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
74	Maid of Erin, g. s. c. l.	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
75	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,070,000	Aug..	1896	.05
76	Mayflower Gravel, g	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
77	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct...	1891	.03¾
78	Mercur, g	Utah.	5,000,000	200,000	25	*				475,000	July..	1896	.12½
79	Minnesota Iron, i	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
80	Mollie Gibson, s	Colo..	5,000,000	1,000,000	5	20,000	Jan..	1891	.02	4,080,000	Jan..	1895	.05
81	Monitor, g	S. D..	2,500,000	250,000	10					45,000	Oct...	1890	.03
82	Montana, Ltd., g. s	Mont.	3,300,000	660,000	5	*				2,890 637	Oct...	1895	.06¼
83	Moose, g	Colo..	600,000	600,000	1					186,000	Jan..	1896	.01
84	Morning Star Cons., s. l.	Colo..	1,000,000	100,000	10	*				1,025,000	Dec..	1891	.25
85	Mt. Diablo, s	Nev..	5,000,000	50,000	100	140,000	July..	1896	.05	225,000	Aug..	1893	.25
86	Mt. McClellan, g. s. l	Colo..	1,250,000	250,000	5	*				21,936	June.	1891	.03
87	Mt. Rosa, g	Colo..	1,000,000	1,000,000	1					10,000	Jan..	1895	.00½
88	Napa, q	Cal ..	700,000	100,000	7	*				790,000	July..	1896	.20
89	New Guston, g. s. c	Colo..	550,000	110,000	5	*				1,198,120	Oct...	1892	.25
90	New Hoover Hill, g	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1885	.20
91	North Banner, g. s	Cal ..	1,000,000	100,000	10	19,794	June.	1896	.03	20,000	July..	1891	.05
92	North Belle Isle, s	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10	230,000	May	1888	.50
93	North Com'wealth, s	Nev..	10,000,000	100,000	100	85,000	April.	1890	.25	25,000	June.	1891	.25
94	North Star, g	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
95	Nugget, g	Colo..	1,000,000	1,000,000	1	*				10,000	Jan..	1895	.00½
96	Ontario, s. l	Utah.	15,000,000	150,000	100					13,280,000	July..	1896	.10
97	Osceola, c	Mich.	1,250,000	50,000	25	*				2,072,500	July..	1896	1.00
98	Pacific Coast Borax, b	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
99	Parrot, c	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
100	Petro, s	Utah.	1,000,000	10,000	100					17,500	July..	1891	.75
101	Pharmacist, g	Colo..	1,200,000	1,200,000	1					80,000	Jan..	1893	.01
102	Portland, g	Colo..	3,000,000	3,000,000	1	*				743,000	June.	1896	.01
103	Quicksilver, pref., q	Cal ..	4,300,000	43,000	100	*				1,823,911	June.	1891	1.25
104	" com., q	Cal ..	5,700,000	57,000	100	*				643,867	July..	1882	.40
105	Quincy, c	Mich.	1,250,000	50,000	25	*				8,370,000	Aug..	1896	6.00
106	Reed National, s	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
107	Robinson Cons., s. l	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
108	Running Lode, g. s. l	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
109	Savage, g. s	Nev..	11,200,000	112,000	100	1,006,600	June.	1896	.20	4,460,000	June.	1869	3.00
110	St. Joseph, l	Mo...	2,500,000	250,000	10					2,524,000	Dec..	1895	.25
111	Silent Friend, g. s. l	Colo..	500,000	500,000	1	*				60,000	Aug..	1891	.25
112	Silver Cord Com., g. s. l.	Colo..	5,000,000	500,000	10	*				270,000	April.	1889	.10
113	Silver King, s	Ariz..	10,000,000	100,000	100	222,858	June.	1896	.25	1,950,000	July..	1887	.25
114	Silver King, g. s. l	Utah.	3,000,000	150,000	20					712,500	July..	1896	.25
115	Silver Mg. of L. V., s	N. M.	500,000	500,000	1	*				300,137	Dec..	1891	.04
116	Small Hopes, s	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
117	Smuggler Union	Colo..	5,000,000	50,000	100					100,000	July..	1896	1.00
118	Standard Cons., g. s	Cal ..	10,000,000	100,000	100					3,771,160	June.	1895	.10
119	Swansea, g. s. l	Colo..	600,000	60,000	10	*				39,000	Sept..	1892	.10
120	Tamarack, c	Mich.	1,250,000	50,000	25					4,320,000	June.	1896	3.00
121	Teal & Poe, s. l	N. M.	150,000	150,000	1	*				9,000	Nov..	1891	.01½
122	Tom Boy, g	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
123	Tombstone, g. s. l	Ariz..	12,500,000	500,000	25	*				1,250,000	April.	1882	.10
124	Trinity River, g	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
125	United Verde, c	Ariz..	3,000,000	300,000	10	*				562,500	Dec..	1893	.25
126	Union, g	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
127	Union Leasing	Colo..	500,000	500,000	1					340,000	July..	1895	.04
128	Victor, g	Colo..	1,000,000	200,000	5	*				605,000	July..	1896	.10
129	Woodside	Utah.	1,000,000	100,000	10					25,000	Oct...	1889	.25
130	Yankee Girl, s	Colo..	1,300,000	260,000	5					520,000	July..	1891	.25

