# THE ENGINEERING MINING JOURNAL



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# Cripple Creek Fires.

Cripple Creek, the newest and largest gold mining camp in this country, has again suffered a terrible destruction of property in the fire of the 29th April, following that of the 25th, which was more than suspected to be the work of incendiaries with the object of plunder, chiefly directed against funds in the First National Bank. This last fire was also of an incendiary character and destroyed the remaining portion of the town left standing from the former and was equally destructive in its effects, so that Cripple Creek may be said to be virtually wiped out. In such a case the direct losses are never nearly covered by insurance, and the indirect losses, misery, and discomfort are uninsurable, for all which misfortunes Cripple Creek is entitled to the most sincere sympathy from every one.

The destruction of the town by fire does not of course affect the producing capacity of the mines, but at the same time it cannot fail to produce a certain disorganization which will probably show itself in a diminished product this month. We have not the slightest doubt but that the characteristic energy of Westerners in general, and Coloradoans in particular will cause Cripple Creek to rise like a Phœnix from its ashes, better built than before, and better protected against fire, and that within a very short time the production of its mines will resume their normal output.

### General Electric Company's Report.

Referring to the annual report of the General Electric Company of which we gave a very full extract in our last week's issue, we wish to draw attention to the large amount of useful information contained therein, for the benefit of the stockholders. In this respect the report is a model for the great majority of corporations and it would tend very much to confidence and a sense of security in investments when made, if such a form of report were followed in other cases. The addition to capital accoun during the year increasing the company's assets in that direction are clearly shown and the amount written off on account of depreciation of their property, and reduction in value of patent and manfacturing plants are fully set forth and show a safe and conservative administration. The increase in value of business was less than 10 per cent. greater than that of the preceding year but at the same time the increase in the capacity of the plant and the actual output were respectively about 25 and 30 per cent. greater. The prospects for the current year are certainly bright and there seems but little doubt that the development in railroad traction will be considerable. The varied fields into which the company have carried their business and the great development of long distance transmission in mining and metallurgy are of high interest to the readers of the Journal as well as to the stockholders of the General Electric Com-

# Tharsis Sulphur and Copper Company.

We publish in another column a full abstract of the report of the Tharsis Sulphur and Copper Company for the past year. In some respects the report gives a fair amount of information to the stockholders, but in others it is unfortunately deficient. There is no information as to the average price at which the copper and sulphur was marketed, nor the actual amount that was marketed, but only the figures as to the amount shipped, with the rather vague statement that the cost of copper was lower than it had ever been, and that the amount produced was greater than it had ever been. Figures relating to cost of removing overburden, and cost of mining and marketing, are entirely omitted. It may be all right for both the board of directors to publish their accounts in this shape, and for their stockholders to accept them, the latter having so much confidence in the directors on account of their undoubted integrity. Still it is a very bad example to set, and is apt to lead to great abuses, as a similar prominent example has in this country. In other companies where the directors are not men of such undoubted standing, directors take refuge behind the shelter of such an example, and take advantage of the stockholders with the most disastrous results.

The dividend declared by the Tharsis Company is the highest that it has paid during the last four years being at the rate of 171 per cent. on the par value of the stock which gives a return for the investor of 64 per cent. interest at the current market quotation, and judging from the price of copper since the commencement of the present year and the outlook of the market, they ought to be able to maintain profits in much the same ratio. All the copper companies in which the English and French investors are interested have shown remarkable improvements in their dividend distribution for the past year over the preceding three years as will be seen from the following table, which we take from the Economist:

	-Divid	ends			
1895.	1894.	1893. D. C.	1892. D. C.	Price.	Yield.
Cape Copper	614	61/4	61/4	296	73/6
Mason and Barry 31/6 Rio Tinto	31/8	216	21/6	3¼ 1884	4½ 5¾
Tharsis171/2	10	1216	15	538	61/8

### The Merced Bubble

The stock of the Merced Gold Mine which was booming in Boston, up near 60, with predictions of 100, when the Engineering and Mining Journal exposed the scheme and told what the mine was fairly worth, has been steadily tumbling ever since and was only sustained for some time past by the expectation that the first run of the new mill would show something satisfactory. It was indeed to be expected that there had been accumulated a quantity of the best ore the mine could produce, to start upon.

The mill run has been so dissappointing, that the officers have declined to state the result-perhaps some of them unlike Captains Couch and Palmer who sold out when the stock was high up in the forties, still hold some of the precious "securities" and wish to unload before all the fools have learned their value.

The quotations have gone down as low as 111, which still leaves room for a heavy tumble; perhaps when it gets down to a small part of the \$10 paid in, there may be found some willing to assume the hability for a call of \$5 a share which still hangs over the stockholders; but, on the other hand, the costly experience purchased with Butte & Boston and with most of the other Bigelow stocks since the policy of secrecy was adopted, may however have taught a lasting lesson, and those with money to invest, to gamble with, or even "to burn," may conclude that they can get more fun, and probably more dividends, by investing it in some other game of chance.

Our esteemed contemporary, the Boston Herald, the only paper of the Hub that ever ventures to publish the truth about the "Bigelow management" speaks of the Merced as an "enigma"-but this is not correct. There is no mystery about it, the mine had long been worked at a loss or with very small profit: it was hawked at \$100,000 and could have been purchased far below that figure; about \$125,000 was, we believe, the actual price at which the promoters bought it. A large amount has since been expended, and in part sunk, in work which was largely unnecessary. The mine contains a great amount of very low-grade ore on which a moderate profit might possibly be made with a large mill and strictly economical management. There is no foundation for the extravagant claims made for the property by interested brokers, and in the face of the faet that those in the best position to know the truth long ago sold out their holdings, it seems unreasonable to suppose they left their principals ignorant of it. The end is not yet.

We first drew attention to this matter on September 7th, 1895, when glowing and grossly exaggerated statements were being made, if not by the directors, at least with their knowledge and consent, as they did not contradict them and must have known that purchases of stock were being made daily at the then prices on the strength of such statements. On that date we invited "the officers of the company to make public any information the company may be willing to give on this subject" through the columns of the Journal.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal. the company to make public any information the company may be willing to give on this subject "through the columns of the Journal.

On September 14th, 1895, a correspondent from Boston entirely endorses our remarks. On September 21st, another correspondent, evidently well acquainted with the history of the mine and its value, writes from Kansas City and gives facts and figures that should have undeceived the most sanguine. Not one word from the responsible Directors and Managers to put themselves right with the public.

# Witwatersrand Gold Production.

The cabled report of the Johannesberg Chamber of Mines for March at first sight shows a heavy reduction in the gold output of the Witwatersrand for the month, the total given being only 147,015 crude ounces. It appears. however, that nine companies have refused to make reports to the Chamber, indicating that the dissensions in that body, which has heretofore commanded the adhesion of all the working companies, are becoming serious. The nine companies which did not make returns are the Langlaagte Estate, the Langlaagte Block B, the George Goch Amalgamated, the Lancaster, the Randfontein, the Princess Estate, the United Main Reef, the Van Ryn and the Meyer & Charlton. Five of these-the Langlaagte Estate, Langlaagte Block B, George Goch, Meyer & Charlton and Van Ryn-have given out their returns through their London offices, the total reported by them for the month being 20,324 ounces. The other five are small companies, their aggregate output in February having been less than 4,000 ounces. Assuming that it was the same in March, as they were all at work, the total production of the Witwatersrand was 171,310 ounces, showing a gain of 4,292 ounces, or 2.6 per cent., over February, but a decrease of 13,635 ounces, or 7.4 per cent., as compared with March, 1895.

At the usual rate of fineness of Witwatersrand gold, the March output would be equivalent to 139,800 fine ounces. Considering the disturbed state of the country, and the many complaints which have been made as to the difficulty of securing labor, the showing made is not a bad one, though the apparent increase over February is not as great as the fact that there are two more working days in March would call for.

The troubles in the Chamber of Mines are those arising out of the socalled "reform movement," and though little has been said about them in the despatches, the indications are that they are increasing, and it is said that more companies are preparing to withdraw; at latest accounts 23 companies had already done so. The Chamber has been a useful body to the Witswatersrand in many ways.

The operations of the Goldenhuis Deep--the first of the deep level companies to reach the main reef and to obtain actual working returns--have been watched with a great deal of interest. The results for the first month or two were hardly a fair test, perhaps; but we have now the reports from the mine for three months of regular work--January. February and March. The company has a mill of 100 stamps and a cyanide plant, both of which were run steadily during the quarter. The total quantity of ore raised and crushed was 27,722 tons, from which there was obtained in the mill 6,179 ounces gold; 19,720 tons of tailings were treated by cyanide, yielding 3,682 ounces. The total return was therefore 9.861 ounces gold, an average yield of 0.35 ounce per ton. At the usual fineness this would give a return a little under \$6 per ton, which is far from satisfactory.

It is possible, of course, that in order to keep the mill at work the ore has not been selected, but everything taken out has been sent to the stamps. On the other hand the motive for making a good showing is strong, and it might be supposed that care would be taken to do the best possible. The returns have not been improving; in January 8,467 tons of ore were crushed, the average being 0.40 ounce per ton; in February 8,255 tons with an average of 0.34 ounce, and in March 11,000 tons, with an average of 0.33 ounce. There is no accumulation of tailings, the cyanide plant having been built of full capacity to take all that came from the mill. The Geldenhuis is not on a section of the reef which is of the best grade: but the result is hardly encouraging to the other deep level companies.

The sentence pronounced upon the Reform Leaders, including Mr. Hammond and its commutation is now a matter of history, well known to all of our readers, and no matter how they and the others who were placed on trial will be ultimately dealt with, it is a foregone conclusion that their services will be lost to the Rand district for many years if not entirely. We cannot see any other result than that the production of gold in the Transvaal will be unfavorably affected, as those chiefly interested as owners of the more important properties will find it hard to replace the men of whose services they are now deprived. No doubt there are other good men to be had both here and in Europe, but many who would have accepted a good appointment in the Transvaal six months ago, would hesitate considerably now before accepting.

# BOOKS RECEIVED.

- Johnston's Electrical and Street Railway Directory for 1896. New York; The W. J. Johnston Co. Pages, 832. Republica Mexicana. Exposicion del Sistema Metrico Decimal y Tablas de Equivalencias, 1895. City of Mexico; Nationa. Printing Office. Pages, 24.
- Republica Mexica: Ley sobre Pesas y Medidas de 19 de Junio de 1895, y Reglamento de la Misma Sey. City of Mexico; National Printing Office. Pages, 43.
- New York State Museum; Bulletin No. 15. Mineral Resources of New York State. By Frederick J. H. Merrill, Albany, N. Y. Published by the State University. Pages, 595; with map.

# 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

# Gold Mining in the South.

Sir: In reply to article in Journal, March 28th, on Gold Mining in the South, I inclose a clipping from local periodical written last October. As to character of ores, pyritic or free milling, there is ample, and of good value as would do credit to any section. I do this not in the interest of any "gold boom" (for I was not aware that one was on), but solely that the truth may be made manifest.

L. C. Cannon.

# The "WelcomeStranger Nugget."

WEST SPRINGS, S. C., April 18, 1896.

- The "WelcomeStranger Nugget."

  Sir: Kindly allow me space to correct a slight error in the interesting paper by Mr. T. A. Rickard printed in your issue of the 14th, December last. He states that the "Welcome Stranger" was a Ballarat nugget. The "Welcome Stranger" the largest Victorian nugget was found in the neighborhood of Dunolly and yielded 2,280 oz. of melted gold (2,248 oz. of pure gold). The largest Ballarat nugget was the "Welcome" nugget which weighed 2,217 oz. 16 dwt. The "Welcome" nugget was found on June 15th, 1858, and the "Welcome Stranger" on February 5th, 1869. The above mistake is commonly made eyen by residents in Victoria.
- The above mistake is commonly made even by residents in Victoria.

  I am Yours, etc., ALEX PURDIE,

  Professor of Geology etc., Ballarat School of Mines.

  Ballarat, March 16th, 1896.

## Beryllium-Glucinum.

Sir: If you or any of your readers can inform me as to whether beryllium is actually being used for electrical purposes, and at what price it is obtainable, I shall feel much obliged. I have heard that it can be procured in quantities of a pound or less at about \$20 per pound. I am unable to confirm this, and shall be glad for any information through the medium of the Journal. New York. April 17, 1:96.

[We published in the Journal a note on this subject in our issue of February 15th, our authority bein; the Electrical Review of London, stating the price to be nearly \$18 per pound. The production of this metal has not as yet been undertaken in this country.—Ed. E. & M.J.]

### First National Convention of Foundrymen.

Sir: The first National Convention of Foundrymen ever held in the United States will take place at Philad-lphia, Tuesday, Wednesday and Thursday, May 12th, 13th and 14th, 1896. It is to be held under the auspices of the Foundrymen's Association of Philadelphia. I am requested by the Committee on Call to cordially invite you, and shall deem it a great favor if you will extend the invitation through your valuable columns to the foundrymen who may read your paper. The reduced railroad fares extend to all parts of the United States east of Chicago, and upon application any one wishing further information on this point will be furnished it without delay with full particulars.

will be furnished it without delay, with full particulars.

The object of the convention is to bring about a more friendly feeling among the foundrymen of this country, and to allow of the presentation and discussion of papers upon interesting subjects, and other similar

and discussion of papers upon interesting subjects, and other similar objects.

The business headquarters will be at the Manufacturers' Club, 1,409 Walnut street, while the hotel headquarters will be at the new Hotel Walton, so well and favorably known. Arrangements have been made with nine other hotels conveniently situated, on both European and American plans, at reasonable prices.

The following papers will be presented: 1. The Chemistry of Iron, with Determinations and Their Value, by Charles James and W. C. Henderson. 2. Physical Tests and Chemical Strength of Cast Iron, by W. J. Keep. 3. Apprenticeships, Their Value, and How to Make New Molders, by D. J. Mathick, 4. Foundry Cranes, with the Different Methods of Driving Them, by A. E. Uo'erbridge, Jr. 5. Acid Openhearth vs Basic Openhearth and the Walrand-Legenisel Bessemer Process for Making Steel Castings, by Jos. Hartshorne. 6. The Air Compressor for use in the Foundry, by C. W. Shields, of The Ingersoll-Sergeant Drill Company, Easton, Pa. 7. Cupolas and Cupola Practice up to Date, by Dr. Edward Kirk, Philadelphia. 8. Utility and Advancement of Green. Dry, and Loam Sand Molding, by Thomas D. West, Sharpsville, Pa. 9. Grar Molding and Gear Molding Machines, by S. Groves, of Taylor, Wilson & Co., Limited, Pittsburg, Pa. 10. The Sand Blast for Cleaning Castings, by Fred. C. Brooksbank, of Ward & Nash, Boston, Mass. 11. Molding Machines and their Applications, by Harris Tabor, of Tabor Manufacturing Company, Elizabeth, N.J.

Invitations have been received from the Baldwin Locomotive Works, Wm. Cramp & Sons, Henry Disston & Sons, and other prominent manufacturers in the neighborhood of Philadelphia, and in the intervening time between the sessions advantage will be taken to visit these works in various parties, each following his own inclination.

HOWARD EVANS, Secretary.

PIER 45, NORTH DELAWARE AVE., Philadelphia, April 28

The Institution of Civil and Mining Engineers of London-Sir: In a recent issue of the Engineering and Mining Journal some re-Sir: In a recent issue of the Engineering and Mining Journal some remarks were made which were perfectly correct as referred to the above scheme, but I should like to point out to you that there is absolutely no proper comparison between that and the Institution of Mining and Metallurgy; the one you criticised was a proposed scheme of a joint stock character, got up by someone who is quite unknown both in the civil engineering and in the mining engineering professions, and without the slightest support by anyone of reputation in the business. The circular was distributed broadcast by the parties who got up the scheme, and I do not suppose that anything will ever come of it, and certainly no support will be obtained from any members of standing as an engineer, since the existing institutions cover in a much more efficient manner the objects proposed to be attained by the unknown parties who wish to start a little society of their own.

In your remarks you referred to a failure on the part of the Institution

In your remarks you referred to a failure on the part of the Institution of Mining and Metal urgy to restrict the membership in some measure to those who are professionally entitled to the same. I do not think that the results at all justify such a conclusion on y ur part. It is recognized by everybody in the profession that it would be quite impossible to limit the members of any useful institution to those mining engineers whose reports could be absolutely accepted by the public on any proposition, and exactly the same would apply to the Institution of Civil Engineers or any other equivalent body. At the same time the Institution here by putting certain limitations as to practical experience on to membership does take a step which makes that membership, or will make that membership in time, of more value than if it were simply representing an ability to pay an annual subscription.

It is customary on this side for mining reports to be signed by engineers who give the initials of their membership in the American Institute of

who give the initials of their membership in the American Institute of Mining Engineers as a sort of qualification, although the same is of course not accepted by members of the profession as any real qualification. If, therefore, membership of such institutions is used as an indication of some qualifications in the profession, the restrictions on the English Institution are certainly an advantage.

I do not consider that this portion of the Institution Rules here has been, therefore, any weak point, but is in fact its greatest advantage, and with the growing membership from engineers all over the world we have good reason for believing that the Institution will prove of increasing importance, and the average quality of papers prove more valuable

and interesting than in the past. You must not forget that the Institution here has suffered under some considerable disadvantages, besides those of youth, and that we have not here a Professor Raymond to devote energy and special skill he possesses to the purposes of its development.

WALTER MCDERMOTT. LONDON, April 9th.

Sir Henry Bessemer on Nickel Steel.
Sir: I have read with much interest Sir Henry Bessemer's letter to the Journal of the Iron and Steel Institute of Great Britain, which you copy

Journal of the Iron and Steel Institute of Great Britain, which you copy in the Engineering and Mining Journal of March 21st.

In this letter Sir Henry speaks in a very complimentary way of the paper read by Sir Henry Wiggin on nickel steel, before the Institute at its meeting in Birmingham in August last. He also speaks in a like complimentary manner of the paper read by Mr. James Riley before the lustitute in 1888 upon nickel steel, and also makes favorable mention of the names of Mr. Marbeau and Mr. I. C. Hall in connection with this metal. Having thus complimented all of these names he gives his own experience and investigations, which he says date back to 1842.

Sir Henry is frank enough to state that, as he never made any of the results of his own experiments public, those who at a later date carried their experiments to a success were in no way indebted to him.

The facts are that neither Mr. Rilby, Mr. Marbeau, Mr. Hall nor Sir Henry Wiggin—all of whom I know—were the discoverers of nickel steel. But the man who conducted a long series of experiments with the object of accomplishing a certain result, and while conducting these experiments produced ni kel steel, was John Gamgee. His name is probably unknown

produced nickel steel, was John Gamgee. His name is probably unknown to Sir Henry Bessemer, but it is a curious coincidence that he also, like Sir Henry, took his suggestions from meteoric iron.

I enclose you herewith a copy of the Toronto Globe of February 17th, 1894, containing an interview with myself with regard to the discovery of nickel at Sudbury and the origin and adoption of nickel steel by our government.

I also enclose copy of letter from myself to Fried Krupp under date of February 27th, 1887; copy of letter from General Tracy to myself under date of March 7th, 1892; copy of letter from myself to John Gamgee under date of February 28th, 1893; copy of letter from Gamgee to myself under date of March 10th, 1893.

self under date of March 10th, 1893.

From the data herewith enclosed you will see that Mr. Rilev's experiments with nickel steel were 13 years later than those of Gamgee, and that at least five years previous to Riley's experiments an American firm (I think in Bridgeport, Conn.) were using Gamgee's alloy. All of the history contained in the enclosed data seems to be entirely unknown to Sir Henry Bessemer. My letter to Mr. Krupp, who, I believe, is also a member of the Iron and Steel Institute, was of a date 16 months previous to that of Mr. Riley's paper.

member of the Iron and Steel Institute, was of a date 10 months provided to that of Mr. Riley's paper.

I do not pretend to have been the discoverer of this alloy. I have not the slightest desire to deprive any of the parties referred to in Sir Henry's letter of any of the honor to which they are entitled, nor have I any wish to dispute any of Sir Henry's statements, but as I was with Mr. Gamgee during all his experiments, saw them with my own eyes, aided him with my own hands, I feel like claiming for him the honor which is rightly his due.

rightly his due.

The whole history of the discovery of this alloy and its adoption by the United States Government is such a strange blending of romance and reality that I have thought you might find sufficient material in the enclosed papers to form an interesting chapter for your new volume of the Minaval Industry.

S. J. RITCHIE. Mineral Industry.
AKRON, O., March 31, 1896.

AKBON, O., March 31, 1896.
Extract from letter referred to above dated March 10th, 1893, from John Gamgee: "I have used the metal from time to time since and one firm of American machine makers in America have continued to make in the continued to make it is a second to the continued to the nickel iron castings since I first instructed them in my methods in 1883.

# TROPENAS STEEL PROCESS.

This process, comparatively little known in this country, has made considerable progress in Europe, the works now in operation or being erected including some of considerable importance, such as Edgar Allen & Co., Sheffield, England; Plichon & Co., Paris, and some eight or ten more, Russia, Belgium and Austria all being represented. It is claimed that the cost of Tropenas steel is lower than that made in any other converter and for certain purposes, such as machinery of almost every description, it can be used to great advantage.

The main features of the system are the use of a double row of tuyeres and their position being on one side of the converter only greater depth.

and their position being on one side of the converter only, greater depth of the converter, and the decarbonization attained under a very light pressure. The lower row of tuyeres are of large diameter and cylindrical, opening into a large blast pipe; these are called fining tuyeres. The top tuyeres are of smaller dimensions, and are called the combustion tuyeres. The main points of difference between the Tropenas process and other forms of Bessemerizing is that the compressed air does not enter the metal, but acts only on its surface, and in place of agitating the molten metal the point seems to be to keep it as quiet as possible during the oper-

One very important advantage claimed for the process is the very large One very important advantage claimed for the process is the very large per cent, of scrap iron that can be used it apparently being converted into steel of good quality, in some instances as much as 40% of scrap is used; the final additions (1% of 14% of ferro-silicon and 1.80% of 75% ferro-manganes) are added in a moiten state in either the converter or ladle. No spectroscope nor spectacles are employed in stopping the operation, the signs are so unmistakable and so well defined that any intelligent laborer can be taught to operate the converter in a week. The pressure of the blast being only 4½ lbs. any good rotary positive blower can be used instead of an air compressor. This is being done to-day in Germany. Very little ferro-silicon is used to make the charge liquid because this is accomplished by he top row of tuyeres. by he top row of tuyeres.

New Use for Carborundum.—It is reported that a new use for carborun dum is found in the manufacture of filaments for incandescent lamps.

### ABSTRACTS OF OFFICIAL REPORTS.

### Hecla Consolidated Mining Company.

The general manager reports that from the standpoint of profit the year 1895 was a failure, but had the conditions, quantity and quality of ore been the same as in 1894, the year 1895 would have been the most profitable in the history of the company since the great decline in the price of silver. This is shown by two tables first for 1895 showing that the total tonnage received, namely, 4.762 tons, contained 64.5 oz. of silver, 19.9% lead 29.2% silica and 10.5% from. The corresponding period in 1894, the tonnage amounted to 8,122 tons, with a contents of 75.2 oz. silver, 23.3% lead, 21.5% silica, 9.2% from. In 1895 the total receipts from all sources amounted to \$272,922,97; all disbursements (except dividends), \$245,589.07; net profit, \$27,333.90.

Owing to heavy carry over the surplus from 1894 of \$142,511.84, six dividends were distributed in 1895, amounting to \$90,000, leaving a surplus December 31st,1895, of \$79,845.74.

The Cleopatra mine which for years yielded so much valuable ores, and which has been driven into the mountain for 3,300 ft., is now abandoned. Work is carried on in the Atlantis mine and Cleve mine, but not with such satisfactory results as formerly. The concentrator was in operation 201 days of 12 hours each, running entirely on tailings, the refuse product of the second class, which had already been put through the mill informer years; the product was 504 tons of concentrates, the average value of which was 29.4 lead and 46.9 oz. of silver per ton. The ratio of concentration was 21 to 1. The cost per ton treated 75½c.; cost of ton per concentrate produced \$14.97\frac{1}{2}\$. Cost of mining the first-class ore was \$22.91 per ton. The whole of the first-class ore, and a small amount of the second-class ore and the concentrates are treated by smelting. Cost of mining first and second-class, taken together, \$18.44 per ton; average cost of concentrating to date, 65.79c. per ton of crude ore. Total cash dividends to December 31st, 1895, \$2,100,000 in a period of 15 years.

The furnace report f 281 days and 14 hours out of the 365, and the daily average of tons of all material was 41.

The two following tables show the comparative working of the mines

and concentrator since 1882:

	de ore	concen- s pro- d.	Av. a	cen-	lead in ntrates.	er in rates.	ses.	ton sore.	per ton of entrates.
Year.	Tons crude Treated.	Tons co	Pr. ct. lead.	Ounces silver.	Tons lead concentra	Ozs, silver in concentrates	Expenses.	Cost per of crude	Cost per tor
1882 )	20,258	3,882 5	41,4	68140	1,607,355	264,165.30	\$24,380.28	\$1.20,35	26.28
1884	9,742	1,804 3	4270	82,2	770,438	148,313.46	9,521.92	97,66	5.27
1885	7,913	959	584	117 46	560 560	112,644.14	6,566.87	83	6.85
1881	10,760	884 7 0	48	75 56	424 880	66,851 71	5,213.22	481/6	5.89
1887	10,522	1.426	48100	63,74	698 650	90,918.73	6,071.34	57%	4.25
1888	12,276	1,48410	41 10	5970	617 380	88,600.77	7,384 65	60	4.9754
1889	12,954	1 647 10	45100	59 g	744 340	88,685.25	6,717.75	51 85	4.07%
1890	21,940	2,395,7	3510	51 5	845 680	123,378.55	9,119.28	47 100	$3.80^{6}_{13}$
1891	21,610	1,935 %	3510	52 8	6931160	101,823.08	10,570.58	48450	5.46
1892	13,450	1,683 10	33 8 5	50 2	570, 36, 000	84,531.00	6,389.71	4756	3.80
1893	7,997	841	32100	47 100	271,56	39,637.00	5,368.50	67 13	6.3813
1894	10,083	871 3	2310	1210	201 986	36,668.00	7,251 07	71 91	8.3214
1895	11,044	51410	2910	4610	151 143	24,109.00	7,698.00	75,5	14.971
Total Av'age	170,629	20,330 20	40.11	6114	8,156,298	1,248,626.99	\$112,253,17	\$0.65,79	\$5.52

Name.	Produc-	Year.	Gross ton including concentrates.	Cost per ton first- class mined.
Atlantis. True Fissure and Sheep. Cleopatra Ariadne. Cleve and Avon Franklin Trapper. Emma. Ramshorn	17,782 36,922 97,207 6,066 6,860 323 481 9 76	1882 1883 1884 1885 1886 1887 1888 1889 1890	12,192 12,466 9 210 12,286 9,842 11,249 17,557 13,157	13, 25 13, 97 13, 60 10, 84 12, 39 12, 20 11, 25 15, 25 20, 27
Tons, first-class	165,726 20,330 186,656	1891 1892 1893 1894 1895	10,418 8,383 4,847 8.855 5,434	22.02 20.60 21.87 14.521/9 22.91
		Total	186 056	Tons

Tons first-class mined, 1895, 4,919, at cost of \$22.91 per ton. Tons second-class mined, 1895, 1,186. Cost of mining first and second-class, \$18.44 per ton.

Tharsis Copper and Sulphur Company, Limited.

The annual report of the above company, for the twelve months ending December 31st, 1895, shows that the mmeral extracted from the Tharsis was 278,441 tons, against 333,896 tons in 1894, showing a decrease of 55,455 tons. At the Tharsis mines proper there were only 23,101 cubic meters of over-burden removed; this was from the Esperanza deposit. Work of this description is reported to be now practically completed in this part of the company's properties. From the Esperanza deposit 226,249 tons of schist were extracted, against 315,077 in 1894. The quantity of schist remaining in this deposit available for profitable working is now of limited extent.

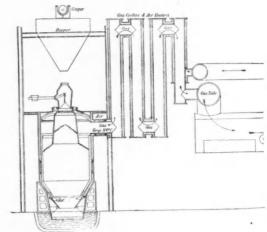
At the Calañas mines there were removed during the year 283, 113 cubic

were extracted, against 315,077 in 1894. The quantity of schist remaining in this deposit available for profitable working is now of limited extent. At the Calañas mines there were removed during the year 283,113 cubic meters, against 264,806 in 1894. Mineral extracted amounted to 298,424 tons, showing an increase over the previous year 43,893 tons. At the Lagunazo mines, being the other group owned by this company, the principal work prosecuted was the removal of 172,174 cubic meters of over burden; this has enabled the extraction of ore to be fairly commenced, 35,618 tons having been obtained, reported to be satisfactory in quality. Summary.—The total quantity of mineral raised at all the mines was. therefore, 614,483 tons, against 588,427 tons in 1894, an increase of 24,056 tons. Production of copper at the mines was the largest in the history of the company, owing to a great extent to the abundant supply of water all through the year.

Pyrites shipments were 197,832 tons large mineral, 22,996 tons smalls and 6,001 tons washed mineral. This mineral, from which the copper had been recovered and now sold for its sulphur contents.

Of copper precipitate 9,443 tons were shipped against 7.386 tons the previous year. The reduction works and the refining works produced over 1,200 tons more of copper than they did last year owing to the larger shipment of precipitate from the mines. The refined copper was produced at a considerable lower cost than in previous years, great benefit being derived from the concentration of their scattered works; £23,690 were written off of the mines in Spain and £20,000 have been written off railway rolling stock and shipping piers.

Profit and Loss.—Including the sum of £14,948 brought forward from 1894, the total amounted for the year to £234,439, of which the directors



MOND'S GAS PRODUCER:

recommend £218,750 be appropriated in paying of dividend of 7s. per share, equal to 17½% on the capital of the company, and the balance of £15,689 be carried forward to the credit of the year 1895.

The tabular statements give no information as to cost of mining or marketing, nor are there details of producing or refining the precipi-

The following is extract from abstract balance sheet showing the prop-

	Origi			Writte till da						
By Mines in Spain:										
Tharsis and Calanas	£709,228	11	9	£564,228	11	9	£145,000	0	-0	
Lagunazo				3,690			45,000		0	
By Railways and Shipping Piers in Spain:				0,000						
Permanent Way	413,362	11	5	275,574	4	3	137.788	7	2	
Rolling Stock	58,361	10	3	45,869		2	12,491	18	1	
Shipping Piers	54,381			41,031		2	13,349	19	6	
By Works, Buildings, Machinery, and Plant:	01,001	10	U	11,002	Δ.	-	10,010			
In Spain	445,879	18	2	347,970	15	8	97,909	2	6	
In Britain				266,640			127,933			
Patents, Leases, Concession Rights.										
etc	398,127	3	1	398,127	2	1	*****			
By Stocks in Trade:			•	000,124	.,	-	*****			
In Spain	357.846	15	0				357.816	15	8	
(Including Preparatory Works.)	001,010	80	0	*****		* *	001,010	10	45	
In Britain	191,899	11	1				191,899	11	1	
By Debtors on Open Accounts	70.540			*****			70,549	17		
	70,549	1.6	9	*****			10,040	1.6	4,1	
	411 800						444 800	11	4	
Bankers, and on hand	411,708	11	4	*****			411,708	11	*	
PL POIDS IS	£3,554,610	15	10	£1,943,132	17	9	£1,611,477	18	1	

A New Chinese Mint.—The North China Herald, of Shanghai, dated January 31st, 1896, says: Sheng Hsio-jen, the father of Sheng Taotai, has obtained permission from Governor Chao, of this province, to build a mint at Soochow for the coining of dollars and subsidiary money. The works will be inside the Sümên gate, and the machinery from Europe is expected to arrive here within the next six weeks. The governor has advanced 50,000 taels for this purpose.

At the chemical works of Brunner, Mond & Co., Northwich, England, there is in operation a plant for the simultaneous generation of producer gas and the manufacture of sulphate of ammonia from the nitrogen in coal. This plant is the invention of Dr. Mond, and is the result of many years' study of the important problem of obtaining large and cheap supplies of sulphate of ammonia. So completely has the problem been worked out that not only is a maximum amount of ammonia obtained from the coal, but a producer gas of high calorific value is generated.

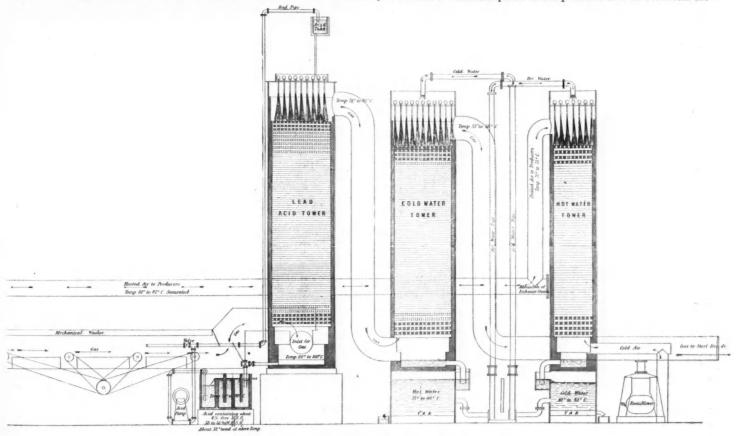
Before commencing to describe the plant in detail, it may be said that every possible point of efficiency and economy has been studied, such as the design of the producer furnace in order to use the cheapest fuel, the provision of scrubbers to remove all dust and tarry matters, the recovery of waste steam and the utilization of the heat of the gas. The accompanying illustration shows in a diagrammatic way the design of the plant.

The experiments of Dr. Mond showed that the yield of ammonia in the producer varied with the temperature and that it was highest when the producer was worked as cool as was compatible with a good combustion of the fuel. It was also found to depend on the amount of steam introduced into the producer, and the most favorable results were obtained by introducing 2½ tons of steam for every ton of coal consumed. Under these circumstances it mattered little what kind or quality of fuel was used, and common slack from the local coal-fields answered perfectly well. About 70% of the nitrogen contained in the coal is recovered, yielding 90 lbs. of sulphate of ammonia to the ten. The fact that so rough well. About 70% of the nitrogen contained in the coal is recovered, yielding 90 lbs. of sulphate of ammonia to the ton. The fact that so much

MOND'S COMBINED GAS PRODUCER AND SULPHATE OF AMMONIA RECOVERY returned to the producer. As regards the producer, the lining lasts a very long time and little clinker is made, on account of the low temperature at which it is worked.

very long time and little clinker is made, on account of the low temperature at which it is worked.

After passing through these pipes the producer gas is led through a chamber which is partially filled with water. This water is beaten into spray by revolving beaters, and the 'spray thus formed washes the dust and soot from the gas. The gas is reduced in temperature in this chamber to about 100° C., and it is further loaded with water vapor from the spray. The gas is then passed through a leaden scrubber which is filled with perforated bricks. This chamber contains the sulphuric acid for absorbing that ammonia. In practice it is found best not to use pure acid, but to keep in circulation a fairly concentrated solution of sulphate of ammonia, say 36% strength, which contains about 2½% of free acid. At regular intervals a certain proportion of this solution is withdrawn and the sulphate of ammonia recovered, the free acid being pumped back. After the gas has passed through the chambers its temperature is as low as 80° C., and as it is not fully saturated with moisture, no condensation takes place. The gas is then passed to a second scrubber constructed of wrought iron and filled with perforated wood blocks. In this it meets a current of cold water which condenses the steam, which heats the cold water to about 78° C. The gas is cooled to 50° C. in this chamber, and passes from it to the various places where it is to be consumed. The hot water in the chamber is pumped into a third scrubber of wrought iron, through which a current of cold air is forced in an opposite direction to the water. This air gets saturated with moisture and becomes heated to about 74° C., and is afterward forced back to the producer. The water leaves this third scrubber cold enough to be used again on the second scrubber. In this way about half the steam required in the producer is recovered from the



MOND'S SULPHATE OF AMMONIA RECOVERY PLANT.

steam had to be used is at first sight against the process, but Dr. Mond has arranged the plant in such a way that a large proportion of the excess steam and its heat is recovered. When it is mentioned that only one-third of the steam used is decomposed and the other two-thirds passes away with the gas it will be seen that the problem of recovering it was by no means simple.

The gas producers are cylindrical in shape and taper at the bottom. In the producer as used in practice about 24 tons of fuel are gasified every 24 hours. The dimensions of the producer are 10 ft. diameter or 21 ft. high. The gas producers are cylindrical in shape and taper at the bottom. The the producer as used in practice about 24 tons of fuel are gasified every 24 hours. The dimensions of the producer are 10 ft. diameter or 21 ft. high. Toward the bottom of the producer casing the sides taper inward and end in a conical grate. This grate has a round opening in the center through which the ashes descend into a water lute. The upper portion of the producer has a cone and hopper for introducing the fuel, and underneath the cone is a bell-shaped casting about 7 ft. long which is kept partially filled with fuel. The casing of the producer consists of two wrought iron shells, and air saturated with steam is blown into the annular space between them. The air and steam after being thus distributed and heated, passes through the conical grate into the fuel. The producer is kept filled up to the bottom of the bell-shaped casting. When fuel is introduced it is first of all distilled as in an ordinary gas retort inside the bell-shaped casting. The gases given off are obliged to force their way downward through the hot fuel, and during their passage the tarry vapors become fixed and give no further trouble. The gas on being taken off from the producer at a temperature of 450° to 500° C. is made to pass up and down a series of wrought iron pipes before going to the washers. These pipes are surrounded by annular casings, which are protected from the air by some non-conducting material. The steam-saturated air coming forward to the producer passes through these annular casings, and is heated in there by the head of the producer gases, and so a considerable amount of heat is

gas, the rest being supplied from the exhaust of steam engines on the

premises.

The producer gas in a dry state contains by volume 17% CO<sub>2</sub>, 11% CO, 27% hydrogen, 42½% nitrogen, 0.4% olefins, and 1.8% methane. The fuel used is a common kind of slack, and contains 33½% of volatile matter, including water, 55% of non-volatile carbon and 11½% of ash. The calorific value of this gas is stated to be 80% of that of the fuel used, but the exact significance of this figure is not quite clear. At Brunner, Mond & Co.'s works ten of these plants are now in use, and the average cost per ton of sulphate produced is about £4 5s., the value of the gas being, of course, deducted from the cost of the coal. The profit is, therefore, considerable at the present price of £8 10s. per ton. The initial cost of the plant is large, viz., about £20,000 for a plant to produce 4 tons of sulphate of ammonia per day, but the cost is not so great as that of the recovery plant used in connection with blast furnaces.

A "Miners's Inch" Analogous to an Ampere.—A New York exchange having stated that, in engineering phraseology, there is no term for the rate of flow of one gallon per second, which would be the analogue of the ampere, has been corrected by Prof. T. O'Connor Sioane, writing to the \*Llectrical Review\*, London, stating that this assertion is incorrect, inasmuch as the "miner's inch" is a perfect analogy for the ampere. The head of water represents the E. M. F. the aperture, the resistance, the rate of flow (the "miner's inch"), the ampere, as the miner's inch, by which water supply for hydraulic mining and irrigation purposes is very largely measured in the Western States, is the rate of flow that will take place through an orifice in a vertical surface 1 in. square, under a constant head. It is therefore an exact analogy to the ampere,

### BESSEMERIZING NICKEL MATTE.

### By H. W. Edwards

These notes were made from the result of work from 1891 to 1894 when the author had charge of a nickel smelting plant in Sudbury district, consisting of two blast furnaces and a set of Bessemer con-

onstrict, consisting of two blast furnaces and a set of besselfer converters (Manhes modification).

