THE ENGINEERING AND MINING JOURNAL AND COAL

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

VOL. LXIV. JULY 10 No. 2.

RICHARD P. ROTHWELL, C. E. M; E., Editor
ROSSITER W. RAYMOND, PH. D., M. E., Special Contributor.
SOPHIA BRAEUNLICH, Business Manager.
THE SCIENTIFIC PUBLISHING CO., Publishers.

Subscriptions are PAYABLE IN ADVANCE. For the United States, Mexico and Canada, $5 per annum; all other countries in the Postal Union, $7.
The address slip on the paper will show date of expiration of subscription. When change of address is desired both old and new address should be sent.
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Main Office: 253 Broadway (P. O. Box 1833), NEW YORK.

Telephone Number, 3,095 Cortlandt.

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

Branch Offices: Chicago, Ill., Monadnock Building, Room 737.
Denver, Colo., Boston Building, Room 206.
Salt Lake City, Utah, 230 Atlas Building.
San Francisco, Cal., 207 Montgomery Street.
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London, Eng., Office, 20 Bucklersbury, 366 & 367. E. Walker, Manager.

English subscriptions to the JOURNAL may be paid at the London office at the rate of $7 = £1 8s. 9d.; the publications of the Scientific Publishing Company may be bought at the rate of 4s. 2d. to the dollar, net.

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Mr. Richard P. Rothwell, editor of the *Engineering and Mining Journal* and *The Mineral Industry*, sails for Europe to-day on business connected with these publications. The growing circulation of the *Engineering and Mining Journal* in Europe, and the great demand for *The Mineral Industry* which has developed there, have led to many matters requiring Mr. Rothwell's personal attention. In this connection it is proper to refer to the high position which *The Mineral Industry* has gained on the other side of the ocean. Received from the first volume with enthusiasm, with succeeding volumes it has assumed a commanding place among publications relating to the mining and metallurgical industries, and is now regarded by the statistical departments of foreign governments and by the managers of all the great industrial enterprises as the highest authority in all that pertains to them. One result of Mr. Rothwell's present journey will probably be the making of arrangements for certain new and valuable features in the next volume.

The Index to Volume LXIII. of the *Engineering and Mining Journal* is completed and is issued with this number of the paper. Subscribers who do not receive this Index with their copy of the *Journal* should promptly notify this office. A glance over the pages of the Index will show the great range of topics connected with the mining industry which is covered by the articles and notes published during the half-year included in the volume. There are more than seven thousand titles in this index.

The recovery of gold from alluvial deposits, such as the beds and bars of rivers by dredging up and washing the gravel, is not by any means new, having been long ago successfully practised in this country, in New Zealand, in the Trans-Baikal in Siberia and elsewhere. There has been some extension of the method lately, and within a few months we have described plants for this purpose in use near Bannack, in Montana; on the Chestatee River, in Georgia; on the Snake River, in Idaho, and at the Malamalski Placer, in Siberia. The Bannack plant has been so successful in its results that it is to be duplicated this season by the company owning the first dredge. This plant, by the way, is operated by electric power.

A new gold-field, the importance of which is as yet uncertain, will be opened before long as a consequence of the commercial treaty just concluded between Great Britain and China. By this treaty the nominal control of the small Shan States of Northern Burma is transferred to Great Britain, and that country acquires the right to trade with the great province of Yunnan in the southeastern part of China. To utilize this permission it is understood that the Burmese railroads will be extended as soon as possible to the frontier of Yunnan, a province heretofore practically inaccessible to European trade. The railroad will secure the pacification and opening to trade also of Northern Burma, and in the hill country there gold is known to exist. It has been recovered by the natives and used by them in trade, but the country has been too wild and uncivilized to permit the entrance of European miners and prospectors. The occupation of this region by British troops and the building of the railroad will give an opportunity of which advantage will doubtless be taken.

The latest attempt to form a coal combination in Great Britain has failed, although circumstances seemed especially in its favor. The proposed association was to include the South Wales operators, and in that district the mines are chiefly in the hands of large companies, while the product is chiefly steam coal, which commands a higher price than the ordinary grades of English coal. The proposition was that the operators should combine to limit the output and to maintain prices, and the agreement was to be operative when signed by representatives of 95 per cent. of the total production. The result has been that only 68 per cent. of the output assented, and of this 53 per cent. was signed conditionally, only 15 per cent. accepting without limitations. Representatives of 11 per cent. refused entirely to sign, and the remaining operators were undecided. This result was probaly due in part to an increase in demand since the plan was proposed; steam coal then sold at $2.25 to $2.40 per ton, but it now commands $2.64 to $2.75, with a prospect of a further rise, as the demand is active. Apart from this, however, it shows that a number of the producers were actively opposed to combination. It is generally conceded that if South Wales will not combine, it is hopeless to expect any such action in any other district.

A Few Words on Statistics.