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01⅓
2	Ajax, g	Colo..	1,000,000	1,000,000	1				
3	Alamo, g	Colo..	1,000,000	1,000,000	1				
4	Alice, g. s. c	Colo..	5,000,000	5,000,000	1	*			
5	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec..	1895	.10
6	Allouez, c	Mich.	2,000,000	80,000	25	1,440,937	June.	1894	.20
7	Alpha Cons., g. s	Nev..	10,500,000	105,000	100	247,000	May..	1896	.05
8	Alta, s	Nev..	10,080,000	108,000	100	3,568,960	June.	1896	.10
9	American, c	Idaho	5,000,000	500,000	10	*			
10	Anaconda, g	Colo..	5,000,000	1,000,000	5				
11	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
12	Anchoria-Leland, g	Colo..	600,000	600,000	1	*			
13	Aola, g	Colo..	1,000,000	1,000,000	1	*			
14	Argonaut Cons., g. s,	Colo..	1,000,000	1,000,000	1	*			
15	Atlantic Cable Cons.	Colo..	1,500,000	1,500,000	1	*			
16	Bahama, g	S. D..	1,250,000	250,000	5	3,125	Sept..	1893	.00¼
17	Bankers, g	Colo..	1,250,000	1,250,000	1	*			
18	Ben Hur, g	Colo..	900,000	900,000	1				
19	Blue Bell, g	Colo..	500,000	500,000	1	*			
20	Blue Jay Cons., s. l	Utah.	2,000,000	400,000	5	4,750	July..	1893	.004
21	Bob Lee, g	Colo..	1,200,000	1,200,000	1	*			
22	Bullion, s. g	Nev..	1,000,000	100,000	100	3,020,000	April.	1896	.10
23	Burlington, g. s	Cal...	10,000,000	100,000	100	3,000	May..	1896	.03
24	Buskhorn, g	Colo..	900,000	900,000	1				
25	Butte Queen, g	Cal...	1,000,000	100,000	10	16,000	Feb..	1893	.10
26	Calumet, g	Colo..	1,400,000	1,400,000	1	*			
27	Central Lead, l	Mo...	400,000	4,000	100	*			
28	Central North Star, g.	Cal...	1,000,000	100,000	10	10,000	July..	1893	.10
29	Challenge, s, g	Nev..	5,000,000	50,000	100	295,000	April.	1896	.05
30	Chollar, g. s	Nev..	11,200,000	112,000	100	2,021,600	July..	1896	.25
31	Cleveland Cliffs, l	Mich.	5,000,000	50,000	100	*			
32	Columbine, g	Colo..	1,000,000	1,000,000	1	*			
33	Cons. Imperial, g. s	Nev..	5,000,000	50,000	100	2,081,500	Sept..	1895	.01
34	Copper Mountain, g	Colo.	1,000,000	1,000,000	1	*			
35	Creede & C. C., g	Colo.	800,000	800,000	1				
36	CrippleCreekCons., g.	Colo..	2,000,000	2,000,000	1				
37	Dante, g	Colo..	1,250,000	1,250,000	1	*			
38	Denver City, s	Colo..	5,000,000	500,000	10	*			
39	Denver Gold, g	Colo..	300,000	60,000	5				
40	Dickens-Custer, g. s	Colo..	2,100,000	420,000	5				
41	Enterprise, g	Colo..	800,000	800,000	1				
42	Eureka Con. Drift, g.	Colo..	500,000	500,000	1	90,000	Oct..	1892	.07
43	Exchequer, g. s	Nev..	10,000,000	100,000	100	715,000	Nov..	1895	.05
44	Favorite, g	Colo..	1,200,000	1,200,000	1	*			
45	Fortunatus, g. s	Colo..	100,000	100,000	1	*			
46	Found Treasure, g. s.	Nev..	10,000,000	100,000	100	55,770	Jan..	1892	.50
47	Franklin Gold, g	Colo..	1,000,000	1,000,000	1	*			
48	Free Coinage, g	Colo..	1,000,000	1,000,000	1	*			
49	Galena, l. s	Idaho	500,000	500,000	1				
50	Garden City, g	S. D.	2,500,000	250,000	10	2,898	Sept..	1891	.001⅓
51	Garfield-Grouse, g	Colo..	1,200,000	1,200,000	1	*			
52	Gem, g	Cal...	10,000,000	100,000	100				
53	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July..	1896	.00⅓
54	Golden Age, g	Colo..	1,000,000	1,000,000	1	*			
55	Golden Dale, g	Colo..	2,000,000	2,000,000	1	*			
56	Golden Eagle, g	Colo..	1,000,000	1,000,000	1	*			
57	Golden Fleece Grav. g	Cal...	130,000	130	1000	56,000	Aug..	1892	2.00
58	Gold Flat, g	Cal...	1,000,000	100,000	10	13,000	Aug..	1893	.03
59	Gold King, g	Colo..	1,000,000	1,000,000	1	*			
60	Gold Rock, g	Colo..	1,000,000	1,000,000	1	*			
61	Gold Standard, g	Colo..	1,000,000	1,000,000	1	*			