The ore was representative of the district, being composed of massive pyrrhotite magnetic iron pyrites, about 4% nickel when free from gangue and about 2% copper in the form of chalcopyrite. The ore was easily smelted, the gangue being an easily fusible diorite, and when roasted, in most of heaps there was as much as 60% of pyrrhotite with the otherminerals accompanying it, the nickel amounting to about 2.4% and copper 1.2%; he sulphur contents of the blast furnace operation would be about 5 or 6%. ne suppur contents of the blast furnace operation would be about 5 or 5%, and the product of the blast furnace being a slag consisting of a moderate silicate of iron, 0.1% nickel, and a matte containing from 10 to 15% nickel, 5 to 7½ copper, and 65 to 75% iron sulphide. The furnace was so arranged that the matter an from the furnace directly to the converter, the length of which was 73 in.; diameter 5 ft. 8 in.; number of tuyeres. 12; diameter of tuyeres, ½ in.; capacity newly lined 1½ tons; with old lining 3 tons.

lining, 3 tons.

The lining of the converters is the principal part on which the econon

The lining of the converters is the principal part on which the economical part of success depends as on the converter lining depends the efficient supply of silica to aid in the formation of a silicate of iron slag. The following is a table of four descriptions of clays with four qualities of quartz showing the costs of 130 linings made of 13 different mixtures with various kinds of clay and quartz.

No. 1. White sandy clay with some feldspar, slightly fusible at incipient white heat; plasticity moderate; cost per ton, delivered, \$375.

No 2. A red clay with much oxide of iron, very plastic; softens at a full red heat; cost per ton, delivered, \$4.

No 3. A gray clay very infusible; plastic; cost per ton, delivered, \$5.

No 4. Imported from Stonebridge, England, very plastic and very infusible; cost at furnace \$10.

fusible; cost at furnace \$10.

A. Massive milky white quartz with about 20% albite; cost per ton at works. crushed, \$5.50.

D. Silicious tailings from Bruce Mine, cost per ton. delivered, \$2.50.
C. River sand, very fine, 97 to 98% silica; cost per ton, delivered, \$2.
D. Glassy quartz, very pure; cost per ton, delivered, crushed, \$4.

					10 lin-	(or 10	clay for	quartz	charges the 10		per cl		
		1	Mixtu	ire,		Clay used for ings.	Quartz used	Cost of the classification of the classifica	Cost of the que for 10 linings.	Number of children on linings	For clay.	For quartz.	Total.
		-				Lbs.	Lbs.						-
Clay	No.	1		Quartz	A	13,500	37,000	\$25.31	\$64.75	53	g0.48	81.22	\$1.70
		1	4.6	61	B	15,000	41,500	28.12	51.87	60	0.47	0.86	1,33
6.6	6.6	1	1.6	8.6	C	18,500	40,000	34.69	40.00	37*	0.94	1 08	2.12
6.0	6.6	1	6.6	**	D	14.000	36,000	26.25	72.00	82	0.32	0.88	1.20
44	64	2	4.6	1.6	A	12.70	38 000	25 40	66.50	51	0.50	1,30	1.80
		24		+6	B	13,200	41,000	26.40	55 87	39	0,68	1.43	2.11
4.0	46	2	6.9	4.6	B	16,000	40,50	32.60	50,62	34	0.91	1.49	2,43
66	46	9	6.6	**	D	13.000	35,000	26.00	76.00	48	0.54	1.58	2.12
64	66	3	64	44	A	12,000	39,500	30.60	63.87	81	0.38	0.79	1.17
+8	26	3	16	44	B	13,500	41,500	34,42	51.87	75	0.16	0.69	1.15
46		3	4.0	**	Č	12,500	38,000	31.87	76.00	86	0.37	0.03	1.75
48	44	1+	44	**	B	17,0001	42.000	31.87	52,50	318	0.86	1.42	2.28
64		AT	**	46	C	12 000	43.500	60 00	87 00	98	0.80	0.89	1.50

\*Three linings failed altogether on blowing their first charge—want of adhesion. †In these two cases the clay was mixed to a slurry, and then crushed quartz added. All other mixtures made by mixing dry pulverized clay with crushed quartz.

1 Estimated weight.

Four brings had to be rebuilt before converters left re lining shop, the overhanging parts falling away while drying.

The molten matte is accumulated in the blast furnace in a suitable reservoir, and the converter is placed in position. On tapping the furnace the matte runs into the converter by an iron trough coated with clay. The only objection to this direct method, as opposed to its alternative, casting the matte into pigs and remelting it specially for the converters, arises from the inconvenience of not knowing the relative quantities of nickel, copper and iron sulphides present in the charge. The blowing would be over before one could make any satisfactory assay. Nevertheless, with practice, a fairly regular product was turned out.

The converter, now charged, is wheeled to a bell-mouthed iron chimney, supported on four pillars, where the blowing operation is conducted. Air connection between converter and engine is made by a pair of well-finished flanges fitted with three bolts and thumb screws, one flange fixed upon the twyer-box of the converter, and the other to 3 or 4 ft. of leather

upon the twyer-box of the converter, and the other to 3 or 4 ft. of leather

upon the twyer-box of the converter, and the other to 3 or 4 ft. of leather hose leading from the air receiver.

Starting with a pressure of air 5 lbs. per square inch, the first stage is marked by brilliant scintillations from the mouth of the converter accompanied by little or no flame or fumes, the agitation being af first very violent, in fact, more violent than later on at 7 lbs. The brilliant display usually lasts five to ten minutes, but is occasionally much prolonged if the amount of sulphide of iron exceeds 70% of the charge, and the action would be more violent in proportion as the initial temperature of the charge is higher, and also to the size of the charge. In such circumstances the blast pressure is reduced, sometimes as low as  $3\frac{1}{2}$  lbs. per square inch, and the twyers raised so as to present less resistance. I usually cumstances the blast pressure is reduced, sometimes as low as  $3\frac{1}{2}$  lbs. per square inch, and the twyers raised so as to present less resistance. I usually found a height of 30 in. of matte above the twyers gave the best results, but in the case of such violent action as I have just mentioned we sometimes had to work for a while with only 10 in. The quieting down was aided by the addition of cold matte to the charge, sometimes insurprising quantities 30% of the weight of the charge in more than one instance, all of which would be fused by the heat developed.

White Fumes and Flame Appear.—The sir-pressure is raised to 7 lbs. per square inch, the twyers immersed to their deepest below the surface of the

charge. The temperature of the charge begins to rise rapidly, and part of the sulphur seems to be given off as SO<sub>3</sub>, while when the temperature has reached its maximum, or increases but slowly, the proportion of SO<sub>3</sub> appears to diminish or cease. SO<sub>3</sub> is, of course, given off copiously all the time. The flame at first is red; but as the temperature increases sol, appears to diffinish of cease. Iso, in the temperature increases it becomes blue or green according to the size and temperature increases it becomes blue or green according to the size and temperature of the charge. The appearance and color of the flame is no indication of what is going on inside the converter: it can be relied upon only for negative indications. So long as the flame is red, or has any red or pink border, and so long as white fumes are mingled with the flame, there is still a considerable amount of iron in the converter as yet unoxidized but as both of andications. So long as the name is red, or has any red or bink corder, and so long as white fumes are mingled with the flame, there is still a considerable amount of iron in the converter as yet unoxidized; but as both of these appearances cease when the operation is but little more than half accomplished, they are not much practical guide. As the operations progress the fumes decrease and finally cease, leaving the flame of a transparent blue or green color which is maintained to the end. The end of the operation is judged rather by a perceptible diminution of temperature, not only of the flame, but also of the particles splashed or blown out of the converter, and by the appearance of these particles, which gradually become more frothy, and at last issue in flakes about the size of the open hand. The twyers are then raised above the level of the charge and the blast stopped. After a few moments' rest, to permit the slag and enriched matte to separate, the slag is emptied off, by rotation of the converter, into cast-iron pots, and the rich matte, so far as possible free from slag, into separate pots. The resulting rich matte usually contains but little sulphide of iron, sometimes I so than 2%. The slag consists of silicate of iron, the silica being derived from the quartz of the lining, as before explained. The lining lasts from five to seven charges, when it has to be renewed, that is to say, sufficient quartz and clay rammed in to bring the interior cavity of the converter to its original size. For this it is not necessary to remove any more of the old lining than will give a solid bearing for the new material.

solid bearing for the new material.

The amount of nickel oxidized is trifling, the copper and nickel in the slag being invariably present in the same proportions as in the original and final matte, showing it to be due merely to grains of matte entangled in the slag.

### ANALYSIS OF THE RESULTING PRODUCTS

	Firal Ms	atte.			Slag.	
Nickel sulphide Copper sulphide Iron sulphide	63·8 32·4	Per Cent. 64.7 32.1 3.2	Per Cent. 64.9 33.8 1.3	FeO SiO <sub>2</sub> Cu Ni	Per Cent. 66.6 28.5 1.1 1.9	Per Cent 67 1 27.9 0.8 1.6

Cobalt when present is perfectly scorified with but little oxidation of nickel, forming a very ready means of commercially separating these two metals. Zinc, antimony, and arsenic in particular are completely volatilized. Bismuth, silver and gold are completely concentrated along with the copper and nickel.

In treating a lot of very cupreous ore containing copper about 8% and nickel about 1½%, I succeeded in producing in the converter a crude metallic alloy containing copper 76 and nickel 15%. Another lot from ore slightly different, gave an alloy of 68% copper and 28% nickel. Several carefully arranged experiments with one of similar tenor indicated that with proper modifications there would be no difficulty in regularly producing a crude metallic alloy of half nickel and half copper, or two-thirds nickel and one-third copper. The principal modification I would recomnickel and one-third copper. The principal modification I would recommend would be the considerable increase in the size of the converters, say, to five tons per charge in order that there might be a greater quantity of heat developed, so that the increased temperature required by the nickel

alloy may be attained.

The slag from the converters is in every instance returned to the The slag from the converters is in every instance returned to the blast furnace along with succeeding quantities of burnt ore. As all the slag has to be remelted, it will be evident that any efforts to diminish the proportion of slag produced by the converters, will, if successful, have a very important bearing upon the industrial aspect of the process. It naturally occurs to the mind that a basic, or at least neutral, lining in the converter would be beneficial. Unfortunately my experiences with basic linings were not very successful; and I believe repeated experiments by others, treating copper mattes by this process, have been failures. According to my own experiences one great obstacle would seem to be the retarding of the process itself. For example, a normal charge, estimated to require 50 minutes blowing on the ordinary siliceous lining, required 1½ hours on a fining of lime. Such a retardition of the lining, required 14 hours on a lining of lime. Such a retardition of the process it will readily be perceived almost halves the capacity of the converter plant while the running expenses for labor and steam power are unaffected.

# CONDITIONS OF ZINC MINING AT AURORA, MO.

Sub-sections are divided into lots each 200 ft. sq., which leaves a strip 117 ft. wide on one side and 123 ft. wide on another side, making a total of 36 lots  $200 \times 200$  ft.; 6 lots  $200 \times 117$  ft.; 6 lots  $200 \times 123$  ft.; and 1 lot  $123 \times 117$  ft. Sometimes these lots are cut into quarters and sometimes in halves, depending upon the number of men working or the richness of the denosit the deposit.

Taxes are paid by the owners of land and property, and the mining land is assessed four to five times the value of farming land, an 80 acre tract being assessed about \$4,000. The mine owners are not legally liable for accidents. They have no operating expenses except pumping and for this they collect 5% royalty.

The following figures, given by one of the larger operators, give a fair idea of the expenses of running a plant, per diem. Wages: Superintendent, \$3; jigman, \$2.50; engineer, \$1.75; hoister, \$1.25; underground boss, \$1.50; two shovellers, \$1.25; ach; 5 minera ("cutters"), \$1.25 each; crusher feeder, \$1.25; "rou-tabout." \$1.25. Total wages, \$21.25 per day. This mine produces 15 tons of mineral per week ready for market worth about \$250; 150 tons of ore are producing the above 15 tons of mineral or concentrates hoisted from the mine per week. The other expenses per week are: "forsyte" \$15; blacksmithing, \$5; general repairs, \$10; cord wood, \$15; total, \$45. The plant cost \$4,000, including the 45 H. P. boiler and the 40 H. P. engine. Assuming a cost of the property, and adding the interest of invested capital to the other expenses, we see that these mines are working on a fair paying basis.

<sup>\*</sup> Abstract of Paper Jl. Soc. Chem. Ind.

### ELECTRIC POWER TRANSMISSION.

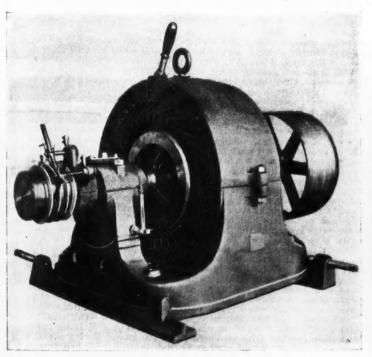
The devel pment of water power converted into energy by the aid of electric transmission for mining purposes is steadily gaining ground. Perhaps the most noticeable in this country are two three-phase mining plants and a polyphase Tesla plant. The two former are those at Silverton, Colo., and at Park City. Utah. That at Silverton is the first three-phase plant installed in the Rocky Mountain regions. It utilizes a water power taken from the Animas River through a 3 × 4 ft. flume, 9,750 ft. long. The electrical installation consists of two 150-kw. generators, driven by two double-nozzle Pelton wheels. The current, at 2.500 volts, is transmitted back up the mountains, a distance of over three miles, to an altitude of 12,300 ft. above sea level, where it is used to operate various mining machinery in the Silver Lake group of mines and to drive the stamps and crushers in the mill. Previous to the installation of this electrical plant the mines were operated by steam, and the coal cost \$8.75 a ton at the mine. It is calculated that an economy of \$36,000a year will be effected by the use of electricity.

The Ontario mine located near Park City, in Utah, utilizes the power derived from the water of the drain tunnel of the mine—the most expensive tunnel ever constructed by any mining company. It is three miles long and discharges 1,000 cu. ft. of water per minute from its mouth. This water, under a head of 120 ft. drives generators of the General Electric monocyclic type, which furnish current at 2,500 volts for transmission around the mountain to the Ontario and Daly mines, five and a half miles distant, where it drives the mills and lights the surrounding buildings. Current from these machines is also taken to light the neighboring town of Park City.

The San Miguel Gold Mining Company are so well satisfied with the

reighboring town of Park City.

The San Miguel Gold Mining Company are so well satisfied with the result of operating in Southwest Colorado, near Telluride, by long distance



POLYPHASE TESLA MOTOR.

transmission, that they decided to largely increase their plant for themselves and neighbors, and the new plant is now being installed, the striking features of which we now illustrate. This addition to the plant is supplied by the Westinghouse Company.

Electrical Supplies for South Africa.--Under the classification " Elec trical," goods to the value of £2.897 were exported from England to South Africa for the second week in Mirch, made up as follows: Cape Town, £1,117; Algon Bay, £153; East London, £1,346; Natal, £281.

Conversion of Emery into Corundum.—Mr. Hasslacher has patented an electric process of converting emery into corundum by means of the arc of alternating currents, says the Trade Journal Review. As heat and not decomposition is aimed at, continuous currents would be unsuitable. The furnace is made of firebricks and stands on two bridges; the hollow underneath serves as receptacle for the fused mass, there being a small hole in the bottom of the furnace. This hole is covered with a glass plate. The electrodes (carbon rods) are approached to within 1 or 2 in.; the interval is packed with lumps of carbon. The emery, also the finest dust of little use otherwise, is mixed with powdered coal, the amount depending upon the iron oxide in the emery; for 25% of oxide 5% of carbon is reckoned. The coal lumps are soon burned by the oxygen of the iron oxide and the arc forms under hissing. The inner mass begins to melt, the glass plate gives way and a stream of fused corundum flows out. The hard outer crust is then broken with iron rods and new material thus fed to the arc. This addition stops the flow, which starts again after 10 or 15 minutes. The biseplate is strewn with fine emery powder to protect it from the intense heat of the fused mass. The resulting corundum is almost free of water, of which the emery contains about 5%. It is crystalline, colorless, and then resembling quartz, pink or blue; fine, small crystals of sapphires have been found in druses. The current is kept at 250 amperes and 40 or 60 volts.

# ORE DEPOSITS OF THE LITTLE ROCKY MOUNTAINS, MONTANA,

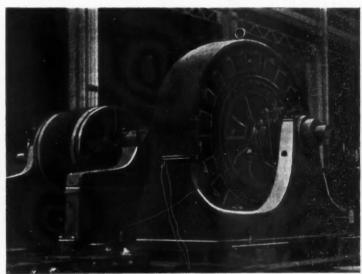
### By Walter Harvey Weed.

Within the past few years the isolated mountain tracts rising above the open plains of central Montana have come to the notice of the mining open plains of central Montana have come to the notice of the mining public as regions whose auriferous ore deposits promise to add to the mineral production of this State. One of those most recently prominent has been the Little Rocky Mountains, and as the larger part of the mineral belt of this tract lies within the limits of an Indian reservation, where prospecting can only be surreptitiously prosecuted, and no legal locations of mineral claims can be made, a bill was passed by the last Congress, providing for the appointment of a commission to treat with the Indian tribes owning the lands for a relinquishment of such tracts as are mineral-bearing.

The author was detailed as geolgist to report to the commissioners upon the mineral character of these lands and the location of a new boundary line, which should exclude the ore desosits. During a brief visit made to the region for this purpose, a few notes upon the geology and the ore deposits of the region were made, and the following facts may prove of interest to the readers of The Engineering and Mining Journal, as the locality is sure to become better known when the region is declared open to location. The only settlement within the region is the town of Landusky, which sprang into existence in the brief weeks of feverish activity consequent upon the discoveries of gold leads in 1894. The town is built in the upper valley of Rock Creek, and shows some twenty or thirty houses and as many more uncompleted buildings stretching along the main street parallel to the stream; it is surrounded by rather open slopes with scattered pines, above which occasional limestone crags rise abruptly. A mail road crosses the Indian reservation from Harlem on the main transcontinental line of the Great Northern Railway to St. Paul's Mission and to Landing of the Great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the stream of the Great Northern Railway to St. Paul's Mission and to Landing of the Great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the Great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the great Northern Railway to St. Paul's Mission and to Landing the main street parallel to the great Northern Railway to St. Paul's Mission and to Landing the great Northern Railway to St. Paul's Mission and to Landing the great Northern Railway to St. Paul's Mission and to Landing the great Northern Railway to St. Paul's Mission and to La line of the Great Northern Railway to St. Paul's Mission and to Lan-

dusky.

Geology.—The region is a mountainous tract, about 10 miles in greatest and somewhat less in width. Deep length, from southwest to northeast, and somewhat less in width. Deep cut gulches and steep slopes, wooded with lodgepole pines, prevail. The summits are rarely rugged or precipitous, and reach altitudes of about 6,000 ft., or 3,000 ft. above the surrounding plain. This region constitutes an uplift which is similar in nature to that of the Black Hills,



800-H. P. GENERATOR.

though upon a very much smaller scale. A core of gneisses and crystalline schists is surrounded by steeply upturned Paleozoic limestones dipping toward the open plains on every side, the most prominent rocks being the massive white beds of carboniferous limestone, forming a white girdle that is a noticeable feature of the mountain from every point of view. Between the stratified rocks and the crystalline schists there is a great intruded body of igneous rock, varying in nature from syenite porphyry to granite porphyry. This rock caps all the higher summits, but is cut through by the large mountain gulches. It is a peculiar rock, belonging to the high alkali series, and associated with it there is a phonolite of the variety known as tinguaite.\*

The ore deposits of the Little Rocky Mountains are of considerable

known as tinguaite.\*

The ore deposits of the Little Rocky Mountains are of considerable scientific interest, since they represent a type that has thus far been noted at very few localities in this country—a type that is well known because it prevails at the famous Cripple Creek district of Colorado. While the ore deposits are as yet but little developed, they promise to be actively exploited when the mineral lands which are now within the limits of the Fort Belknap Indian reservation shall be declared open to location. The gold ores are tellurides associated with fluorite, and occur in the altered porphyry. This character of ore (telluride) and its association with phonolitic rocks, is of much interest, for it occurs not only in the Cripple Creek region but in the Black Hills of Dakota and in the Judith Mountains of Montana.

The mineral belt in which the ore deposits occur is a zone of altered mineralized rock, extending in a northeasterly direction to the central ridge of the mountains. Although of variable width, this mineral belt may be considered as about 2,000 ft. across. The ores carry gold and occasionally silver. They consist of brecciated or shattered country rock impregnated, coated, and replaced by quartz, often associated with fluorite and carrying small amounts of telluride, pyrite, and possibly other

<sup>\*</sup> A full account of the geology of this region and its igneous rocks, together with maps and geological cross-sections, will appear in a forthcoming number of the Journal of Geology of the University of Chicago.

minerals. The ores do not occur in well defined fissure veins with defin-

minerals. The ores do not occur in well defined fissure veins with definite mineral walls. The gold occurs both as a telluride and as free gold. In the altered ore forming the surface of the ore deposits and the "float" of the mineral belt, the gold can be seen to be free, but in many cases it can only be seen after burning the ore. A characteristic ore of the district consists of an intimate mixture of fluorite and quartz, the brilliant purple color of which makes it readily recognizable.

Superficial alteration of the deposits has caused the oxidation, hydration, and leaching of the ore, which consists of a granular, friable, quartz and stained a rusty color by iron. In many of the richest ores, free gold is seen in small spongy masses of a dark coppery color.

The slight amount of development work as yet carried on makes any conjecture as to the mode of occurrence of the ore bodies quite hypothetical. The total absence of dykes, and the fact that no contact deposits have been found points to the origin of the deposits as due to the alteration of shattered zones of the porphyry itself. That there has been some movement and fracturing of the porphyry since its consolidation is proven by the slickensided surfaces seen near the Alabama mine. The presence of fluorite may have some connection with the telluride ores which are the source of the gold. In the mines of the Judith Mountains the richest ores occur associated with fluorite, and the source of the free gold seems to have been the telluride minerals. This association of fluorite with gold has been noted by various observers at Cripple Creek and in Boulder County, Colorado.

The Goldbug mine is the only property which shows any considerable amount of development. It is owned by G, L. Manning and the heirs of Pike Landusky. It was bonded some years ago to the owners of the famous Granite Mountain mine, but was relinquished and is now bonded by another syndicate, who have the ore body prospected, under the superintendence of M. H. Jacobs, formerly of Hailey, I

stituents of the rock and replacing these and filling the seams with quartzose material, which is gold-bearing.

The Goldbug mine is situated just north of and below the divide between Mill Creek and the head of Morton Gulch, about 1½ miles north of the town of Landusky. The ore body appears to run N. 15 E. magnetic, as far as can be determined from the surface outcrops. The main lead has been prospected by open cuts at frequent intervals, showing a width of about 4 ft.; there is a well defined foot wall but no hanging wall, the overlying rock being brecciated porphyly whose fragments are similar in character to the fine-grained quartz, porphyly prevailing throughout the of about 4 ft.; there is a well defined foot wall but no hanging wall, the overlying rock being brecciated porphyry whose fragments are similar in character to the fine-grained quartz porphyry prevailing throughout the mine. The ore body consists of shattered and cracked up porphyry, with stringers and c acks filled with quartz. Even the solid looking rock is found to be impregnated with quartz. The quartziferous material is, however, not always auriferous; a rusty seam occurring near the foot wall has been found to be generally barren. The workings consist of a shaft 40 ft. deep and considerable drifting upon three different seams. The No. 1 tunnel shows quite low grade rock, running about \$\frac{4}{2}\$ in gold per ton. No. 3 shows 6 to 8 in. of ore which will average \$100, with ore that can be picked that will run \$300 per ton. The broken character of the rock, however, and the fact that the richer ore occurs in pockets or masses irregularly distributed through the shattered zone, makes the workings somewhat difficult and the exploitation of the property somewhat expensive. A 50-ft. winze sunk down from the level of No. 3 shows a better ore below than it does in the level itself. Near mouth of drift of No. 5 the ore body shows a "blow out" or expansion 25 ft. wide of quite rich ore showing free gold.

The ore shows in the hand specimen a fine breccia of rusty or flesh-colored fragments of altered porphyry, with clear feldspars and greenish quartz and more or less decomposed and altered white porphyry, the interspaces filled with glassy quartz which was originally gray, and in the richest ore is mottled with lead-colored metallic telluride segregations. Small geode cavities and seamings of quartz with rusty surfaces of a dark red or brown color are quite common. The gold is seen associated with the telluride in the dark spots which occur in the body of the ore and near the quartz of the seams and cavities. Fluorite is noticed although it does not form so prominent a feature of the Goldbug ore as it, does in th

open fractures and partially filled cavities of quartz. Pyrite occurs sparingly in these ores.

The August mine is the name given to a location upon an ore body found within the limits of the reservation. It is this claim which gave the region a somewhat local notoriety in 1893, as the deposit was worked surreptitiously, and a shaft 65 ft. deep yielding some \$32,000 in actual returns for ore which was sacked and shipped to the Aurora, Ill., smelter. The ore presents the same general characters as that of the Goldbug mine, although it differs considerably in outward appearance. The ore shows considerable telluride, with dark-colored, spongy gold scattered through the mass.

The Alabama mine, situated on a lateral ridge of the main crest near

gold scattered through the mass.

The Alabama mine, situated on a lateral ridge of the main crest near the head of Ruby Gulch, is located in a fissured zone in the porphyry. The ore consists of bright purple fluorite rock carrying telluride and only showing free gold upon burning or roasting in the forge. Near the surface the ores are oxidized, and the fluorite, if not leached entirely out, forms a soft, earthy material. At 75 ft. in depth the ore body shows a solid breccia of a dark purple-gray color in which no free gold is seen, but minute crystals of pyrite and of telluride are seen sprinkled through the mass. The mine is opened by a shaft 100 ft. deep, which shows the ore body to vary from a few inches to 15 in. across, the ore occurring in a vein or lead that is somewhat wider and appears to have definite side walls. A recent shipment of 2½ tons of this ore went 10 oz. of gold and 30 oz. of silver to the ton, netting about \$500 after all expenses were paid.

paid.

The Big Chief mine, which is found on the main ridge a few hundred feet above the divide between Ruby Gulch and Lodgepole Creek, is a lead of the same character as the Alabama, and the ore promises to change to the hard purple quartz in depth.

Placer Deposits.—The discovery of the auriferous character of the alluvial gravel of the region caused a stampede here in 1884, when a large amount of work was done and considerable gold dust washed out. The

placer deposits are now only "grub-stake" propositions, and do not yield enough to pay wages; the largest amount taken out by any one person is said to have been \$1,200 as a result of four months' work.

The alluvial deposits about the mountain flanks are of considerable ex-

The alluvial deposits about the mountain flanks are of considerable extent and are rich enough to warrant working if a sufficient water supply could be obtained. The scarcity of water was, however, an insurmountable obstacle to the working of the larger bars, where the mountain streams debouch upon the open prairie. The terraces about the mouth of Alder and other large gulches have been prospected by test pits, and many claims have been located. The gravels are from 5 to 50 ft. thick, rest upon black Cretaceous shales, and are well located for working, but the streams are dry the greater part of the year. These gravels are now being worked at the mouth of Camp Creek. Inside the mountain area the recent deposits in the bottom of the narrow V-shaped ravines of the present streams are from 4 to 20 ft. deep. The gravels are largely subangular, consisting of the debris of the adjacent slopes of porphyry and schist. In 1895 a little work was being done in Ruby, Sullivan and Rock Creek gulches. Creek gulches.

# AN IMPROVED PROCESS OF EXTRACTING GOLD ORES.

Written for the Engineering and Mining Journal by William M. Grosvenor, Jr.

Among causes that have led to the recent surprising increase in the world's gold production, improved methods of treating ores stand foremost in importance. The stamp mill and concentrator have been improved, smelting simplified and rendered more efficient, and, perhaps, most important of all, the cyanide and chlorination processes introduced to meet the difficulties presented by refractory ores. In connection with these, electrolysis has been employed to recover the gold from solution. Instead of the old treatment charges, we to-day find even cyanide mills charging only \$8.50 at Florence, Colo., including rail freight of 50c. to \$1.50.

Recently, another process has been patented and perfected by J. W. Bailey, of Denver, Colo., and a small mill is established for trial near the Denver & Rio Grande switch at Cripple Creek. This experimental plant has been in operation about seven months, handling all kinds of Cripple Creek ores and, after this careful experiment and thorough trial, is to be

Denver & Rio Grande switch at Cripple Creek. This experimental plant has been in operation about seven months, handling all kinds of Cripple Creek ores and, after this careful experiment and thorough trial, is to be established wherever desired.

As at present operating, the plant consists of a 20-H. P. Atlas engine and boiler, a 30 V. 50 Å. General Electric Company's generator, the mill (Figs. 1 and 2), an electrical dolly tub (Figs. 3 and 4), a concentrator and a retort. The mill and dolly-tub are novelties. The former performs the work of pulverizer, amalgamator, extraction vat and electrolytic bath. It consists of a round outside pan (A), 2 × 5 ft., of 1½ in iron, round the bottom of which is a mercury groove 4 in. wide and of graded depth. Concentrically within this is a steel wearing plate (e), upon which the muller (H) gyrates, and which is made an almost frictionless thrust bearing by a film of the solution forced into N a little too rap.dly to escape by the water feed (c). The bottom of the pan is conically depressed in the center, as shown, to make in the solution reservoir (N) hydrostatic pressure which balances the weight of muller and shaft. Resting in the bottom of the pan, and held in place by set screws, is the die (B), a mild steel ring 2½ × 6 in. in section and 48 in. in internal diameter. Within this rolls the muller (H) rimmed with a removable shoe (C) of mild steel 2½ in. thick and of 45 in. external diameter. The muller in all weighs 3,200 lbs. It is given 200 revolutions per minute by an adaptable eccentric attached to the shaft (L) and it thus excites against B a centrifugal pressure of about 6 tons varying in distribution with the extent to which the pulp is banked up in front of it. The electrolytic action is carried on between the anode (é), a truncated cone of iron supported by paraffin saturated blocks (f), and two cathodes. A similarly supported cone of amalgamated  $f_0$  in. copper M forms upper cathode and mercury (Hg) insulated from the groove the lower. The fender (E) serves to

After falling through the solution, the ore is pulverized between the shoe and die and, by the splash ahead of the muller, is driven down into the mercury for amalgamation. Gravitation takes the heavier particles down to be pulverized or amalgamated, while the rising solution carries up the finely divided rock and discharges it through the overflow and thence to the dolly tub where the time of electrolysis and extraction is thence to the dolly tub where the time of electrolysis and extraction is prolonged. The presence of nascent oxygen has been found very advantageous in dissolving the gold by cyanide, and this has led Mr. Bailey to introduce some soluble oxidizing agent like potassium pemanganate into the extracting solution. The pulverized ores are subjected to four agents simultaneously: gravity, solution, amalgamation and electrolysis. The cyanide solution is partially decomposed by the current, liberating cyanogen at the anode and potassium at the cathode. The latter, with the water residue, forms KO H, serving to cleanse the gold and facilitate amalgamation, while oxygen is liberated to assist in breaking down tellurides or sulphides. The electrical action in presence of KO H renders amalgamation instantaneous, and the extent of decomposition of the electrolyte is perfectly controlled by current strength, making the treatment easily adaptable to varying contents of free gold. The electrical action

asily adaptable to varying contents of free gold. The electrical action has also been found to prevent the mercury from retaining a minutely spheroidal condition and passing out with the overflow.

The dolly tub (Figs. 3 and 4) is designed to further amalgamate the pulp and electrolize the solution, and particularly to allow further time for leaching. The pulp is fed direct from the mill, as shown, and is swept to the bottom of the tub by the current from the screw. C is a cylinder, shown in section, and is continuous circularly on the side and bottom but with open top. It is supported from above by four narrow wooden blocks (8), which also serve as supports below m m', concentric cylinders alternately anodes and cathodes. C is the anode and Hg cathode of a parallel series. C and m' are made of ½-in. iron and m of ½-in. amalgamated copper. The pulp passes down inside C and is driven in a downward spiral against the surface of the mercury (Hg). Passing up outside of C and between the paired anodes and cathodes, the pulp repeats the circuit. The tub of the dolly is of wood, as also the four supports. The draw-offs, overflow, shaft, screw and anodes are of iron, and the cylindrical cathodes of ½-in. amalgamated copper. Should the character of any ore prove such that one tub fails to complete the extraction, concentration and wet decomposition or passage through a second or even third dolly tub may possibly be required. Roasting is never employed.

Complicitions of the dolly tub may possibly be required. The starms will the

ployed.

Combining, as it does, the advantageous features of the stamp mill, the cyanide or chlorination, and the Siemens-Halske processes, this plant is interesting in its complete automatic and rapid operation. In both mill interesting in its complete automatic and rapid operation. In both mill and dolly tub the action is continuous and, as only the most finely divided gold is left for solution, larger particles being amalgamated, rapid passage through the mill and a sigle dolly tub usually gives at least 90% complete extraction. The Cripple Creek plant has been handling about 25 tons per day. As a stamp mill it shows great efficiency and durability. A five-stamp battery contains 67 pieces more or less liable to breakage, shoes being an espicial cause of trouble and delay. In this mill there is practically nothing to break. The wear on the shoe and die is less than 4c. per ton of ore compared with 5 to 10c, in the same capacity stamp mill. This wear is perfectly distributed, as only at long in-

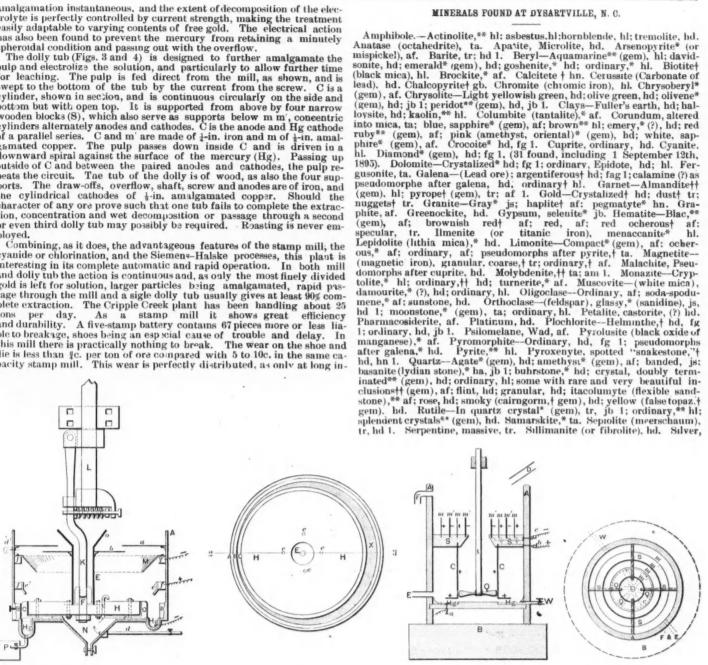
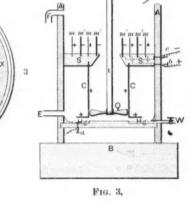


Fig. 1.





tervals can the same points of die and shoe become coincident. As the surfaces are plane and the muller closely follows up the outer ring, and as the pulp is under constant and violent agitati in, there is no wearing of grooves or pits and no decrease of grinding surface. The entire plant in operation in Cripple Creek requires a 20 H. P. engine, and crushes over a surface of about 200,000 sq. in. per minute. A 20-stamp battery at 90 drops each per minute and an 8-n. fall would crush over only about 90,000 sq. in. per minute, reducing to 40 mesh about the same amount of ore, and would require about 35 H. P. The equality and fineness of the pulp from the Bailey mill was tested by H. E. Holtoff, of E. P. Ellis & Co., preparatory to their purchase of rights of manufacture for the East. All but 5% passed through 60 mesh; all but 5% through 80 mesh and all but 6% passed through 100 mesh gratings. Such fine pulverization is possible without loss only when beneath liquid. Dry pulverizing would lose about 5% as dust. As the action of the muller at any point is simple pressure, the objection made to some pulverizers does not apply, the grains being broken to sharp edges where weakest—not rolled or rounded. The Siemens-Halske and ordinary cyanide or chlorination processes require prolonged steeping in order to dissolve out the larger particles of gold. In the new mill these, by their weight, sink against the rising current and, aided by alk linuty of solution and electric action, instantly amalgamate. Lullion extracts have rarely fallen below assay values and, in ores particularly difficult of complete fire assay, containing much zing or copper, the bullion extract has frequently been found to exceed assay indications.

By the new process a very high efficiency is obtained, and the cost of extraction largely decreased. In the rough experimental plant described

found to exceed assay indications.

By the new process a very high efficiency is obtained, and the cost of extraction largely decreased. In the rough experimental plant described ore has been treated for months at a cost of about \$1.50 a ton with coal costing \$5.50 a ton. Only two men were employed and labor cost less than fuel. It would require little more work to run a 100-ton plant as the feeding is automatic. With four 25-ton mills, a Corliss or other modern engine and boiler and coal at \$3.50 to \$4 a ton, extraction would, it is claimed, cost less than \$1, and the use of water power would reduce this to somewhere near 70c.

Auriferous,\* tr. Sphalerite--(zinc blende)†, gb; smithsonite, (?) hd Spinel ruby, orange, red\*\* (gem), tr, hd 1. Spodumene--Hiddenite (gem), af; ordinary, hd. Staurolite, af. Talc--(soapstone), fine granular,\* js, hd; indurated, js, hd 1; massive,\* hl. Thorite--Calciothorite,† (?), hd; eucrasite, (?) hd; ordinary,\* hl. Titanite--Ordinary,\*\* hl; pyromelane, af. Topaz—Ordinary, hd; white\* (gem), hd, fag 1: yellow (gem), hd. Tourmaline—Brazilian emetalu, green\* (gem), af; Brazilian sapphire, blue, af; ordinary black, \*\* af; rubellite, pink\* (gem), af. Vermiculite, af. Vivianite, jb. Water—Chalybeate,\*\* jjs; lithia,\*\* hd; sulphur,\* tr. Xenotime,\*\* hl. Zircon—Hyacinth\*\* (gem), hl; ordinary pale brown,\* hd; steel colored\* (gem), hd, jb 1; syenite, hd; white\* (gem), ta. Total number of species, 149. Species marked with \*, very good; \*\*, superior; †, very superior; †, superb.

MINERALS FOUND AT DYSARTVILLE, N. C.

The species were found by one or more of the following named persons. To designate particularly the name of the first finder, two or more initials of the name are used. When the mineral was found by one and determined by another, the initials of the determinor are also added, followed by the figure 1:

by the figure 1:
ta Thomas S. Ash, mineralogist. No. 2052 Rush street, Philadelphia,
Pat. Deceased. List signed and left with H. C. Demming.
jb J. W. Beath, lapidist, 111 South Tenth street, Philadelphia, Pa.
gb George F. Becker, geologist, United States Geological Survey,
Washington, D. C.
tb T. K. Bruner, mineralogist, and Secretary State Board of Agriculture Patigist N. C.

ture, Raleigh, N. C.
id Col. Henry C. Demming, mineralogist and general manager prop-

erties, Harrisburg, Pa.
af Alfred Free, Ph. D., mineralogist and geologist, Turner's Falls,

fg Dr. F. A. Genth, chemist, mineralogist and geologist, 111 South Tenth street, Philadelphia, Pa. (Deceased.) fag Prof. F. A. Genth, Jr., chemist, No. 103 North Front street, Phila-

bl Prof. H. Carvill Lewis, Professor Mineralogy Academy Natural Sciences, Philadelphia, Pa., and Professor of Geology, Harvard College, Massachusetts. (Since dec-ased.) List made by him on the property, April 17th, 1888, signed and left with H. C. Demming. am Andrew S. McCreath, chemist, No. 225 Market street, Harrisburg,

H. B. C. Nitze, Assistant State Geologist, North Carolina, Chapel

Hill, N. C. tr Capt. Thomas H. Rice, ex-Superintendent Mines, Buckingham C. H.. Va. js J. Alden Smith, ex-State Geologist, Colorado, Boulder, Colo. jjs John J. Sprouse, Superintendent Mines, Demming. McDowell County, N. C. The localities where most of the species were found are on the property of the Marion Improvement Company.

Most of the varieties mentioned have been found by several but the letters are used in connection with the name of the first finder. Take, for instance, the item of gold. Every person named who has been on the properties has found that; but the credit is given to Captain Thomas H. Rice, he being the first.

Where a mineral has been found, and it is doubtful whether another of

Where a mineral has been found, and it is doubtful whether another of the same species could be mined, or picked up, it has not been included in the list. One or two minerals found in 1895 have not been classified, and consequently are not in the foregoing list. They do not appear to be described or mentioned in the latest and most complete works on mineralogy.

### RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

## Specially Reported for the Engineering and Mining Journal.

Assumption of Risk by Mine Employee.—An employee was injured by falling through a hole in an unfinished platform, placed across a section of a salt-mine shaft, near the bottom of the shaft. He had been working for the mining company about nine months, in sinking the shaft and adjusting the timber work, and in making platforms at intervals, had daily traveled up and down the shaft, and was perfectly familiar with the nature of the work. The accident occurred while he, with another employee, was working on a platform where it was dark, and after the request of his companion had blown out his miner's lamp proother employee, was working on a platform where it was dark, and after he, at the request of his companion, had blown out his miner's lamp, provided by the company, and while the platform was lighted only by the candle used by his companion. He testified that he did not know of the hole, but admitted that if he had placed the light near the floor of the platform he could have seen the opening. The Court held that he assumed the risks.—Sharpsteen vs. Livonia Salt and Mining Company (38 New York State Reporter, 49). Supreme Court of Appeals, Division, Equith Department Fourth Department

MEASURE OF COMPENSATION FOR TAKING MINERAL LANDS FOR PUBLIC USES.—Where, in proceedings to condemn a right of way across land, the evidence shows that part of the land is underlaid with mineral limestone, the extent to which that fact would tend to increase its market value is for the determination of the jury.—Sanitary District of Chicago vs. Loughran (43 Northeastern Reporter, 359). Supreme Court of Illinois.

The Walton-Ferguson Chemical Plant.—These works at Niagara Falls will be put in operation early in May. This company will manufacture potash and soda on a large scale by electrical processes, consuming about 1,000 H. P. electrical energy, from the Niagara Falls electric plant. The present installation is one-eighth of the projected plant, and will be enlarged after the graphs are in correction. after the works are in operation.

The Lyons-France Power Transmission Scheme.—The Societe Lyonnaise des Forces Motrices du Rhône, which proposes to utilize part of the waterpower of the Rhone for the generation of electricity for light and power, has awarded the contracts for part of the plant. The complete plant is expected to produce 20,000 H. P. and will consist of 16 turbines of 1,250 H. P. each. The available fall varies from 30 ft. to 40 ft. The turbines have vertical shafts and are of the reaction type, working with a suction tube, and the generators are connected direct to the vertical turbine shaft. By a special arrangement the large turbines can be made to true shaft. By a special arrangement the large turbines can be made to run at 120 revolutions, while the turbines driving the exciter dynamos run at 250 revolutions. The generators are each to have an output of 1,250 H. P. each, with generators, and the necessary exciter dynamos with their turbines, will be erected, the dynamos being made by Brown, Boveri and Co., of Baden, the turbines by the well-known Swiss firm of Escher, Wyss & Co., of Zurich.

The Income of the London Stock Exchange.—If any further proof were required of the fact that the boom on the London Stock Exchange in required of the fact that the boom on the London Stock Exchange in mining shares, particularly during 1895, was the greatest on record, it would only be necessary to turn to the report of that institution for the 12 months ended March 25th, 1896. During that year the membership was the greatest on record, being 3,660 as compared with 3,421 in the previous year, while the net income was £184,191 as against £122,275 in the year ended March 25th, 1894. The company managing the Exchange is not registered under the limited liability acts, but the capital consists of 20,000 shares on which £12 each has been paid. The dividend paid for the past year is £7 10s. per share, a record figure, while the present quotation of the shares on which £12 has been paid is no less than £195. A sum of nearly £30,000 out of the profits was also carried forward to provide for structural alterations contemplated. In addition to the capital above mentioned, there is an issue of debentures amounting of £250,000 bearing interest at £3½. This is to be increased by a further issue of £500,000, which is to be devoted to acquiring adjacent property and to so enlarge the Exchange. During the whole of the recent boom, the space at the disposal of the South African mining market was quite inadequate, and even at the present time, when things are comparatively dull, the West Australian market is in a very cramped-up condition.

Recent Experiments in Acetylene.—H. Le Chatelier, a French chemist, in experimenting with acetylene, finds that mixtures with air are explosive when they contain more than 2.8 and less than 65% of acetylene, mixtures of acetylene and oxygen when they contain more than 2.8 and less than 93% of acetylene. The diameter of the tube from which it is ignited is commented upon. In tubes of less diameter than about 40 mm. (1.57 in.), these limits are gradually narrowed until in tubes of 0.5 mm. (0.02 in.) the propagation of the flame ceases altogether. In mixtures of air and acetylene, when the percentage of the latter is less than 7.7, the flame is yellowish brown and feebly luminous, and the products of combustion are carbolic anhydride and water. When the percentage of acetylene is from 7.7 to 17.4 the flame is pale blue with a yellowish brown edge, and carbonic anhydride, carbonic oxide and water are formed. acetylene is from 7.7 to 17.4 the flame is pale blue with a yellowish-brown edge, and carbonic anhydride, carbonic oxide and water are formed. Between 17.4 and 20% of acetylene cause very imperfect combustion, carbonic oxide, hydrogen, carbon and acetylene being residual products. When over 20% the deposition of soot is very marked, and the flame, though strongly luminous, is of a reddish color. The temperature of ignition is very low, viz., about 480° C., most other combustible gases requiring 600° C. for ignition. The temperature of the flame is very high. Burned with its own volume of oxygen, acetylene gives a temperature of about 4,000° C., or about 1,000° C. more than the oxyhydrogen flame.

Electric Transmission of Power in Mines.—Continuing the correspondence in the Financial News which is referred to in our issue of April 11th, Mr. H. K. Baynes, a director of Messrs. Easton, Anderson and Goolden (Limited), writes as follows: "As the successors in business of Messrs. W. T. Gooldea & Co. (the contractors for the electrical transmission plant at Moodie's Gold Mining Company), we have read with interest the letter from Mr. W. B. Esson, and cordially endorse his views as to the reliability of electricity as a motive power in mining and other districts. Having supplied electrical plants to many mines, both at home and abroad, including, in Africa alone, the Champ O'Ot Deep Level Gold Mining Company, the Gassell Colliery Company, Village Main Reef Gold Mining Company, the Goldfields Deep, Metropolitan Gold Mining Company, May Consolidated Gold Mining Company, George Goch Gold Mining Company, Salisbury-Jubilee Joint Mill, Witwatersrand Gold Mining Company, Salisbury-Jubilee Joint Mill, Witwatersrand Gold Mining Company, Salisbury-Jubilee Joint Mill, Witwatersrand Gold Mining Company, Ferreira Gold Mining Company, Nigel Gold Mining Company, etc., all of which have given the fullest satisfaction, we feel that we are in a position to speak with authority on the subject. To supply, however, any plant, whether the motive power be electricity, steam or anything else, it is necessary to know beforehand the conditions under which it is to work and the amount of power required. Neither of these factors was known in the case of Moodie's. The calculations as to the quantity of power required were prepared at Barberton, and embodied in a specification, and the plant supplied by Messrs. Goolden & Co. was designed to produce, and, in fact (as certified by Moodie's consulting engineer), produces the quantity specified. It now turns out that these calculations were quite incorrect, and that the quantity specified is altogether insufficient for the work required. Thereupon the uninitiated hasten to fall foul of electric

# 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 APRIL 21ST, 1896.

WEEK ENDING APRIL 21ST, 1896.

558,652. Rock Horing Machine. Rudolf Meyer, Mulheim-on-the-Ruhr, Germany, Filed February 6, 1892. Serial No. 420,515. Patented in Germany April 25, 1892. No. 62,028. Combination of a motor-cylinder having an inlet-passage and an annular series of equidistantly-spaced exhaust-passages at one side of the inlet-passage, a piston within the cylinder provided with two sets of alternately-arranged and equidistantly-spaced passages, one set of which constitute supply-passages and extend through the piston from the space in the rear thereof to a point on its periphery near its forward end, while the remaining set, which constitute both supply and exhaust passages, extend through the piston from the space in front thereof to a point on its periphery near the opposite end of the piston, and means for imparting a set phy-seter rotary motion to the piston.

558,725, 558,726. Prockss of Producing Hydrous Chlorid of Aluminium. Frank A. Gooch, New Haven, Cond., Assignor to the Waldo Foundry, Bridgeport, Cond. Filed October 25, 1895. This process consists in treating a suitable aluminous material with dilute hydrochloric acid, separating the resulting golution by filtration from the undissolved residue, introducing into the solution gaseous hydrochloric acid and separating the resulting precipitate.

558,747. Process of Refining Oil. Carlos A. Smith. Cleveland, O., Assignor, by direct and mesne assignments, to the Ohio Oil Improvement Company, same place. Filed September 25th, 1895. This improved process consists in first distilling the oil, then bringing the distillate into contact with metallic lead and carbon, and finally treating with an acid in the usual way.

558,803. One Crusher. Hanson Gregory, Jr., Boston, Mass. Filed August 8th, 1895. Combination of a driving shaft surrounded by the bed, boxes of supports connected with the shaft and revolved thereby, shafts journaled in the boxes and movable longitudinally therein, crushing folis mounted on the shafts, the rolls and shafts being movabl

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The following is a list of patents published by the British Patent Office on sub-ects connected with mining and metallurgy:

# WEEK ENDING APRIL 4TH, 1896.

- 2,736 of 1895. P. Naef, Argentine, Kansas. In rotating calcining cylinders, special arrangements for bringing air into intimate contact with the material treated.
  9,081 of 1895. H. C. S. Dyer, Newcastle, England. Eliminating sulphur from pig iron by allowing the iron to cool to a temperature at which the sulphur has a greater affinity for manganese.

### PERSONAL.

Mr. W. A. Silliman, until recently connected with the Pittsburg & Tennessee Copper Company, has gone to Altoona, Pa.

MR. L. W. Adams, mining engineer, has gone to Central America to examine some mining property for a New York syndicate.

MR. J. B. HASTINGS, the well-known mining engineer of Boise City, Idaho, has been in British Columbia on professional business.

MR. G. A. DENNY, mining engineer, has been appointed general manager of the Kierksdorp Proprietary Mines, Limited, in South Africa.

MR. E. DWIGHT KENDALL, of the Kendall Gold and Silver Extraction Company, has gone to North Carolina on professional business to remain for some time.

MR. W. DE L. BENEDICT, consulting mining en-gineer, of New York, has removed his offices from rooms 617 and 618 to rooms 811 and 812 Welles Building, this city.

MR. H. BRADLEY SMITH has become the senior member of the firm of Smith, Dean & Co., who have just established themselves at Rossland, B. C. for the purpose of carrying on the business of civil and mining engineering.

Dr. William H. Wahl, the well-known Secretary of the Franklin Institute, has had conferred upon him by the French Government the decoration of Officer of Academy, in recognition of his merits as a scientist, brought to the notice of that Government by services rendered to it, as well as by his connection with the Franklin Institute. Dr. Wahl served as secretary of the Institute from 1870 to 1876, when he resigned to devote his time to the Polytechnic Review, which he founded. During this period he served for some time as Professor of Physics in the Boys' High School. He was re-elected as Secretary of the Franklin Institute in January, 1882, remaining in continuous service ever since. He has published several technical books, the chief of which was a work on electro-metalurgy, published in 1883.

Mr. Charles G. Yale, of San Francisco, Cal.,

MR. CHARLES G. YALE, of San Francisco, Cal., has done much for the mining interests of the Pacific Coast, and has recently been presented with the following engrossed resolutions by the California Miners' Association in recognition of his services to that organization: to that organization:

to that organization:

WHEREAS, Charles G. Yale was the founder of the California Miners' Association as now constituted; and whereas, he has rendered invaluable services to the association at all times since its organization, as an editor earnestly and intelligently urging measures for its advancement; as a writer for the daily press fearlessly and consistently making its contests, and as a diligent worker upon it a various committees; therefore

Resolved. That the gratitude of the California Minera' Association is due to Charles G. Yale for his services, and that its thanks be hereby tendered to him; and Resolved. That the Secretary of this association be and is hereby directed to furnish the said Charles G. Yale with an engrossed copy of these resolutions, the same to be duly attested by the signatures of the President and Secretary of the association and by the impression of its seal.

# OBITUARY.

BENJAMIN A STARR died at Camden, N. J., April 27th, aged 66 years. He was well known among the iron founders and gas manufacturers throughout the country. He was one of the partners with his father, the late Jesse W. Starr, his brother, Jesse W. Starr, Jr., and brother-in-law, B. F. Archer, in the Camden Iron Works, now owned by R. D. Wood & Co.

DAVID H. JEROME, ex-Governor of Michigan, died at Watkins Glen, N. Y., on April 23d, aged 66 years. He had been a sailor, merchant, lumberman, railroad contractor, legislator, governor, a member of the State Constitutional Commission, and an Indian Commis-ioner. He went to California with the Forty-niners, but returned, and established himself in business in Saginaw in 1853. He built the Saginaw Valley & St. Louis Railroad and was its president and manager until it was merged into the Detroit, Lansing & Northern system.

into the Detroit, Lansing & Northern system.

JOSEPH RICHARDS, died at his home in Port Oram, N. J., on April 24th, aged 62 years. Mr. Richards was born in England and came to this country when 20 years of age, locating in Georgia. He went from there to East Tennessee and then moved to Port Oram about 35 years ago. Mr. Richards was in the employ of the Mt. Pleasant Mining Company from that time on. A practical miner, of wide experience and excellent judgment, it was not long before his employers had recognized his ability and made him Assistant Superintendent, which position he held for a number of years and until he was made Superintendent about 16 years ago. Last July, on account of failing health, he decided to resign, but the company made him consulting engineer. "Captain Joe," as he was familiarly known, commanded the respect and esteem of all who knew him.

# SOCIETIES AND TECHNICAL SCHOOLS.

WESTERN SOCIETY OF ENGINEERS. — The next egular meeting will be held on May 6th, when a

paper will be read by Mr. George E. Thomas on "Foundations."

United Mine Workers of America.—At the meeting held in Columbus, O., last week, the following officers were re-elected: Phil H. Penna, Linton, Ind., president; Cameron Millan, Massillon, O., vice-president; W. C. Pierce, Corning, O., secretary-treasurer. Executive board, W. W. Webb, Kentucky; John Faheny. Pennsylvania; Frederick Dilcher, Ohio; James O'Connor, Illinois; Henry Stephenson, West Virginia; R. A. Davis, Ohio. Patrick McBryde, the retiring secretary, was elected an honorary member.

ENGINEERING ASSOCIATION OF THE SOUTH.—At the meeting of this association at Nashville, Tenn., on April 16th, the committee appointed by the President to report on the communication from Mr. E. L. Corthell, relative to the furthering of more intimate relations between the engineers of the world, reported that in their opinion any action with reference to international relations between engineers should be taken by that society in the United States representing the nation at large, and not a particular section. The question has already been acted on by the American Society of Civil Engineers and the committee therefore believes that no action should be taken by this association. This report was adopted. A paper by Mr. Edward Mead on "Cement Mortars" was read, and considerable discussion took place on it, especially as regards the question of sands to be used, and the "personal equation" of the tester.

Montana Society of Civil Engineers.—An

departion" of the tester.

Montana Society of Civil Engineers.—An adjourned meeting was held on April 25th, at Helena, Mont. There were present W. A. Haven, Finlay McRae, F. J. Smith, James S. Keerl, A. E. Cumming and James M. Page. Mr. Keerl, of the committee appointed to attempt to secure an amendment to House bill No. 1,470, to include the appointment of at least one civil engineer upon a national commission to supervise the design and construction of public buildings, reported that the matter was progressing satisfactorily and that he believed the bill would be so amended that the commission would consist of the supervising architect, two civil engineers and two architects. A letter from Gen. W. A. Haven, resigning his position as trustee of the society, was read. The resignation was accepted and a committee consisting of Keerl, Herron and Page, was appointed to draw up fitting resolutions embodying the regrets of the society upon the departure of Mr. Haven from the State to engage in professional work elsewhere.

IRON AND STEEL INSTITUTE.—The annual meeting of the Institute will be held by permission at the Institution of Civil Engineers, Great George street, Westminster, on the 7th and 8th days of May, 1896. The Bessemer gold medal for 1896 will be presented to Dr. Hermann Wedding, of Berlin. The following is a list of the papers that are expected to be read and discussed: 1. On the Rate of Diffusion of Carbon in Iron, by Prof. W. C. Roberts-Austen, C.B., F.R.S., Member of Council; 2 On Some Alloys with Iron Carbides, by J. S. de Benneville, Philadelphia. 3. On Mond Gas as Applied to Steel Making, by John H. Darby, Brymbo; 4. On Hot-Blast Stoves, by B. J. Hail, Westminster; 5. On the Hardening of Steel, by H. M. Howe, Boton, adjourned discussion; 6. On the Introduction of Standard Methods of Analysis, by the Baron Hans Juptner von Jonstorff, Neuberg, Austria; 7. On the Production of Metallic Bars of any Section by Extrusion, by Perry F. Nursey, London; 8. On Mr. Howe's Researches on the Hardening of Steel, by F. Osmond, Paris; 9. On the Treatment of Magnetic Iron Sano, by E. Metcalf Smith, member of the New Zealand House of Representatives; 10. On the Making of the Middle Lias Ironstone of the Midlands, by E. A. Walford, F. G. S., Banbury. President, Sir David Dale, Bart.; Bennett H. Brough, Secretary.

Ratt; Bennett H. Brough, Secretary.

CIVIL ENGINEERS' CLUB OF CLEVELAND.—At the meeting of this club, held April 14th, a letter from E.S. W. Moore, at Wolverhampton, England, was read, also various communications from D. H. Hurley and others, from Washington, in regard to the metric system. The topic of the evening was "Smoke Prevention," first taken up by Prot. C. F. Mabory, and then by Prof. C. H. Benjamin, and discussed by other members, the conclusions arrived at being that, in avoiding smoke, it was necessary to have sufficient boiler, grate and stack capacity, and to have, on the part of the fireman, sufficient mental capacity. Mechanical stokers and shakers were recommended as saving both in labor and fuel. The standing committees for the year were announced as follows: Finance committee, James Ritchie, F. A. Coburn, Jos. C. Beardsley; library committee, A. Lincoln Hyde, John L. Culley, Jas. C. Wallace; programme committee, Wm. H. Searles, chairman; J. R. Oldham, C. F. Shulz, Dayton C. Miller, J. C. Oliver, S. T. Dodd, F. S. Barnum. At the meeting on May 12th Mr. E. A. Sperry will read a paper on Steam engine for direct connected electric generators, and on July 14th Mr. James Ritchie will read one on Inspection of structural steel from the standpoint of the engineer. August 11th, J. D. Varney, Solar work in land surveying and a new mechanical method for doing it.

Association of Engineers of Virginia.—The regular informal monthly meeting of the Assoc-

Association of Engineers of Virginia.—The regular informal monthly meeting of the Association was held April 15th, at Roauoke, Va. The House Bill to fix the standards of weights

and measures by the adoption of the Metric System of weights and measures was taken up and discussed, also the Senate Bill to establish engineering experimental stations in connection with the colleges established in the several States. The House Bill, to organize and increase the efficiency of the personnel of the Navy; to increase the influences and number of the corps of Naval Engineers; to induce the scientific institutions to provide a naval engineering reserve for time of wars; to establish a naval engineering experimental station, and to encourage the study of the Mechanic arts and sciences, and particularly that of naval engineering in the technological colleges of the country, was taken up and dicussed and on motion the Secretary was instructed to proceed as with the other two bills. The subject for the evening "Engineering Ethics" was called and opened by Prof. L. S. Randolph, of Blacksburg, who showed clearly the necessity for some code as well as the difficulties of making and enforcing it. The discussion was very generally entered into by those present all seeming in favor of establishing some standard for the guidance as well as the protection of the profession. The directors have decided to have the summer meeting at Pulaski, Va., June 28th and 27th. Detailed information of arrangements will be furnished later.

### INDUSTRIAL NOTES.

The Buffalo Iron Company has put in blast its No. 2 furnace at Mannie, Tenn.

No. 1 Sheridan Furnace, at Sheridan, Pa., was blown out a few days ago for repairs.

The W. Dewees Wood Company, of McKeesport, Pa., has made shipment of 15 cars of Russian sheet iron to a firm in St. Louis.

The Toledo Tube Works and the Smead Foundry were damaged by fire, April 27th, to the extent of \$55,000, with \$34,000 insurance.

The Colorado Fuel and Iron Company of Denver, Colo., has been awarded the contract for 7,000 tons of new rail by the Union Pacific Railroad Com-

The Pittsburg Locomotive Works, of Allegheny, Pa., has just delivered two engines with 19×20-in. cylinders to the Lake Superior & Ishpeming Rail-road.

The Johnson Forge Company, Wilmington, Del., after a long shut down, will commence to place its plant in thorough running order at once, and will add new buildings to increase the output of the hammer shop. hammer shop.

The Aschman Steel Casting Company, Sharon, Pa., has announced a reduction in laborer's wages from \$1.35 to \$1.25 at day. The wages of skilled laborers will also be reduced, but individual contracts will be made.

The Columbia Iron and Steel Works, at Uniontown, Pa., which have been in the hands of a trustee for two years, were purchased last week by Eastern capitalists. The plant will be remodeled and put in operation.

Little Giant Furnace in Allegheny owned by Neal Brothers, of Pittsburg, has been abandoned and will shortly be dismantled. The furnace is a small one and had an annual capacity of 12,000 gross tons of white and mottled pig iron.

The Harrisburg (Pa.) Foundry and Machine Company has received an order to build two 300-H. P. engines for an electrical plant at Braintree, Mass. This company just made a shipment of two 300-H. P. engines to the southern part of Italy.

The Gates Concentrator Plant now being erected by a Chicago company will treat 600 tons of the tail-ings per day from the Utica, Sickles and Meadow mines at Angels, Calaveras County, Cal. The build-ings will cover an area of half an acre.

The Westinghouse Electric and Manufacturing Company, Pittsburg, nas started the erection of a big addition to its foundry department. It will be of iron,  $60 \times 500$  ft. The addition will employ about 60 more men. It will be completed by June.

The Falcon Bronze Company, of Youngtown, O., states that it has enough orders on hand to run them for some weeks ahead. The company is at present engaged in filling a large order for brass moldings for the Great Western Tin Plate Company, of Joliet, Ill.

Reports state that the Mannesman Tube Company has leased the old Zylonite (Mass.) plant and has begun to remodel the buildings. The company will build a dam on the Hoosac River and most of the machinery will be run by water-power. The company will employ 600 skilled workmen.

A receiver has recently been refused the Columbus & Hocking Coal and Iron Company by Judge Slough at Columbus, O., who ordered the property restored to the stockholders. It is stated in the decision that the company is abundantly solvent, is not mismanaged, and has not been diverting its funds.

The Monongahela Fire Brick Works, at Monaca

Pa., which were recently purchased by the Park Fire Clay Company, of Rochester, Pa., were started a few days ago. The John Porter Brick Works, at Kenilworth, W. Va., which have also been pur-chased by the Park Company, have been put in operation.

Advices from Phoenixville, Pa., are that bids are being received for the erection of an immense pipe manufacturing plant at Moore Hall Mill for the American Pipe Manufacturing Company. It is said that the plant will be one of the largest of the kind in the country. It will be about one mile from Phoenixville.

The Chattanooga (Tenn.) Foundry and Pipe Works will erect an addition to cost about \$100,000. A site of 21 acres has been purchased, and foundry  $110 \times 360$ , with iron truss roof, will be built at a cost of \$20,000. The equipment will be the latest improved of all kinds, including three great steam shifting cranes to cost about \$10,000 each.

Messrs. Rawson & Morrison, Cambridgeport, Ma Messrs. Rawson & Morrison, Cambridgeport, Mass., are having plans prepared for a building 60 × 150 ft., three stories high, of brick, for manufacturing machinery. Two 66-in. steel boilers, 17 ft. long; engine of 500 H. P. There will be an elevator for the handling of machinery. The building will be fitted with the latest improved tools for the building of their machinery.

The foundations have been started for the works of the Niagara Electro-Chemical Company, located on the lands of the Cataract Construction Company The buildings will be—office and laboratory, 75 × 32, two story; main building, 110 × 124, with wing, 66 × 40, both one story. The company has contracted for 1,000 electrical H. P., and will mapufacture sodium and peroxide of sodium.

The Iron and Steel Company, of East Chicago, has again gone into the hands of a receiver. John J. Parkhurst, of Chicago, is the President. This action is taken on complaint of James McCloskey, whose claim amounts to \$79. Back of this are others aggregating \$15,000. The other indebtedness will swell the liabilities to \$30,000. General Manager Felt claims the assets will reach \$150,000.

J. Tatnall Lea, of Philadelphia, and Francis C. Gray, of Boston, the assignees of the Glendon Iron Company, have asked for the appointment of appraisers. The Northampton Court appointed John Bacon, of the Eastern Trust Company, and Willard Sawyer, who is the new superintendent of the works. The plant of the Glendon Iron Company represents a capital of \$100,000. The liabilities represents a capital of \$100,000. The liabilities have been carefully gone over and will not exceed \$270,000

The Card Electric Company, Mansfield, O., has been awarded by the managers of the Ohio State Reformatory, the contract for two direct-connected multipolar generators, capacity 66 kw. each, speed 250 revolutions per minute, for use in the Reformatory buildings at Mansfield, for lighting purposes. The generators will be direct coupled to Ball engines. Competition in this contract, we are advised, was quite keen and the securing of the contract is regarded as quite an achievement.

The General Electric Company has received a contract from the South American Light, Power and Traction Company of Lima, Peru, for the installation of a 5,000-H. P. electric plant. The dynamos will be erected at the waterfalls, Il miles from Lima, and the electric power generated will be transmitted to the city where it will be used to operate the surface railways and electric lights and furnish electric power for general use. It is said that this will be the largest electrical installation in South America.

# TRADE CATALOGUES.

A handsome catalogue has been issued by E. T. Barnum, of Detroit, Mich. This is a large annual catalogue by a house very well known for their specialties in iron and steel work of every description, from steel jail cells to wire flower pot stands. Their experience in this department of catalogue making results in an amount of information so well gotten up and so clearly illustrated as to be of great value. From their general catalogue special ones, such as for builders, wire and brass goods, fences and office railings, etc., can be selected by those requiring them and will be forwarded upon application.

The Lidgerwood Manufacturing Company has issued a special catalogue, or rather an illustrated description of a new device known as the Lidgerwood Rapid Unloader for unloading dirt, ballast, etc., from flat cars in railroad work. For railroad construction and for repairs it is a most ingenious and handy contrivance for unloading, as steam is taken from the locomotive boiler and a powerful drum with steel cable unloads a whole train of flat cars. This is done by means of a plow, which moves from car to car, sweeping everything off, being operated by the drum and cable before referred to. The Lidgerwood Manufacturing Company has

The Sykes Steel Roofing Company, of Chicago, Ill., and Niles, O., has issued an annual catalogue for this season. The goods supplied by this house are not confined to steel roofing, as it manufactures not only its own patent standard steam roofing, but four or five other descriptions,

crimped, corrugated, sidings and ceilings. It also deals in paint and cement especially suitable for such construction purposes as will be undertaken by their trade. People who have not used this material before will find in the catalogue a great deal of useful information and many points of interest regarding the different kinds of work and of their construction.

The Union Iron Works of San Francisco have issued catalogue No. 4, dealing mainly with the Union Improved Ore Concentrator. It is well illustrated, showing in one figure the concentrator without sulphuret discharge, second with sulphuret discharge, and third a skeleton of the concentrator, the belt having been removed. The construction of each part of the machine is clearly illus'rated in detail, so that anyone accustomed to concentrators of this type can understand the special features and advantages of this without seeing one actually set up. Full instruction is given as to erection and running, setting, weight and price. The rest of the catalogue is occupied with illustrations of the well-known type of stamp mills made by this firm, with union concentrators, combination mill with Concentrators and coarse concentrator mill with Union concentrators. concentrators.

The Link Belt Machinery Company, of Chicago, has issued a new catalogue, No. 21, fully describing the modern methods as applied to the handling of sugar cane and its products. This firm is well known by its excellent work in the past as having invented and adopted some of the best modern methods for elevating and conveying freight, grain, minerals, raw and manufactured products. The invented and adopted some of the best modern methods for elevating and conveying freight, grain, minerals, raw and manufactured products. The catalogue is well illustrated, for instance, that of the refuse conveyor at the Belle Alliance plantation in Louisiana, which carries refuse from the filter press and deposits same in a pile 130 ft. away. Such a conveyor may be constructed of any length or capacity to suit the existing conditions. The illustration of the Link-Belt Filter and Elevator combined, as in use both in the Hawaiian Islands and in Cuba, shows a very ingenious and convenient arrangement. It is impossible to refer to all the excellent illustrations and endless descriptions in this catalogue, but the Endless Freight Carrier acrected by the company for the Chicago Sugar Refluing Company, length 435 ft., is sufficiently interesting to draw special attention to. The catalogue is altogether got up in first-class style and the illustrations could not possibly be clearer and more thoroughly fulfill their purpose in conjunction with the descriptions accompanying each. This company is satisfied of the advantages of transmitting power by manilla rope, but they consider that it is unnecessary to go fully into a description of this system and furnish instead some good illustrated instances of its application. trated instances of its application.

# 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 "Engiaering and Mining Journal" are not brokers or exporters, nor have they my pecuniary interest in buying or selling goods of any kind.

# GENERAL MINING NEWS.

# ALASKA.

ALASKA MEXICAN GOLD MINING COMPANY.—This company reports its clean-up for the month of March as follows: Period since last return, 31 days; bullion shipment, \$22,019; ore milled, 7,282 tons; sulphurets treated, 126 tons; bullion from sulphurets. ets, \$6,160; working expenses for period, \$13,189; profit for the month, \$8,830.

ALASKA TREADWELL GOLD MINING COMPANY.— The powder magazine of this company on Douglas Island, containing four tons of dynamite, was recently destroyed by a terrific explosion. The property loss is unknown.

# ARIZONA

### YUMA COUNTY. (From Our Special Correspondent.)

(From Our Special Correspondent.)

LA FORTUNA.—This is one of a group of mines acquired by C. D. Lane and associates, and is located about 25 miles southeast of Yuma and about 12 miles from Gila River. A double compartment shaft is down 200 ft., from which three drifts have been run, showing a large body of free milling ore. The vein is said to be from 10 to 20 ft. in width, and the pannings run good in value. Water is obtained from a well, 60 ft. in depth, located near the Gila River. The 20-stamp mill, which has just been completed, will be operated by a 100-H. P. engine. Each stamp weighs 1,350 lbs.

# CALIFORNIA.

CALIFORNIA DEBRIS COMMISSION.—This commission recently granted three permits to hydraulic mine owners to erect impounding dams. These will be the last permits granted until further appropriation is made by the Federal Government. The commission has before it a number of applications

from mine owners who wish to obtain permits to

from mine owners who wish to obtain permits to build dams and begin mining.

The permits granted were to the owners of the Strawberry mine near Pleasant Valley in El Dorado County; and the Liberty Hill and Polar Star Mines near Dutch Flat. The Liberty Hill Mine is owned by Timothy Guy Phelps, and the Polar Star by John Spaulding. These two will join in raising an old dam in Bear River and use it in common. It is proposed to hydraulic the Polar Star with 1.000 in. of water under 400 ft, of pressure, and the Liberty Hill with 1.800 in. under 270 ft. of pressure.

## AMADOR COUNTY.

### (From Our Special Correspondent.)

(From Our Special Correspondent.)

Argonaut.—This mine is located % of a mile from Jackson, and adjoins the Kennedy. The shaft is down 1,200 ft. and sinking is still in progress on the hanging wall of soft rock, the foot wall being in hard rock. After sinking 60 ft. more for a sump a station will be cut at the 1,200-ft. level, and a crosscut run for the ledge to the west.

I wante —This mine and mill near Plymouth.

LUCILLE.—This mine and mill, near Plymouth, have been sold under foreclosure for \$45,323 to John E. Lee and others, the judgment creditors.

### CALAVERAS COUNTY.

CALAVERAS COUNTY.

LOCKWOD.—This mine was recently listed on the call board of the Gold Mining Exchange of San Francisco. On examining the property Mr. George E. Hogg, the engineer for the exchange, reports that the mine is situated at West Point, and consists of three United States patented claims, 160 acres of land, two mill sites, a 40-H. P. engine, a four-foot drum, steel cable and hoisting works, one 60-H. P. tubular steel boiler, pumps, air-drills, etc., which are in good condition. Actual development work has been done in the middle of the patented claims, and three shafts are sunk on the property. The main shaft is down 300 ft.; center shaft 160 ft., and south shaft 185 ft. There are six levels from the main shaft. Ore now in mine is at the bottom on the 6th level. When sinking the shaft a stringer was cut 60 ft. above bottom. It has widened 2 ft. and extends length of 6th level. A number of samples taken from gauge assayed \$100.46 in gold.

KERN COUNTY.

# KERN COUNTY.

### (From Our Special Correspondent.)

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OLYMPUS — The foot wall of this mine which is of Solid porphyry has been struck 10 ft. from the surface. This shows the ledge to be 10 ft. wide, the first 8 ft. toward the hanging wall averaging about \$40 per ton and the 2 ft. next to the hanging wall averaging apparently more than the rest of the vair. wali averaging apparently more than the rest of the vein. This mine is located at Randsburg. Every of ground within a radius of five miles has been located.

GARLACK's.—This eight stamp mill at Cow Wells is kept busy running test lots of ore from the different mines. The water supply will be increased by an artesian.

# MADERA COUNTY.

# (From Our Special Correspondent.)

SAVANNAH.—Mr. Charles W. Haskell, superintendent of this mine, reports that work on the Wideawake tunnel is giving great encouragement. Ore found in stringers prospects fully \$10 a ton 3 ft. below the surface. About 10 tons of quartz are ready for hoisting in shaft No. 1, which will mill well.

# NEVADA COUNTY

FORTUNA & ORLEANS.—A syndicate of San Francisco and Eastern capitalists, represented by Mr. Kellogg, has purchased the Fortuna mine, located on the upper Nevada City road, a short distance beyond Town Talk, says the Grass Valley Tidings and also the Orleans mine, in the Grass Valley district. It is the intention of the purchasers to begin operations at the Fortuna mine without delay, and the Orleans will also be developed with renewed vigor.

PEABODY GOLD MINING COMPANY.-Baron Von PEABODY GOLD MINING COMPANY.—Baron Von Schroeder has reorganized this company of Grass Valley. He is the largest stockholder in the property. The paid-up capital of the company is \$600,000. At an election for directors 43,923 of the 60,000 shares were represented. J. J. O'Farrell, Baron Von Schroeder, B. Natorp, E. Peterson and A. H. Ricketts were elected directors. They elected the following officers: President, J. J. O'Farrell; vice-president and treasurer, Baron Von Schroeder, secretary, B. Natorp.

# (From an Occasional Correspondent.)

(From an Occasional Correspondent.)

SEBASTOPOL.—This mine, in the Grass Valley district, was recently purchased by Gen. Walter Turnbull, who represents a syndicate of wealthy men. The property has been examined and reported upon by Mr. George E. Hogg, examining engineer of the Gold Mining Exchange of San Francisco, Cal. The mine was worked in early times from a strong outcropping ledge down to the water level, about 60 ft. This is the same lode now being worked by the Empire mine, 1,500 ft. to the north, and at a depth of 2,100 ft., having had a continuous ore body for nearly 1,000 ft. and still having high grade ore in the bottom. The Sebastopol Gold Mining Company has been incorporated with the following officers: B. G. Lathrop, president: Walter Turnbull, vice-president; V. L. Turnbull, secretary and treasurer; B. G. Lathrop, Walter Turnbull, V. L. Turnbull, John Landers and George R. Wells, trustees. The capitalization is 300,000 shares at a par value of \$10. An electrical plant will probably be put in and active operations begun shortly. The stock of the com-

pany has been listed on the call board of the Gold Mining Exchange.

PLACER COUNTY.

(From Our Special Correspondent.)

(From Our Special Correspondent.)

MAYFLOWER.—This drift mine, located three miles north of Forest Hill, comprises 1,40° acres. The lower channel has been worked over three miles and the Oronochannel over 2,000 ft. An upraise recently made in the Mayflower tunnel struck the Orono lead and opened up at least 8,000 ft. of new ground. At the north end of the channel at Section 15½, another fine body of gravel has been found.

RIVERSIDE COUNTY.

CINCINNATI BELLE.—The main shaft has been sunk 65 ft, and a tunnel running south has been put in to a length of 105 ft. In this tunnel the gold-bearing ledge runs from 18 in. to 4½ ft. in width. Another shaft is now being put down 200 ft. south of the other shaft, and will be timbered to a depth of 250 ft. A gas engine is used for pumping, hoisting and other purposes.

SANTA ROSA.—This mine is now running 15 stamps and employing 25 men. It is reported that the staff of men will be increased in a short time.

SAN DIEGO COUNTY.

RECOMPENSA.-Work is progressing on this mine The Bryan mill recently brought from down the coast is being put in position for milling a large quantity of ore now on the dump.

(From Our Special Correspondent.)

OWERS.—This mine, in the town of Julian, comprises three claims, the Old Owens, New Owens and the Jeannette. On the 350-ft. level a fine body of ore has been discovered. The vein is about 2 ft. wide and rich in free gold.

SISKIYOU COUNTY.

(From An Occasional Correspondent.)

DRIFT MINES.—These mines are all doing well, especially those on McAdam and Indian Creeks. The majority of the mines are worked by Chinamen who generally lease or own the property.

LUKE SHAW.—This mine has recently been cleaned out and its owner has come upon an 18-in. vein of free milling ore, yielding \$18 to \$20 to the ton.

PLACER MINES.—There is great activity in all these mines and some 15 or 20 of them near the Oro Fino Range have now full heads of water, which will probably last until August. About 60 men are employed. A large number of new placer mines have been started on the Klamath River below Happy

SHORE'S LEDGE.—This mine has been worked for 30 years. At present there is a hugh quantity of ore on the dump which was taken out during the past winter. The mine is located on the Oro Fino Range.

SLEEP.—The last several lots of 12 tons each of ore from this mine, near Mugginsville, when crushed at the Chester stamp mill yielded \$22 to the ton. At a distance of 80 ft. the lode has run into vein-matter consisting of disintegrated quartz and porphyry, nearly 4 ft. in thickness. This material lies between a well-defined hanging wall and foot wall of porphyry.

TRINITY COUNTY.
FORGET-ME-Nor.—A winze of 60 ft. has been sunk a this mine, owned by G. L. Carr, and a 2-ft. edge has been developed of ore showing well in old

(From Our Special Correspondent.)

BONANZA KING.—At this mine, 45 miles west of Anderson, new tunnels are being driven at the 150 and 200-ft. levels. On one extention the ore body shows 25 ft. in width. The ore is low grade. A five-stamp mill and a concentrator have been put in.

COLORADO.

BOULDER COUNTY. (From Our Special Correspondent.)

COLUMBUS.—The vein has increased to 3 ft. in width and the ore averages \$20 per ton. The ore is treated at the Jack Pot mill.

ECLIPSE.—The shaft is down 100 ft., with drifts east and west 100 and 75 ft. respectively. The Eclipse vein has been cut 75 ft. without a break in the body of mineralized dirt, the vein averaging 5 ft. in width.