62	Hartshorn, g. s	S. D..	1,250,000	250,000	5	8,750	Sept..	1891	.00⅓
63	Head Cent. & Tr., g.s.	Ariz..	2,000,000	200,000	10	22,824	Mar..	1892	.03
64	Hidden Treas., g. s	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
65	Himalaya, s. l	Utah.	1,800,000	180,000	10	10,000	Oct..	1892	.01
66	Idaho Co., Ltd., g	Idaho	100,000	1,000	100	*			
67	Idlewild, g	Cal...	1,000,000	100,000	10	*			
68	Inez, s. l	Idaho	1,000,000	1,000,000	1	*			
69	Jack Pot, g	Colo..	1,250,000	1,250,000	1				
70	Jackson, l	Mich.	300,000	12,000	25	*			
71	Justice, g. s. c	Colo..	500,000	500,000	1	*			
72	Keystone, g	Colo..	1,500,000	1,500,000	1	*			
73	Kingman Silver, g. s.	Ariz..	10,000,000	100,000	100	5,000	Sept..	1891	.05
74	Lacrosse, g	Colo.,	1,000,000	100,000	10	*			
75	Lottie Gibson, g	Colo..	1,000,000	1,000,000	1				
76	Matoa, g	Colo..	5,000,000	1,000,000	5				
77	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
78	Mexican, g. s	Nev..	10,080,000	100,809	100	3,063,920	May..	1896	.20
79	Michigan Gold, g. s	Mich.	2,500,000	100,000	25	40,000	Mar..	1892	.10
80	Milwaukee, s. l	Idaho	500,000	500,000	1				
81	Modoc Chief, g. s. l	Idaho	1,000,000	200,000	5	4,375	Jan..	1892	.00⅓
82	Monarch, g	Colo..	1,000,000	1,000,000	1				
83	Mutual, g	Colo..	500,000	500,000	1				
84	Neath, g	Colo	1,000,000	100,000	10				
85	New Gold Hill	N. C..	1,750,000	350,000	5				
86	New Viola, s. l	Idaho	750,000	150,000	5	*			
87	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	428,652	July..	1896	.15
88	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
89	Oro Cache, g. s	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00⅓
90	Orphal Bell, g	Colo..	1,000,000	1,000,000	1				
91	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,177,040	June.	1896	.10
92	Pappoose, g	Colo..	2,000,000	2,000,000	1	*			
93	Peer, s	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
94	Peerless, s	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
95	Pine Hill, g	Cal..	1,000,000	100,000	10	20,000	July..	1896	.05
96	Pioche Con., g. s. l	Nev..	20,000,000	2,000,000	10	*			
97	Potosi, g. s	Nev..	11,200,000	112,000	100	2,016,000	May..	1896	.20
93	Princess, g	Colo..	1,000,000	1,000,000	1				
99	Puritan, g, s	Colo..	1,500,000	150,000	10	*			
100	Quincy, c	Colo..	3,000,000	300,000	10				
101	Red Mountain, s	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
102	Ruby & Dun., g. s. l.	Nev..	25,300	506	25	*			
103	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
104	Seg. Belcher & M., g.s.	Nev..	10,000,000	100,000	100	330,000	Oct...	1895	.10
105	Silver Age, g. s. l	Colo..	2,000,000	200,000	10	*			
106	Silver Hill, s	Nev..	10,800,000	108,000	100	1,992,600	July..	1894	.05
107	Silver Queen, c	Ariz..	5,000,000	200,000	25	*			
108	Silver State, g	Colo..	700,000	700,000	1	*			
109	Siskiyou Con., s	Cal ..	2,000,000	200,000	10	44,000	June.	1896	.01
110	Specimen, g	Colo..	1,200,000	1,200,000	1				
111	Temonj, g	Colo..	1,000,000	1,000,000	1				
112	Tornado Con., g. s	Nev..	100,000	100,000	1	*			
113	Union Con., g. s	Nev..	10,000,000	100,000	100	2,525,000	Feb..	1896	.20
114	Utah Cons., s	Nev..	10,000,000	100,000	100	410,722	May..	1896	.05
115	Victory, g. s	S. D..	1,250,000	250,000	5	1,250	Nov..	1895	.005
116	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
117	Waterloo, g	Cal...	2,000,000	200,000	10	30,000	Aug..	1893	.15
118	West Granite Mt., s	Mont.	500,000	100,000	5				
119	Whale, g. s. l	Colo..	500,000	500,000	1	*			
120	Work, g	Colo..	1,250,000	1,250,000	1				
121	World, g	Colo..	1,500,000	1,500,000	1	*			

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

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See Machinery.)

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Jenkins Bros.
Penberthy Injector Co.

Insulated Wires and Cables
Okonite Co., Ltd. The

Insurance Companies
Hartford Steam Boiler Inspect'n and Ins. Co.
Mutual Life Insurance Co.

Joint Fittings
Tight Joint Co.

Lead Linings for Chlorination Tubs.
Raymond Lead Co.

Locomotives
General Electric Co.
Hunt, C. W. Co.
Porter, H. K., & Co

Lubricators.
Asbestos Paraffine Co.
Detroit Lubricator Co.

Machinery, Dealers in Mining, Milling and Other Machinery
Allis, Edw. P., & Co.
Bacon, E. C.
Beckett Fdy. & Mch. Co.
Besly, Chas. H., & Co.
Blake, T. A
Bradley Pulverizer Co
Buckeye Eng. & Co.
Bullock, M. C. Mfg. Co.
Caldwell, H. W., & Co.
Card Electric Co
Colorado Iron Works.
Connersville Blower Co
Crook, W. A., & Bros. Co.
Davis-Colby Ore R. Co.
Denver Mg. Mach. Co.
Denver Eng. Wks. Co
Dodge Mg. Mach. Co.
Ellison, Wm., & Son.
Engelbach Ma. Mfg. Co
Field, F. R.
Fraser & Chalmers.
Hammond, Mfg. Co.
Hendrie & Bolthoff Mfg. Co.
Hercules Engine & Hoisting Co.
Ingersoll-Sergeant Drill Co.
Jeffrey Mfg. Co.
Jessop, W., & Sons, Ltd.
Leyner, J. Geo.
Lidgerwood Mfg. Co.
Krupp, F.
McCully, R.
McKiernan Drill Co.
Meerkleoburg Ir. Wks.
Merralls' Mill Co.
Montgomery, J. H. Mach. Co.
Moore, Sam. L., & Son.
Nelsonville Foundry & Machine Co.
New York Diamond Drill Co.
Norwalk Iron Wks. Co.
Parke & Lacy Co.
Philadelphia Eng. Wks., Ltd.
Pollock, Wm. B., & Co.
Risdon Iron Works.
Stedman Fdy. & M. Co.
Scoville, H. H., & Co.
Stearns-Roger Mfg. Co.
Sullivan Mach'y Co.
Tod, Wm., & Co.
Truax Mfg. Co.
Union Iron Works.
Vulcan Iron Works.
Walb'rn-Swens'n Mfg. Co.
Walker Co.
Webster, Camp & Lane Mach. Co.
Westinghouse Elect. Mfg. Co.

Manganese Steel.
Taylor Iron & Steel Co.

Metal Dealers
American & Dev. Mg. Co
American Metal Co.
Am. Zinc-Lead Co.
Baker & Co.
Bath. Henry & Son.
Besly, Chas. H., & Co
Bridgeport CopperCo.
Cherokee-Lanyon Spelter Co.
Cookson & Co.
Elliott's Metal Co., Ltd.
Eureka Co
Foster, Blackett & Wilson.
James & Shakspeare.
Johnson, Matthey & Co.
Lambert's Wharf. Co.
Lewisohn Bros.
Mathison Sm'lting Co.
Matthiessen & Hegeler Co.
Montana Ore Purchasing Co.
Orford Copper Co.
Pass, C., & Son, Ltd.
Phelps, Dodge & Co.
Picher Lead Co.
Raymond Lead Co.
State Ore Samp'g Co.
Tod, William, & Co.
Vivan. Y'nger & Bond.

Metallurgical Works and Ore Purchasers' Processes
American Dev. & Mg. Co.
Amer. Zinc Lead Co.
Baker & Co
Balbach Sm. & Ref. Co.
Baltimore Copper Wks
Bridgeport Copper Co.
Canadian Copper Co.
Cookson & Co.
Denver Eng. Wks. Co.
Elliott's Metal Co., Ltd.
Electro Cyanide Gold & Silv'r Ext'n Co.
Foster, Blackett & Wilson.
Fraser & Chalmers.
Kendall Gold & Silver Extraction Co.
Matthiessen & Hegeler Co.
Kan. City S. & Ref. Co.
Ledoux & Co.
Montana Ore Purchasing Co.
Newark Pulv'ng Wks.
Orford Copper Co.
Pennsyl. Salt Mfg. Co
Ricketts & Banks.
Russell Process Co.
State Ore Sampling Co
Walburn-Swenson Mfg. Co.

Mine Cars
Denver Eng. Wks. Co.
Hendrie & Bolthoff Mfg. Co.
Hunt, C. W., Co.
Nelsonville Foundry & Machine Co.
Whiting Foundry Equipment Co.
(See Machinery.)

Mine, Mill and Smelters Supplies.
Denver Eng. Wks. Co.
Dodge Mining Machinery Co.
Gates Iron works.
Parkh'st & Wilkinson.
Roessler & Hasslacher Chemical Co.
Stieren, William E
(See Machinery.)

Mining and Land Companies
American Dev. & Mg. Co.
Atlantic Mg. Co.
Arizona Copper Co.
Copper Queen Mg. Co.
Detroit Copper Mg. Co.
Eureka Co.