FIRST NATIONAL.—Small quantities of good ore lave been found in this mine for several months, but a regular channel was only recently disclosed, which yields profitable returns. Shipments are

GOLD CHIEF.—Work has been resumed on the tunnel in this mine near Ward. A cave-in recently necessitated the stoppage of development.

GRAND ISLAND MINING COMPANY.—This company is steadily pushing work on its new tunnel, which will extend almost through Humboldt Mountain. The tunnel is already in 200 ft.

HOUSATONIC.—The recent strike is giving very cood results. The shaft is down 40 ft.

King William.—A new company has taken charge of this property, and the workings are now being drained for the first time in several years. Development will speedily ensue.

Monoc.—This shaft has been widened and timbered and the hoisting of water out of the sump has begun. The mill is being overhauled and enlarged.

RED MONSTER.—A depth of 37 ft. has been attained and good milling ore is being mined in large quantities.

REDEEMER.—O. E. DuBois has struck an 8-in. streak, running 1 8 oz. in gold.

SCANDIA.—This property was sold this week by G. F. Headman and Charles Anderson to John Sevenoaks, a wealthy mine operator of Cripple Creek. The purchase price was \$15,000. The Scandia has a 6-in. pay streak in sight, running \$80 to the

SILVER DOLLAR.—Messrs. Rouse & Sibley, who have been operating this property extensively, have been compelled to suspend development pending preparations to cope with the increased influx of surface water resulting from the recent heavy

Messrs Evans & Bartlett are work-SMUGGLER. ing the tunnel level, and have a small streak of verich ore, which they are shipping at a good profit.

STAND-BY.—The vein has materially increased in size and the ore has greatly improved, late assays giving good value. The shaft is 35 ft. in depth.

Yellow Grad.—A California whim has been ordered, and will be put in shortly. Shipments of high grade are made regularly.

EL PASO COUNTY-CRIPPLE CREEK.

A second country—cripple creek.

A second conflagration swept the business part of the town of Cripple Creek at noon on April 29th, causing much destruction of property, loss of life and injuries to many persons. Great excitement prevails among the residents against the supposed incendiaries who have started this and Saturday's fire. All that is left of the camp is "Oid Town," over to the east; Capitol Hill, the residence section northward, and scattering places about the Florence and Cripple Creek yards, and West Cripple Creek, across the Freeman Placer.

(From Our Special Correspondent.)

(From Our Special Correspondent.)

To show how fast this camp is going ahead, there have been during the 3½ months so far passed of 1896 no less than 63 new steam hoists put up, against 80 in 1895. The following properties have put un air compressors during 1896: Rebecca, 2 boilers, 125 H. P. each, 7 drills; Uinta, 1 boiler, 80 H. P., 4 drills; Elkton, 1 boiler, 125 H. P., 3 drills; Moose, 2 boilers, 25 H. P. each, 5 drills; Ophelia Tunnel, 2 boilers, 125 H. P. each, 7 drills; Raven Tunnel, 1 boiler, 80 H. P., 3 drills. The Columbine Tunnel is using an electric drill. The Dante Mine and the Shiply Tunnel are using steam drills. These figures seem to show that some persons have still confidence in the future of the camp. The only part of the camp which shows a decrease in shipments has been Battle Mountain, and reasons for this have been given heretofore. The worst fire I ever saw, was here yesterday (April 28th). Warren, Myers, Bennett and Carravenues were completely destroyed from Third to Fifth streets. Estimated damage, \$1,000,000 in two hours. Insurance not more than 25%. Brick buildings stood no better than frames. The Post Office, with 25,000 letters and 2,300 letter-boxes was burned. GENEVA.—This property on Gold Hill gives em-

GENEVA.—This property on Gold Hill gives employ to 20 men, 14 of whom are at work on mineral underhand stoping at the second level. The vein, though large, is low grade ranging from 1½ to 2 oz. gold per ton. The shaft is being sunk below the 300-

LADY LOCELLA.—This property on Mineral Hill is owned by the Pennsylvania, Washington & Cripple Creek Company, which recently started a new steam hoist on the incline shaft which has been

sunk 225 ft.

MOOSE.—This mine on Raven Hill shipped its first car of ore in October 1892 which not only paid for the claim, but also paid for all the labor expended on it to that time, and left a surplus. A crosscut, West 53-ft., recently exposed a vein of ore 10-ft. wide which shows a good average, one a paystreak of from 6 to 10 in. of black manganese ore, the richest which has ever been uncovered in the mine. Two carloads of this ore have been shipped and sampled 50 oz. of gold.

MOON ANCHORS.—This company, on Gold Hill, is

Moon Anchors.—This company, on Gold Hill, is preparing to cut a station at 390 ft. deep for a pump as quite a little water is encountered at that point. The shipments ofore are increasing. The output being now nearly 100 tons a week. The machinery shaft house, and sorting house on the Peachy lease have been torn down and all the hoisting and work confined to the Cobb shaft.

and work confined to the Cobb shaft.

Nellie.—At this mine, on Squaw Mountain, the lease expires June 1st. The shaft has been sunk 140 ft. and levels have been extended from the 70-ft., the 105-ft., and from the bottom of the shaft. The 105-ft. level has been driven north and south 60 and 140 ft. respectively. The ore is of good grade, from 7 to 7½ oz., of which over 300 tons have been shipped. At present about 60 men are employed. But little stoping has been done below the 60-ft. level.

TRACHYTE.—A circular was recently sent to the stockholders which stated that ore was being saved from a 3-ft. vein, assaying from \$13 to \$504. This level is 170 ft. deep and no stoping has been done above, simply a drift extended at the 120-ft. level.

GILPIN COUNTY.

(From Our Special Correspondent.)
CROWN POINT & VIRGINIA. — An action has been brought by the owners of the Rio Grande for \$200,000 damages. The defense is based on the theory that the Williams and Rio Grande veins have come

together above the Crown Point Company's workings, in which case the Williams, being much the older patent, would cover the extension of the vein downward.

Fisk.—As a result of the injunction recently obtained by the owner of the Cook mine, the Fisk property, which is one of the largest producers in the county, has closed down. It is said that all the payable ground in the upper drifts, above the present level of the water, has been stoped out. Meantime the drainage of this and the neighboring mines, through the Bobtail incline, is making satisfactory

POCAHONTAS.—This old patented claim on the outh side of Quartz Hill, has been sold to eastern arties. Very little work has been done on it for core time.

HINSDALE COUNTY.

EARL & DUKE. — These properties, located on Hotchkiss Mountain, and adjoining the Golden Fleece on the east, are reported to be sold to an English company. These two claims contain, it is said, the eastern extension of the Golden Fleece vein, and this theory will be thoroughly tested by the new owners in the work already outlined.

LITTLEJOHN.—This mine, located about two miles above Capitol City, has been leased by a Chicago company. Arrangements are being made to commence operations, says the *Phonograph*.

LAKE COUNTY.

(From Our Special Correspondent.)

CORONADO.—The shaft is down 600 ft, and a diamond drill is in operation.

FANNY RAWLINGS.—This property is being operated by Colorado Springs lessees. A drift is being run to catch the rich ore chute of the Big Four property.

GOLD AND SILVER EXTRACTION COMPANY.—This is a new corporation, of which W. B. Page is president; John F. Campion, vice-president; J. C. Mitchell, secretary and treasurer, and L. S. Noble, manager. The company will introduce in this camp the cyanide process for the treatment of low-grade ores and has leased the right from the MacArthur-Forrest people. The machinery is being put in registion pear. people. The machinery is being put in position near the old American smelter preparatory to handling 50 tons of ore a day. Operations will commence early in June. The ore of the Ibex dump is the first to be treated.

GOLD BELT LEASING COMPANY.-This is a new GOLD BELT LEASING COMPANY.—This is a new Breecehill enterprise and the company has secured 40 acres of ground on the northern portion of the hill. It is capitalized for \$1,000,000. Wm. Y. Hately, Chicago, is president; P. L. Hanscom, vice-president; M. C. Gormley, secretary and treasurer. The shaft of this company is located on the Park No. 2 claim and work has been resumed on the same at a depth of 286 ft. The ground that is being operated was leased from the Benton Mining Company and the Worthington estate. Worthington estate.

MAHALA.—The big winze is to be sunk 50 ft. further and a drift will then be run eastward to catch the big ore body.

NORTHERN MINING COMPANY.—On the Northern shaft work is conducted on the 575-ft. level from which 40 tons per day, mostly iron is being shipped.

Welden.—Over 1,500 tons a month of good oxidized ore are being shipped from this property. Some very good finds of chloride of silver have been made lately in the Welden workings.

made lately in the Welden workings.

PITKIN COUNTY.

FREE SILVER.—The pumps in this mine, adjoining the Mollie Gibson broke down April 19th, says the Denver Republican, and in a short time the mine was flooded and work shut down. This is the second time within a month that this mine has been flooded and there are now four pumps under water. The pumps that broke down Sunday night were relief pumps borrowed from the Argentum-Juniata. Some little water from the Free Silver has made its way into the Mollie Gibson but the pumps in the latter are of sufficient capacity to handle the extra flow.

ROUTT COUNTY.

ROUTT COUNTY.

(From Our Special Correspondent.)

FOURMILE PLACER DISTRICT.—The Timberlake Syndicate is making preliminary arrangements preparatory to commencing work on the construction of its canal in order that it, together with the plant, may be completed the present season. The estimated cost of the canal is \$200,000. The President of the West Side Placer Association has returned and work on the Dry Gulch plant will soon be under way. The Rock Springs Company has already started up its plant on Fourmile Creek.

HAHN'S PEAK.—It is reported that some rich

already started up its plant on Fourmile Creek.

HAHN'S PEAK.—It is reported that some rich strikes of tellurium ores have been made some three miles west of Columbine, and although the ground is covered with three feet of snow, it has been entirely staked out and located. Several new strikes have been reported at the head of foponus creek at the southeast end of Egeria Park. It is claimed that the gold is free milling, and arastras are being erected to treat it.

IDAHO.

LEMHI COUNTY

LEMHI COUNTY.

IDAHO CHEMICAL GOLD MINING COMPANY.—
Articles of incorporation of this Company, organized under the laws of New York, have been filed with the secretary of state, together with a notice of appointment of H. H. Armstead as agent for the company in this State,

### OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—The following is the return for March: Crushed during the month, 4,030 tons; bullion produced in the mill, \$70,290; estimated value of ore shipped to smelters, \$7,175; miscellaneous revenue. \$590; total produce, \$78.355; total expenses. \$43,065: profit for the month of March, \$35,290.

### SHOSHONE COUNTY.

POORMAN & TIGER CONSOLIDATED MINING COM-PANY.—Some 25 men are employed on the pumps and doing emergency work on this property in the Canyon Creek district.

STANDARD MINING COMPANY.—This company is working 50 men in the upper works, and 30 men in the Campbell tunnel, which is in 1,600 ft, and advancing at the rate of about 10 ft. a day. About 12 cars of ore are shipped daily.

### KANSAS

### CHEROKEE COUNTY.

## (From Our Special Correspondent.)

(From Our Special Correspondent.)

BONANZA LAND.—Oliver Mathews & Co. have leased 80 acres of this land and have several prospect shafts going down in addition to those already producing ore. They have built a fine steam concentrating plant, which is equipped with a 50-H. P. boiler, a 40-H. P. engine, a 16-in crusher, three sets of rolls and a Cooley five-cell rough and six-cell cleaner. At the pump shaft the lessees are drifting at 110 ft. on a 12 × 14-ft. face of jack dirt in open ground, and are making from 10 to 15 tons of high zinc ore each shift. zinc ore each shift.

zinc ore each shift.

Crown Point Mining Company.—This company has a crusher and set of rolls and eight hand jigs on the North Superior lease for cleaning the ore and will put up a steam concentrating plant to crush the ore. The company is drifting at 110 ft. on a 20 × 25 face of zinc ore in open ground, with enough water to clean the ore, and is making from 4 to 5 tons of zinc ore each shift.

KEYSTONE MINING COMPANY.—On the North Empire lease this company is drifting at 85 ft. on a 14 × 16 ft. face of lead and jack in timbering ground. The ore is cleaned on eight hand jigs, and the company is making over 12 tons of zinc ore and 3,500 of lead each shift. Last week it started a new drift on an 8-in, sheet of lead ore with some zinc ore under it.

CHRISTMAS GIFT MINING COMPANY.—On the North Empire lease this company is drifting at 75 ft, on 15×20-ft. face of ore in open ground with ore in each side of the drift. Last week new flues were put in its boiler and a shed built over the hand jigs.

### KENTUCKY.

# CLINTON COUNTY.

INTERIOR OIL COMPANY.—Oil was struck on a farm one and a half miles from Albany, April 18th, by this company at a depth of about 820 ft.

# MICHIGAN.

# COPPER.

CALUMET & HECLA MINING COMPANY.—This company has recently stopped sinking the vertical Red Jacket shaft at a depth of 4,900 ft. as this is the Red Jacket shaft at a depth of 4,900 ft. as this is the required depth necessary for this company to reach the limit of its underground territory. Bored wells have been carried down to a greater depth, but the Red Jacket shaft, it is claimed, is the largest and best constructed mining shaft in the world. Its inside dimensions are 11 by 22½ ft., divided into six compartments and timbered throughout with pine. The new shaft rock house, will be built of iron and will be made fireproof.

QUINCY MINING COMPANY.—The miners went out on the morning of April 27th in sympathy with the trammers who struck last week. A conference was held between Captain Harris and his assistants and the leaders of the miners, but no understanding could be reached. The men are quiet, but say the trammers must get their demands.

# MANISTEE COUNTY.

The new Buckley Salt Block is nearing completion. The three wells now going down have reached a depth of 2,000, 1,700 and 1,500 ft. respectively, and two more wells will be drilled. One of the buildings alone requires 3,000,009 ft. of lumber in its construction.

# MINNESOTA.

# BLUE EARTH COUNTY.

Mankato Lime and Stone Company.—This company has bought the Craig quarry, near Mankato, including all the buildings and real estate. A large force has been set at work. The directors of the company are Alexander Bashaw, George Pass, A. Schippel and V. Williams.

A. Schippel and V. Williams.

Taxes on Iron Lands.—State Auditor Dunn, of Minnesota, has sent instructions to the county auditor of St. Louis County, in which are the mines of the Mesabi and Vernilion ranges, that all mining lands, which do not pay a tax at the rate of 1c. a ton on their output, shall be put on a tax roll and assessed as are other properties. There are some 10,000 acres of land held under State mineral leases, about two-thirds of them by the Lake Superior Consolidated Mines.

(From Our Special Correspondent)

# (From Our Special Correspondent.)

On the arrival of the first ore boat at Duluth the union dockmen, who have been organized during the winter, struck for the employment during the entire season of union men. Their places were filled by non-union men and work was not delayed,

but it is feared there may be some trouble after the season is in full blast. Only twice since ore shipments began at the head of the Lake have they been as early as this year, namely, April 22d, 1889, and April 20th, 1894. The latest dates of opening were May 16th, 1895 and 1888. Seasons have averaged about 215 days long. On account of the large amount of wheat to be moved from Duluth in May the first loads of ore will be taken almost exclusively by iron company vessels, and the shipments from the first loads of ore will be taken almost exclusive-ly by iron company vessels, and the shipments from Lake Superior ports will not be up to their average for some weeks. The ore docks of the Duluth and Winnepeg, at Superior, have been opened by the arrival of the first cargo from the Mahoning mine and boats are expected next week. About 5,000 tons of ore are being received daily at Two Harbors and 3,000 tons at Duluth.

# IRON.—MESABI RANGE. (From Our Special Correspondent.)

BIWABIK BESSEMER COMPANY.—At this company's mine about 200 men are at work getting in readiness for shipping. The pits have been cleaned out, tracks put in shape, water mains laid, and mining will commence shortly.

Commodore Mining Company.—This company's mine, which was closed down completely some months ago, has been reopened, and bailing is now under way.

Franklin Mining Company.—Nearly the entire force employed at this company's mine before the close of its No. 1 shaft has been put into the Bessemer and Victoria shafts, and over 500 men are now at work.

MAHONING ORE COMPANY.—This company began loading ore April 27th, and is shipping to its docks. OLIVER MINING COMPANY.—Fully 250 men are at work at the Oliver and Lone Jack mines of this ompany and the Drake Stratton Company, but ittle has been done in the ore.

PENOBSCOT IRON COMPANY.—This company has eccived three 80-H. P. boilers which are being put a place. Better speed will now be made in sinking he shafts. The town of Hibbing will build a road of the mines, which is a mile or more distant.

SELLERS IRON COMPANY.—This company has about 75,000 tons of ore in stock, and is shipping from the shafts, some 350 tons a day being raised.

### MISSOURI.

# JASPER COUNTY.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The sales of zinc ore this week were 1 255,440 lbs. less than those last reported. The sales of lead ore was about the same as last week. The top price paid for zinc ore was \$23 per ton and the average \$2) per ton. The price paid for lead ore was \$16.25, with 50c, added for hauling. The output of ore was the same as last week and there was left in the ore bins over 1.500 tons of zinc ore. The turn-in from the different camps was as follows: Joblin zinc, 1,264.840 lbs.; lead, 221.460 lbs.; value \$17,550; Webb City zinc, 494,210 lbs.: lead, 43,800 lbs; value \$5,662; Carterville zinc, 1,187,580 lbs.; lead, 377,633 lbs., value, \$18.110; Oronogo zinc, 39,940 lbs.; lead, 9,600 lbs., value \$497; Galena, Kan., zinc, 1,630,000 lbs; lead, 415,000 lbs., value \$22,125; Stott City zinc, 89,240 lbs.; value \$881; Zincite, zinc, 4,715,410 lbs.; lead, 1,067,550 lbs.; value \$65,031.

JOPLIN CITY MINING COMPANY.—This is a new company, composed of ex-Lieut.—Gov. S. H. Claycomb, Marion Staples, Dr. F. P. Claycomb and A. C. Blackey, all of Joplin. They have purchased the lease and machinery on what is known as the Loyd & Guinon lease, situated in the city limits, adjoining the property of the Bankers' Land and Mining Company, and directly south of the old Bay State mines. The lease comprises 40 acres, and runs for 10 years. The company has purchased two engines, 25 and 35 H. P. each; two boilers, 80 H. P. each; three pumps, crusher rolls, and steam jigs, steam hoisters and a large amount of other machinery, which they are now removing, repairing and putting into position preparatory to pumping out the mines which are already developed. The three pumps of the company will be put in operation in a few days. The land will be surveyed into mining lots and subleased to miners. Governor Claycomb is manager and superintendent.

MORRIS & THIMBLE.—The lessees, Joplin Prospecting Company, is drifting at 140 ft. in a large face of zinc ore in open ground.

U Know.—At this mine, located on the Gramby land drifting is being carried on at 134 ft. on a large face of zinc ore in hard ground. Large quantities of crush ore are being hoisted and last week the turn-in was 13 tons. A good run of ore was met at 75 ft. in open ground.

# LAWRENCE COUNTY.

(From Our Special Correspondent.)

BLACK LAND.—The strike of silicate at the Trilby (Old Ruby shaft) looks promising. A big strike of lead was made last week in the drift at Gilberts, Johnson & Co.'s shaft and rich dirt is being taken the party of the shaft and shaf

LEAD QUEEN MINING COMPANY.—This company intends to put up a couple of hand jigs this week at the shaft, which is 82 ft. deep.

### MONTANA. JEFFERSON COUNTY.

# C., A. & D. MINING COMPANY.—This company has resumed operations on the Homestake Mine at

Homestake in full force for the summer. A force of men were put on recently and from now on the output will be made as large as possible. This mine is a high grade gold proposition, some of the ore reported running as high as \$100 to the ton. For the present the ore will be shipped to Butte, but the company expects to build a mill, and will continue to store a large amount of a good grade of ore in anticipation of this, shipping only the highest grade.

LIVERPOOL.—In this mine drifting has continued on the 400-ft. level. The ore body was reached in the Washington lode, which is found to be good and has been explored 165 ft. long with 100 ft. stoping ground above. Shipments have been begun from the 400 level, where the Washington lode was reached. Sinking is now in progress from the 400 to the 500 level. The work will be pushed by the management.

### SILVER BOW COUNTY.

MONTANA MINING AND LEASING COMPANY.—This company is pushing development on the Sioux Chief. A crosscut has been run 30 ft. on the 100-ft. level, and the shaft is being sunk to the 200-ft. level.

The company is also working on the Old Joe fraction with indications of a good body of copper, 'The shaft at a depth of 150 ft. has cut the lead, but sinking will continue to the 200 level before they will crossent.

### NEVADA.

### STOREY COUNTY-BRUNSWICK LODE.

BRUNSWICK EXPLORATION COMPANY.—Shaft No. 1 has been sunk 14 ft. on the incline, passing through porphyry, clay and quartz; total depth 390 ft. 200 level—The north drift, which was started from the station, has been advanced 26 ft., passing through porphyry and quartz showing value; total length 142 ft. Shaft No. 2—The west crosscut No. 1, started from the south drift 80 ft. from east crosscut No. 1, has been extended 6 ft. to the footwall and discontinued. At a point in this west crosscut, 45 ft. from the south drift, started south from a small stringer of quartz and extended the drift 6 ft. East crosscut No. 2 has been run from the south drift at a point 80 ft. from east crosscut No. 1, extended 14 ft. and work discontinued, with the face in hard porphyry.

### STOREY COUNTY-COMSTOCK LODE.

The following extracts are taken from the official weekly letters of the superintendents of these mines:

ANDES.—In this mine they have secured better drainage and ventilation on the 420-ft, level, and work has been resumed in the face of the south drift from the top of the upraise.

drainage and ventilation on the 42J-R. level, and work has been resumed in the face of the south drift from the top of the upraise.

Consolidated California & Virginia.—In the 1,650 level we have been making some necessary repairs and easing timbers in the south drift on the ninth floor—the first floor above the sill floor of this level. From this south drift, at a poirt 69 ft. north from an east line from the Consolidated Virginia shaft, an east crosscut has been advanced 30 ft. through porphyry, clay and quartz formation of very low assav value. In the 1,750 level from the 14th and 19th floors at the north end of the stopes in old ground of former workings, and from the northwest drift upraise on the east side of the ledge, we have extracted during the week 111 tons of ore, the average assay value of which was \$52.50 per ton. In working to the southwest from this upraise on the 9th floor, 64 ft. above the sill floor, 64 ft. above the sill floor of this level, at a point 230 ft. south of the north boundary line of the upraise 23 ft. above the sill floor of this level, at a point 230 ft. south of the north boundary line of the mine, we are following narrow streaks of ore and fillings which continue to appear. We have extracted from this point 33 tons of ore, assaying \$4.98 per ton. 1,000 level—West crosscut No. 2. started at a point in the north drift 550 ft. north from the Consolidated Virginia shaft station, has been advanced 34 ft. total length 147 ft., continuing in porphyry, clay and quartz assaying from 50c. to \$2.50 per ton. The total extraction of ore for the week amounted to 144 tons, the average assay value of which per samples taken from the cars when raised to the surface was \$51.45 per ton.

HALE & Norcross.—Operations were recently resumed in the nine with four men, who completed results and the nine with four men, who completed results and the nine with four men, who completed results and the nine with four men, who completed results and the nine with four men, who completed results and the nine

HALE & NORCROSS.—Operations were recently resumed in the nine with four men, who completed the repairs in the shaft. This force was increased to 10 men, and they have been repairing the shaft station, and 975-ft. level. The Dazet Mill at Silver City, under control of the company, recently commenced crushing Hale & Norcross ore. The ore is hauled by teams from the mine to the mill for 80c. per ton.

per ton.

OPHIR.—In this mine, on the 1,000-ft. level, west crosscut No. 1 from the south drift, 70 ft. north of the south boundary, is in 142 ft. in porphyry carrying seams of clay. The west crosscut on the same level, 480 ft. north of the shaft station, is in 240 ft. in softer porphyry carrying clay seams and fine lines of quartz. In the Central tunnel workings of the Ophir they saved from the openings northwest of the old Mexican shaft and above the tunnel level during the week 12 tons of ore assaying \$48.66 per ton.

UNION CONSOLIDATED.—In this mine the north drift from the upraise from the joint west drift from the shaft, 115 ft. above the sill floor of the 900-ft level and 1,620 ft. west from the shaft, has been extended during the week 22 ft.; total length, 177 ft.; face in quartz and porphyry. The east crosscut No.

5, started from the Sierra Nevada north lateral drift 946 north from the joint west drift from the shaft, has been extended 17 feet; total length 79 ft.; face in porphyry and quartz, with a strong flow of water.

## OREGON.

## BAKER COUNTY.

COLUMBIAN MINING COMPANY.—This company recently filed articles of incorporation. Capital, \$1,000,000; sbares, \$10 each. Incorporators, Victor McDowell, L. H. McDowell and W. E. Grace. Head office, Baker City. The property is the Columbian mine in Virtue district

mine in Virtue district

EXPLORING SYNDICATE OF MINES AND MINING
COMPANY.—This French syndicate, represented by
Mr. E. L. Giroux, resident agent and manager, has
started mining operations at Clark's Creek on an
extensive scale. Arrangements are being made for
equipping the mines with pumps for the purpose of
sinking to bedrock with a view of putting in a bedrock flume, starting at the mouth of the creek and
running up to the old town. This will give fall to
carry off all the gravel and debris washed by the
giants and enable the bed of the creek as well as
the hill sides to be washed down.

### PENNSYLVANIA.

### ANTHRACITE COAL.

CLARK COLLIERY.—Messrs. Bynon & Moses have been awarded the contract to drive a gravity plane from this mine to the new county vein in the Hyde Park mines, so the coal from both veins may be brought to one same foot. The length of the tunnel will be between 400 and 500 ft.

### BITUMINOUS COAL

BITUMINOUS COAL.

John C. Neff, of Masontown, and J. D. Boyd and James R Barnes, of Uniontown, have sold a coalfield of 671 acres lying on the Monongahela River front, above East Riverside, Fayette County, for about \$43,000. It is a block of river coal lying mostly in German township, though a small part of it is in Luzerne township, though a small part of it is in Luzerne township, the comprizes the coal under the farms of Riley Jacobs, Lewis Antrim, Samuel Brown, Riley Christopher, Mrs. Staley and the Normans. The purchasers are Uniontown capitalists: Hamilton Bryner, J. M. Freeman and Miss Annie Walker, of Uniontown, and Hugh Rankin, of Vance's Mills.

### SOUTH DAKOTA.

### PENNINGTON COUNTY.

## (From Our Special Correspondent.)

J. R.—The new exploration shaft upon this property has now reached a depth of 70 ft. While examining an old surface drift recently, Messrs. Crocker and Petit discovered a body of high-grade

CROW PEAK MILL.—This five stamp plant which was shipped from the Edward P. Allis Company's Works to Shearfish for erection on the Salted Crow Peak property by Milwaukee parties, was unloaded the other day at Hill City and will let up at one of the newly opened properties near here. The mill which has never dropped a stamp, will now be utilized in legitimate mining.

utilized in legitimate mining.

LUCKY CHANCE.—This is the latest find in the new Newton Fork district north of Hill City about half a mile west of the Sunny Side. The locators Riuehart, Black & Bishop have uncovered another rich vein, and have at the surface a 3-ft. body of cloudy quartz yielding heavy shot gold.

HOLY TERROR MINING COMPANY.—This company has levied an assessment of 5c. per share, payable in May. The working shaft has just been completed to the depth of 287 it., and other work in the line of development is projected.

PATRICK HENRY —Work is progressing regularly.

PATRICK HENRY.—Work is progressing regularly in sinking the 100-ft, shaft on this claim, which is situated in the Queen Bee district, 10 miles north. The shaft is all in ore, the vein matter concentrates very heavily, and recent tests have given good values. The ore is chiefly refractory.

# UTAH.

# JUAB COUNTY.

BLACK BART MINING COMPANY.—Work was re-cently commenced on this property with a small force of men. Assays run \$4 in go'd and it is ex-pected that ore will be struck in a short distance.

BUCKEYE.—A big body of shipping ore is reported at the bottom of the 270-ft. level of this property. It is also stated that a new body of lead has been struck on the 200 level.

COBBLEY CLAIM.—A new strike of rich lead carbonate ore is reported to have been made by John Cobbley and associates in the vicinity of the Aunie Consolidated Mining Company's property, near Capan Siding. Canon Siding.

EUREKA WOLF TONE MINING COMPANY.—This company has filed its articles of incorporation, its organization being based on a group of four claims joining the Keystone and Bullion Beck claims on the east. This ground has been developed so far by a 109-ft. shaft, which shows up some ore. Work on this shaft is to be resumed at once.

# SUMMIT COUNTY.

BOGAN.—The steam and delivery columns are being placed in position in this mine at Park City preparatory to putting in the pumps which were ordered from Chicago on the 15th instant, and will reach Park City on or before May 1st. There is very little water coming into the shaft at present, not more than 15 gai. per minute, but the company is taking the precaution to put in such machinery

as will handle any volume of water that may be encountered and for this purpose is putting in the most improved pumps, with a capacity of 100 gal. per minute.

It is stated that the pumps will be in position and everything ready to resume sinking by May 10 when the eight hour shifts will be put in the shaft. The shaft is now down 500 ft. where a station has been cut for the pump. This is exactly the depth and the same formation at which the Silver King encountered a small body of water such as the Bogan now has, and after sinking about 50 ft. below this point the formation was so open that the water escaped.

DALY AND ONTARIO—Communication between

DALY AND ONTARIO.—Communication between these mines was opened on April 15th. The place of conjunction occurs in the 1,000-ft. level of the Ontario No. 3 and the 1,300-ft. level of the Daly No. 2 shaft. Surplus water continues to be a vexations problem in the old workings of the Daly. Enough ore is being taken out to keep a good supply in the bins and the Marsac mill grinding steadily.

### TOORLE COUNTY

BRICKYARD.—Preparations are being made to resume work on this property. The pump which was ordered has arrived and will be in position for work shortly. The shaft is now down 220 ft., and it is expected that ore will be encountered in a short dis-

MONTE CRISTO GOLD MINING & MILLING COM-PANY.—Mr. J. G. Rush is the manager of the Monte Cristo group of mines owned by this com-pany. The group is located in Ophir district and adjoins the Cedar Hill group of mines on the north. When the company took hold of this property in December last, the face of a 100-ft. tunnel had just opened out into ore. Since then the tunnel has been extended 35 ft. and a crosscut run for 37 ft, all in ore which assays from 60c. to \$8 in gold. The ore so far exposed is similar in appearance to the Mercur ores. According to Mr. Rush, the forma-tion differs a little from that at Mercur.

Moss Rose.—The Mercur Gold Mining Syndicate and Development Company has sold to Col. E. M. Coates a half interest in the Moss Rose Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10 claims, the Empire Nos. 1, 2, 3, 4, 5, 6, 7 and 8 claims and the Lone Star lode, located in the western foothills near the Badger mine. The half interest sold formerly belonged to A. H. Jenkins, of Ozden.

### WASHINGTON.

# KITTITASS COUNTY

BLEWETT.—This mill, located in the Peshastin, north of Elensburg, will commence working ore about May 1st. The mines are running full time.

CONSOL GOLD MINING COMPANY.—This company was recently incorporated with \$1,000,000 capital stock. Spokane is named as the principal place of business. The trustees for the first term are W. A. Ritchie, of Spokane; Amos Young, T. K. Wilkins, C. C. Kemmer and J. Nichols, Lima, O.

NINETY-FIVE MINING COMPANY.—This company was recently organized at Everett by Peter Lecque, Samuel Vestal and John McRea. Capital stock \$20,000, principal place of business, Silver Creek Mining District.

### WEST VIRGINIA. MINERAL COUNTY.

DAVIS COAL AND COKE COMPANY.—This company has about worked out all the big coal at the Windom mine and it will be closed up about the middle of May, a new plane built and an opening made to take the place of the Windom mine, near West Virginia Junction, at the Hampshire property of this company. company.

# WYOMING.

# CARBON COUNTY.

CARBON COUNTY.

(From Our Special Correspondent.)

BATTLE LAKE COPPER COMPANY.—This company at Battle Lake lately shipped a carload of copper ore to the Copper Reduction Works in Chicago for treatment. The returns gave 27.33% copper and netted the company \$20.90 per ton after deducting \$408 charges for freight and smelting. Owing to the distance from the railroad (50 miles) the company has decided to erect a 20-ton smelter to treat the ore at the mine.

# SHERIDAN COUNTY.

GOLD RUN MINING AND MILLING COMPANY.— This company recently filed articles of incorpora-tion, with a capital stock of \$2,000,000. Principal office is at Sheridan.

# (From Our Special Correspondent.)

BLUE GRASS PLACER DISTRICT.—A new and valuable placer discovery has been made the past week on the head of the Blue Grass in the extreme eastern portion of this county, some 50 miles northwest of Laramie and about 15 miles due west of Hutton, a station on the Union Pacific system. Certificates of location covering 5.180 acres of placer ground have been filed for record during the present week, while 2,200 acres in addition have been located and are being surveyed. The Laramie River flows within six miles of these deposits, from which sufficient water can be obtained for hydraulic and other purposes. An Eastern syndicate is at present experting the Laramie River placers, some six miles north of the Blue Grass, with the view of purchasing the same. The Laramie Board of Trade is pushing work on the Hahn's Peak road as fast as the snow and weather BLUE GRASS PLACER DISTRICT .- A new and val-

will permit. It is expected that the road will be open and ready for travel by May 5th.

open and ready for travel by May 5th.

DOUGLAS PLACER DISTRICT.—The Albany, Douglas Consolidated, Spring Creek, Gus Hurley, Munson, Ritchey, Roper and other companies owning placer properties on Douglas, Spring, Lake and Muddy Creeks, will start up shortly. The owners of placer properties on Independence and Owl Mountains have sent out parties the past week to commence operations on their claims and expect to have the machinery on the ground and be ready for hydraulicking by May 15th.

### FOREIGN MINING NEWS.

### CANADA.

## BRITISH COLUMBIA.

BRITISH COLUMBIA SMELTING AND REFINING PLANT.—F. Aug. Heinze, the owner of this plant at Trail, is pushing the work as rapidly as possible. It is stated that Mr. Bellinger, who went from Butte, Mont., to start the plant, has been engaged by the company for \$10 000 a year to take charge of the works both at Butte and Trail.

works both at Butte and Trail.

CAMP-BIRD GOLD MINING COMPANY.—This company has been incorporated, with \$1,000 000 capital stock. The purpose is to operate the Camp-Bird mineral claim in Trail Creek. Headquarters of the company will be maintained at Spokane, Wash. The Trustees named are John Leeson, George W. McGavren H. G. Ritchie and W. T. Backus, all of Van Wert, Ohio, and W. A. Ritchie, of Spokane.

CENIRAL STAR.—A good body of ore is reported to have been encountered in the face of the main tunnel in this mine. This tunnel is now in about 650 tc.

650 ft.

650 ft.

LE ROI MINING AND SMELTING COMPANY.—This company closed a contract recently for a large compressor plant. The specifications call for one compressor with compound Corliss engines, twin type, with 450 I. H. P. When in position the machinery will be used for hoisting and pumping, and is built to operate 40 drills at the elevation of the Le Roi mine, which is 3,500 ft. above sea level. The machinery will be built at Sherbrook, Canada, and the contract specifies that it must be on the cars in five months. When it arrives at the property it will be put on the Black Bear property.

SOUTH AFRICA.

TRANSVAAL. WITWATERSAAN GOLD OUTPUT.—The gold output of the Witwatersrand for March, as reported by the Johannesberg Chamber of Mines was 147,015 cz. This, however, does not include the production of nine companies which have refused to make reports to the Chamber. Four of these have made their reports through other channels, the to'al amounting to 19,295 oz., and estimating the production of the other five, brings the output up to 171,310 oz. This is 4,292 oz more than in February, but 13,635 oz. less than for March of last year.

# LATE NEWS.

MR. ALFRED RICKARD, a well-known mining engineer, died in Western Australia on March 29th. He was an uncle of Mr. T. A. Rickard, the State geologist of Colorado, and a brother of the late Reuben Rickard, whose death we recorded in our issue of April 4th.

Salt Lake Copper Plant.—It is reported that the Salt Lake Copper Plant is going to start up again, the parties interested having arranged their differences. There has been more than \$390,000 expended on the plant, and it is claimed that \$30,000 more would put it in shape, not including electrolytic

James Mitchell, who died suddenly in Brooklyn, N. Y., April 30th, aged 60 years, had been chairman of the New York Stock Exchange since 1871. In his service of a quarter of a century in a responsible and sometimes very trying position he secured the general regard and confidence of the members of the board.

Despatches from Kankakee, Ill., says that the Standard Oil Company has leased 1,200 acres of land near Herscher and will spend \$10,000 in ascertaining the extent of the oil and gas supply. Herscher citizens for years have piped natural gas to their houses for firing and illumination. A fine quality of lubricating oil has been flowing continually from a well sunk several years ago.

YORKSHIRE COLLIERY EXPLOSION.-A cable dis-Yorkshire Colliery Explosion.—A cable dispatch states that an explosion occurred in the Micklefield colliery, in Yorkshire, April 30th, cutting off the escape of 100 men. Searching parties are endeavoring to find and rescue them. The explosion is ascribed to the use of naked lights. Twenty-five men were afterward rescued from the Micklefield pit, all of them terribly burned. It is feared that the others have perished, but the search is being continued.

HAMILTON DISSTON, the head of the extensive aw works of Henry Disston's Sons, of Philadelphia,

was found dead in bed at his residence in that city, April 30th. Heart disease was the supposed cause of death. He was 51 years old, and was a son of Henry Disston, who had established large saw works in Philadelphia. On his death in 1878 the control of the business passed to Hamilton Disston and his brothers Horace C., William and Jacob S., who became incorporated as Henry Disston's Sons, with Hamilton, the eldest son, as head of the corporion. In his youth he entered his father's shops and learned the details of the work, both as artisan and as manager. The Disston factory employs 6.000 men and has an annual output of 70,000 circular saws, 2,000,000 hand saws, 5,000,000 files and large quantities of other tools used in various trades. He formed the Disston Land Company, which acquired from the State of Florida 4,000,000 acres of land in 1881. The development begun by Mr. Disston was successful in every way. was found dead in bed at his residence in that city, cessful in every way.

Special Telegram to the Engineering and Mining Journal.

Special Tetegram to the Engineering and Mining Journal.

On Saturday last, April 25th, the most disastrous fire occurred at Cripple Creek, Colo., attributed by many to incendiarism. Six of the principal business blocks were wiped out, including the first National Bank, and it was more than hinted at that robbery of this bank was the principal object of the fire. This calamity was repeated on Wednesday, the 29th; practically the business portion of Cripple Creek is wiped out. It is no exaggeration to say that 10,000 people are homeless, and the second fire was even more serious than the first. The huildings to a great extent were of a very poor and cheap character, but at the same time there were many brick buildings, and the estimated loss of the two fires is set down at about \$2,000,000. The town is now patrolled by nundreds of deputy sheriffs and the Cripple Creek militia. They are out guarding safes and what little movable property was saved. The loss of life is not yet ascertained, but there is no doubt that one or more thieves and suspected incendiaries were shot and several are said to be burnt to death, while others were killed by the explosion of 700 lbs. of dynamite stored in the basement of a hardware house. The few houses remaining were saved by the demolition of others by dynamite, so that the burnt district, covering in all about 25 blocks, is surrounded by a circle of shattered buildings. Relief arrived without delay from Colorado Springs and Denver, clothing, tents and provisions being supplied. Although assistance has been given on a liberal scale, it is, so far, not nearly adequate for the requirements. The amount of insurance was comparatively small, many of the owners not heirg insured at all. insurance was comparatively small, many of the owners not being insured at all.

# COAL TRADE REVIEW

NEW YORK, Friday Evening, May 1.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending April 25th. 1896, compared with the corresponding period last

	15	896. ——	1895.
Pennsylvania Railroad	Week.	Year.	Year. 1.243,947
PRODUCTION OF BITUMINOU for week ending April 25th, ary 1st, 1896 and 1895:	S COAL,	in tons of	2,000 lbs.

Shipped East and North: Allegheny, Pa Barclay, Pa	Week. 45,265 1,131	Year. 791,735 16,834	Year. 579,214
Beech Creek, Pa Broad Top, Pa Clearfield, Pa	4,993 79,763	152,387 1,604,557	978,491 179,308 2,525,831
Cumberland, Md	77,448 1,755 192,407	1,306,604 17,897 1,222,353	1,002,962 33 457 1,210,776
Totals † Week ending April 18th.	302,852	5,112,367	6,510,039

		896.—	1895.
Shipped West; Monongahela, Pa Pittsburg, Pa Westmoreland, Pa	Week. 17,889 31,288	Year. 311,533 641,194 664,876	Year. 254,929 726,666 791,95
Totals	88,077	1,617,603	1,773,540
Grand totals	390,929	6.729.970	8.283.579

Production of coke on line of Pennsylvania Railroad for the week ending April 25th, 1896, and year from January 1st, 1896, in tons of 2,000 lbs.: Week, 80,392 tons; year, 1,497,331; to corresponding date in 1895, 1,872,538 tons.

Anthracite.

Anthracite.

The trade is fairly active if we consider that we are on the verge of settled warm weather, when domestic demand naturally falls off.

Coal is beginning to go West, chiefly to be stocked up for future use, as usual at this time of the year: shipments being made early to take advantage of lake navigation.

Some sales of coal have been made in the Eastern market the half.

shipments being made early to take advantage of lake navigation.

Some sales of coal have been made in the Eastern market at the old figures. The anticipated advance in circular price of all sizes of coal has been made. The first to make the move was the Reading Company, which issued a circular on April 27th, announcing an increase of 25c. in all sizes. This notice was sent to all the leading sales agents, and two of the other prominent roads followed suit almost immediately. The Delaware, Lackawanna & Western Railroad Company and the Lehigh Valley both made public their intention of raising their prices from May 1st. The new prices will be \$4 for stove, \$3.75 for egg and chestnut and \$3.50 for grate,

This action was taken quietly, no meeting being held. However, the sales-agents appear to be quite content with this arrangement. No action to restrict or increase the tonnage during the month of May has been taken by the companies, as any proof of an agreement would hardly be politic just now.

A few sales are said to have already been made at the new figures, and it is understood that no further change will take place in the schedule of prices for several months to come. Much business cannot be expected just now on account of the warm weather, although stocks are depleting gradually and will eventually force buyers on the market.

The anti-coal-trust law is still a topic of discussion in the trade, but excites only slight interest at present.

NOTES OF THE WEEK

Notes of the Week.

The old suit brought by the Delaware, Lackawanna & Western to enjoin the New York, Susquehanna & Western from delivering coal over its own tracks to the Hudson River has come up again, arguments having been made on the cross suit brought by the Susquehanna to enjoin the Lackawanna Company from further prosecuting the suit. It will be remembered that the suit was based upon the contract which formerly existed between the two companies under which the Susquehanna coal was delivered at the Hudson River over the Delaware, Lackawanna & Western tracks from West End to Hoboken, N. J.

### Bituminous.

The soft coal market is in an inactive state. There The soft coal market is in an inactive state. There is a small amount of business doing from consignees who are in need of coal for their daily wants, but wherever it is possible buyers are holding off in the hope that the combination will not hold. Tonnages are pretty well divided among the far East, Sound and New York harbor, although the first named is taking a little more coal than usual. A slight decrease is manifest in the tonnages that are going forward.

Iorward.

All-rail trade is comparately active, and the tonnages in this line do not differ materially from what they have been. Transient trade is small, as is also spot business.

what they have been. Transient trade is small, as is also spot business.

There have been some small deliveries for South American shipments, and there is still a slight inquiry from that quarter. Not much has been doing in the way of contracts during the week. The Boston and Maile Company is reported to have thrown out bids presented to it for its coal supply during the year as they were at the combination figures. The old talk of cuts on the New Haven contracts is still going the rounds, but if the facts are as reported it seems probable that the people who are doing the cutting have used up about all the tonnage they produce. The smaller contracts are holding off. It is apparent that the contract season this year will be a late one

There is very little new concerning Association matters. Reports are to the effect that one or two recreant members have been brought to task and promise to keep their agreements in the future. The main line roads are adhering to their agreements, thus adding to the strength of the association. Transportation from mines to tide is much slower than usual, but it is up to all needs of producers. The car supply is good on most of the roads. Stocks on hand at the shipping ports are small.

The coastwise vessel market is quiet and weak. There are reported vessel tennages at Norfolk amounting to 50,000 tons, which await cargoes.

The Dominion Coal Company has chartered four large vessels in the coasting trade to run from its shipping port in Nova Scotia to Eastern ports in the United States at 80c. for the season. This coal company is now making more effort to cut into the trade of this country than it has in former years, although the market is not a very favorable one.

We quote current rates of freight from Philadelphia: To Boston, Salem, Portland, Portsmouth and Bath, 65c.; Providence, New Bedford and Sound ports, 55@60c.; Wareham, 80c.; Lynn, 70c.; Newbouryport, 70@75c.; Dover, \$1.10 and towage; Saco, 90c. and towage, Gardiner, 65@70c.; Bangor, 70c.; Newport News, 5c. above this r

The Peoria Gas and Coke Company, of Peoria, Ill., has awarded its contracts for coal for the ensuing year to the Coal Elevator Company, of Ohio.

It is said that the Vermillion coal-fields in Illinois are soon to be opened and worked upon a larger scale. An option has been secured on over 10,000 acres of these coal lands by an Eastern syndicate.

A secret meeting was held by the bituminous coal mine operators of Indiana at Indianapolis, April 28th, to consider the situation in the State and to discuss the strike which has just been begun by the operatives. The latter have demanded that the mine owners pay the Ohio scale of 6lc. per ton, and the former say that, owing to their peculiar situation with respect to markets and enforced competition with Illinois mines, they cannot pay more than 55c. per ton, which is the Illinois scale.

This strike has been expected for some time past, and the operators have prepared for it by getting as

large a supply of coal on hand as possible. It is in-timated that contracts now in force can be filled, but new ones are not being made.

The Davis Coal and Coke Company has removed its main office from New York City to Piedmont, W. Va. The company's shipments include foundry, furnace and crushed coke, and it is agent for Elk Garden Big Vein coal. It has offices in Philadelphia, Baltimore, Boston, Trenton, Wilmington, Chicago, St. Louis and at No. 1 Broadway, New York City.

# Buffalo, N. Y.

(From Our Special Correspondent.)

(From Our Special Correspondent.)

The anthracite coal trade continues lifeless and quotations unvaried. The weather for the past week has been fine—not too warm, but just warm enough. Navigation is now fully opened at this port, although there are still immense fields of ice extending for a dozen miles up the lake and Niagara River is full of floating ice. Shipments by lake thus far 13,570 net tons distributed as follows: 2,000 tons to Chicago, 3,200 tons to Milwaukee, 1,500 tons to Duluth, 600 tons to Racine, 900 tons to Kenosha, 2,200 tons to Toledo, 670 tons to Sault Ste. Marie, 1,100 tons to Port Arthur, 1,200 tons to Lake Linden and 200 tons to Osceola. The rates of freight were 40c. to Chicago, Milwaukee and Port Arthur and Green Bay, 45c. to Racine and Kenosha, 50c. ito Sault Ste. Marie, and 25c. to Duluth, Toledo and Detroit The Toronto Gas Company's coal contract for

Ste. Marie, and 25c. to Duluth, Toledo and Detroit
The Toronto Gas Company's coal contract for
40,000 tons of coal has been let at prices kept private. The 3,000 tons of anthracite were secured by
Messrs. Ball of this city. The bituminous coal was
divided between Messrs. Brinker & Jones, of Buffalo, representing the New York & Cleveland Gas
Coal Company, and Messrs. N. L. Scott & Co., of
Erie, Pa., representing the Youghiogheny River
Coal Company. It is asserted that the price obtained was in the neighborhood of \$2 per ton delivered at the Bridges, the Toronto people paying
transportation from there.
To-day the weather is very hot and the ice is

To-day the weather is very hot and the ice is rapidly melting away.

### Chicago.

(From Our Special Correspondent.)

Anthracite Coal.—There is very little trade in this market, the warm weather having about taken all the life out of the small ousiness that was running. For this time of the year there are very few new contracts being made, and things are dragging along in a rut that only better business conditions can extract. Lake trayed having opened there is now. tricate. Lake travel having opened there is now a steady arrival of hard coal from Lake Eric ports, which is being added to stocks left over. Hard coal circular rates are but little held to, and there is apparently but little use for the making of new ores. Bituminous Coal has been in but little demand.

The miners voted on the question, and the majority was in favor of continuing work at the present scale, beginning May 1st.

Coke. -- Sales are few, and but small quantities are sought for.

### Pittsburg. April 30,

(From Our Special Correspondent.)

(From Our Special Correspondent.)

Coal.—Shipments to the lower ports are over for the present; water not sufficient. The coal shipments to the lower ports are the largest for many years. Mining in the pools continues brisk, with sufficient loaded to furnish a good run. In the railroad district things are lively; the 70c. mining rate is still being maintained by the majority of the operators who have large lake coal contracts to fill. A number of coal operators who sell their product to lake shippers held a meeting; the condition of trade, prices for mining and freight rates were discussed—no action was taken on wages. Reports received show that 500,000 tons more of coal will go to the northwest from this district than last vear, the total shipments will likely reach 3,000,000 tons. The prices will be governed by the price for mining; the rate of mining is considered too high. Coal producers are likely to cutwages and a miner's strike may result. The operators will demand an equalization of the mining rate and if the committee does not grant the lower wages, paid by the larger operators, there will be a general breaking away from the 70-cent rate by the operators now paying that price. The situation is that the New York and Cleveland Gas Coal Company is paying 54 cents a ton; the Pittsburg and Chicago Gas Coal Company 60c. with 10% retained, and the first pool, Monongahela Coal Company (Robins interested) the same rate, other companies cannot go into the lake season just opening. The miners say they will resist the reduction and a general strike is looked for when the cut is ordered.

Connellsville Coke.—Last week's showing in the region is that every body is playing a waiting game, but reorganization of the bar iron people may help matters. The coke trade showed a good tonnage last week. There were 99 ovens blown out, the remainder in blast of the Bessemer plant, but there were 214 ovens fired up at other places giving the region is that every body is playing a waiting game, but reorganization of the bar iron

6,267; last week 4,567 ovens made six days, 7,785 ovens five days, 300 ovens four days, an average of 529 days as against 539 the week previous. Shipments of coke from the region amounted to 6,822 cars; previous week, 6,773 cars; increase, 49 cars, distributed as follows: To Pittsburg and way points, 2,171 cars; to points East, 1,040 cars; to points west of Pittsburg, 3,611 cars. Prices are unchanged.

Shanghai, China.

(Special Report of Wheelock & Co.)

Coal.—The low rates of freight still ruling between this port and Japan keep our market for this class of coal in a dull state, and prices low, showing little business during the fortnight. Only a few transactions have taken place in Cardiff. American anthracite is extremely dull; in fact offers, however low, are not obtainable. During the fortnight the market for Sydney Wollongong experienced a severe drop, but in the last few days it recovered, and is now fairly firm. Quotations are as follows for ton lots: American anthracite. 9:00 taels; Australian Wollongong, 9:50 taels; Welsh Cardiff, 10:50 taels. For Japan coal we quote 5:75 taels per ton for Takasima lump, 4:25 taels for Namazuta lump, and 3:00@.3:25 taels per ton for other sorts as can be procured. procured.

procured.

Kerosene Oil.—There has not been much business transacted in this article during the period under review and prices have dropped considerably, the absence of speculation being conspicuous. We have heard of nothing being done in Russian case or bulk oil. We note the arrival of 70,000 cases of this oil, which was sold previously to landing. Including this cargo our stocks may be estimated at 230,000 cases American and 170,000 Russian. We quote as follows per case: For American Devoe's, 169½ taels; Russian Batoum, 162½ taels, and Batoum bulk, 155½ taels.

### IRON MARKET REVIEW.

NEW YORK, Friday Evening, May 1, 1896. Pig tron Production and Furnaces in Blast.

		Week e	From	From			
Fuel used.	May 3	, 1895.	May 1	1, 1896.	Jan., '95.	Tons. 538,598	
Anthracite. Coke Charcoal	34 119	Tons. 20,097 132,360 3,859	F'ces. 44 139 13	Tons. 20,250 170,370 5,200	371,590		
Totals	171	156,316	196	195 820	2,906,184	3,597,317	

The iron market generally has not been very active this week and transactions have been quite limited. Perhaps this is due to the fact—noted briefly last week—that the executive committee of the Steel Billet Combination at its meeting in Pittsburg last Friday seemed to lack the courage of its convictions and decided not to increase prices. Perhaps our advice to try \$25 or \$30 billets as a stimulus to business may be taken later, when the deliveries and resales under old contracts, which furnish all the business now doing, come to an end. The latest news from the steel combination is that the Ohio Steel Works, at Youngstown, are to be run for two vears by a trust, in which the Bethlehem, the Carnegie and the Illinois Steel Companies are represented, the Ohio Company to receive \$500,000 a year. This agreement, as reported by despatches from Youngstown, shows that the combination is determined, if possible, to remove all disturbing elements. The Ohio Company's Works employ some 800 men and have been running steadily since they were completed two years ago. Another despatch says that steps will be taken by parties in interest to enjoin the agreement.

will be taken by parties in interest to enjoin the agreement.

Meantime combinations and rumors of combinations continue to multiply, and if all the plans under discussion are carried out, every branch of the trade will be pooled and competition will be at an end. It is quite possible, however, that history will repeat itself, and that all this pooling may revive the business of starting new plants to be sold out to one or other of the combinations. This has occasionally been known to be a profitable operation, and it has also been known to reach an extent which finally broke down the pool on which it was worked.

which many proke down the pool on which it was worked.

Sales of Lake iron ores are reported as quite heavy this week, contracts for some 1,500,000 tons having been closed in Cleveland. There is a rumor of a deal which will put the supply of low phosphorus ores in the hands of a party, which hopes to control in this way the supply of Bessemer pig. Any operation in this direction seems a little dangerous so long as the supply of foreign ores is accessible.

In this connection we may note a report from Ottawa that the exploring parties of the Canadian Geological Survey have located outcroppings of iron ore over an extensive district in Labrador, the superficial examination apparently showing ore of a high grade. The existence of iron ore deposits in the peninsula was reported several years ago, but the discovering party was not able at the time to continue its investigations.

NOTES OF THE WEEK.

NOTES OF THE WEEK.

Reports are current in Pittsburg of probable cutting on the ore rate from Lake Erie ports, which is now 90c. per ton. The Pittsburg, Shenango & Lake Erie Company is building a branch which will

give it a direct line to Pittsburg, and is said to have promised large concessions to certain interests.

Until last year all the coining dies used in the United States mints were of English steel, either of the Jessop or the Mustet brand. In the summer of 1895 the Pittsburg Tool Steel Company furnished the steel for a set of dies, and this proved to be of such excellent quality that large orders have since been given; the latest was recently shipped to Philadelphia.

# New York.

New York. May 1.

The fact cannot be disguised that the local market is dull, with the exception of structural iron and cast iron pipe. The small orders, which make up a large share of the local business, have not been coming in freely, and menufacturers are hesitating about putting in stocks of raw material until they can see their way to a better demand for finished work than that existing now. Moreover, most shrewd operators are fully convinced that the market will not now stand the increase of prices required by higher rates for raw iron and steel, and that any attempt to put up quotations will be followed by a sharp drop in sales of their finished products. Demand is not urgent enough to warrant high prices in any direction, and some experiments in this direction have shown the fact very distinctly.

ments in this direction have shown the fact very distinctly.

The new electrical work which was promised for summer is still, for the most part, held back. This is chiefly due to the reluctance of most people to put money into new enterprises just now, aided by the conservatism of the banks, which are limiting their loans and looking doubtfully at any but the very best paper. The fact is that the great majority of people do not care to take any risk until the currency question is settled—and settled in the right way.

Pig Iron.—The market is quiet, with light sales.

Pig Iron.—The market is quiet, with light sales, but prices are nominally unchanged. It is quite probable, however, that offers from good parties at a shade below the market are not refused. It is reported that some of the Eastern furnaces are trying to arrange a combination, but it is not easy to see how this can be done. There is too much good Southern iron ready for sale to permit any increase in prices now or for some time to come. It is said that the Maryland Steel Company will put one or two of its stacks on foundry iron, using the Newfoundland ore which it lately bought.

We quote for Northern iron as follows: No. 1 foundry, \$12.75@\$13.25; No. 2, foundry, \$12.26\$11.75; Por Southern irons we quote: No. 1 foundry, \$11.75@\$12.25; No. 2 foundry, \$11.25@\$11.75; No. 1 soft, \$11.50@\$11.75; No. 2 soft, \$11.60\$11.50; forge, \$10@\$10.50. All prices are for tidewater delivery.

Cast Iron Pipe.—A contract for gas pipe for

Cast Iron Pipe,—A contract for gas pipe for Brooklyn is reported let to the Warren Foundry, of Phillipsburg, N. J. Some small contracts are pending, and negotiations are said to be going on for a large order for South America.

Spiegeleisen and Ferro-Manganese.-No new business is noted, and quotations are nominal at \$19.50@\$20.50 for imported spiegeleisen and \$47.00 \$47.50 for ferro.

Steel Billets and Rods.—A few sales of billets are reported by brokers from lots to be delivered on old contracts. Terms are private, but are understood to be below the pool price, which is \$21.75 per ton for New York delivery. Rods are quoted nominally \$27@\$27.50, with no sales.

Merchant Iron and Steel.—The market is quiet, with only small sales. The expected higher prices

merchant from and Steel.—The market is quiet, with only small sales. The expected higher prices for bars have not come. We quote for common bars, 115:@1:25c.; refined bars, 125:@1:50c; soft steel bars, 135:@1:45c. Other quotations are: Steel hoops, 1:50:@1:60c.; steel axles, 1:65:@1:80c.; links and pins, 1:65:@1:75c.; tire steel, 1:85:@2c.; spring steel, 2:05:@2:20c. Open hearth machinery steel is 1:45:@1:60c.

Plates.—There is some demand for universal plates, but the call for boiler plates has apparently been satisfied. We quote for universal mill plates, 145@1\*55c. Other quotation are: Tank, 1\*45@1\*55c.; boiler shell, 1\*55@1\*65c.; good flange, 1\*80@1\*90c.; firebox, 2\*10@2\*50c. Charcoal iron plates are 2\*25c. for shell, 2\*75c. for flange, and 3\*25c. for firebox, Rivets are 3@3\*25c. for best iron and 2\*15@2\*25c. for steal

Structural Iron and Steel.—There is a steady business in small lots and several large contracts are under negotiation. Prices show no material change. We quote for angles, 1\*45@1\*55c.; channels, 1\*60@1\*75c.; tees, 1\*65@1\*75c.; beams (up to 15-in.), 1\*65@1\*75c, for large lots and 1\*90@2\*10c. for small orders.

Steel Rails and Rail Fastenings. standard rails are noted here. The business instreet rails has fallen off again and is disappointing. The new elevated line of the New York Central from 106th Street to Mott Haven is being laid with steel ties. Steel rails are quoted at \$28.75 per ton at tidewater for standard sections; girder rails at \$29@\$32 at tidewater.

tidewater.

Rail fastenings are quiet. Fish and angle-plates, 1.25@1.35c.; spikes, 1.05@1.70c.; bolts, 1.90@2.05c. for square nuts, and 2.05@2.15c. for hexagon nuts.

Scrap Iron.—The demand for foundry scrap is lighter than for some time past, but prices change very little. We quote for best machinery scrap \$10.50@\$12 per ton, according to size and quality of

lot; for ordinary mixed foundry scrap, \$9.50@\$10.50; stove-plate, \$6.50@\$7.50. Some half-worn steel rails, 56 lbs. to the yard, suitable for relaying on light track, have been sold for about \$20.50 delivered at Jersey City.

Butialo, N. Y. Ap. (Special Report of Rogers, Brown & Co.)

(Special Report of Rogers, Brown & Co.)

It has been a quiet week locally, the consumption of pig Iron, except in the car building line, being below the average. Scrap continuing scarce has made a place for some of the closer grades of iron and so slightly increased the movement of those grades. We quote on cash basis f. o. b. cars Buffalo as follows: No. 1 foundry, stiong coke iron, Lake Superior ore, \$13.50; No. 2 foundry, strong coke iron, Lake Superior ore, \$13. Ohio strong softener No. 1, \$13.50; Ohio strong softener No. 1, \$13.50; Ohio strong softener No. 2, \$13; Jackson County silvery No. 1, \$15.50; Southern soft No. 1, \$12.40, Southern soft No. 2, \$11.90; Hanging Rock charcoal, \$18; Lake Superior charcoal, \$14.

Chiesgo. April 29.

(From Our Special Correspondent.)

The quiet of the previous week still prevails in the iron market here, the buying in all lines being of a light character. In pig iron, sales were somewhat smaller than last week, with prices fairly held. In steel rails an aggregate of 6,000 tons was booked and there is enough business coming in and in sight to keep both the South Chicago and Joliet mills of the Illinois Steel Company renning steadily. The Illinois Steel Company reports the sale of 1,200 tons of tin-plate bars at \$23.75. In structural material the only contract placed was one of 1,200 tons bridge material by the Great Northern Railroad, the Lassig Bridge and Iron Company of Chicago being the successful bidder. The lake now being opened the receipts of ore at South Chicago are quite large.

Pig Iron.—Nearly 6,000 tons of pig iron was sold (From Our Special Correspondent.)

are quite large.

Pig Iron.—Nearly 6,000 tons of pig iron was sold by the Northern furnaces during the week, the Southern furnaces having disposed of about half that quantity. Prices appear to be held too well though there is yet a tendency on the part of some Southern dealers to quote slightly below market prices. We quote: Lake Superior charcoal, \$13.50 @\$14; local coke foundry No. 1, \$12.50@\$13; local coke foundry No. 2, \$12.08\$12.50; local coke foundry No. 3, \$11@\$12; Southern coke, No. 1, \$12.10@\$12.35; Southern coke, No. 2, \$11.60@\$11.85; Southern coke, No. 3, \$11.10@\$11.60; Southern, No. 1, soft \$11.60@\$11.85; Southern No. 2, soft, \$11.35@\$11.60; Jackson County Silveries, \$14.50@\$16; Ohio strong softeners, \$15@\$15.50; Alabama car-wheel, \$16.85@\$17.35.

Structural Material.—There has been but little

Structural Material.—There has been but little business to speak of during the week. Prices are as follows: Beams and channels, 165@170c.; angles, 145@150c.; blates, 150@175c.; tees, 1765@170c. Small lots from stock are quoted \( \frac{1}{3}c. \) to \( \frac{1}{3}c. \) higher.

Bar Iron.—There has been a moderate demand for bars, some of the railroads having contracted for cars during the week. Inquiry is fair, and prospects are for some large buying soon. Common iron is quoted 1:30@1:35c., and refined 1:35@1:40c.

Steel Rails.—Rails are in good demand, though the buying is almost wholly confined to small lots. Quotations are \$29 and upward.

Billets and Rods.—There have been no sales of billets, the market being unusually flat in this line. Rods have sold very well, nearly 10,000 tons having changed hands. Billets are quoted \$21.25 and rods \$29.50@\$30.50.

Old Rails and Wheels.—A few small sales of old wheels are reported at about \$13.50. Old rails are quoted \$14.50@\$15.

Cleveland, 0. April 30.

Cleveland, 0. April 30. (From Our Special Correspondent)

Iron Ore.—During the past week the sales of Bessemer ores have exceeded 500,000 tons and may have reached well up to the 1,000,000 tons, all at the association prices announced several weeks ago. But the buyers have been the smaller furnacemen. The two largest consumers of Lake Superior iron ores are the Illinois Steel Company and the Carnegie interests. As reported last week the former has purchased a considerable portion of its requirements, but the latter has not yet come into the market.

Conditions this spring are quite different from those which have usually prevailed in the ore trade. The season of lake navigation is now fully open, but comparatively little ore has been sold, perhaps 2,000,000 tons out of an estimated production this year of 10,000,000 tons, including both Bessemers and non-Bessemers. The shippers are unwilling to contract for lake freights on the ore until it has been sold, and thus the season is advancing with much more than the ordinary uncertainty regarding lake tonnage. Ordinarily enough ore is sold when navigation opens to make most of the season contracts.

navigation opens to make most of the season contracts.

Besides the Bessemer ore sales noted above, there have also been some transactions in the non-Bessemers. The advance in these latter ores has been porportionately much less than of the former. Bessemers are up \$1.10 over the opening prices of 1895, but the non-Bessemers have scored an advance of only about 50c. Standard non-Bessemer hematites are now selling at \$2.75\(\tilde{s}\)2.80.

Lake freights for the first large blocks of ore were contracted for a day or two ago. About 600,000 tons of ore were covered at \$1, for delivery during the short season, or to October 1st, and at \$1.65 for delivery during the full season of navigation. Single or wild charters on ore from Escanoba to Ohio ports

have advanced this week from 55c. to 60c., and strong at that figure. The rates from Marqu and Duluth hold firm at 85c. and \$1 respectively.

and Duluth hold firm at 85c. and \$1 respectively.

Pig Iron.—The local pig iron market continues inactive and almost featureless. There is no tendency toward further weakness, but dearth of buying orders. The nominal quotation for Bessemer pig is \$13.25. based on one or two sales at \$12.50 in the Valley. Foundry irons are also quiet. Northern streng is quoted \$12.50@\$12.75 for No. 1, and \$12.20 for No. 2.

What delables.

### Philadelphia.

Philadelphia. May 1.

(From Our Special Correspondent.)

Pig Iron.—The telegrams in the daily papers concerning large ore sales at Pittsburg has created quite a breeze in local pig iron circles. It will do more to settle things than any other one influence, especially as it appears to fix prices at \$4. A few days may develop something, but for the present there is very little to report. There is an abundance of iron, and buyers are selecting the best possible brands for the price. No. 1 is \$13@\$13.25; No. 2, \$11.75@\$12; Forge \$10.75@\$11.25. These quotations indicate a reduction of 25 to possibly 50 cents.

Steel Billets.—The old contracts for steel billets

indicate a reduction of 25 to possibly 50 cents.

Steel Billets.—The old contracts for steel billets have some time yet to run, and as our people never purchased largely they are not concerned over rumors concerning a marking up of prices. Business has been done at \$21.25. There will be no premature buying of steel for midsummer requirements. When jobbers' stocks are exhausted and freight is added to \$20 at Pittsburg, or possibly more, it looks as if billets would alwance.

Merchant Bars.—Bars are selling in carload lots a little more freely, but the volume of business is not heavy. There is a sharp competition for business. Quotations are 1'20@1'40.

Skelp.—Some business has slipped westward on account of advantages in freights.

Sheets.—A gradual improvement in the size of orders is reported this week. Prices are kept down and business is sharply solicited for in every portion of the field. As building operations expand the mills are better off. Prices range from 1'80 to 2'80. No. 10 to 2'8. Galvanized is doing much better.

Pipes and Tubes.—The Eastern makers have had to follow Western mills in fractional shadings downward. There is only a moderate amount of work coming to hand and buyers are very exacting.

Merchant Steel.—Business is rather slow, but here are no departures from recently quoted

Plate and Tank.—An order for 500 tons bridge plates was closed Wednesday, and the understanding is there will be another order soon from the same quarter. Prices are said to be perceptibly weaker. The mills are running as usual and quotations are 1.50 for tank and universals, 1.60 for shell, 1.65 for flange, 1.80 to [3 for firebox according to resetting the same process.] specification.

Structural Material.—A large order is to be closed to-morrow for 1,500 tons. More business is coming up and local requirements are increasing. Prices are said to be shaded but quotations given out are 150 for angles, and 1:60@1:90 for beams and channels according to weight.

Steel Rails.-Standard Sections ore quiet at \$28. old Rails.—There is a moderate demand at \$15. Scrap.—Railroad is always wanted at \$13 50@ \$15; iron axies at \$17; borings are \$8; axle turnings \$9; heavy steel scrap, \$13; machinery cast, \$10.

Pittsburg. April 30.

(From our Special Correspondent.)

Raw Iron and Steel.—Business conditions are beginning to look more favorable. Recent fine weather throughout the country has quickened activity in various directions; the effect has been felt chiefly in branches of trade nearest consumers; a further stimulating influence is looked for in the near future. Business in iron and steel products continue to reflect the immediate wants of consumers: the big production of oig iron and distrust of continue to reflect the immediate wants of consumers; the big production of big iron and distrust of the operation of the steel combine cause general reluctance to operate in advance of need. Neither pig iron nor manufactured products have improved in demand as yet, though further combinations have raised prices of rods, bar iron, and steel bars. The advance of 15c. on rails goes into effect May 1st; steel billets are selling now 50 to 75c. below the pool price, though it was formed nearly a month ago. Bessemer pig declined at Philadelphia to \$13; Pittsburg prices are uncoanged.

price, though it was formed nearly a month ago. Bessemer pig declined at Philadelphia to \$13; Pittsburg prices are uncoanged.

The iron and steel business does not improve; possibly the reason is that all producing interests are confident that it will, and are making preparations on that basis, while consumers are counting upon a break in quotations before the advance really comes. But within a short time the position of the large steel companies have been strengthened by large purchases of iron ore at the advance rates, which naturally renders them indisposed to cut the prices of finished material. Still, consumers resolutely refuse to come in, although the financial situation is decidedly easier, and the political skies are rapidly clearing. It is a question of which side can hold out longest, and the advantage at present is with the producing interests, hedged in as they are by agreements and combinations. In some lines, however, there has been weakness; the production of pig iron is so much in excess of the consumption that some makers have tried to force a market by shading prices.

Valley furnacemen complain that with ore and coke higher, and prices at present quotations, they can see nothing but bankruptcy ahead of them. They are restricting output accordingly and buying in a day-to-day manner for immediate requirements; they express the hope for better prices, but say the middlemen are bearing prices. The sales are the smallest of the year, and show the situation as well

as prices.	
COKE SMELTED, LAKE AND NATIVE ORE.	Tone. Cash. SKELP IRON.
Tons. Carh. 2,000 Bessemer, May, June. Pitta. \$13.40	1.000 Sheared, Pitts, \$1.45 4 m. 700 Wide grooved, Pitts
2,000 Bessemer, May., June, Pitts 13.30	600 Narrow grooved, Pitts1.39 4 m.
1,500 Bessemer, June, Pitts 13 25	SKELP STEEL.
1.200 Bessemer, May, June, Pitts 13.40 1,200 Bessemer, May,	950 Sheared, Pitts. \$1.40 4 m. 500 W 1 d e grooved,
June, Pitts 13.25 1 000 Bessemer, May,	Pitts1.20 4 m. 350 Nerrow grooved.
June, Pitts 13.25 1,000 Bessemer, June,	Pitts1.20 4 m.
Pitts 13.30 600 Gray Forge, May,	STEEL WIRE RODS.
June, Pitts 11.15 500 Gray Forge,	Pitts\$28.00
May, Pitts 11.25 500 No. 1 Foundry, prempt. Pitts 13.25	sheet bars. 1,000 Delivered, Pitts\$22 50
500 No. 2 Foundry, spot. Pitts 12.25	700 Delivered, Pitts \$22.75
100 No. 2 Silvery, prompt, Prits, 13 30	BLOOMS, BILLETS AND BAR ENDS.
10 No. 1 Si very, May, Pitts 14.30 CHARCOAL.	650 Blooms and billet end*, delivered Pittsburg\$14.75
50 No. 2 Foundry, Pitts\$16.50	FERRO-MANGANESE,
50 Cold Blast, Pitts. 23.50 50 No. 2 Foundry, Pitts 16.30	100 80 per cent., delivered, Pittsburg.\$50.00
BLOOMS, BILLETS AND SLABS	OLD RAILS.
1,000 Billets, 4 × 4. May, at mill \$21.25	land delivery\$17.25 1,000 Steel rails 13.75 375 Steel rails 14 00
1,000 Billets, May, at mill 19 60	SCRAP MATERIAL.
500 Billets, May, at mill	500 Wrought tr'm- mings, net,
500 Billets, prompt, at mill 19.50	Pittsburg 8.00 500 No. 1 railroad
500 Billets, May, at mill	wrought, net, Pittsburg 13.25
300 Billets, spot, at mill 19.65	300 Cast borings, gross, Pittsburg., 8.00
300 Billets, apot, at mill 19.90	150 No 1 Cast. gross, Pittsburg 10 25

# METAL MARKET.

NEW YORK, Friday Evening, May 1, 1846. Gold and Sliver.

# Prices of Silver per Ounce Troy.

April.	St. Mx.	London Pence.	N. Y. Cte.	Value of sil. in \$1	April, May.	St. Ex.	London Pence.	N. Y. Cte.	Value of sil. in \$1
25	4 85%	31	67%	*525	29	4 8834	31 16	68	*526
27	4 88%	31½	68	*526	30	4 8876	31 16	68	*526
28	4 88%	31½	68¼	*528	1	4 8876	31 16	68	*526

Purchases for French account, presumably for colonial coinage, have materially assisted in sustaining the price of silver. In addition, the smelters have not been pressing sales, and in some instances have used their output to cover future contracts, thus reducing the amounts of spot silver for sale.

The United States Assay Office in New York reports the total receipts of silver at 60,000 oz. for the week.

# Gold and Silver Exports and Imports.

At all United States ports, March, 1896, and years from January 1st, '896 and 1895:

İ	Specie and bullion.		In o	Total ex-		
	Exports.	Imports,	Exports.	Imports.	or Imp.	
Gold Mar., 1836	\$384 080 13.134.306	\$677,733 22.604 762				
1895 SILV.	30,621,116	14,109,920	281,557			
Mar., 1896	5.014,726 15,280,344 10,618,376	1,353,526 3,823,690 1,606,156	67,568 539,444	1,257,875 4,053,081 2,876,302	E. 7,943,617	

These figures are furnished by the Bureau of Statistics of the Treasury Department and include the exports and imports at all United States ports. Gold and Silver Exports and Imports, New York

# For the week ending May 1st. 1896, and for years from January 1st. 1896, 1895, 1894, 1893 and 1892:

Gold.		Silver.			Total Ex-	
	Es ports.	Imports.	Exports.	Imports		ss, Exp. or Imp.
We'k 1896 1895 1891 1893 1892	\$45,001 13 93 (637 31,543,595 21,315,394 51,673,606 22,991,173	16 8)0,608 15,845,377 5,520,336 5,623,076	10,671,449 14,40,939 10,999,177	638,365 477.637 513,997 940,928	E. E.	\$524,156 9,518,636 25,502,036 29,321,916 56,108,776 25,541,52

The gold exported for this week went to the West Indies; of the silver \$47,331 went to South America and the remainder to London. Both gold and silver imported came chiefly from South America.

## Average Monthly Price of Silver

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

1	189	<b>16</b> .	18	95.	1894.	
Month.	Lon- don. Pence.	New York. Cents,	Lon- don. Pence.	New York. Cents.	Lon- don. Pence.	York, Cents
January .	30 69	67:13	27.36	59.69	30.81	66.63
February.,	31.01	17.67	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	64 92

The Lordon price is per standard ounce '925 fine; the New York price is per fine ounce, or for pure silver.

### FINANCIAL NOTES OF THE WEEK.

During the week there has been considerable apprehension about renewed exports of gold and at one time it was supposed that the shipments by tomorrow's steamers would amount to \$3.000,000, this however, we are informed at the sub-treasury is an overestimate, as all that has been engaged for soipment is \$1,200,000. The revenue receipts for the month have been disappointing, being a reflex of the dullness of business generally; and in the opinion of many experier c d bunkers this is not owing to either the fact of this being the year of a Presidential election, or to the political situation abroad, but to the uncertainty in the minds of both home and foreign investors, bankers and manufacturers, as to whether the selected candidate and eventually elected president will be a sound money man or tot. Sound currency is wanted both here and by our customers abroad. During the week there has been considerable ap-

The Treasury gave notice to the National Banks, acting as special depositories for a portion of the proceeds from the recent bond issue, to pay into the sub-treasury here an amount sufficient to reduce their holdings to 30% of the amount originally deposited. This payment will amount to about \$3,000,000, nominally taking that amount of money out of the loan market, but it is not likely to affect the money market to any extent whatever, as the banks acting as depositories are not able to employ a large amount of their surplus funds. This will leave about \$9,000,000 still on deposit with the banks.

One financial event of the week of a novel nature was rhe opening of bids for bonds of the Cuban Republic to the extent of \$2,000,000. The total amount bid for was in the neighborhood of \$9,000,000, and the information is given out by the Cuban Junta that deducting bids that they consider were not bona fide the average price was 62½%.

The receipts of the Treasury for April were \$24,282,893, and represents the lowest record for several months. The smallness of the receipts has been the subject of some discussion at the Treasury Department, but the only plausible explanation offered is the small volume of general trade, and some reduction of revenue from spirits and to-bacco. Thif is \$1,750 less than the March receipts.

The recepts should average over \$1,060,000 for each week day in order to make the Government meet its expenditure. The amount returned on Thursday was only \$857,701, of which \$513.359 was from customs, \$3'8,564 from internal revenue, and \$25,778 from mi-cellaneous sources. About \$12,500,000 has been from customs, \$11,460,000 from internal revenue, and \$14,224,336 from miscellaneous sources. The expenditures during April have been \$28,735,388, of which \$10,980,000 hs been for pensions, \$5,139,288 for interest, \$7,480,000 civil and miscellaneous, \$3,322,000 for the War Department, \$2,095,000 for the Nay, and \$677,000 for Indians.

The deficit for April is reduced to \$5,447,494, and for the fiscal year to \$23,193,197, and that the deficit for the month will be reduced to about \$4,500,000.

Russia is replacing a considerable amount of her paper currency by silver roubles, the total amount under contract at present being £3.000.000 sterling. These are coined at the French mint and are shipped from Paris via Dunkirk to Hull, England, and thence to Russia. Each installment amounts to about \$500,000.

The statement of the United States Treasury on Thursday, April 30th, shows balances in excess of out-standing certificates as below, comparison being made with the corresponding day of last week:

Gold	22.346.726	A pril 30. \$125 498,509 •23,209,627 76,607,611 31,427,398	D. L. D.	\$825 699 882,901 2,117,276 283,051
Tota's	\$258,526,168	\$256,742,245 26,814,511	D. L.	\$1.783.923 1,571,550

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Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, \$133,400,280. Against these are held in the Treasury 12,912,560 coined standard silver dollars, and the silver bultion purchased at a cost of \$120,487,690, making a total of \$133,400,250.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending April 25th, gives the following totals, comparisons being made with the corresponding weeks in 1895 and 1894:

1894.	1895. 1896.
Loans and discounts. \$460 9 2	
Deposits 578,853	.800 516,600,500 487,312,500
Circulation 10,159	
Specie 99,467	
Legal tenders 127,414	1 0 86 216,900 83,504,200
Total reserve \$226,881	,400 \$154,420 800 \$142,506,800
Legal requirement 143,463	450 129, 150, 125 121, 828, 125
Surplus reserve \$83,417	,950 \$25,270,675 \$20,678,675

Changes for the week this year were increases of \$1,062.900 in loans; \$3,255,500 in deposits; \$373,200 in specie; \$2,980,000 in legal tenders, and \$2,539,325 in surplus reserve; decreases were \$341,500 in circula-

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 hold-ings at the corresponding dates last year:

ings at the correspondi	ng dates i	ast year:	
Asso, Banks of New York	Gold.	Silver.	Total. \$59,002,600 68,203,900
Bank of England	238,112,470 185,183,355	*********	238,112,470 185,183 355
Rank of France	390,534,900	\$248,615,600	639,150,500
	411,516,875	247,062,303	658,579,178
Imp. Bank of Germany. 1895.	*** *****	*********	228,840,000 267,590,000
Austro-Hungarian Bank	134,270,000	64,070,000	198,340,000
1895	93,313,000	68,005,000	161,318,000
Netherlands Bank	13,125,000	34,916,000	48.041,000
1895	21,403,000	35,400,000	56 803,000
Belgian National Bank. 1895		********	20,070,000 24,241,000
Bank of Spain	40,95%,000	53,302,000	94,260,000
	40,021,000	62,468,000	102,489,000
Bank of Italy	62,455,000	10,535,000	72,990,000
	63,055,000	11,220,000	71,270,000
Imp. Bank of Russia	390.625,000	45,370,000	435,995,000
	274,075,000	53,530,000	327,605,000
mt	A 1 - 4	. n	. 6 37

The return for the Associated Banks of New York is of date April 25th; all the others are of date April 30th, except the Bank of Italy, which is dated March 31st, and the Bank of Russia, whose return is dated March 16th-28th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. 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.