Nickel
Canadian Copper Co.

Ore Cars.
Truax Mfg. Co.

Ore Roasters
Brown, Horace F.
Cummer, F. D., & Sons Co.
Davis-Colby Ore Roaster Co.

Ore Testing Works
Hunt, F. F.
Ledoux & Co.
Montana Ore Purchasing Co.
Ricketts & Banks.
Robertson, W. F.
Simonds & Wainwright
State Ore Sampling Co

Packing and Pipe Coverings
Asbestos Paraffine Co.
Brandt, Randolph.
Jenkins Bros.
Hine & Robertson.
New York Belting & Packing Co., Ltd.
Wyckoff & Son, A.

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

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Phosphor-Bronze
Phosphor-Bronze Smelting Co.

Pile Drivers
Bucyrus Steam Shovel and Dredge Co.
Ingersoll-Sergeant Drill Co.

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

Platinum
Baker & Co.
Johnson, Matthey & Co.

Powder
Atlantic Dynamite Co.
Aetna Powder Co.
Ingersoll-Sergeant Drill Co.
Laflin & Rand Powder Co.
Lau, J. H., & Co.
Repauno Chem. Co.

Pressure Blowers
Connersville Blower Co.

Publications
American Fertilizer.
Financial Times
Indian Engineering.
Arms & Explosives.
Australian Mg. Stand.
Bullionist.
Colliery Guardian.
Denver Republican.
El Minero Mexicano.
Electrical Plant & Electrical Industry
Iron & C. Trade Review
McNeill's Code
Mining Journal.
Scientific Pub. Co.
So. African Mg. Jour.
Spon & Chamberlain.
Zeitschrift fur Praktische Geologie

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

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

Quicksilver
Eureka Co.

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

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

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

Rock Drills. (See Air Compressor.)

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

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

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

Second Hand Machinery
Robinson & Orr.

Separators
Dodge Mining Machinery Co.

Shoes and Dies
Chester Steel Cast. Co.
Chrome Steel Works
Crescent Steel Co.
Denver Eng. Wks. Co.
Fraser & Chalmers
Pierce & Miller Engineering Co.

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

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

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

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

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

Testing Laboratories
Fairbanks Co.

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

Tubes
Besley Chas. H., & Co.
Pollock, Wm. L. & Co.
Williams Bros

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

Turbine Water-Wheels
Leffel, Jas., & Co.
Pelton Water Wheel Co.
Stilwell-Bierce & Smith Vaile Co

Valves
Eddy Valve Co.
Jenkins Bros.

Ventilators
Bullock, M. C. Mfg. Co.
Fraser & Chalmers.
Tod, Wm., & Co.

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

Water-Wheels
Leffel, James, & Co.
Pelton Water Wheel Co.
Stilwell-Bierce & Smith-Vaile Co.

Well Drilling Machinery
Sullivan Mach'y Co.
Williams Bros.

Wharfage
Lambert's Wharfage Co.

Wheels, Car
Chester Steel Cast. Co.
Taylor Iron & Steel Co.

White Lead
Cookson & Co.
Foster, Blackett & Co.

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

Wire Rope & Wire
Besley, Chas. H., & Co.
Broderick & Bascom Rope Co.
California Wire Wks.
Carpenter Steel Co.
Cooper Hewitt & Co.
Hunt, C. W., Co.
Phelps, Dodge & Co.
Bibling, J. A. Sons & Co
Ropeways Syndicate
Trenton Iron Co.

Wire Rope Tramway
Brown Hoist. & Conv. Machine Co.
California Wire W'ks.
Colorado Iron Works.
Denver Eng. Wks. Co
Fraser & Chalmers.
Hunt, C. W., Co.
Roebling, J. A., Son & Co.
Ropeways Synd., Lt.
Vulcan Iron Works.

POSITIONS VACANT.

FREE ADVERTISING

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

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

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

1468 WANTED—A MAN WHO IS A THOROUGHLY competent Mechanical Draftsman and Chemist, who is willing to start with low wages, where chances for advancement are good; steady position. Address, stating references, experience and salary expected, XY, ENGINEERING AND MINING JOURNAL.

1472 WANTED—A FIRST-CLASS MILLwright accustomed to quartz mill for mine in Central America. Contract three years. Give terms and references. Address MILLWRIGHT, ENGINEERING AND MINING JOURNAL.

1473 WANTED.—A GOOD BLACKSMITH for mining camp in Central America. Must understand mule shoeing. Contract three years. State terms and references. Address BLACKSMITH, ENGINEERING AND MINING JOURNAL.

1475 WANTED — MINING ACCOUNTant in California, age about 30, unmarried and Scotch preferred. Undeniable references as to personal character and practical experience. Able to arrange and control the accounts, returns and general commercial business of a large concern. Good salary to a first-class man. Address CALIFORNIA, ENGINEERING AND MINING JOURNAL.

1476 WANTED—A FIRST-CLASS ASsayer and ore sampler, also as assistant manager and engineer in the operating of a large deposit of manganese of the kind known as "wad" or "bog." Address with full particulars, references, etc. PRINCIPAL, ENGINEERING AND MINING JOURNAL.