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

1895 India£1,316,8		Changes. I. £118.468
China	93 423,450	D. 523,943 I. 5,777
Totals £2,481,33	8 £2,081,630	D. £399,698

Arrivals for the week this year were £149,000 in bar silver from New York, and £13,000 from the West Indies; £33.000 in Mexican dollars from New York; a total of £195,000. Shipments for the week were £67,500 in bar silver to India, and £76,000 to Japan, £37,000 in Mexican dollars to Hong Kong; a total of £180,500.

Indian exchange is somewhat weaker, and although the 60-lakhs of Council bills offered in Londoa were taken there was a further reduction in the price and the average was 14-04d, per rupee. Exports in India have been somewhat light owing chiefly to the very low prices of cotton, and a large quantity of that staple is now being carried in Bombar in the hopes of securing better prices. The rice season is largely over, and the demand for Council bills on Chinese account has decreased.

# Domestic and Foreign Coins.

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

**Asked
4.92
3.92
4,80 4,85

# Other Metals.

Copper.—Although the market remains quiet, the more hopeful feeling which we reported last week continues and several small transactions have taken place at full prices, yet there is enough room for improvement, as the larger manufacturers still do not enter the market. Advices have now been received to the effect that the first boats with Lake

copper have left the smelting works, and the copper is expected in New York between May 10th and 15th. We have still to quote nominally 11c., with odd lots obtainable at 10\(^3\)\(\frac{2}{c}\)\(\text{c}\) Electrolytic copper has been somewhat irregular, and while for large quantities higher prices have been refused, business in cakes, wire bars or ingots has been reported at 10\(^3\)\(\text{d}\)\(\text{c}\) and cathodes at 10\(^10\). Casting copper has been neglected and must be quoted 10\(^0\)10\(^3\)c. The exports for the month are again very heavy, and the total is 10\(^0\)10\(^1\) tons of 2\(^2\)20 lbs.

again very heavy, and the total is 10,070 tons of 2,240 lbs.
Europe continues to send very firm reports, and there is a marked scarcity of best selected copper. Chile bars are being freely delivered to refiners, and are becoming more and more scarce, while the heavy arrivals of American fine copper, are mostly being taken up direct by consurers. G. M. B.'s opened firm last Monday at £45.5s.@£45 7s. 6d. for spot, with 5s. higher for three months prompt, advancing during the week about 2s. 6d., but close to-day at £45 5s.@£45 7s. 6d. for spot, and £45 10s.@£45 12s. 6d. for three months prompt. The business for the week was rather large. For refined and manufactured we quote: English Tough, £49 10s.@£49 15s; Best Selected, £30@£50 10s.; Strong Sheets, £56@£56 10s.; India Sheets, £53@£53.10s.; Yellow Metal, 4%d.

The statistics for the second fortnight in April show a decrease of 1,100 tons, a most remarkable showing, which proves how good the demand is.

Tin.—There has been a regular and steady busi-

Tin.—There has been a regular and steady business done from day to day, without much variation in price, and we quote for May 13°35, and June to August 13'40c.

The English market shows hardly any alteration, the opening price being £59 12s. 6d., and the closing prices £59 15s.@£59 17s. 6d. for spot and £60 5s.@£60 7s. 6d. for three months prompt. The statistics show an increase of 300 tons, but values are very well maintained.

Lead.—A much better inquiry prevailed, and prices have bardened quite perceptibly. Although some of the Western refiners have been free sellers, whatever they offered found a ready market, and we close firm at 3°07½@3°10.
In London Spanish lead is quoted £11 is, 3d.@£11 2s. 6d. and English lead 5s. more. The market is reported very firm.

St Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is quiet but fairly active on a basis of 280 for common and 280½ for argentiferous. There is rather a lively demand for June and July lead at present rates. Inquiries for spot are limited.

Spelter is very irregular and flat. Again lower prices have been accepted in the West, and we have to quote 3.97% @4c., New York.

The London market continues to advance, and good ordinary brands are quoted £16 5s., and specials 2s. 6d. more.

Antimony is still very dull and neglected, without any quotable change; Cookson's, 7½c.; Hallett's, 6¾c.; U. S. Star 7c.

Nickel.—Demand is moderate and prices are unchanged. We quote 351/2@38c. per lb. for small orders, and 34@35c. for ton lots. The London price is 131/2@15d. pec lb.

Is 13%(@15d. per 1b.

Platinum.—Prices are steady and unchanged and we quote \$13(@\$14.50 per oz. New York London quotations are 49(@51s. 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, 48c. 49c. and 50c. per gram. Wire and foil are 45c., 46c. and 47c. per gram. The current retail price for crucibles is 60c. per gram. is 60c, per gram.

Quicksilver.—Quotations continue \$37.50 per flask, New York. The London price is £6 15, per flask, with £6 13s. 9d. quoted from second bands.

# Imports and Exports of Metals.

North A	Week,	Apr. 23.	Year	, 1896.
New York.*	Expts.	Impts.	Expts.	Impts.
Aluminum lbs.				
Antimony ore short tons		137		1,706
" regulus, . casks				694
Brass, oldsbort tons.			31	59
Copper, finelong tons		†39	25,108	1,138
matte	1359		5,690	11
" ore	1000			
" sulphate " "	646		2,839	
		50		65
Iron ore	*******	00	*******	1362
" pigs, bars,		100		1,907
rods		100	******	
Iron pyriies				2,275
sulphate		******		1,700
Werro-mangan'se " "	*******	55		948
Ferro-silicon " "	*******			75
Manganese ore " "				1,690
Spiegeleisen " "		1,228		14, 44
Lead ore " "				
" pigs and bars " "	1965	†190	13,434	13,365
Nickel " "	29		232	15
Steel, billets, rods. " "	20	613		10,148
	****	+325	188	4,387
Tin and black plates, boxes,		28,509	30	331,146
	175	20,000	308	87
Zinc (spelter)long tons	110		000	01

Baltimore.**	Week,	Apr. 23.	Year, 1896.		
Baitimore.	Exp.	Imp.	Exp.	Imp.	
Bismuth metal, bales, cases Chrome orelong tons Copper, fine	†1,392 †95		10,043 500 1,402	26 4,040	
Iron, ore " " " pigs, bars, ingots, blooms. " "		2,160	*******	1,373	
Iron oxide bags "pyriteslong tons Ferro-manga-			*******	300 5,069	
nese		81		1,250 58	
Lamestoneshort " Manganese orelong				2,743 3,673	
Spiegeleisen " " Steel " " Steel wire, bundles			10	2,202	
Tin, long tons Tin and black plates, boxes Zinc (spelter) long tons	†36	57 12,971	53	154 81,336	

\*\* From our special correspondent.
† Week ending April 23.

	Imports.					
Philadelphia.tt	Week, Apr. 24.	Year. 1896.				
Antimony, casks Copper ore, long tons Ferro-Manganese, long tons Iron ore, long tons ore, long tons " pig " " " " " " " " " " " " " " " " " " "	150 12,450 20 27 40	67 4,300 150 78,380 618 2 224 77 265 18,229				

tt From our special correspondent.

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 1b
No. 1, "ingots for re-melting, per lb 48@53c.
No. 2. 91% pure. " "38@42c.
Ingots from scrap, per lb
Aluminum-nickel casting metal, per lb40@45c.
Bismuth, per lb
Phosphorus, per lb
Platinum, per oz
Tungsten, pure, powder per lb
Tungstic acid, per lb
Ferratungsten 60% in ton lote per lh

The variations in price are chiefly on size of order.

# Average Monthly Prices of Metals

In New York since January 1st, 1896, and for the corresponding periods in 1895, 1891, 1893 and 1892, in cents per pound.

Month.	1896.	1895.	1894.	1893.	1892.
Copper:					
January	9.87	10.00	10.13	12.13	11.0
February	10 64	10.00	9.63	12.00	10.00
March	11 03	9.75	9.81	11.88	10.38
April	10.98	9.75	9.50	11.38	11.20
Tin:					
January	13.02	13.25	20.16	19 99	20.50
February	13-44	13 35	19.61	20 30	20.00
March	13:30	13.50	19:09	20.71	20.25
April	13.34	14 '00	19.75	20.81	20.50
Lead :				9	
January	3.08	3.10	3.19	3.87	4. 20
rebruary	3.19	3 12	3 31	4.22	44.12
March	3.14	3.15	3 37	3.96	4.21
April	3.07	3.08	3 43	4.08	4.15
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

# CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, May 1.

New York, Friday Evening, May 1.

Heavy Chemicals.—There has been no material change in the conditions of the market; it remains featureless. Caustic soda shows no new developments, Alkali exhibits a slight improvement in the demand for deliveries of high test domestic, but on the whole the market is quiet. Bleaching powder retains the same position as last reported. Sal soda shows no change this week. We quote: Caustic soda, '2½@'2½c. for spot, according to test; carbonated soda ash. 48%, is '95@1.20c., according to quantities and packages. Alkali is 87½c.@\$1.15, according to test and package. Bleaching powder, prime brands, \$1.5@\$1.55. Sal soda, 60@65c.

Acids.—The market remains inactive, and the business that is being done consists chiefly of deliveries on yearly contracts. Prices are as follows: per 100 lbs. in New York and vicinity, in lots of 50 carboys or over, Acetic acids (in barrels), \$1.25@ \$1.60. Muriatic acid 18°, 56@75c.; 20°, 75@85c. Nitric acid, 36°, \$2.25@\$4.25; 40°, \$4@\$4.25; 42°, \$4.50 @\$5.25. Oxalic acid, \$7.25@\$7.50. Mixed acids, according to mixture. Sulphuric acid, 66°, 75@80c.;

10@15c, higher for small quantities; chamber acid, \$6.00@\$6.50 per ton at factory. Blue vitriol, \$3.87% @\$4, according to size of order.

Brimstone.—We must continue to report an improvement in this market, though it is very slight. The stocks at the end of March are said to have been 160,000 tons, against 184,000 tons in the preceding month. The shipments to all parts for the first quarter of this year were 138,000 tons, against 102,000 tons for the same time in 1895. We quote for shipments, best unmixed seconds, \$15.50@815.75; thirds are 25c. less. Brimstone.-We must continue to report, an

Ward.
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.—Soct. \$1.671/6.\$1.70; to explore

Nitrate of Soda.—Spot, \$1.67½@\$1.70; to arrive, \$1.70@\$1.75.

### Liverpool. April 22.

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

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

In heavy chemicals fresh business is limited, but quotations snow little change.

Soda ash is in moderate demand, but not up to the mark. The nearest spot range for tierces is about as follows: Leblanc ash, 48%, £4@£4 5×.; 58%, £4 5×.@£4 10×. Ammonia ash, 48%, £3 2×. 6d.@£3 10×.; 58%, £3 7×. 6d@£3 12×. 6d. per ton, net cash; bags 58. per ton less. Soda crystals are quiet at £2 7×. 6d. per ton, less 5% for barrels and 7×. less for bags.

Caustic soda keeps steady, although there is not much going on. On spot we quote: 60%, £6 5×.@£6 10×.; 76%, £49 5×. per ton, net cash.

Bleaching powder is depressed and values are nominal at about £7 2×. 6d.@£7 5×. per ton, net cash, for hardwood packages. Chlorate of potash is weak at 4¾d.@4¾d. per pound. Bicarb, soda is in fair request at £6 15×. per ton, less 2½% for the finest quality in one cwt. kegs, with usual allowances tor larger packages. Sulphate of ammonia is flat, at about £8@£8 5×. per ton, less 2½% for good gray and 24×. for 25% in double bags, f. o. b. here, according to quality. Nitrate of soda is inactive, but steady at £8 5×.@£8 7×. 6d. per ton, less 2½% for double bags, f. o. b. here, according to quality.

Carb. ammonia, lump, 3½d. per pound; powdered, 2½% for double bags, f. o. b. here, according to quality.

Carb. ammonia, lump, 3½d. per pound; powdered,

3%d. per pound, less 21/2%

# MINING STOCKS.

Complete quotations will be found on pages 438 and 439 of mining stocks listed and dealt in at:

Aspen, Colo.
Colorado Springs.
Duluth, Minn.
Helena, Mont.
Salt Lake, Utah.
San Francisco.

St. Louis,
Paris, France.
Mexico.
Shanghai, China.
Valparasso, Chile,
London, England. New York. Boston. Philadelphia. Baltimore. Pittsburg. Denver, Colo.

Denver, Colo. San Francisco. London, England.

New York, Friday Evening, May 1st.

The volume of business in the mining stock market this week shows a decrease. Trading has been exceedingly quiet, almost lifeless, and the speculating public is not coming in. The business during the past week chiefly followed the reported quotations on the San Francisco Exchange.

Among the Comstocks Consolidated California & Virginia shows sales of 3,900 shares at \$1.75@\$1.85.

The Colorado stocks were in some request. Chrysolite showed sales of 1,700 shares at 13c;; Leadville, 1,300 shares at 13@14c., and Work, 1,200 shares at 130.; Colorado stocks were: 500 shares of Golden Fleece, at \$1.65@\$1.75; 500 shares of Mount Rosa at 10c.; 500 shares of LaCrosse, at 9c.; 500 shares of Union, at 44c., and 350 shares of Victor, at \$80.

\$8.25.

Of the California stocks the most active was Pol-

\$8.25.
Of the California stocks the most active was Bulwer, sales of which amounted to 1,000 shares at 25@ 35c. Brunswick Consolidated showed dealings of 700 shares at 14@15c. There were also sales of 300 shares of Standard Consolidated at \$1.75.
The Standard Consolidated Mining Company had a fire in its shaft during the latter part of last week; it is officially stated that the loss has not as yet been ascertained, but it is probably small. The re-

port of this fire has had a depressing effect upon the selling price of the stock.

Father de Smet, a South Dakota stock, was again dealt in this week to the amount of 200 shares, at 17c.

Kingston & Pembroke, of Ontario, records sales of Name of Company.

Par | April 1834 500 shares, at 52c.

### April 30.

## (From Our Special Correspondent.)

There has been a more active market this week

There has been a more active market this week in mining stocks, but at the expense of values. The copper stocks have been heavy all through the list and a lower record has been made, especially for the so-called Bigelow stocks. Boston & Montana has been active, and during the early part of the week the price was very well sustained; but yesterday and to-day heavy liquidation of long stocks broke the price down to \$72%, from which there was a rally to \$74. To-day the stock closed quite firm at this price; over 17,000 shares were dealt in during the week. Butte & Boston declined to \$2, with small sales at \$2½ later. \*\*

Kearsage was hammered quite freely by the bears which caused a decline from \$10% to \$8%, which was the closing price. Osceola dropped from \$20% to \$24%, and closed at the lowest figure. Franklin sold in a small way at \$11½@\$11. Atlantic gained \$½ to \$17½ on sale of 200 shares only. Wolverine declined to \$6%. Calumet and Hecla sold ex-dividend at \$300, all the stock offered at that price being taken. Quincy was heavy and declined from \$120 to \$115, being pressed for sale. The scrip declined from \$80 to \$78½. Tamarack also felt the depressing influence of the market, and fell off from \$99 to \$94, with a later rally to \$96, which was bid for it at the close. Old Dominion touched \$16½, but declined later to \$14 and closed at \$14½.

Of the gold stocks, Merced has taken the lead in activity, and on free offerings was sold down to \$11¼, a loss of \$3 for the week. There was a slight rally to-day to \$14½. Pioneer was also raided by the bears, but they made small headway, although some stock came out in sympathy with Merced, and it sold down to \$7%, but quickly rallied to day to \$8%. Gold Coins advance, closing at 65c. Santa Ysabel was dull at \$13, small sales being made at \$12½.

The market closed with a slightly improved tone and a tendency to higher prices

### Chicago.

# (From Our Special Correspondent.)

The business for the week has been comparatively light. The first three days all stocks were in brisk demand and orders in the hands of brokers were plentiful. During the latter half notwithstanding encouraging reports the demand was light or at figures below the views of holders.

encouraging reports the demand was light of as agures below the views of holders.

Finance stands as it did a week ago, but lost the advance of the previous week. The market closed with 5c. bid by a leading broker for 100,000 shares or any portion thereof. Sunnyside Gilpin closed with 10½ bid, just where it started. Rhyolite suffered a slight decline and closed weak. All the other stocks were well sustained and most of them closed fractionally higher.

The bulk of the trading was confined to Cosmopolitan, Little Gem, Peerless, Sunnyside Gilpin and Sumpter.

The following table gives the highest prices with sales of the stocks recorded on the Chicago Mineral and Mining Board for the week ending April 29:

sales of the stocks recorded on the Chicago Mine and Mining Board for the week ending April 29:

Stocks.	April 23	April 24	April 25	April 27	April 28	April 29	Sales.
Boston & C.C. Capazone C.C. & C.C.	.031/6	.031/6				.031/4	4,500 2,000
C. C., G. M. B. & L. Co Christmas	.13			.09	*****		1,600 2,000
Chi. & G. Mt. Cosmopolitan. Delaware Cf	.051/4					.05%	163,500
Dictator	.05%	.0586			.05	*****	22,100
Golden Group Golden Stairs.		.071/2	.08	.081/4	.081/6		11,100
Great Fissure Gregory Gold. Hawkeye							2,500 8,000
Imperial Iron Mt	1.15%	.1516	.2370	.15	.50		8,000
Jefferson Justice	*****						5,000
Little Gem Lyons Gold Medina G. M	.041/8	.04%	.041/4			.0454	154,700 5,000
Co Peerless G. M.	.061/2		1	1	1		
Pharmacist Rhyolite	.1134				.111/8		129,600
Sonora Squaw Mt	-30%	.1172		.301/6			2,200
Sunnyside- Gilpin Union Gold	.1234	.12	.4016	.11	.1156		112,500 500

# Total shares sold, 653,900.

# Cleveland, O.

# (From Our Special Correspondent.)

There is not much activity this week in the iron ore stock market; barely enough to keep it from being stagnant. A few transactions occur, but they are in small lots usually, Minnesota Iron Company sold to-day at \$70. There is little demand, however,

Name of Company.	Par	Apr	il 23.
Name of Company.	val.	Bid.	Ask
Aurora	\$25 25	\$38	\$8 40
ChandlerCleveland-Cliffs Iron Co	100	43 70	4.5
Jackson Iron Co Lake Superior Iron Co	25 25	30	75 32
Lake Superior Consolidated Minnesota Iron Co	100 100	20 70	21 71
Pittsburg & Lake Angeline Republic Iron Co	25 25	80 18	85 20

### Colorado Springs, Colo. (From Our Special Correspondent.)

(From Our Special Correspondent.)

The market has been apparently under the control of the bears this week and quotations have generally been low, while the low-priced stocks have been rather neglected. There has been a better show of outside buying orders, however, and signs are not wanting that the shorts have been pretty well covered. It is quite on the cards that an upward movement may be begun very soon. Meantime some undoubtedly good stocks are selling low, and some sharp buyers are quietly taking the chances for investment.

Mr. D. V. Donaldson, secretary and treasurer of the Colorado Springs Mining Stock Association, leaves Colorado Springs to-day for a trip to Chicago, Pittsburg, Philadelphia and New York.

To-day's fire at Cripple Creek has caused an excitement here. Details are still lacking, but it does not appear that any of the mining companies have lost shaft-houses or machinery. The fire may be a benefit to the town in the end, as it will certainly be built up in a more permanent shape.

# BY TELEGRAPH.

The second fire at Cripple Creek has unsettled everything for the moment, as we are still without any details, it is impossible to say who has suffered and to what extent.

Messrs, Gardner & Co. furnish the closing quotations of the Colorado Springs Mining Stock Exchange for the week ending April 30th, as follows.

Name of Company.	Apr. 24	Apr 25	Apr.	Apr. 28	Apr. 29	Apr 30
Alamo	.0616	.06	.06	06	116	.06
Anaconda	.60	.69	.61	.60	5646	56%
Argentum-Juniata	.5716	.5736	.: 656	.56	.5516	.55%
Blue Bell	.06%	.Uni 46	.0616	.0616	.06	.06
Cripple Creek Con	.1316	.1334	1334	.1384	. 1334	1350
Golden Fleece	1.63	1.65	1 65	1.65	1.65	1.65
Isabella	.58	5316	.53	.53	.53	.524
Mollie Gibson	.65	.65	.61	.62	.57	.61
Mount Rosa	.10	.10	.10	.10	.10	.09%
Pharmacist	.0816	.(816	.0814	.0814	.081/	.6814
Portland	1.42	1.42	1.43	1.43	1.44	1.45
Silver State	.0156	.0116	.0136	.0116	.0:16	.0134
Union	.40	.4	.33	.37%	.37	.37
Work	.121/4	.1214	i1	.11	.11	.10%

In addition to the above quotations Messrs. A. Pick & Co., of New York, furnish the following:

Name.	Apr. 24	Apr. 25	Apr. 27	Apr. 28	Apr. 29	Apr. 30
Bankers			.121/2	.121/2	.121/2	.12
Des Moines		.22	.22	.211/2	.21%	.2116
Gold Standard		.071/4	.08	.081/4	.073/4	.07%
Jefferson	.20	.18	.18	.20	.27	18

# Denver, Colo.

# (From Our Special Correspondent.)

(From Our Special Correspondent.)

The past week has given some evidence that the downward movement in stocks is over for the present, and that the reaction will continue. Sales have been large and the outside interest in the market is evidently increasing. The fire at Cripple Creek at first threatened to be a disturbing factor, but the later accounts show that none of the mine buildings or machinery suffered, and that it was limited to the town itself. Most of the buildings were of small value, and the spirit shown hy the people in beginning to rebuild before the embers had cooled, promises well for the future. The weakest spot in the market is the general financial condition; anything which helps that will give mining stocks a lift. A strong point is the increased interest shown from other places, especially in the East.

Boulder, Colo.

May 1.

# Boulder, Colo.

(From Our Special Correspondent by Wire.)

(From Our Special Correspondent by Wire.)
The well known mine the Famous Rose & Chief was sold on the 29th of April to a syndicate of Colorado and Omaha capitalists. The price is stated to be \$50,00° cash. New machinery will be ordered and a large force of men put to work under ground at once.

A strike of exceptionally high-grade ore has been made in Loveland Mine, owned by Dr. Loveland and others. Samples from 2 ft. of ore have given from \$7,000 to \$8,000 per ton the result of which is great excitement in mining circles.

# Salt Lake City, Utch.

Salt Lake City, Uth. April 26.

(Special Report of James A. Pollock.)

Business in the local stock market has been satisfactorily active, with a continuance of the upward tendency of the previous week. Orders from the outside are heavy and frequent. Ajax continued in fair demand, with the offerings and bidding both stronger. Alliance lost the preliminary skirmish

with the Silver King, but the officers of the company say they are confident of the result being in favor of their company when the main case is called for trial. Anchor was firm, although the inquiry was not very heavy. Gas did nothing of note. The demand for Bullion-Beck was spirited, but holders refused to make concessions and the volume of business done in the stock was only moderate.

Centennial-Eureka paid its mid-month dividend of \$1 per share April 20th. Offerings of the stock were limited, none being under \$78, while small blocks were in great demand at \$75 and above. Dalton and Lark sold around 50c. Dalton was in good demand at about the previous week's figures, although there was a slight shading toward the close. Daly was very strong at advancing figures, with comparatively light offerings. Daly West was also a favorite and sold higher than ever before in its history. Eagle was considerably stronger than during the previous week, and sold up to and above 15c. Galena was again in good demand and considerable business was done in the stock. The suit between the Marion and Geyser companies, involving the properties of the latter, will be called in courtearly in May, and preparations are being made for a very extended contest. Bids on Geyser were considerably stronger than during the previous week, with the offering, higher. Horn Silver did very little business, there being a limited amount of the stock offered on this market. Little Pittsburg remained practically stationary as to quotations, but a large volume of business was done in the stock. Mercur continued strong with only a comparatively light offering of stock, and the demand heavy around \$7.05. Mammoth sold at slightly shaded practically all of its lost strength, selling again around \$3. Bids on Ontario were more frequent and at better figures than during the previous week, the offerings being very limited. Silver King was also very strong, with bidding spirited and light offerings of stock.

# San Francisco.

# (From Our Special Correspondent.)

At the opening on Monday quite a show of strength and activity was given to the Comstock shares by the report that a body of ore carrying high values in gold had been struck in the Occidental Consolidated workings. The extent of this body is, of course, entirely problematical as yet, but assays of \$80 and \$100 per ton are talked of, though not verified. Occidental shares jumped to \$1.50. On Tuesday there was a slight reaction and the buying fell off, the market finding no outside support, while even the old insiders did not seem inclined to deal on a large scale and left matters mainly to the small operators. In these days, however, we are thankful for a little the market finding no outside support, while even the old insiders did not seem inclined to deal on a large scale and left matters mainly to the small operators. In these days, however, we are thankful for a little and have ceased to expect great things. Later the market again improved a little and at the close was strong, though but moderately active, and the week has shown quite an increase in sales over any of its recent predecessors.

Some closing quotations are: Consolidated California & Virginia, \$1.65@\$1.70; Occidental, \$1.32@\$1.35; Hale & Norcross, \$1.15@1.20; Confidence, 70@73c.; Ophir, \$1.15@\$1.20; Gould & Curry, 35@36c.; Mexican, 31@32c.; Sierra Nevada, 58@60c.

The Bodies were more active than for a long time, the bringing of new blood into the Bulwer having stirred up interest considerably. Bodie Consolidated sold up to 50c. on Monday and Tuesday and closes at 47@50c. Bulwer is quoted at the close at 30@32c. The new Bulwer management is taking hold quietly, but seems to mean business. Mono sold at 13c.

It is given out that all the Comstock companies have instructed their superintendents to exercise strict economy in supplies, etc., and to carry no surperflous men on the pay-rolls. This is a very commendable course, but such orders have been given before, without resulting in any serious changes in the methods followed on the lode.

The Lady Emma Mining Company, of El Dorado County has levied an assessment of 20c. per share, delinquent May 25th.

The Home Gold Mining Company, of Nevado County, announces an assessment of 5c. per share, delinquent May 28th; and the Golden Land Placer Company, of Sacramento County, one of 1c. per share, delinquent May 20th.

# THE NEW EXCHANGE.

THE NEW EXCHANGE.

The Gold Mining Exchange continues steadily at work and reports that the new properties offered will keep the examining engineers busy for some time to come, while the inquiries and correspondence continually increase. The officers say that the work already done is making an impression and showing results. On the call board of the Exchange sales continue active, and the number of shares transferred makes a very good showing. The stock of the Sebastopol Gold Mining Company, a Grass Valley mine, was listed this week.

Some quotations noted are as follows: Amalie, \$1.65@\$1.70; Sebastopol, 70c.; Savannah, 43@45c.; Lockwood, 34@35c.; Grant, 24@25c. The active list will soon be further increased.

# London.

The South African section of the mining market has been entirely overshadowed by the Matabele revolt. All speculation in the companies operating in Charterland has been at a standstill, and even the shares of the British South Africa Company have received comparatively little attention. The shares have fallen quietly and gradually, but, as

every speculator is a bear, the falls are not so marked as an outsider would expect. The £1 shares now stand at from £3.5s. to £3.10s., a price which is far above their real value, seeing that the company has an unlimited liability hanging over its head in the shape of the expenses of the necessary expedition to reconquer its territory from the Mataneles. It is useless here to go into the causes, consequences or news relating to this revolt, for such matters will be dealt with in your daily press. I may mention, however, that the general impression prevails here that the British will lose their grip of Charterland during the next few weeks or months, and that an organized imperial campaign will be required to regain possession of it. Such a campaign will be considerably more expensive than the original one; and as it has been caused entirely by Dr. Jameson's ill-advised withdrawal of his troops from their authorized sphere of action, the cost will have to be borne by the Chartered Company. This will mean the creation of further capital, which will, of course, depreciate the value of the present stock.

Owing to the dullness in Rhodesians, and owing to the quieter political position in the Transvaal, the Johannesburg gold shares have received more attention, and in many cases a slight advance has taken place in quotations. The companies connected with deep level mining have also been rather more inquired for, on the publication of the results of the first crushings at Roodepoort Deep. The first £4 days run at this mine has given £37 oz. from 1,920 tons of ore. This is quite a favorable result, for the outcrop vein at Roodepoort United has been giving an average mill yield of a similar amount. It is a much better result than that obtained at Geldenhuis Deep, which yields only 4 dwts. instead of the 11 dwts. prophesied. In connection with these poor results obtained at Geldenhuis Deep, it may be mentioned that in his report to the Rand Mines, Limited, Mr. H. C. Perkins gives a very long and very complicated explan

cated explanation of the pnenomenon, but for all that everybody is wondering why he has thrown up his engagements in South Africa and gone back to America.

The West Australian market has been quiet and no feature of interest can be chronicled. The New Zealand section has also lost the activity which has been so noticeable recently, but the luli is only temporary. It is probable that New South Wales will come more prominently to the front in the near future, as several influential syndicates have recently been formed to acquire mines in that colony. The mining men who will act for these syndicates are not adventurers, so that the properties recommended by them will be of quite a different class from the bulk of West Australians flosted here.

The Bradbury Drill Sharpener Company, whose specialty was illustrated in your issue of March 28th is being introduced on the Stock Exchange, and the shares are attracting attention. This is a Transvaal Company at present, but it is proposed to form a large company in London to take over the business. The Australian and New Zealand rights have been disposed of for a very large sum, and the promoters have already made a big haul. The conversion of the company, i.d., for the year 1895, has served to remind us that the copper market has seen a considerable revival lately. The rise in the rate of dividend from 4% in 1894 to 11% in 1895 is largely due to this improvement, in the copper market, but it is also partly due to the reduction of the debenture interest which was effected a year ago. It should also be mentioned that in 1895, only 425,000 was placed to the reserve fund, as against £75,000 in 1894, but as this reserve fund amounts to £100,000, there is no reason why it should be further swelled at so great a rate.

### Paris. April 19.

# (From Our Special Correspondent.)

Interest in the stock market has been diverted to political matters to some extent. The Egyptian complication abroad and at home, and the contest between M. Bourgeois and the Senate, are taking up a great deal of attention, and speculation has not been very active.

The metallurgical stocks are still strong, and their fluctuations have generally been upward. The iron

The metallurgical stocks are still strong, and their fluctuations have generally been upward. The iron and steel trade reports show an excellent condition, not only in France, but all over Europe, and we are promised a good demand.

The copper shares also hold their own very well, notwithstanding the somewhat anomalous position of the trade just now. In spite of the heavy imports from your country stocks increase little and the metal is taken up for consumption in a way that actually puzzles many experts. The active demand for cartridges and other war material furnishes some explanation, but hardly enough. Boleo shares have been especial favorites.

The nitrate shares are rather weak, since all the benefits to be derived from the combination were discounted some time ago and prices are really too high.

were discounted some time ago and prices are really too high.

The South African shares are quiet and weak. Affairs in the Transvaal grow worse and worse, and there seems to be every day more chance of war and consequent stoppage of the mines. England seems determined to extinguish the rights of the Boers regardless of justice—that is, in her usual fashion—but apparently has not counted up the cost of such an undertaking. Many holders, I believe, would like to sell, but are afraid of starting a general fall. The foreign trade of France is reported as follows,

by the Ministry of Commerce, for the three months ending March 31st:

Imports:	1895. Francs. 229,020,000	1896. Francs. 283,364,000
Raw materials	515,877,000 127,361,000	603,639,000 160,484,00
Total Exports:	902,258,000	1,017,487,00
Food Raw materials Manufactures Postal parcels	117,674,000 201,907,000 435,926,000 29,385,000	141,674,00 206,977,00 118,612,00 36,797,00
Total	784,892,000	834,090,0 (
Excess, imports		213,397,00

I trust that a way out of political complication may become apparent for us—and for you also, b fore long. AZOTE.

# MEETINGS.

Name of Co.	Location of office.	Dat	e.	Time.
Centennial	Mills Building,			
Eureka		May	9	2 p. m
Freddie Lee	Helena, Mont	16	12	12 m.
Goleta	330 Pine St.,			
	San Francisco.Cal.	14	6	2 p. m
Jay Gould	Pittsburg Block,			
	Helena, Mont	6.6	25	2 16 11
Magnet		66	16	10. a. m
Montecito	330 Pine St.,		AG	10, 10, 111
Montecito	San Francisco, Cal.	46	6	1.30 p. m
Peruvian Con	34 Com'ercial Block.		U	1.00 p. iii
Ceruvian Con		64	11	
	Salt Lake City,	1	. 1.1	7.30 ** **
701	Utah			1.30
Placer		66		
	Denver, Colo	**	11	10 a. m.
Scorpion	310 Pine St			
	San Francisco, Cal	66	12	12 m.
Smuggler-Union.	804 Boston Building.			
	Denver, Colo	6.6	18	2 p.
Sterling	330 Pine St.,			- p.
	San Francisco, Cal.	81	6	1.45 " "

### ASSESSMENTS.

Name of Co.	Loc'n.	No.	Dlnq.	Sale.	Amt
Alpha Con	Nev	16	May 12	June 2	.05
Buckeye	Utah	2	4	May 19	.0034
Bullion	Nev	47	Apr. 22	" 14	.10
Burlington	Cal	2	May 27	June 17	*3
Caledonia	Nev	46	Apr. 6	May 27	.05
*Camp Floyd			May 16	June 1	.01
Challenge Con		21	Apr. 29	May 20	.05
Channel Bend	Cal	2	May 22	June 13	.05
Crown Point		67	" 6	May 28	.20
Gould & Curry	64	781	May 25	" 20	.15
*Lady Emma			., 6	** 27	.15
Lucky Bill		18	Apr. 18	May 9	.02
Occidental Con		22	May 10	** 28	.10
Old Flag		2	" 10	** 26	.03
Potosi		45	" 14	June 4	.20
Tetro		3	** 2	May 25	.01
Thorpe		1	Apr. 20	" 15	.05
Utah Con		22	May 6	. 27	.05

\*New assessment.

# DIVIDENDS.

NAME OF COMPANY		nt Divi-	Paid since	Total to
	Date.	Amount.	Jan. 1, 1896.	date.
Ætna Con			\$10,000	\$50,000
Alaska-Mexican			16,200	119,031
Alaska Treadwell .		********	75,000	2,750,000
Anaconda	May 1	\$750,000	*********	
Boston & Mont	May 20		600,000	4,025,000
Bullion Beck & Ch.	*******	********	65,000	2,015,000
*Calumet & Hecla .			1,000,000	44,350,000
*Centennial-Eureka			150,000	1,650,000
C. O. D			5,000	25,000
Dalton & Lark	*******		25,000	25,00€
Diminion Coal			600,000	*********
Florence			10,818	45,976
*Galena			6,000	25,000
*Gold Coin			45,0tx	61,000
*Golden Fleece			72,000	473,179
Gold & Globe Hill.			15,000	24,378
Hecla Con			30,000	2,130,000
Highland			25,000	3,109,918
*Homestake		********	125,000	5,837,500
Horn Silver			50.00	5,130,000
*Iron Mountain			25,000	135,000
*Isabella			67,500	90,000
Le Roi			25,000	100,000
Mercur			75,000	425,000
Minnesota Iron		** ******	247,500	2,992,500
*Mont. Ore Pur. Co.			160,000	320,000
Moose			6,000	186,000
Napa Con	****		30,000	770,000
*Ontario			60,000	13,235,000
Osceola Con			75,000	2,022,500
Ottaqueachy			1,000	1,000
Portland			60,000	683,000
Quincy			40,000	8,070,000
*Silver King			150,000	600,000
Small Hopes			25,000	3,275,000
"Smuggler-Union			50,000	50,600
*Utah			8,000	140,100
*Victor			80,000	545,000
Victor M. & L	** * * * * * *		9,000	33,000
*War Eagle			25,000	157,500
Totals		\$1,050,000	\$4,494,018	\$105,975,579

\* April dividend paid.

# STOCK QUOTATIONS.

				B	081	ON	. M	ASS	3."						
NAME OF	Loca-	Par		r. 24.	Apr. 25.		Apr. 25. Apr. 27.		.   Apr. 28,		.   Apr. 29		Apr. 30.		Sales,
COMPANY.	tion.	val.	H.	L.	H.	L.	Н.	L.	H.	L.	Н.	L.	H.		istarce,
Allouez	Mich.	25 25													5
Arnold	84	25	****	*****		*****	1 00	****	*****	*****	17 50		****	****	21
Bost, & C. C	Colo	1						****	*****	*	20,00			*****	~
lost. & Mont	Mont.	25	75.50	73.75	25.75	75.00	75.25	74.50	75.75	74.50	74.75	72 75			15.72
utte & Bost	14	25							2.13	2.00	2 25	2.13	2.25		54
al. & Hecla	Mich.	25	30)+		300		300		800		300		300		21
entenniai	6.6	23		*****	****		*****		::*::	*****	*****		11.44	10 -3	*****
ominion Coal.	N. 8		18.00				14,00	13,18	13.53	13,25		*****	14.00	18.5)	2,90
" pref.		100		*****	****		11 00		23.00	*****	44 00		90.00	- 22.0	1
ranklin	Mich.		PO 70		****		11 30	11.25	*****	****	11.00	*****	20 6	** *	
ninois Steel	III.	100	73.00	****			16, 10	- ***	* '73	70	44.00	***	42 33	*****	8 47
old Coin	Colo	96	* 09	****	11 00	10.75	.00	.60	10 80	. 40	10.00	0.00	6 00	***	2,11
earsarge	Mich.	25	RICK	*****	11.00	10.40		****	10.00	*****	10.00	0.40	9 00		2,11
ake Sup. Iron. lerced	Cal.	15	15 50	19.95	16 95	15 10	15 60	19 00	19 50	11 95	12 00	11.80	19 50	11.50	14 41
linnesota (Ir.)	Minn.	100													*****
apa	Cal	7		*****											*****
ational	Mich.	25													
old Dominion	Ariz	25	13.00	14.50	16.00	15.53	16.00	15.75	16 50	115.63	15.50	15.00	15.00	14.75	2.12
sceola	Mich.	25	25,50	26.10	26.0		25.75		25 00		26,00	25,00	25.0.1	24.88	1.13
loneer	Ca'	10	8.75	8 50	9.01	8.63	3.75	8.00	8.25	7 75	8.25	8.00	8.63	8.38	6,50
ontiac	Mich.	25													
uincy	64	25	120	118			118	117	116						24
do. scrip	16		90,00				79,50						78.00		6
anta Rosa	Cal	10													*****
an. Ysabel (G.)	83	5	13.00				13.00	12.50	13.00			*****	18,00	*****	26
amarack	Mich														20
do. serip	44														
amarack, Jr	44	25													*****
ecumseb	1	25			***		****		20 00		*****				8
Vestingh E.&M	Pa.	30	29.50	** *		*****		2 ne	49.25		****		- mr		8
do. pref	64	30	****			*****	22.20	3-5.25	52.75	****	*****	0 00	52.75	*****	. 6
	Mich.	25				7 00									1,36
* Official q	uotatio	ns B	ostor	Stoc	k Ex	chan	ge.	+ Ex-	divid	end.	To	tal sa	les, a	6,864.	

	INDU	STR	IAL	C	JAC	ANI		OAL		ILR		*		
NAME OF	Par	April	25.1	April	27	April		Apri		Apri	-	May		Sale
COMPANY.	value,	H.	L.	H.	L.	H.	I.a.	H.	L.	H	L.	H.	L.	-
Balt. & Ohio	100	1796	1736	17%		18	1714	1736	1	17%	***	17%	****	2,70
hes. & Ohio.	100	18	1796	1756		1736	1796			1796	1714		****	2,06
Col.C.& I.Dev	100					*****		****	-		*** **	*****		-
ol. Fuel & I.	100	3236	31			3134	3114	811/6	31%			30%		3,00
ol., H. V. & Tol	100			*****		****		****		*****				****
do. pref	100			*** *			788.					****		
Col. & H.Coal	100						***	*****			****			
Det. & Hud. C	100	138		128%				12734		127				86
Del., L. & W	50		72.56	16036	159%			15914	** **	**			1	70
eneral Elec.	100	3736	3716	37%	3716	3756	3.14	3798	375%	8736	361/4	363/6	35%	9,64
ake Erie& W	100	21	20	1994				**			*****			
do. pref	100	7286		7236		72%	7214	7836	*****	71	70%		*****	76
Iorris&Essex	100	27%					****						** *	
at'l Lead	100			271/8	27	27%	*1 * * *	27		263/8	26			1.26
do. pref	100	1				9136	9154		** **	9134	91			54
. J. Central	100	10736	***	****	2.0				***	10736	107	107%		30
Y.L.E.&W	100													
do. pref	100			****	*****				*** ***			*****		
.Y.,Ont.&W.	100			1514	1516	15%	15%	15%	1516			1536	15	1,16
Y.,Susq.&W	100			***	*****	****		4.58	*****	44 . 1	*****			
do. pref	100	2436		2456	2436	25	2434	25	2436	-2434	2416			1,80
orfolk & W.	50								***					
do. pref	50				*****				****			-5.44		
hila. & Read.	50	1294	12	1256	12	12%	12	12%	12	12%	12	13		20,64
enn. C. & I	100	30%	30%	3134	3036	311/8	3016	30%	3,34	3014	29%	30%	2916	,9,00
do. pref	100			** ***			2111				*****	****		** *
Vheel. & L. E.	100	11	10%	11	10%	1114	1016	1194	10%	1056	10	1034	10%	23,91
do. pref.	100	37	36			37				3734				38

					45	VY	Uni								
NAME OF	Loca-	Par	Apri	1 25	Apr	11 27.	Apri	1 28.	Apr	11 29.	Apr	11 30.	Ma	у 1.	Sale
COMPANY.	tion.	val.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	State
Adams	Colo	10							****			-			
AJax	Utah	10		****	*****			***	*****		****			*****	
Alamo	Colo	1	* *	** **					****	***	*****				
Alliance	Utah	ı î													
Amer. Flag	Colo .	10													
Anaconoa	44 274 - 1	5			****	*****									
Anchor	Utah . Nev	10					****					****		****	****
elcher	MEY	10		****	*****		*****				****			*****	
Best & Belcher	66	100					.55		.57				.53	***	3
Bodie Con	Cal	100													
Boliver	****	**	* **									*****			
Bullion Beck&C	Utah	100	.25		95						96		****	****	1,0
reece	Colo	25	.15		. 16:11	*****		***	****	****	*(312		****	****	li
Brunswick	Cal.	2	.14		.15					*****		:			7
Centennial Eur.	Utah.	50									****		.20		
hollar	Nev	10							*****	41.4	*****		.70		. 2
Comstock T	Colo	100	*****	*** *	*****	****		****	.13		.13				1,3
Con. Imperial	Nev	100	****			****					*****				- * *
Con. Cal. & Va	44	100						*****			1.85		1.75		3,9
Creede & C. C	Colo	1											.05		3
rescent	Utah	25							*****			4.4			
Cripple C. Con	16 .	1	*****		*****				*****		** *			****	
roesus Crown Point	Nev	100	*****	*****			*****	*****		****			****	****	
Dalton	Utah			*****				*****		****		*****			
Daly	46	20				** *						****			
Deadwood Ter.	S.Dak	100									****				
Durkin	Culo	12.5									17		****		2
Father de Smet. Gold Coin	S Dak						.72	****		*****	.14		.17		
Golden Fleece	1010	1			1.75		4		1.75		1.65				1 2
Gould & Curry	Nev										50				1
Hale & Norcross	-	100			1.10		1.30		1.30		1.15				
Homestake	8. Dak	100												*****	
Horn Silver	Utah	25			*****	***	1		*****	4.1.2				** *	**
Isabella	CO10	1			*****			****			53	*****		****	3
bing & Pemb	Ont	10		1			.00	*** *							
Lacrosse	Colo	10	,19												5
Leadville Con	14		.13				.14				.14				1,3
Little Chier Mexican.	Nev	50	.18		*****							** ,	* .		1
Mollie Gibson	Colo	103		*****	*****		*****							*****	**
Mouston	Mont.	1 5								*** *				*****	
Mt. Ross	Colo	1 1					.10				*****				5
Occidental	Nev	100			****						4		1.25		1.44
Ophir	Colo	100			****	****				***			200		
Pharmacist Phœnix	Ariz	1	****	*** *	****		*****					****	*	****	
Portland	Colo	l i													3
Potosi	Nev	100			.2								.35		175
Rover .	Utah	10													
OB V 84 E 41	Nev	100						****	*****	****	68				
Sierra Nevada Silver King	Utah.	100							. 64/	****	.68	*****			
Sm. Hones Con	Colo.	20					*****		1.00						
Standard Con	Cal.	100				1								****	1 3
Sunshine	Utah .	10												****	
Tetro	46	1	***												
Union Con	Nev	100	*****							****					
Union Gold	Colo	1	0.44		8 00	** *	9 60		****		8 95	****	****		
		1	8.25		5.00		17.10				8 25				
Work	44	1	.15	.13								1			1.2

ONFANY   Val B B	NAME OF	Par	Apri	1 20.	Apr	11 21.	April	122.	Apri	. 23.	Apr	11 24.	Apr	11 25.	, Sales.t	Sales.*
mircian   1	COMPANY:		B. (	A.	В.	A.	В.	A.	В.	A.	B.	A.	B.	/ A.	Sales.T	Sales,*
mirric 1	jax	81					-									
	lamo	1	.05	.07			.06	.07	.061/6	.0654	.05%	.0636	$.059_{\rm R}$	.1614	46,567	2,000
	kın'ric'nC	1			(2	.03				.13	.1.2	.(210	.02	.025	*********	1.000
rg'atumal 2	naconda	5		.70	.55		.58			.60	*** *					
Section   2	ola	1				0234	.0.36							.0234		9,000
minor 1 12 129 1296 1056 1056 1056 1056 1056 1056 1056 105	rg'ntumJ	2	.58		.58		.57	.68	56	.60	.57	.5736	.55	.5750	11,800	
ankers. 1 1.2 1236 1.295	nkok	1														
Namer   1	lankers	1	.12	.12%	. 1296		.1256	.13	.12%	.1356	.12	.1234	.12	.12%	**********	8,500
en Hur.   1 0956   0956   0956   0956   0956   0956   0966   0956	anner	i		*****		0536				.1 556						
Internal   1	en Hur	î	.0574	.0616	.0546		0514	.06	.0334	.06	.05	.05%	05	.0634		6.000
b Lee . 1	lue Bell.	î		68		07	/-	.1.7		1/8		1.646		11612		opinou
ut. & C. C. C. 1		i			0146	0:84	.0144				0114	.0156	.0134		5.0.0	*****
ucknorn. 1	at. & C.C.	1	*****		.0.75	0114		0114	.00%	0134	~~/*		/6	01146		********
OIOC2.M   1			04	0414	04	0414	1376	0416	0354	1 386	0387	09%	0314			6.000
Numbrine   1		1				0.434				0.04				04		12 000
poper M					0.114	1.0	.0.70	. c /8	1914			0917	.ouyg	.04		12,000
The Corner   1	nnor M	1		*****	0114	100		09		(19)	.02	0104		0184		********
Corresponded   1	pper m		0.00	"aii	.0178		04	1414	* **	.06	0.91	0198	0.01		12 000 111	
Corresponded   1	C Con		.00%		0474	.0479	.04	.0478	100.	1 21 4		.005%	.0078	1004	14,000	10 000
Commist.   1   0.02   60%   0.01%   0.02%   0.01%   0.02%   0.01%   0.02%   0.01%   0.02%   0.01%   0.02%   0.01%   0.02%	C. Coll.	1	.1498	145%	1429	.10%	10	1174	. 1398	, 1370	1974	. 1958	1079	.1394	63,400	29,600
mate   1	.Cr.E.xp.	1			1278	1278			0494	in	011	' ioo :	1458	00.11	*********	
eshiolnes 1	COMUN	1	.02	.0276	.ULWA	.0479	.0120		.0198	.0078			.1126	.02	200	
terprise   1   0.9%   1.0%   1					.1 9%		*****	.11	.0.98	.10%		.10	.09	1078		1,200
may R. 1		1	000	******	***	U6	voi :		****	*****	*****	403	** **		*********	
Nortice		1					.1054	11.98			. 10		.10		******	
anklin 1	nuy R	1	.0976		.0956	10%	.69%	.10	.0994	.10	.0996	.09%	****		6,000	1,000
arfield-Q 1 0.0146 0.04s 0.04s 0.04s 0.04s 0.05s 0.05 0.03s 0.04 0.33s 0.04 0.23s 0.05s 0.	vorite	1		08	*** **	.04%	.0094			.00%					6,000	
Old, Age, bid. Stage 1	anklin	1		.0136	.001	.011/6	.04	.011/8			.01				1,000	
Old. Age 1		1	.0436	.0450	.0434	.14%			.0376	.04		04	.13%	.04	****** * **	23,000
10.1   10.2   10.2   10.3		1		.1236	.0136		.1136		***	*****	.0114	.01%			*********	1(,000
1	old.Eagie	1	*****			.03		.03	.01%	.0214			*****		*****	2,510
		1	*****	4-1			1.6	1.72	4.1		1.65				5,800	
Old King   1		1	.2036	. 2296	.22	. 2214		.21%	.21_	.22		.22			1,000	3,100
Numbord   1		1	,45		.45							****				
Otte	old Stand	1				.03		***		.09		.6856				
Barietta   1	ouid	1	.08	.0836	.08	.0856	.0836	.08%	.08	.09	.08	.08%				
Barietta   1   0.015   0.1   0.1   0.1   0		1					*** *									*** *****
Nambord   1   0.15   0.2   0.35   0.25   1.1   22   0.25   0.25   1.1   22   0.25		1			.01	.0136	.01	.0136	.01	.0136	.01	.0134	.01	.0:34		
a May			.0136		.(2		.0:36				.0134		02	.0314		
g ham, C. 1	a May	1		.15											**** *****	
CONCIDENT 1 5.53% 5.43% 5.43% 5.43% 5.43% 5.54% 5.53% 5.35%	gham, C.	16				.25		.22		.23	.10	.22		.23	********	
abella . 1 53% 54% 54% 54% 54% 55% 55% 55% 55% 53% 53% 53% 53% 53% 55% 55	ron Clad.	1		.06	.05	.66	.0536		.0456	.0596		.06		.16		2.000
ack Pol. 1   07%   10   0.08%   0.78%   0.7   0.8   0.7   0.8   0.7   0.7   0.8   0.7   0.7   0.8   0.7   0.7   0.8   0.7   0.8   0.7   0.8   0.7   0.8   0.	abella	î	.5356	.54%	.54%	.54%		.54%	5396	.5334	.5256	5316	.5356	5334	41.750	8,800
ack Pol. 1   07%   10   0.08%   0.78%   0.7   0.8   0.7   0.8   0.7   0.7   0.8   0.7   0.7   0.8   0.7   0.7   0.8   0.7   0.8   0.7   0.8   0.7   0.8   0.	lo.stamp.			5496			.5334	.5394	.53	.54	.52	.52m	.5284	.5936	12.500	4.:00
## efferson	ack Pot.	î	11746	.10 -	.0646	.0786				1756		11:16	.0786		1.500	38 (50)03
cystone   1   .04	efferson	1			10	.195	.18		.18	.20		20			24000	
	eystone.	1	.04		.(1446)	.0456	.04	.0436	.0414	0436	0354					3.500
ne'inBoy 1 1	des a	î											****			cyooo
trite Gib. 1	ne'lnBoy	1														
Infron   1   0.68   01\frac{1}{6}   01   01\frac{1}{6}	ttie Gib.				.0116	.0134	.01	.0136		.0136	.0134	.02	.0134			8.000
Akoa. 1 1.3 16 1396 1596 14 1.394 1.314 1.41 1.3 1.414 1.3 1.5 1.5 1.5 1.00 1.00 1.00 1.00 1.00 1.	larion	1	.0.8	.0134	.01	.0154		.0154	.01					1)114		0,000
Dible G     5	LOS.	1				1552		1584	1814					15		9.000
ODBATCH   1   10%   10%   10%   11%   11%   10%   10%   10%   10%   12%   11%   10%   12%   11%   10%   12%   11%   10					65				1.5		63				7.490	100
Russa. 1 10% 10% 12% 12% 11 10 12 11 10 10% 11% 12,200 11th 11 11 11 11 11 11 11 12 11 11 12 2,200 11th 12 11 12 11 11 12 2,200 11th 12 11 12 11 11 11 12 11 11 11 12 11 11	onarch		** *	**		100			.00		100	10078	*400		1,400	100
High   1	. Russ	1 4	1012	1074	1.74	1114	111	.12	*****	11	10	1004	10	1014	19 900	******* **
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	utual	1	110/8	.107B	0374		. 40	11284				. 1078		0374	14,000	
phir: 1	ugget.	3	08	08		11714	1674	0744		0714	.00/8	0784		071		201
1	phir.	1				10		.0744		10	07	0:34		10)		1,000
	lole	1	,00	40		10	.04	10178		. 40	.01	10178		.10	*** *** ***	1,000
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	ruhan R	1	00	1084	10	11:14	1014	1084	10	19	10	19	10	111	********	4.000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	aunoose	1			0414			115	11177	* 1.00		116			**********	2,000
Friance   1   1.43   1.44   1.45   1.41   1.41   1.42   1.40   1.42   1.40   1.43   3.100   8.200   1.100	armaciet	1 1		1.05	Out Out	0074	Letta	(00)	0038	00	0098	0987		1108	44 800	
Trincess 1 keron. 1		1			1 14	1 16	1 41	1 44	.03%	1 40	1 400	.0098			11,700	0,000
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		1	1.95	****		1.40			18.4	1.46		1.42	1.40	1.45	3,100	8,200
acram to 1	eno.	1	*** **	****			*****	**		OR.		*****			*** ***	*** . *
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	none on the	1		*****	410	00	*****	022	*****	.00	'ner	** * *	** *	*****	* ******	******
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Inon St	1			.00	.08	047		*****	*****			*****	*****		
Necumen. 1 (.9% 10 (.0% 10 10 10 10 10 10 10 10 2.200		1	*****		*****	**** *	.0134	.1.156	.01%	.01%	.01%	.(198	*****	.0134		1,00.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	reumen	1	,0956		.09%		**	.10	61.	.10		.10		.10	2,200	
emunj 1 .06 .09 .0956 .0956 .07 .0954 .06 .0756 .06 .073407541,0001,000		1	.0494		.04%	.01%	.0418						.04	.0434		
Tachyle   1   1.00   1.03\( \)	emonj	1 1	.06	.69	.0656	.06%		.0534	.06	.0736		.0736		.0754		
1 42% 42% 42% 43% 43% 41 41% 40% 41 40% 40% 40% 40% 40% 40% 40% 40% 40% 40%	achyte .	1			.0356		.0314		.0314	.04	0334			2 04	1,000	
DER 1 1334 1396 1334 1336 13 1334 1294 13 12 1234 76,500 17,000	шов	1	.4236	.42%	. 4298	4356	.41	4114	-4036	.41	.403%	.40%				23,400
0rm 1   1894   1894   1894   1896   18   1894   1894   18   12   1294   76,500   17,000	rginia M.	1			.01	.0236	.0134	.0134		.0214	.01	.0214		1		1
	310	1	1.134	1336		.1336	.13	.135	.1294			1 124	.12	128	76,500	17,000
									-			/-				

	O Milestown,				
+ Official	quotations	and sales (	Jolo, Spri	ags Mg.	Stock Assoc.

NAME OF COM- PANY.	Company's Office.	Par Value.	Bid.	Asked.	Last Dividend.
Central Lead	St. Louis, Mo	\$100 100 100 25 100	\$50 16 .75 1.58 8,75	1 60	Sept., '95, 1 p. c. June, '92, 2

\*Official quotations Con. Stock & Petroleum Exchange. Total sales, 16,450.

NAME OF COMPANY.	Loca- tion.	Par. value.	Apr.25.	apr.27.	Apr.28.	Apr. 29.	Apr.30.	May I
Alta	Nev.	100	.08	.08	.08	.08	.08	
Belcher	4.6	100	.42	.45	.48	.48	.49	
Best & Belcher	46	100	.49	52	51	56	.57	.52
Bodie Con	Cal.	10.)	.47	.50	5)	.48	.49	.48
Bulwer	66	100	.30	.3)	.28	.28	.31	.31
Choliar	Nev.	100	.38		.39	.42	.60	.56
Con. Cal. & Va	44	100	1.70	1.70	1.70	1.75	1.70	1.65
Crown Point	64	100	.27	.30	.34	.33	.34	.30
Sould & Curry	66	100	36	***	.33	40	41	.40
Hale & Norcross	44	100	1,15	1.20	1. 5	1 25	1.20	1 15
Mexican	66	100	.81	.32	32	32	.35	. 31
Mono	Cal.	100				.15	.16	.15
Ophir	Nev.	100	1.15	1.20	1.20	1.25	1 20	.15 1.25
Potosl	44	100	.22	.22	.25	.25	.:4	.27
Savage	16	101	.26	.25	.29	.98	.29	.27
Sierra Nevada	41	100	.60	.59	.59	.62	64	.:9
Union Con	6.6	100	.50	.51	.51	.52	.55	52
Utah	64	100	.04	.04	.04	.04	.04	
Yellow Jacket	41	100	.31	.34	35	.35	36	.34

\* Official telegraphic quotations, San Francisco Stock Exchange.

		BAL	TIM	ORE,	MD.*	Veek en	ding A	pril 3	0.
NAME OF COMPANY.	Loca tion.	Par	Bid.	Ask.	NAME OF COMPANY.	Loca tion.	Par value	Bid.	Ask.
Balt. M. & S. Conrad Hill. Con. Coal G. Cr'k Coal	N. C Md	100	31 1J9	32¼ 112	Howard C.&C Lake Chrome Ore Knob Silver Valley.		5 5 10 5		20

\* Official quotations Baltimore Stock Exchange.

NAME OF COMPANY.	tion.	Par Value.	Bid.	Asi
American Coal Datesugay Ore & Iron R. R., 6s, 1915 Mahosing Coal R. R., pref Maryland Cost, pref Maryland Cost, pref New Central Coal Nicaragua Construction, New Pennsylvania Coal Pref, Cum do, Pref, Cum	Md. Minn C A Pa Conn	100 100 100 100 100 100 100	108 50 69 6 330 6 62	60 70 8 10 340 13 72
Retsof Mining, Bond Sloss Iron & Steel, 1st 6s. Standard Oil. Susquehanna Ccal, 6s. Texas & Pacific Coal. do. do. ist. Worthington Pump.	Va	100	92 240 115	242 50 16 76

								3 JO	OTSL							439
1		LONG		Last div		pril 17.	4			DENV		COLO				
ME OF COMPANY.	Country		pital Par ock. value.		Date. Buyer	s Sellers.	NAME OF COMPANY. Par val.		В.	A. B			A. B.	r. 84.	Apr. 25	Sales
mericans: ska-Mexican	Alaska	Gold g	200,000 1 0	0 0 4.8 Fe	£ s, d	0 1 15 0	Addie C \$1 Agate 1 Alamo 1	.104 .0	0% .008 07 .005 6% .06%	.014 .00 .006 00 .06% .06	5 .007	.004 .	010 007 1616	. 011 . 007 . 0636		11 15,0 07 6 55,0
ska-Treadwell Lamar I horn	Idaho Montana .	Gold&silver	00,000 5 0 40,000 1 0 20,00 1 0	0 2 0 Jan 0 0 Fe 0 0 3 Ju	b., 1895; 17	0 18 0	Amity 1	.0216	254 .02	. 214 .02 .62 64	14 .02%	.01%	02½ .02 60 .55	0214		236 4,0
rquahala	Arizona California	** *******	300.0 0 1 0 135,000 5	0 0 6 No	v., 1891 3	0 1 6	Ansconda 5 Argentum-J 2 Bangkok 1	.0784 .0	8 .07	.60 .51	.54%	.54	56	.6784	.5416 .5	756 1,9
w Guston	Colorado.	Gold & silver	660,000 1 0 110,000 1 0	0 0 3 Ma 0 1 0 De	C., 1892 2	6 9 6	Bankers 1 Ben Hur 1 Big Johnny. 1	.04% .0	4 .12 05% .049 08% .0073	.13½ .13 .06 .0 .00384 .00	84 .05%	.04%	.13 .115 .06 .0816 0063		.0514 .0	13% 2,5 6 14,0
marejo mas-Eureka	Mexico	Gold & silver Gold Gold & silver	800,000 1 0	0	2	9 16 3	Bob Lee 1 Cannon Ball 1	.0116 .0	0.34 .013	011 .00	96 .01% 9 .009%	.0136	.0136	.015	.009 .0	136 109.0
rra Buttes	Nevada Californ'a	G'ld, ·11., le'd Gold	270,000 5 0 245,000 2 0	0 1 0 De	E. 44 8	9 11 3	C. K. & N 1 Colfax 1	.005	06 .0053				.008 .007 .01 .005			81/2 27,3 007 13,0 1,0
ringdale rin Lake, I'th Americans:	Colorado.	* :::::::	26,000 1 0	0 0 2 Se 0 3 0 Fe	pt.,1894 1016 b., 1895 1 U	0 1 5 0	Colo. C.& M. 1 Creede&C.C 1	.0376	05 .04	.05		.0394	.0436 .04	.04%	.03%	3,0
lomb. Hydra'iic ontino & Bolivia.	Colembia.	Gold	75,0°0 1 0 14 ,000 1 0	0 1 0 Ju	n, 1896 1 0	0 1 0 0	Cripple C.C. 1 Croesus 1 Chimborazo 1	.01%	15 4 .14 02 5 .011	1.15 .1		.13	.14	.10		1354 6,0 1136 48,0
copper: acondape Copper	Montana. So. Africa	Copper	5,00°,000 5 0 600,000 2 0	0 De	6 2 ec. 1895 2 6	6 6 7 6 3 2 8 9	Eclipse. 1 Enterprise. 1 Eureka. 1	.10 .0	916 .000 12 .13 009 .000	.09 .	010 15 17 .010	.(8	.010 .003	15	.005 .0	20 10,0
piapo	Chile		150,000 2 0 200,000 2 0 3,250,000 10 0	0 1 3 Ju	ne " 2 7 ec. " 2 9 ev. " 18 12	6 2 3 0	Garfield Gr. 1 Gold Fleece 1	1.60 1	0414 .64 73 1.63	1.71 1 6		1.63	.0414 .18	1.71	031/6 1.65 1	03% 5, 69 2,
ustralians:		Sulpræccp'r	1,250,000 2 0	0 4 0 A	pril " 5 5	0 5 15 0	Gold & G 1 Gold Stand. 1 Goldstone. 1	.0794 .	23 .19 08¼ 07	. 8 .6		.0734	.25 .0816 .07		.073%	25
yley's Reward oken Hill Prop'r. . Morgan Gold	N.S. Wales	Gold Silver		0 4 D 1 1 0 M	ec., 1894 ar., 1896 3 12	6 5 0 3 2 8 9 5 3 17 6	Henrietta 1 Isabella 1 Jefferson 1	5436 .	01% 01 54% .52 19 .7	6 0114 0 .529h .5	13 .9139		.01¼ .01: .3% .52 .19% .15	.54	.54 .	0114 11, 5336 14, 20 5,
outh Africans:	So. Africa	Lands &Ex.	2,500,000 1 0	e rgts. Ju	ily, 1995 3 5	0 3 7 6	Justice 1 Keystone 1	.05	05 02	. 0514 0	4 .043	EU. 13	.05			151/4
y & Suburban own Reef Beers Con	CapeCol';	y Diamonds	120,000 1 0 3,9 (0,000 5 0	( 18 0	an., 1893 1 12	6 11 17 6 0 28 5 0	Ladessa 1 Lincoln Boy 1 Mollie Gib 5	.0436	01 .10 (434 .3 .6) .65	.04 .1	436 .01 6 .70	.007 .0354 .6256	.01 .00 .03% .04	14 .1416		041/6 229, 69 1,
reira Idenhuis Estate. gersfontein	44	S Diamonds	91,000 1 0 200,000 1 0 1,00,000 5 0	0 60 J	nly, 1895 4 2	26 15 0 6 4 7 6 1 0 0 0	Mt. Rosa 1 NewZeal'nd 1	.15		08 .0	5 . 81	6 .0436	.12% .09	94 .15 97%		15
nglaagte Estate . w Primrose	Transvaa	Gold	507,000 1 0 280,000 1 0	0 5 U F	eb., " 5 12 5 17	6 6 0 0	People's 1 Pharmacist. 1 Portland 1	136 .	.06 68 .46 1.43	16 .10 .0	4 .053 7 .10 6 1.50	.0794	.06 .03 .09 .07	.06 .09	1 40 1.	16 09 13 0416 47
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		PA	RIS.	V	Veek ending	April 10.	Sacramento 1 Santa Fe 1 Tenderfoot, 1	.0031/6	.004 .008	0. 1.0.	114 .02	.01	.00436 .00	.05	.0134	05 28.
NAME OF COMPAN	v. Co	untry. Produ	ct.  Capita	Par	Diva. P	rices.	Union Gold 1 Unity. 1 Va. M. Con 1		.008 .00	4 .009 .	1 .02	.004	.008 .00	08 .00736		008
MASE OF COMPAN			Stoce	value.	year. Op'nin	g.   Closing?	Wh. of For . 1	.0 8	010 .00	16 .0 9	009 (10	11716	.008 0			42
eieries de Creusot. " " Firming " " Fives-L	ille.		" 3,000,00	U 2,000 U 500	Fr Fr 100.00 1,835 85.00 1,545 85.00 715	.00 1,830.00 .0 1,559.00 .00 725.00	# All the	compan	ies are	located in unl	Colora sted, 1,	do Tot 118,300.	al share	s sold:	listed, 81	5,85.;
" la Marii " Long w guas Tenidas	y Spai		rites 10,000,00	500 500	37.50 910 35.00 690 40.00 220 160.30 4,50.	1.50 700,00 100 233.0 i		1	1 An	PHILAD			A.* April 27	April	28. 1 AD	ril 29. [
uay	Low Fran	er Cal Copper	3,0 0.0	500	700.00 19,700	0.00 1,335.00 0.00 19,700.00	NAME OF COMPANY.		al'e H			Н.   І.,	H.   L.			- Sa
pe Copper amp d'Or	···· Vene	ezuela.   Gold	3:,210,0	00 125 50 25	1.50 60	3.25 8 25 0.00 58.75 0.37 45.10	Acety.L.H.&P. Bethlehem Ir.	Pa.	25							
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uanchacaebao anglaagte Estate.	Boli Ton	via Silver. quin Coal	11,750,0	125	6	2.50 68.43 0.00 60.00 6.25 145.00	Lehigh C. & N. Lehigh Valley.	44		52 6 42.0 42.5 10 34.75 35.0	1 42.00 4					
aurium	Ch.I	ece Z'nc &	lead. 16,3/0,0	00 500	40.00 60	0.00 595.00 0.00 170.00	Penn. Gas Coal	**	50		6	3,50	****		63.7	5
lalfidano letaux, Cie. Fran. lines d'Or de la Ru	de Frai	nce Metal	12,500.0 Plers, 25,000,3	00 500 500		5.00 870.00 1.00 485.00 0.00 1,200.00	Penna. R. R Penna. Salt Penna. Steel	**	50				26,50			
ickel	N.C	aled'nia Vickel	12.720,0	00 500 00 500	40.00 75 30.00 15	0.00 770.00 3.01 152.51 0.00 41.25	UnitedGasImp " scrip			70.8	9 7	).88	70.88 70.	50 70.50		
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NAME OF COMPANY	. s		of Last	Las	18-	rices.	Name of Con	Par valu	e, Bid.	Asked. s	ctual elling orice.	Name o	f Com-	Par l	Bid. A	sked. Ac sei pr
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	ia Hidala	shar		12	8 4		Alliance	1	.35	.55	.45	Geyser Horn Sil	ver	25 8	5.00	.03
mistad y Concord	Guana Hidalg	shar go 9, juato 2,	600 \$1. 400 10.	00	270	100	Ajax Alliance Am. Nat. Gas Anchor	*** *** *	2 40	.55 .07%	2 50	Geyser Horn Sil Little Pi	ttsburg	25	2.00	2.95 2
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mistad y Concord ngustias revalo y Anexas. sturiana y Anexa artolome de Medi armen astellana y SanRa erro Colorado. inco Senores y An oncepcion y Anex	Guana Hidalg Lacave na Hidalg Tepic Chihue Guana S. Luis Guana	Shat	600 \$1. 400 10. 10. 500 10. 0.0 3. 100 7. 443 3.0 000 20. 700 20.	00 00 50 50 50 81	270 409 409 300 600 170 90 10 800 200 109	400 440 300 550 170 11 600 2.0	Am. Nat. Gas Anchor	C. 10 (a. 50		.55 .07% \$700 .40 7.25 78.00 .69% .52% 8.50 8.25	.45 .07 2 50 .3 ) 6.95 [6.00 .09 .50 8 20 7.80	Geyser Horn Sil Little Pi Mammo Mercur. Morgan Ontario. Rover Silver K Sioux C Sunshin Tetro	ttsburg th	25 25 25 125 100 10 20 1 10 10	2.00 .12% 2.90 7.05 .47½ 4.25 .65 6.00 1 50 2.85 .07¼	2.95 2 7 2) 7. .55 5.00 14 .75 7.90 16 2.00 1 2.95 2
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mistad y Concord ngustiss. revalo y Anexas. sturiana y Anexas. sturiana y Anexa artolome de Medi armen. astellana y SanRa erro Colorado. linco Senores y An loro. loro y Anexa abellon. urisima de los Co teal del Monte. tosarlo y Anexas. an Francisco Ped. Chalchihuli	Guana Hidaig  Tepic. Chihur Guana S, Luis Guana Hidaig  Hidaig  The Chihur Guana Guana Hidaig Hidaig Urran Hidaig	Shar   Shar	600 81. 400 10.1 10.500 10.1 10.0 10.0 10.3 11.0 10.0 3.1	00	270 440 440 3400 600 170 00 10 600 100 200 200 200 21 10 90 450 450 450 110	400 440 500 170 1 170 1 10 600 200 200 200 200 200 200 400 4	Am, Nat. Gas Anchor Bogan Bullion Beck & Centen'i Eurele Daiton Daiton & Lark Daly Daly West Eagle  * Special	200 1 1 C. 100 (a. 50 50 100 100 100 100 100 100 100 100 1		55 .07% \$100 .40 7.25 18.00 .52% 8.50 8.25 15% 2.00 PITTS	.45 .07 2 50 .31 2 50 .39 .6.95 6.95 6.95 6.97 .99 8 20 7.80 1.00 k. † A	Geyser Horn Sil Little Pi Mammo Mercur. Morgan. Ontario. Rover Silver K Sioux C Sunshin Tetro Lill the cc	tingon	25 25 25 125 1100 10 10 10 10 10 11 1 are loca Week	2.00 .1226 2.90 7.05 .4756 .425 .65 .650 1.50 1.50 1.80 ated in 1	2.95 2.77 2) 7.55 5.00 14 7.55 2.60 16 2.60 1 2.95 2.00 1 1 Utah.
mistad y Concord ngustias revalo y Anexas sturiana y Anexas sturiana y Anexas artolome de Medi armen, astellana y FanRa ustellana y FanRa inco Senores y An inco Senores y An inco Senores y An inco Senores y Anexas abellon, uz de Maravillas, abellon, uz de Maravillas an Francisco . Ped. Chalchihuit an Rafael y Anex do, free stock ta. Maria de la Pa	Guana Hidaig Tepic. Chihur Guana As S. Luis Guana Hidaig Hidaig Hidaig m. Zacate Hidaig m. Jacate Hidaig m. Jacate Hidaig Juran Hidaig Juran Hidaig Juran Hidaig Juran Hidaig Juran Hidaig	Shar   Shar	600 \$1. 400 10. 500 10. 500 10. 500 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	00	270 440 440 440 380 800 170 170 100 100 200 200 200 200 450 450 450 450 460 460	400 440 300 500 170 1 1 600 2 0 100 200 200 200 200 200 110 400 400 110 400 400 110 400 40	Am, Nat. Gas., Anchor., Bogan Bullion Beck & Centen'i Eurel Daiton. Daiton & Lark Daly Daly West. Eagle	C. 10 50 50 50 10 10 10 10 10 10 10 10 10 10 10 10 10		55 .07% \$100 .40 7.25 18.00 .52% 8.50 8.25 15% 2.00 PITTS	.45 .07 .250 .31 6.95 .6.09 .50 .50 .15% 1.00 k. † A	Geyser Horn Sil Little Pi Mammo Mercur. Morgan. Ontario. Rover Silver K Silver K Silver K Silver L Little C L NAMI COMF	vertitaburg th ting on on ompanies	25 25 25 125 100 10 10 20 1 10 10 10 10 10 10 10 10 10 10 10 10	2.00 .1226 2.90 7.05 .4756 .425 .65 .650 1.50 1.50 1.80 ated in 1	2.95   2.77   2.95   7.55   14   7.50   16   2.00   1   2.95   2.95   2.95   2.10   1   1   1   1   1   1   1   1   1
Amistad y Concord Angustias Arevalo y Anexas Saturiana y Anexas Saturiana y Anexas Saturiana y Anexas Saturiana y San Rain Satellana y San Rain Satellana y San Rain Soncepcion y Anex Il Oro Jurishma de los Co Satellana y Anexas San Francisco San Francisco San Francisco San Francisco Tee stock Sta. Maria de la Pa Solopas	Guana Hidaig Sacate na Hidaig am Tepic. Chihut Chihut Guana as S. Luis Guana Hidaig m. Zacate Hidaig Duran Hidaig Les Luis Hidaig	Shar   Shar	600 \$1. 400 10. 500 10. 500 10. 500 10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	DD DD DD SDD DD DD DD DD DD DD DD DD DD	270 400 400 400 300 700 100 100 300 100 200 100 200 100 100 100 100 100 1	440 440 300 500 170 1 1 600 2 0 100 200 200 200 200 200 100 200 2	Am. Nat. Gas. Anchor. Bogan Bullion Beck & Centen'i Eurel Dalton. Dalton & Lark Baly Bellion  * Special  NAME OF COMPANY.  COAL: Mansfield N.Y. & C. Gas	20 10 10 10 10 10 10 10 10 10 10 10 10 10		.55 .17 <sup>1</sup> / <sub>4</sub> .97100 .40 .40 .7. 25 .25 .24 .52 <sup>1</sup> / <sub>4</sub> .52 <sup>1</sup> / <sub>4</sub>	45   07   250   315   6.95   6	Geyser Horn Sil Little Pi Mammo Mercur. Morgan. Ontario. Rover Silver & Sloux C Sunshin Tetro Ultah Lil the co	ver titsburg th ting on. e ompanies a to of ANY. GAS:	25 25 25 125 100 1 10 20 1 10 1 10 1 1 1 1 are loca Week	2.00 1.276 2.95 7.05 4.756 4.25 6.00 1.150 2.85 .07% 1.80 ated in 1 ending	2.95 2 7.72) 7.25 7.25 7.25 7.25 7.25 7.25 7.26 7.26 7.26 7.26 7.26 7.26 7.26 7.26
Amistad y Concord Angustias Arevalo y Anexas Asturiana y Anexas El Oro Buro Senores y Anexas El Oro Buro Senores y Anexas Buro Buro Senores y Anexas Buro Senores y Anexas Buro Senores y Anexas Buro Senores Buro Senor	Guana Hidaig  Maria Zacate  Maria Tepic. Chihui Guana Guana Hidaig Duran Hidaig	Shar   Shar	600 \$1. 400 10. 500 10. 500 10. 500 10. 600 7 600 20.	200	270 440 440 3400 3400 6000 600 600 600 200 200 200 200 200	400 440 500 500 170 110 600 200 200 200 200 200 200 20	Am. Nat. Gas. Anchor. Bogan Bullion Beck & Centen'i Eurel Daiton. Daiton & Lark Daiy West. Eagle.  * Specia  * Specia  NAME OF COMPANY. COAL: Mansfield N.Y. & C. Gas MINING: En'tprise	200   1	2 40 2 40 2 56 6.75 74.60 0 99 7.75 7.75 7.75 7.75 7.75 7.75 7.75 7.	. 55 .07\% .70\% .40 7. 25 78.00 6 .69\% 8.25 8.50 8.25 2.00 8.25 2.00 8.25 1. Ask. S	45   07   07   07   07   07   07   07   0	Geyser Horn Sil Little Pi Mammo Mercur. Morgan. Ontario. Rover Silver & Sioux C. Sunshin Tetro. Utah.  Nami Comp Nami Hegheny hartiers	ver ttsburg th on on e ompanier * GAS:	25 25 25 25 100 1 10 10 10 10 1 1 1 1 1 1 1 1 1 1	2.00 1.22% 2.95 7.05 7.05 4.25 1.47% 4.25 1.50 2.85 0.07% 1.80 aced in 1 ending	2.95 2 7 72) 7 21 7 22 7 72) 7 22 7 72) 7 23 7 72) 7 25 7 25 22 (0 1 1 2.95 2 2.00 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
mistad y Concord ngustiss revalo y Anexas, sturiana y Anexas sturiana y Anexas sturiana y Anexas artolome de Medi armen astellana y SanRa erro Colorado. dinco Senores y An noncepcion y Anex ll Oro uz de Maravillas, abellon. uz de Maravillas, abellon. urlsima de los Co eal del Monte tosarlo y Anexas. an Francisco Ped. Chalchihuit an Rafael y Anex do, free stock tat. Maria de la Pa oliciad forpress de la Pa oliciad linidad.	Guana Hidaig  Maria Zacate  Maria Tepic. Chihui Guana Guana Hidaig Duran Hidaig	Shar   Shar	600 \$1. 400 10. 500 10. 500 10. 500 10. 600 7 600 20. 600 20. 600 22. 600 22. 600 22. 600 22. 600 22. 600 24. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36. 600 36.	70 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	270 440 440 3400 3400 100 100 100 3400 240 3400 240 3400 3400 3400 3400	400 440 300 500 170 110 600 200 200 200 200 200 200 20	Am. Nat. Gas Anchor Bogan Bullion Beck & Centen'l Eurele Daiton Daiton & Lark. Daly Daly West Eagle  * Special  NAME OF COMPANY.  COAL. Mansfield NY. & C. Gas. Mining: Ent'prise Lustre Silverton Miscrellaneou	C.   10   10   10   10   10   10   10   1	Par Bid  50 440  240  240  240  240  240  240  240	55   107   108   107   108   107   108   107   108	45   .07   .250   .31   .6.95   .6.95   .6.95   .6.95   .50   .50   .50   .50   .50   .50   .50   .50   .50   .6.01   .50   .5	Geyser Horn Sil Little Pi Mammo Mercur. Morgan. Ontario. Rover Silver K Siloux C Sunshin Tetro. Utah.  NAMI Comp NAT. Heghen hartiers anufact eoples' I eoples' I	ver. ttsburg th ting ompanies  of of ANY. GAS:  al. urers. sat. Gas. lpeage. anis.	25 25 25 125 100 10 10 10 10 11 1 1 1 1 1 are loca Week	2.00 1.22% 2.93 7.05 4.25 4.25 1.50 6.60 1.15 6.60 1.285 1.50 2.85 1.50 2.85 1.50	2.95   2.77   7.21   7.25   7.
mistad y Concord ngustiss. revalo y Anexas. sturiana y Anexa saterlana y FanRa erro Colorado. inco Senores y An inco Senores y inco Senores inco	Guana Hidaig  Tepic Chihur Chihur Guana Guana Hidaig Hidaig Hidaig Duran Hidaig Duran Hidaig Guana Hidaig Guana Guana Pueble Hidaig Guana	Shar   Shar	600 \$1. 600 10. 500 10. 500 10. 500 10. 600 2. 600 20. 600 20. 600 22. 600 22. 600 22. 600 22. 600 22. 600 23. 600 32.	20	200 400 400 300 100 100 100 200 200 200 200 200 200 2	400 440 300 550 175 110 600 20 20 300 300 175 100 300 300 300 300 300 300 300 300 400 300 400 300 3	Am. Nat. Gas. Anchor. Bogan Bullion Beek & Centen'i Eurel Dalton & Lark. Daly West. Eagle. Galena  NAME OF COMPANY.  COAL: Mansfield N.Y. & C. Gas MINING: Lustre. Silverton Miscellaneou	280   1	Par val Bio 50 40 100	55 107 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	45   250   31   6.95	Geyser Horn Sil Little P Mammo Mercur. Morgan. Ontario. Silver K S	ing companier  comp	25   25   25   25   25   100   1   1   20   10   1   1   1   20   10   1	2.00 1.22% 2.9a) 7.07b 4.25 4.25 6.00 1.27%	2.95   2.77   7.21   7.25   7.
mistad y Concord inguisties irevalo y Anexas sturiana y Anexa satrolome de Medi astellana y FanRa erro Colorado. Inco Senores y An inco Se	Guana Hidaig  Tepic Chihur Chihur Guana Guana Hidaig Hidaig Hidaig Duran Hidaig Duran Hidaig Guana Hidaig Guana Guana Pueble Hidaig Guana	Shar   Shar	600 \$1. 400 10. 500 10. 500 10. 500 10. 10. 500 20. 100 7 401 3 448 3 6 000 20. 700 20	N	200 440 440 300 100 100 100 200 900 900 100 200 900 100 900 900 900 900 900 900 900 9	400 440 300 550 175 110 600 20 20 300 300 175 100 300 300 300 300 300 300 300 300 400 300 400 300 3	Am, Nat. Gas Anchor Bogan Bullion Beck & Centen'i Eurele Dalton Dalton & Lark Daly Daly West Galena * Special  NAME OF COMPANY  COAL Mansfield N.Y. & C. Gas Ministry Ent'prise Lustre Silverton Miscellansou	C.   10   10   10   10   10   10   10   1	Par val Bio 50 40 100	555   107	45 2 50 2 50 31 6.95 6.95 6.95 6.95 6.95 6.95 6.95 6.95	Geyser Horn Sil Little PI Mammo Mercur. Morgan. Ontario. Silver &	ompanier  ompani	25   25   25   25   25   25   25   25	2.00	2.95 2.7 7.55 7 7.55 7 7.50 14 7.70 16 2.00 1 2.95 2 2.00 1 3.00
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Amistad y Concord Angustias . Arevalo y Anexas Asturiana y Anexas Coro Colorado. Cluz de Maravillas Pabellon. Purisima de los Co Real del Monte. Rosario y Anexas. San Francisco. San Francisco. San Francisco. San Francisco. San Francisco. Trinidad. Tiauzingo. Union Tiauzingo. Union Tiauzingo. Notre.—In most M as formed of a ces Mexican dollars.  NAME OF COMP. Arturo Prat Caracoles. Descub. de Huanta Todos Santos Descub. de Huanta Todos Santos Santos Mitrate Cos: Agua Sitra de Go.  "Special Rep."  "Special Rep."	Guana Hidaig  Tepic. Chihur Guana Hidaig  Tepic. Chihur Guana Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Casa S. Luis Guana Fuebi Hidaig Guana Fuxca mirtain num	Shar   Shar	600   \$1. 400   10. 500   10. 500   10. 500   10. 500   10. 500   10. 500   20. 600   20. 600   27. 400   20. 600	January 10 10 10 10 10 10 10 10 10 10 10 10 10	200   400	440 440 300 550 1750 1750 1750 1850 1850 1850 1850 1850 1850 1850 18	Am. Nat. Gas. Anchor. Bogan Bullion Beck & Centen'l Eurel Dalton. Dalton & Lark Daly Daly West. Eagle. Galena * Special  NAME OF COMPANY.  COAL: Mansfield Mansfield N. & C. Gas Signey Signey Company.  Coal: Mansfield No. & C. Gas Miscellaneo Carborundum  Name of Company.  Coal: Miscellaneo Carborundum  Name of Company.  Am. Dev. & M. Coal Bulliute Bilmetailie Combination. Granite Mt Heiena & Victiron Mountain Judge.	Location.  Colo. Solution and the second sec	Par   Bid	10   10   10   10   10   10   10   10	45 2 30 4 6 95 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Geyser Horn Sil Little PI Mammo Mercur. Morgan. Ontario. Otto Silver & Slour C Sunshin Tetro. Utah Lill the composition of	ting companier  soft ANY.  GAS:  al. urers. Nat. Gas. Pipeage. anis bia.  Bid.  \$1.50 2 30 1.51 1.54 1.75 1.55 1.55 1.55 1.55 1.55 1.55 1.55	25   25   25   25   25   25   25   25	2.00   2.2%   2.	2.95 2.7 7.55 7 7.55 7 7.50 14 7.750 16 7.700 16
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amistad y Concord angustias revalo y Anexas. sturiana y Anexa sariolome de Medi armen saterilana y FanRa erro Colorado. linco Senores y An linco Senores y Anexas. sabellom uz de Maravillas. abellom uz de Maravillas. abellom urisima de los Co teal del Monte. sosario y Anexas. ab Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. an Francisco b. Ped. Chalchinuit san Rafael y Anexas. con Francisco b. Ped. Chalchinuit san Rafael y Anexas. con Francisco b. Ped. Chalchinuit san Rafael y Anexas. con Francisco b. Ped. Chalchinuit san Rafael y Anexas. con Francisco  Notre. — In most Ma s formed of a ces sexican dollars.  NAME OF COMP. Arturo Prat Caraccoles.  Arturo Prat Caraccoles.  arturo Prat Caraccoles.  Caraccoles.  NAME OF COMP. Arturo Prat Caraccoles.  Arturo Pr	Guana Hidaig  Tepic. Chihur Guana Hidaig  Tepic. Chihur Guana Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Duran Hidaig Guana Fuebia Hidaig Guana Fuebia Hidaig ANY  Guana Fuxan  ANY  Guana   Guana  Guana  Guana  Guana  Guana  Guana  Guana  Guana  Guana   Guana   Guana   Guana   Guana   Guana   Guana   Guana   Guana   Guana    Guana	Shar   Shar	600   \$1. 400   10. 500   10. 500   10. 500   10. 500   10. 500   20. 500   20. 600   22. 600   22. 600   23. 600   24. 600   24. 600   25. 600   25. 600   26. 600   26. 600   26. 600   26. 600   26. 600   26. 600   26. 600   66. 600		200   400	440 440 300 550 1750 1750 1750 1850 1850 1850 1850 1850 1850 1850 18	Am. Nat. Gas. Anchor. Bogan Bullion Beek & Centen'i Eurel Daiton. Daiton & Lark Daiy West. Eagle. Galena  * Specia  * Specia  NAME OF COMPANY.  Mansfield N. Y. & C. Gas MINING: En'tyrise Lustre. Silverton Miscellaneou Carborundum  NAME OF COMPANY. Am. Dev. & M. C. Galena  NAME OF COMPANY. Am. Dev. & M. C. Galena  NAME OF COMPANY. Am. Dev. & M. C. Granite Mt. Heiena & Vict. Heiena & Vict. Iron Mountain Judge. Merrill (Gold) Ontario. Yellowstone.  NAME OF CC Adams Iron Biwabik	Location.  Colo. Solution.  Location.  Colo. Mex. Colo. Si Pa.  Location.  Mex. Colo. Si Pa.  Location.  Colo. Mex. Colo. Si Pa.  Location.  Colo. Mex. Colo. Si Pa.	Par   Bid   Par	10   10   10   10   10   10   10   10	45 2 30 4 4 5 2 50 4 6 95 6 95 6 95 6 95 6 95 7 80 1 100 7 1 1	Geyser Horn Sil Little PI Mammo Mercur. Morgan. Ontario. Ontario. Silver & Sloux C Sunshin Tetro. Ultah. Sunshin Tetro. Ontario. Ontario. Ontario. Ontario. Ontario. Ontario. Ontario. Ontario. Ontario. Ontario Company Nat. Hegheny hartiers anufact copies' Fernay Value. In Company Va	wer.  titsburg th.  mpanier  cor  al.  urers sat. Gas.  lipeage.  als.  wek Exch  st. 50 2 30 1.51 2.55 1.15 2.51 1.15 ctal share  weren  or Comi	25   25   25   25   25   25   25   25	2.00 2.29 2.90 2.29 2.90 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.25 1.50 4.79 4.79 4.79 4.79 4.79 4.79 4.79 4.79	2.95 2.7 7.25 7.25 7.25 7.25 7.25 7.25 7.25