1477 WANTED.—A PRACTICAL MINING engineer and metallurgist to take charge of a gold mine and mill in one of the Northern States. Send references and name salary wanted. Address M. & R. Co., ENGINEERING AND MINING JOURNAL.

1478 WANTED—A FIRST-CLASS ASSAYER for custom sampling works in the Northwest; experience and credentials of the best class indispensable; acquaintance with the business of custom sampling would be an advantage. Reply, stating record, references and salary, to NORTHWEST, ENGINEERING AND MINING JOURNAL.

1479 WANTED—ASSAYER AND CHEMIST to take charge of laboratory connected with copper-smelting works in the East. Undeniable references as to ability must be given. Address, stating experience and salary wanted, COPPER, ENGINEERING AND MINING JOURNAL. tf

1480 WANTED — A SUPERINTENDENT who understands handling mica. Apply with particulars, etc., MICA, ENGINEERING AND MINING JOURNAL. tf

SITUATIONS WANTED.

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

YOUNG MAN, THIRTY YEARS OF AGE, desires position as foreman or assistant superintendent of copper or lead-silver smelter. Has practical knowledge of reverberatory and blast furnace work; practical builder of both furnaces Address COPPER, ENGINEERING AND MINING JOURNAL. No. 17,463, Aug. 22.

WANTED—POSITION AS SUPERINTENDent to sink shafts, drive tunnels, open up mines, etc. Fifteen (15) years' experience with largest companies in America. Can give best of references. Address H. J. S., ENGINEERING AND MINING JOURNAL. No. 17,472, Aug. 22

A MINING ENGINEER, OF MANY YEARS experience as superintendent and manager of mines and works in North and South America, having lately returned from South America, wishes engagement as superintendent, manager or consulting engineer, or will examine and report on mining properties. Is capable of designing and erecting all kinds of mining machinery and works for the treatment of refractory ores. Address "S. A.," ENGINEERING AND MINING JOURNAL. No. 17,479, August 15.

POSITION AS ASSISTANT SUPERINTENDent with mining company. Thoroughly up in mining and treatment of ores. Assay, survey and handle men. First-class references. Address MINING, ENGINEERING AND MINING JOURNAL. No. 17,481, Aug. 15.

TECHNICALLY EDUCATED AND PRACtically experienced lead, copper smelter man wants position as assayer, chemist or ore buyer. References. Address TECHNICAL, ENGINEERING AND MINING JOURNAL. No. 17,482, Aug. 15.

WANTED — POSITION AS RESIDENT manager or superintendent; 15 years' practical experience; now with the largest company in Northern Mexico as mine superintendent; Spanish American country preferred; highest recommendations. Address AMERICANO, ENGINEERING AND MINING JOURNAL. No. 17,432, Aug. 29.

MINING ENGINEER AND METALLURGIST of high standing is open to engagement. Large properties or works preferred. Specialties made of successfully treating low-grade ores. Address CONCENTRATOR, ENGINEERING AND MINING JOURNAL.

WANTED—POSITION WITH COMPANY intending to adopt the cyanide process. Large experience; good references. Address CYANIDE, ENGINEERING AND MINING JOURNAL. No. 17,465, Aug. 15.

A CIVIL ENGINEER WANTS TO REPREsent manufacturers of mining and other machinery and supplies in the south and west part of the United States. Address C. E., ENGINEERING AND MINING JOURNAL. 17,466Aug. 29.

CHEMIST AND ASSAYER, SIX YEARS in responsible positions, now in charge of a Lake Superior laboratory, desires position in Southwest. Refers to present employers. Address "V," Box 399 Ironwood, Mich. No. 17,468, Aug. 29.

MECHANICAL ENGINEER AND METALurgist would like a change after July 31; has charge of furnace and concentrating works. Address F. H. A., care W. Hoegner, Indiana Hotel, Cincinnati, Ohio. No. 17,469, Aug 22.

POSITION WANTED—BY YOUNG GRADuate engineer. Has had one year's experience in active mining, mostly in Colorado. Can assay, survey, keep books, etc. Best of references. Address J. F., ENGINEERING AND MINING JOURNAL. No. 17,473, Sept. 5.

WANTED—POSITION BY METALLURgical chemist, four years' experience in silver, lead and copper smelters. Mexico or West preferred. Address C., Box A, Globe, Ariz. No. 17,474, Aug. 29.

WANTED—POSITION BY MINING ENgineer and metallurgist. Several years' experience in gold, silver and copper mining. Can do his own assaying and surveying. Address E B., Box A, Globe, Ariz. No. 17,475, Aug. 29.

PRACTICAL CHEMIST AND METALLURgist, familiar with the cyanide leaching process, wants a position; best reference. Address H. P. C., ENGINEERING AND MINING JOURNAL. No. 17,478, Aug. 29

A YOUNG MAN WITH 10 YEARS' EXPERIence in charge of Lake Superior iron mines desires position as superintendent or manager of mine or prospecting work. Best of references given. Address MINER, ENGINEERING AND MINING Journal. No. 17,480, Aug. 1.

A POSITION WANTED IN SPANISH SOUTH America as chief accountant or representative of a mining or manufacturing concern. Experience for a number of years with one of the largest mining enterprises in Mexico; full knowledge of English, Spanish and German; also some French; 30-31 years; single: best references. Address SPANISH SOUTH AMERICA, ENGINEERING AND MINING JOURNAL. No. 17,461, Aug. 22.

Contracts Open.

TREASURY DEPARTMENT, OFFICE SUPERvising Architect, Washington, D. C., August 8th, 1896.—Sealed proposals will be received at this office until 2 o'clock p. m., on the 8th day of September, 1896, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except heating apparatus) of the U. S. Post Office Building at Youngstown, O., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Youngstown, O. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Erection and Completion (except heating apparatus) of the U. S. Post Office building at Youngstown, O.," and addressed to WM. MARTIN AIKEN, Supervising Architect. Orig.

DREDGING.—U. S. Engineer Office, 39 Whitestreet, New York.—Sealed proposals for dredging in Canarsie Bay, New York, will be received here until August 24th, 1896. Information furnished on application. H. M. ADAMS, Major Engrs.

MATERIALS FOR GUN EMPLACEMENTS.—U. S. Engineer Office, 1428 Arch street, Philadelphia, Pa.—Sealed proposals for furnishing and delivering at Finn's Point, N. J., cement, broken stone, sand, brick, lumber, steel I-beams, steel bolts, pipe, iron stairways, bronze and brass fittings, concrete mixer, derrick fittings, car wheels, wire and manilla rope, derrick masts and miscellaneous hardware, will be received here until August 12th, 1896. Information furnished on application. C. W. RAYMOND, Major Engineers.

WATER-WORKS.—Sealed proposals will be received at the office of the Board of Water Commissioners of Village of Le Roy, N. Y., until August 15th, 1896, for furnishing material and labor for building a water-works system, the amounts of which are approximately as follows: Furnishing and laying: 10,500 ft. of 10 in. cast-iron pipe, 2,100 ft. of 8-in. cast-iron pipe, 24 300 ft. of 6-in. cast-iron pipe, 9,500 ft. of 4-in. cast-iron pipe, 5 tons of special castings, 65 double-nozzle fire hydrants, 9 10-in. valve gates and boxes, 3 8-in. valve gates and boxes, 50 6-in. valve gates and boxes, 20 4-in. valve gates and boxes. Separate bids are also asked for furnishing the above material and for laying and setting the same. Furnishing and erecting a stand-pipe, 20 ft. by 100 ft; furnishing and erecting one force pump of 750,000 gallons daily capacity; also one 50-H.P. boiler and connections; constructing a pumping station. Bids must be accompanied by certified cheques as follows: For the distribution system, a $500 check; for the pump and boiler, a $250 check; for the stand-pipe, a $250 check; for the pumping station, a $250 check. The successful bidders must within eight days of the date of award enter into a contract, giving bonds acceptable to the Commissioners. Plans and specifications may be seen and forms for proposal procured on application to the Board of Water Commissioners, or at the office of POTTER & FOLWELL, engineers, 137 Broadway, New York City.

CEMENT, SAND AND STONE.—U. S. Engineer Office, Boston, Mass.—Sealed proposals for cement, sand and stone for battery at Long Island Head, Mass., will be received here until August 13th, 1896. Information furnished on application. S. M. MANSFIELD, Lt.-Col. Engrs.

DAM, ETC.—U. S. Engineer Office, Custom House, Cincinnati, O.—Sealed proposals for building chanoine dam and stone masonry pier, and for iron work for movable dam, Lock No. 6, Ohio River, will be received here until August 20th, 1896. Information furnished on application to WILLIAM MARTIN, Mahan, Beaver County, Pa., or to W. H. HEUER, Maj. Engrs.

JETTY.—U. S. Engineer Office, 39 Whitehall street, New York.—Sealed proposals for dredging in Patchogue River and Brown's Creek, and for constructing jetty at mouth of Patchogue River, N. Y., will be received here until August 24th, 1896. Information furnished on application. H. M. ADAMS, Major, Engrs.

DREDGING.—U. S. Engineer Office, 39 Whitehall street, New York.—Sealed proposals for dredging in Shoal Harbor and Compton Creek, New Jersey, will be received here until August 24th, 1896. Information furnished on application. H. M. ADAMS, Major Engineers.

WATER-WORKS. — Proposals for furnishing material and constructing a water plant will be received until August 13th, 1896. For particulars address W. B. DE WITT, Clerk, Skaneateles, N. Y.

SEE ANNOUNCEMENT ON PAGE 7.

LANDS AND MINES FOR SALE.

A GROUP OF TEN GOLD QUARTZ MINES.

NEVADA COUNTY, CALIFORNIA.

For sale, in groups of three or seven, price $40,000 and $70,000; terms easy. Will give working bond. Title U. S. Patent. Ledges from 1½ to 12 feet in width; ore assays from $7.50 to $200 per ton. 4,000 feet of tunnels, shafts and drifts. Large bodies of ore in sight. For full particulars apply to J. F. CROSETT,
628 Sacramento St., San Francisco. Cal.