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Adams a La Colo	41 500 mm				1	1		\$693,500	1		.04	1 Ada Cons., s. l	Litah	\$100,000	100.000			1	1895 .0
Adams, s. l. c Colo Ætna Cons., q Cal Alaska-Mexican, g Alask	500,000 1,000,000	100,000	5						Mar.	1896 1896	.10	2 Ajax, g 3 Alamo, g	Colo	1,000,000	1,000,000	1			
Alaska-Mexican, g Alask Alaska-Treadwell, g Alask American Belle, g. s. c. Colo	5,000,000 2,000,000	200,000 400,000	25	*				2,750,000 50,000	April.	1891	.371/2	4 Alice, g. s. c	Colo Utah.	5,000,000 100,000	100,000	1	200,000	Dec	1895
Argentum Juniata.s.l.g Colo Aspen Mg. & S., s.l Colo	2,600,000 2,000,000	200,000	10	*				900,000	July July	1894	.10	6 Allouez, c	Mich. Nev	2,000,000	105,000	100	1,440,937 247,000	May	1896 .0
Atlantic, c Mich.	1,000,000 2,500,000	100,000	25					700,000 650,000	Feb	1893	.(1)2	8 Alta, s 9 American, c	Ildaho	-5,000,000	500,000	10	3,558,160		
Bald Butte Mont. Banakok-Cora Belle,s.i. Colo	250,000 600,000	600,000	1					437,500 101,510	Nov.	1895	.03	10 Anaconda, g	Utah.	5,000,000 1,500,000		10	560,000		1893 .
Bates Hunter, g. s Colo. Belcher, s. g Nev Belden, F. E., m N. H.	1,000,000 10,400,000 500,000	104,000	100	\$3,286,420				15,397,200 217,000		1876 1	.00	13 Aola, g	Colo.,	1,000,000	1,000,000	1	*	*****	**** ***
Belle Isle	10,000,000	100,000	100	230,271	Sept	1893	.10	300,000	Dec	1879	.25	15 Atlantic Cable Cons. 16 Bahama, g	Colo.,	1,500,000	1,500,000 250,000	1	* 3.125		1893 .0
Bodie Cons., g. s Cal Boston & M. Cons., g. s. e Mont.	10,000,000	100,000	100	714,990	July	1893	.15	1,677,572	Dec	1894	.25	17 Bald Mountain, g. s. 18 Bankers, g.	. S. D.,	3,000,000		10	*		
Brotherton, i Mich. Bunker Hill & S., s. l Idaho	2,000,000 3,000,000	80,000	1 435	*				120,000	Mar Oct	1893	.50	19 Ben Hur, g	Colo.,		900,000	1	*****		
Calumet & Hecla, c Mich. Centen'l-Eureka, g.s.l.c Utah.	2,500,000 1,500,000	100,000	25		Mar.		1.00	44,350,000 1,650,000	Mar	1896 1	.00	21 Blue Bell, g 22 Blue Jay Cons., s. 1.	Utah.	2,000,000	400,000	5	* 4,750	July	1893 .0
Central, c	500,000 1,000,000	10,000	100	*	Oct		.65	1,970,000	Dec.	1893 :	2.50	23 Bob Lee, g	Nev.	1,000,000		100	3,020,000	April,	1896
Chrysolite, s. l Colo Clay County, g. s. c Colo	10,000,000 60,000	60,000	) 1						Nov.	1891	.02	25 Burlington, g. s 26 Buskhorn, g	Colo.	. 900,000	900,000	1			
C. O. D., g Colo Cœur d'Alene, s. l Idaho	5,000,000	500,000	10					340,000	Mar June.	1893	.01	27 Butte Queen, g 28 Calumet, g 29 Central Lead, L	. Cal	1,000,000	1,400,000	) 1	8		. 1893
Colorado Central, s. l Colo Confidence, g. s Nev Cons. Cal. & Va., g. s. Nev	2,750,000 2,496,000	24,969	100	1,629,486		1895	.30	277,680	April.	1889 1	.00	30 Central North Star, g	. Cal	1,000,000	100,000		10,000	July	1893
Cons. New York, g. s Nev	21,600,000 10,000,000 2,000,000	100,000	0 100	168,000	April.	1896	.05	10,000	Feb Nov	1893	.10	31 Challenge, s, g 32 Chollar, g. s 33 Cleveland Cliffs, l	Nev.	11,200,000	112,000	100	1,993,600	Dec	1895
Cook's Peak, s N. M. Coptis, g. s Nev Cortez, Ltd., s. g Nev	10,000,000	100,000	0 100					77,000	Feb.	1895	.01	34 Columbine, g	. Colo.	1,000,000	1,000,000	1		Sont	
Daly, s. I Utah.	1,500,000 3,000,000	150,000	9 20	- 4				2,850,000 1,140,000	May .	1893	.25	35 Cons. Imperial, g. s. 36 Copper Mountain, g. 37 Creede & C. C., g	. Colo.	1,000,000	1,000,000	) 1		*****	
tDeadwood-Terra, g S. D De Lamar, g. s Idaho Derbec Blue Gravel, g Cal	5,000,000 2,000,000 10,000,000	400,000	0 5	*	June.		.10	1,812,000		1895	.25	38 CrippleCreekCons.,g	. Colo.	. 2,000,000	2,000,000	0 1	********		
Doe Run, I	500,000	5,000	0 100					10,000	June.	1892 :	00,9	39 Dante, g 40 Denver City, s 41 Denver Gold, g	. Colo.	5,000,000	500,000	0 10	*		
Elkton, g	500,000 1,000,000	500,00	0 1	*******				45,000 1,212,000	Dec.	1894	.01	42 Dickens-Custer, g. s.	. Colo.	. 2,100,000	420,00	0 5	*		
Enterprise, g. s Colo Eureka Cons., g. s. l Nev		500,000	0 5	*	June.		.05	825,000	May .	1893	.25	48 Elkton, g 44 Enterprise, g 45 Eureka Con. Drift,g	. Colo.	. 800,000 500,000	800,000	0 1	90,000		
Evening Star, s. l Colo Florence, s Mont.	500,000	50,000	0 10	=				1,437,500 45,976	Dec., Mar.,	1889 1896	.25	46 Exchequer, g. s 47 Favorite, g	. Nev.	. 1.200,000	1,200,00	0 1	715,000	Nov.	
Franklin, e Mich. Gold Coin, g. s Colo	1,000,000	40,00	0 25					1,240,000	Jan April.	1894 1896	00.9	48 Fortunatus, g. s 49 Found Treasure, g. s	. Colo.	. 100,000	100,00		55,770		
Folden Fleece, g. s Colo Fold & Globe, g Colo	600,000 750,000	600,00	0 1					473,171 24,371	April.	1896 1896	.03	50 Franklin Gold, g 51 Free Coinage, g	. Colo.	. 1,000,000	1,000,00 1,000,00	0 1	8		
Fold Rock, g. s. c Colo Fould & Curry, g. s Nev	500,000 10,800,000	108,00	0 100		April.		.15	3,826,800	Dec Oct	1891 1870	.01	52 Galena, I. s 53 Garden City, g	. S. D.	. 2,500,000	500,00 250,00	0 10	2,896	Sept.	1891
Franite Mountain, g. s. Mont. Franite, s. l Idaho	500,000	200,00	0 2.50		*****			12,120,000 83,400	Nov	1890	.10	54 Garfield-Grouse, g 55 Gem, g	. Cal.,	. 10,000,000	1,200,00	0 100			
Hale & Norcross, g. s. Nev.	5,000,000 11,200,000	112,00	0 100	5,742,00		189G	.15	1,822,000	Nov	1888	.10	56 Gold Belt, g. s 57 Golden Age, g	. Color	1,000,000	500,00 1,000,00	0 1	1,345		
Iarquahala, g Ariz Iecla Cons., g. s. c. l Mont. Ielena & Frisco, s. l Idaho	1,500,000 1,500,000	30,00	0 56					2,130,000		1896	.12	58 Golden Dale, g 59 Golden Eagle, g 60 Golden Fleece Grav.	. Colo.	1,000,000	2,000,00	0 1	*		1000
Holmes, s	2,500,000 10,000,000 12,500,000	100,00	0 100		Mar	1890	(35)	75,000	April.	1892	.25	61 Gold Flat, g	. Cal	. 1,000,000	100,00		13,000	Aug	. 1893
Hope, s	1,000,000	100,00	0 10	*	July				Jan	1895	.10	63 Gold Rock, g 64 Gold Standard, g	. Colo.	1,000,000	1,000,00 1,000,00	0 1		*****	
ron Mountain, s. l Mont. ron Silver, s. l Colo	5,000,000	500,00	0 10					435,000 2,500,000	April.	1896	.01	65 Hartshorn, g. s 66 Head Cent. & Tr., g.s	S. D.	1,250,000	250,00	0 5	8,750	Sept.	1891
Isabella, g Colo Jack Rabbit, g Cal	2,250,000	2,250,00	0 1		April.			90,000	April.	1896	.01	67 Hidden Treas., g. s. 68 Himalaya, s. l	. Cal	. 20,000	20.00	0 1	1,000	Nov.	. 1893
Jay Hawk, g Mont. Kearsarge, c Mich.	1,425,000	285,000	0 5					33,373	Dec.	1892	.12	69 Idaho Co., Ltd., g 70 Idlewild, g	. Idah	0 100,000	1,00	0 100	36		
Kennedy, g	10,000,000	100,00	0 100	*				1,796,000 316,000	Feb.	1893	.03	71 Inez, s. 1	. Idahe	1,000,000	0.1,250,00	0 1	\$ t		
Little Chief, s. l. i-o Colo Møid of Erin, g. s. c. l Colo	3,000,000	600,00	0 5	*				740,000	Dec	1895	.05	73 Jackson, L	<ul> <li>Mich</li> <li>Colo.</li> </ul>	. 300,000	12,00 500,00	0 25	*		
Mammoth, g. s. c Utah. Mayflower Gravel, g Cal	1,200,000	60,00	0 20						Dec.	1895	.10	75 Keystone, g	. Colo.	. 1,500,000	100,00	0 100		Sept.	1891
May-Mazeppa Con., l. s. Colo., Mercur, g	1,000,000 5,000,000	200,00	0 25	*				425,000	Oct Mar.	1896	.1256	77 Lacrosse, g 78 Lottie Gibson, g	. Colo.	. 1,000,000	0 1,000,00	0 1			
Mollie Gibson, s Colo	5,000,000	1,000,000	0 5	20,00	Jan	1891	. ();2		Jan	1895	.05	79 Matoa, g 80 Mayflower, g	. Colo.	1,000,000	0 1,000,00 0 1,000,00	0 1	*********		
Monitor, g	2,500,000 3,300,000	660,000	0 5		*****		*****	2,890 637	Oct	1895	.03 .061/4	81 Mexican, g. s 82 Michigan Gold, g. s.	. Mich	. 2,500,00	100,00	0 25		Mar.	. 1892
Moose, g	1,000,000 5,000,000	100,000	0 10		June.		9.00	1,025,000	Jan Dec Aug	1891	.25	83 Milwaukee, s. L	. Idah	0 1,000,000		0 5		Jan	. 1892
Mt. McClellan, g. s. l Colo Mt. Rosa, g Colo	1,250,000	250,000	() 5	*				21,930	June.	1891	.03	85 Monarch, g 86 Mutual, g 87 Neath, g	. Colo.	. 500,00	500,00	0 1			
Vana a Cal	700,000	100,000	0 7	*				770,000 1,198,120	April.	1896	.10	88 New Gold Hill 89 New Viola, s. l	. N. C.	1,750,000	0 350,00	0 5			
New Guston, g. s. c Colo New Hoover Hill, g N. C North Banner, g. s Cal	300,000	120,000	2.50		Mar.		.03	22,500	Dec	1885	.20	90 North Commonw'lth 91 Occidental Cons., g.s	. Nev.	. 10,000,000	100,00	0 100	120,000	July . 2 May	. 1893 . 1896
North Belle Isle, s Nev North Com' wealth, s Nev	10,000,000	100,000	0 100	513,07	April.	1893	.10	230,000	May . June.	INNH	.50	92 Original Keystone, 9 93 Oro Cache, g. s	Nev. S. D.	. 10,000,000	100,00	0 100	250.000	Mar	. 1892
North Star, g Cal Nugget, g Colo	2,000,000 1,000,000	1,000,000	0 1	20,00	June.	1885	.02	. 10,000	June. Jan	1895	.50	94 Orphal Bell, g 95 Overman Silver, g.	. Colo.	. 1,000,000	0 115,20	0 100			
Ontario, s. 1	1,250,000	50,00	0 25	*				2,022,500	Jan	1896	1.50	97 Peer, s	. Colo.	. 2,000,000	2,000,00	0 100	915 000	July.	1894
Pacific Coast Borax, b Cal Parrot, e	2,000,000	230,00	0 10					1,622,213	July June.	1894	.05	93 Peerless, s 99 Pine Hill, g	. Cal .	. 1,000,000	100,00	0 10		J May	1890
Petro, s	1,000,000	1.200,00	0 1					80,000	July Jan	1893		100 Pioche Con., g. s. l 101 Potosi, g. s	. Nev.	. 11,200,000	112,00	0 100	2,016,000	May.	. 1896
Portland, g	3,000,000 4,300,000	43,00	0 100				*****	1,823,911	June.	1891	1.25	102 Princess, g 103 Puritan, g, s	. Colo.	. 1,500,00	0 = 150,00	0 10	*		
Quincy, c	5,700,000 1,250,000	50,00	0 25					8,070,000		1896	4.00	104 Quincy, c 105 Red Mountain, s	. Colo.	. 300,00	60,00	0 5	22,50	Mar.	1891
Robinson Cons., s. I Colo	500,000 10,000,000 1,000,000	200,00	0 50					585,000	Dec Mar June.	1886	.05	106 Ruby & Dun., g. s. 107 St. Mary, c 108 Seg. Belcher & M., g.:	. Mich	1,000,00		0 25	4.000	July	1895
Running Lode, g. s. l Colo Savage, g. s Nev St. Joseph, l Mo	11,200,000	112,00	0 100	961,80	Oct	1895	.20	4,460,000	June.	1869	3.00	109 Silver Age, g. s. l	. Colo.	. 2,000,00	DE SMIKE ON	0 100	1,992,600		
Silver Cord Com., g. s. l Colo Colo	2,500,000 500,000 5,000,000	500,00	0 1					2,524,000 60,000 270,000	Aug	1891	.25 .25	110 Silver Hill, s 111 Silver Queen, c 112 Silver State, g	. Ariz.	. 5,000,000	00,000	0 25	*		
Silver King, s	10,000,000	100,00	0 100	172,85	Sept	1894	.30	1,950,000	July April.	1887	.25	113 Siskiyou Con., s 114 Specimen, g	. Cal.	. 2,000,000	0 200,00	0 10	42,00	I NOV.	11,600.0
Small Hopes, s Colo	500,000	500,00	0 1	*				300,137	Dec	1891	.04	115 Temonj, g 116 Tornado Con., g. s	. Colo.	1,000,00	0.1,000,00	0 1			
Smuggler Union, Colo Standard Cons., g. s Cal	5,000,000	50,000	0 100					50,000	April.	1896	.50 .10	117 Union Con., g. s	Nev.	. 10,000,00	0 100,00	400	2,525,000	Feb.	1896
Stormont, s	500,000 600,000	500,000	0 10	*				155,000 39,000	Nov Sept	1881 1892	.05	119 Victory, g. s 120 Virginia M. Cons., g	S. D.	1,250,00	0 250,00 0 1,000,00	0 5	1,20	Nov.	10000
	1,250,000	50,000	0 25					4,270,000 9,000	June. Nov	1895 1891		122 West Granite Mt., s	. Mont	500,00	0 200,00	0 10	30,000	O Aug.	1000
Tamarack, c Mich. Teal & Poe, s. l N. M.	150,000							440 000	1128	of the other land									
Tamarack, e	2,000,000 12,500,000	200,000 500,000	0 10					1,250,000	Mar	1882		123 Whale, g. s. l 124 Work, g	. Colo.	1,250,00	01.250.00	0 1	*		* **** **
Tamarack, c. Mich Teal & Poe, s. l. N. M. Tom Boy, g. Colo. Tombstone, g. s. l. Ariz. Trinity River, g. Cal United Verde, c. Ariz.	2,000,000 12,500,000 500,000 3,000,000	200,000 500,000 500,000 300,000	0 10 0 25 0 1	*				1,250,000 15,000 562,500	April. July Dec	1882 1893 1893	.10 .001/2 .25	124 Work, g 125 World, g	. Colo.	1,250,00	0 1,250,00 0 1,500,00	0 1 0 1 0 1	*		
Tamarack, e Mich Teal & Poe, s. l. N. M. Tom Boy, g. Colo. Tombstone, g. s. l. Ariz. Trinity River, g. Cal	2,000,000 12,500,000 500,000	200,00 500,00 500,00 300,00 1,250,00 500,00	0 10 0 25 0 1 0 10 0 10	*				1,250,000 15,000 562,500 37,000 340,000	April.	1882 1893 1893 1895 1895	.10	124 Work, g	. Colo.	1,250,00 1,500,00	0 1,250,00	10 1	*		

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# POSITIONS

# FREE ADVERTISING

WACANT. Inquiries from employers in want of Superintendents, Engineers, 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

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1447 --WANTED--FOR A GOLD MINE also nine nivers experienced in the u-e of power drills as head men; chance for family without children to take charge of boarding house for 40 men; references required state wages expected for steady work. Address GOLD STAR, ENGINEERING AND MINING JOURNAL.

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1455 WANTED-AN ASSAYER FOR SILver department of smelting works. Must have had experience and be able to furnish testimonials as to ability and honesty. Address DENVER, Engin-EKRING AND MINING JOURNAL.

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A SSAYER, REFINER AND SMELTER IS ODER for engagement. Best of references. Address X. Y. Z., ENGINEERING AND MINING. 7,15, May 9.

POSITION WANTED AS ASSAYER AND assistant by young graduate who is at present employed in Colorado gold mine. Considerable practical experience, and has studied abroad. Can survey, keep books and is familiar with cyan'de process, Speaks French and some Spanish. Best of references, Address I. S., ENGINEERING AND MINING JOURNAL.

KAPERIENCED, PRACTICAL, ACCURATE themist and Metallurgist withes position as Chemist or Assistant in acid works, smelting works, ateal works, or obest furnace. Low salary. Address PRACTICAL, ENGINEERING AND MINING JOURNAL. No 17,498, May 16.

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28. single, would like a position as assistant
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CHEMIST (AGE 30), EXPERIENCED IN EXperiment station work and in control and running of fertilizer factory, desires position Can design and eract small fertilizer factory. Best references. Address Box 1,492, Engineering and Mining Journal.

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F NGINEERING GRADUATE, 15 YEARS' practical experience with large coal corporations in all the departments of coal mining and trade from preliminary prospecting to mine management, home or abroac. Can guarantee most conomical American methods. Best references. Address L. U., E. GINEKEING AND MINING JOURNAL.

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A N EXPERIENCED ASSAYER, LATE with Balbach, S. & R. Co., desires position; either West, Mexico or South America. Address H. Z., Engineering and Mining Journal.

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A METALLURGIST, LEAD AND COPPER, In charve of large works in Mexico, wishes engagement with reliable company in the States. Successful experience. Best references. Address MEXICO, ENGINEERING AND MINING JOURNAL. No. 17.413, June 27.

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A CHEMICAL WORKS MANAGER AND Superintendent of long and practical experience i open for a new engagement. Address PYFIES, ENGINEERING AND MINING JOURNAL. No. 17,411, May 16.

# Contracts Open.

PUMPING ENGINE.—Office Board of Trustees of Water-Works, Sandusky, O.—Sealed proposals will be received at the office of this Board, in the city of Sandusky, O. until the 1st day of May, 1896, for remodeling a 3,000,000-gal, pumping engine now in the pumping station of the water-works of said city, according to specifications therefor, which are on file in the office of said Board. All proposals must be on blanks which may be obtained at the office of the said Board. Each bid must be accompanied by a certified check, drawn to the order of the Secretary of said water-Works, in the sum of \$300, as surely that if the bid is accepted a contract will be entered into. The right is reserved to reject any or all bids. P. J. CROSSEN, P. esident: ADAM KOLB, 1. O. DEHNEL, Trustees; C. A. JUDSON, Superintendent.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., April 29th, 1896—sealed proposals will be received at this office until 2 o'clock p. m., on the 21st day of May, 1896, and opened ummediately thereafter, for all the labor and ma'erials required for the completion of the \*unerstructure, interior finish, blumbing, etc., of the U. S. Post Office building at Richmond, Ky., in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Superint-Indent at Richmond, Ky. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The right is reserved to reject any or all bids or to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so. All proposals received after the time stated for opening will be returned to the bidders Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Completion of the Superstructure, Interior Finish, Plumbing, Etc., of the U. S. Post Office at Richmond, Ky., and addressed to WMARTIN AIKEN, Supervising Architect. Orig.

BRIDGE.—Bids wi!! be received at my office, in Hawkinsville, Ga., until the 6th day of May, 1896, for furnishing material and placing iron or steel viaducts to west side approaches to river bridge, at Hawkinsville, in lieu of present wooden structure. Total length of said approaches is about four hundred (400) feet. Bids are asked on two hundred (200) feet of same, with privilege of whole length. The right to reject any or all bids is reserved. For further particulars address me at Hawkinsville, Ga. P. T. McGR1FF, Ordinary, Pulaski County, Ga.

water-works.—Sealed proposals addressed to the City Clerk, Bluffton, O., will be received until April 27th, for furnishing material and labor and constructing a system of water-works for Bluffton, O. The work to be done is approximately as follows: 1. Furnishing f. o. b. Bluff on, O. about 25 tons of cast-iron pipe, and about six tons of special castings. 2. Laying of the above pipe, and setting all hydrants, valves and valve boxes. 3. Furnishing f. o. b. care, Bluffton, O., 38 fire hydrants; also the necessary valves and valve boxes. 4. A pumping station. 5. A steam pumping plant of an easy capacity of 1,000,000 gullons per day, with boilers and all appurtenances. 6. A steet tank 22 ft. in dismeter and 30 ft. deep, erected on structural steel tower 50 ft. in height. Bids will be received for the whole or any part of the above work, and the village of Bluffton. O., re erves the right to reject any or all bids. Accompanying each proposal must be a certified check, psysble to the order of the City Treasurer of Bluffton, O, as a guarantee to be forfeited if the bidder falls to enter into the contract awarded to him; the amount to be 35 of the amount of the bid, provided not check be le at han \$200. Plans can be seen at the office of Sanders & Porter, designing engineers, 9.8 Columbia building, Louisville, Ky., and at the office of W. H. KULLER, Chairman of the Water Works Committee, Bluff on, O. All work to be paid for in cash. W. H. EULLER, Chairman of the Water Works Committee, Bluff on, O. All work to be paid for in cash. W. H. ERIDGE.—Bids will be recived at my office in

BRIDGE.—Bids will be recived at my office in Hawkinsville, Ga., until the 6th day of May, 1995, for furnishing material and placing iron or sier! viaducts to west side approaches to river bridge, at Hawkinsville, in lieu of present wooden structure. Total length of said approaches is about four bundred (400) feet. Bids are a-ked on two bundred (200) feet of same, with privilege of whole length. he right to reject any or all bids is reserved. For further particulars address me, at Eawkinsville, Ga. P. T. McGRIFF, Ordinary, Polaski County, Ga.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., April 29th, 1896, —Sealed proposals will be received at this office until 2 o'clock, p. m., on the 26th day of May, 1896, and opered immediately thereafter, for all the labor and materials required for the interior finish, plumbing and approaches, of the U. S Post Office, Court House ard Custom House at Newberne, N. C., in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent at New Berne, N. C. Each bid must be accompanied by a certified check for a sum not less than 25 of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect for informality in any bid should it be deemed in the interest of the Government to do so, Proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, o "Proposal for Interior Finish Plumbing and Appr aches for the U. S. Pot Office, Court House and Custom House at New Berne, N. C.," and addressed to W.M. MARTIN AIKEN, Supervising Architect. Orig.

STEEL-FRAMED CONSTRUCTION AND REpair Shop at U. S. Naval Station, Port Royal, S. C.—Bureau of Yards and Docks. Navy Department, Washington, D. C.—Senarate sealed proposals, in duplicate, for the following object, endorsed proposals for "Construction and Rep. in Shop." at U. S. Naval Station, Port Royal, S. C., will be received at this Bureau until May 22d, 1896. Specifications and blank forms of proposal will be forwarded upon application to this Bureau or the commandant of the Naval Station, Port Royal, S. C. Bidders are expected to fully inform themselves of the character of the work required, by visiting the station, where plans may be examined, and, if necessary, obtained, A certified check of two thousand (\$2,000) dollars must accompany the proposal as a guarantee that the bidder will execute the required contract after his bid has been accepted. Responsible security will be required for the faithful performance of the contract and the right is reserved to reject any or all proposals in the demed advantageous to the Government, and to waive defects, E. O. MATTHEWS, Chief of Bureau.

BRIDGE.—Office Commissioners of Roads and Revenues, Fulton County. Georgia, Atlanta, Ga.—Scaled proposals will be recived at this office until the 8th day of May, 1896, for furnishing all material and labor and building complete, ready for use, the Bridge over Peachtree Creek on Peachtree road, about five miles from the City of Atlanta, in accordance with plans and specifications prepared by Grant Wilkins, Engineer, copies of which can be had by bidders upon application to the undersigned or to the Engineer. Each bid must be accompanied by a certified check for the sum of Two Hundred and Fitty Dollars, payable to C. A. Coliter, Chairman Commissioners of Roads and Revenues of Fulton County. The right is reserved to reject any or all bids. All proposals to be addressed to the undersigned, and must be made upon the blank form for proposal attached to the specifications. ANTON L. KONTZ, Clerk Commissioners Roads and Revenues for Fulton County, Atlanta, Ga.

WATER-WORKS.—Notice is hereby given that until May 18th, 1896, the City Council of the City of Frankl-n, Ky.. will receive sealed bids for the erection of a system of water-works, or any park thereof, according to the plans and specifications of J. A. Holmboe, Engineer, which plans and specifications can be seen after May 1st, 1890, at the office of J. A. Holmboe, 410 Columbia Building, Louisville, Ky., or by calling on JAS. N. I.ARUE, Mayor, at Franklin, Ky.

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Horizontal Tubular Boilers, with full fronts and castings: 1, 48 × 14, 1 42 × 10, 1 42 × 12, 1  $36 \times 12$ . One 8 × 12 and one  $10 \times 12$  alide valve engines. One  $5\frac{1}{2} \times 7$  upright engine. Worthington Funps: 1  $7\frac{1}{2} \times 3\frac{1}{2} \times 5$  (1  $5\frac{1}{2} \times 7$  10, 1  $10 \times 7 \times 10$ , 1  $12 \times 8\frac{1}{2} \times 7$  10, 1  $10 \times 7 \times 10$ , 1  $12 \times 8\frac{1}{2} \times 7$  10, 1  $10 \times 7 \times 10$ , 1  $12 \times 8\frac{1}{2} \times 7$  10, 1  $10 \times 7 \times 10$ , 1  $10 \times 8\frac{1}{2} \times 7\frac{1}{2} \times 6$ . I Mittler Elevator Engine. Tanks of all sizes, Pipe, Fittings and Valves. All above second hand, but in A1 condition. THE JOHN DAVIS CO., 51 to 79 Michigan Street, Chicago, Ill.

FOR NALE—Hoisting Engines, etc. All in good serviceable condition and can be seen near Chicago. Two 12½ × 15 Lidgerwood Double Cylineer, Double Friction Drum Mine Hoisting Engines (weight, 35,000 lbs.), 60 in. Drums, Reversible Link Motion. One 12 × 15 Double Cylinder Single. Drum Copeland & Bacon Hoisting Engine, 48-in. drum; and a large number of Wheel Scrapers, Drag Scrapers, Plows, e.c., and Geperal Contractors' Plant. Correspondence and inspection solicited. Meakthur BROS. O., 184 La Salle St., Chicago.

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offer for sale the following, all in good condition:

One 300 H. P. Cross Comp. Engine, extra heavy.
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# J. MONTGOMERY STRONG, Auctioneer,

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An Anthracite Colliery Property in the Borough of Shamokin, Northumberland County, Pa. Breaker comparatively new, and equipped with the latest coal-breaking and screening machinery; capacity about one thousand tons per day and now in operation. property is in excellent condition and a large quantity

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# Auction of Wallace & Sons' Copper and Brass Rolling Mills, Etc., at Ansonia, Conn.

To close a Trust, the real estate, buildings, machinery, plant, tools, material and shares of stock of WALLACE & SON3, will be sold by auction at toele office in Ansonia, at noon on Thursday, May 14th, 1896, unless previously disposed of at private sails.

The property includes Brass and Copper Wire Mills, Brass and Copper Rolling Mills, Casting Shop, Lamp and Burner Shops, Pin, Rivet and Chain Machinery, with a uxiliary Shops and Buildings, and all now running.

The property also embraces: I double tenement, 2-story and extension, on Pleasant St.; I double tenement, 2-story, on Fourth St., all at Ansonia; about 74 acres woodland in Newton; about 614 acres woodland in Ansonia; about 12 acres woodland in Soymour. Also the following shares of stock, viz.; 8,000 shares Parrot Silver & Copper Co. stock; 240 shares American Fish Hook Co. stock.

The manufacturing plant and land and building; connected with it will be sold in one lot, if started at a bid to be fixed at the sale, which will be less than one-half the value recently appraised by Messrs. Brooker and Plume. Otherwise in lots as per Catalogue.

TERMS: 10 per cent. cash or acceptable cheques at sale and remainder upon delivery of deeds within 30 days. Possession to be retained until delivery of deeds and as much longer as may be necessary to complete existing contracts, if purchaser at the sale does not elect to assume them.

Catalogues of the property in detail may be had by addressing Wallace & Sons, 29 Chambers St., New York.

The Trustees reserve the right to sell all or any part of the property at private sale before the auction.

ROBERT M. THOMPSON, HENRY E. JACOB, ROBERT T. PAINE, 2d,

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