FOR SALE.

MONO MINE, UTAH.

NOTICE OF SALE OF MINING PROPERTY.

Notice is hereby given that the undersigned, Receivers of the Charter Oak Life Insurance Company, acting under authority and in pursuance of an order passed on the 12th day of June, 1896, by the Superior Court of Hartford County and State of Connecticut, will, between the hours of 12 o'clock, noon, and 2 o'clock P. M. on Saturday, the 29th day of August, 1896, at the west front entrance to the City and County Building, in the City and County of Salt Lake, in the State of Utah, offer for sale, and sell at public auction, to the person or persons who shall make the highest bid therefor for cash, upon delivery of the deed therefor by said Receivers, within thirty days after said sale, all the right, title and interest vested in, and which they now as Receivers as aforesaid have, of, in and to the following described mining claim and machinery, and tunnel claim and other property connected therewith, situate in Ophir Mining District, Tooele County, State of Utah, described as follows, to wit:

That certain mining claim situate in said district commonly known as and called the Mono Mine, being more particularly described as follows, to wit: Mineral entry No. 105 in the series of the Land Office at Salt Lake City, Utah, designated by the Surveyor-General as lot No. 46, containing 3.67 acres of land, more or less, and according to the return on file in the General Land Office in said City of Salt Lake, described and correctly described, with magnetic variation at 16° 30′ east, as follows, to wit: Beginning at corner No. 1 a post marked No. 1, Lot No. 46, thence south 83° 30′ east, 1,600 feet to corner No. 2 a post marked No. 2, Lot No. 46, from which a fir tree 17 inches in diameter marked B. T. bears north 71° 30′ west at the distance of 21.5 feet; thence from said corner No. 2 north 6° 30′ east 100 feet to corner No 3, a post marked No. 3, Lot No. 46, from which a fir tree 17 inches in diameter, marked B. T., bears north 76° west at the distance of 13 feet, and U. S. Mineral Monument No. 6 a fir tree 17 inches in diameter, marked U. S. M. No. 6 on the south side, and U.S. Mineral Monument No. 6 on a board nailed on the east side bears north 59° west at the distance of 462 feet; thence from said corner No. 3 north 83° 30′ west 1,600 feet to corner No. 4, a post marked No. 4, Lot No. 46; thence south 6° 30′ west 50 feet to a point from which discovery stake bears north 83° 30′ west, at a distance of 800 feet, 100 feet to the place of beginning. A description of which is also found recorded in the Recorder's office in said county of Tooele, in Book BB of records on pages 632 to 636, inclusive. Nevertheless, however, reserving and excluding therefrom all that part thereof "which is situate east of the center of the ravine crossing said premises nearest the eastern boundry thereof, which ravine is further designated and identified as the one in which a living spring rises a short distance above the north boundary of said premises." Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in any wise appertaining, including all hoisting works, engines and machinery, tailings and property therein and thereon

Also in the same district and nearby the same, and once worked in relation to said mine, that certain mining tunnel commonly known and called in that vicinity "The Ætna Tunnel."

Upon such sale being so made and the purchase money paid, said Receivers will convey said property to the purchaser within thirty days after said sale.

Dated this 7th day of July, 1896

ISAAC W. BROOKS & EDMUND A. STEDMAN,
Receivers as aforesaid.
MARSHALL & ROYLE, Salt Lake City, Utah,
Attorneys.
GROSS, HYDE & SHIPMAN, Hartford, Conn.,
Attorneys.

DIVIDENDS.

ISABELLA GOLD MINING COMPANY.
COLORADO SPRINGS, Colo., August 10th, 1896.
DIVIDEND NO. 8.

A dividend of ONE CENT PER SHARE ($22,500) has been declared, payable August 25th, 1896, to stockholders of record August 18th, 1896.

The stock transfer books will be closed August 18th, 1896, at 3 o'clock p. m., and will be re-opened on the morning of August 26th, 1896.

PERCY HAGERMAN,
Vice-President and Treasurer.

HOMESTAKE MINING COMPANY,

MILLS BUILDING, 15 Broad Street,
New York, August 14th, 1896.
DIVIDEND NO. 117.

The regular monthly dividend, TWENTY-FIVE (25) CENTS PER SHARE, has been declared for April, payable at the office of the company, San Francisco, or at the transfer ageney in New York, on the 25th inst. Transfer books close on the 20th inst.

LOUNSBERY & CO., Transfer Agents.

Received Too Late for Classification.

MINING ENGINEER AND METALLURGIST, graduate of Lehigh University, '95, desires a position with reliable mining company in United States or Canada, but will go to Mexico. Address LEHIGH, ENGINEERING AND MINING JOURNAL.
No 7,433, Aug. 15

MACHINERY AND SUPPLIES FOR SALE.

SECOND-HAND RAILS.

If you have any Rails which are in good condition to relay—or if only good to be used as scrap—write us; we buy both kinds.

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