It is quite as true in English as in French that it is only the narrow-minded that cannot appreciate the good work of others. Envy and jealousy are attributes of small souls and their exhibition in print simply characterizes their authors. No one who read the recent course, vulgar and utterly stupid editorial entitled "Fake Statistics" in a recent issue of

The Iron Age could be left in doubt that it was inspired by jealousy in a small and envious nature, but to understand the cause of the jealousy it is only necessary to note the universal approval and applause with which have been received everywhere the statistics collected for the annual volume of *The Mineral Industry* and published by *The Engineering and Mining Journal* and by nearly all the important papers throughout the world, and the almost as complete ignoring of the tardy and far less complete or accurate statistics collected by the United States Geological Survey.

It will also aid the uninitiated to fully understand the motive and animus of *The Iron Age* editorial to remember that the editor of that paper is a paid agent of the United States Geological Survey (as, with equal political wisdom, are also the editors of several other papers). The good faith and integrity of *The Engineering and Mining Journal* or *The Mineral Industry*, whether in the collection of statistics or otherwise, are too well earned and too generally recognized to call for any reply to an attack whose base motive is so transparent.

It is also quite unnecessary to reply to an intelligence that cannot understand how our monthly production of iron should add up to exactly the final total of the American Iron and Steel Association whose careful and reliable statistics we have always used with full and appreciative acknowledgment. Neither is there any need of reply to an honesty which cannot comprehend that as later and fuller statistics are secured they should replace the avowedly imperfect preliminary statistics published the very last day of the year to which they relate and which were in nearly all cases sufficiently accurate to serve as a prompt and useful guide to business men.

The aim of *The Engineering and Mining Journal* and *The Mineral Industry*, as of every other honest statistical authority, is to furnish the most reliable and accurate statistics possible, correcting errors where found to exist. We confess we have but a very low opinion of those who after making egregious errors in their statistics perpetuate the blunders apparently in the vain expectation that the absence of corrections will deceive the public into the belief that their statistics are accurate. The users of statistics in this enlightened age are both too intelligent and too honest to be often thus taken in, and an excellent proof of this is the universal acceptance of *The Mineral Industry* statistics as authoritative and the ignoring and discarding of those our critic is paid to aid in compiling.

The New Tariff Bill.

The United States Senate has this week passed the new tariff bill with a large number of amendments to the provisions of the bill as originally passed by the House. The bill now goes back to the last-named body, and will receive its final form in conference committee; but there seems to be a general impression that most of the Senate changes will stand. We give below, therefore, a summary of the principal rates in that portion of the new bill which specially affects the mining industry.

The duty on coal has been raised from 40 to 67 cents per ton, the higher figure being the same as the Canadian duty. A rebate or drawback of the duty paid is allowed on all imported coal used by American steamships engaged in foreign trade. The last clause is apparently intended to benefit the steamers engaged in traffic between Pacific Coast ports and the East; at least it is hard to see who else would be affected by it. The increase in tax will affect Nova Scotian coal going into some Eastern ports; on the Pacific coast it will be far from popular. Coke is charged 20 per cent. *ad valorem*.

We will refer to the duties on iron and steel on another occasion.

Iron ore, including purple ore or the residuum from pyrites, is kept at 40 cents per ton. Manganese ore containing less than 40 units of manganese is put at $1 per ton. A special clause puts basic slag at $1 per ton.

In the metal schedule we find that the Senate bill increases the duties on lead to 2½ cents per pound. The terms of the clause also extend the duty of 2½ cents to lead bullion or base bullion, the intention being to make the duty payable on the entire weight of the bullion as at present and not on the lead contained therein. On lead-bearing ores of all kinds the duty fixed is 1½ cents per pound on the lead contents. The sampling and determination of the contents of ores are to be made at establishments to be designated by the Secretary of the Treasury unless the ores are brought in to be refined in bond. These provisions of the law will have an important effect on the current price of lead.

Perhaps the most important clause next to that on lead is that on nickel, which provides for a duty of 8 cents per pound on nickel and on alloys in which nickel is the component of chief value. This is an increase of 2 cents per pound, and in itself would be of little moment; the important part of the clause is that imposing a duty of 3 cents per pound on nickel in ores and of 4 cents per pound on nickel in matte, which has heretofore been free of duty, and which the House bill did not tax. As a large part of the nickel supply of the world is now refined in this country from matte made at the Sudbury mines in Canada, the new tax will undoubtedly have for effect the removal of the nickel-refining business to the Canadian side of the line, with a consequent loss to capital and an injury to labor in this country, and no compensating advantage.

Following a directly opposite course with zinc, the Senate has reduced the proposed duties, putting the metal in bars, blocks or pigs at 1½ cents per pound; in sheets at 2 cents per pound, while old and scrap metal, zinc dust and ashes is to be taxed 1 cent per pound.

In the minor metals the duty on aluminum in ingots is fixed at 7 cents and in manufactured form 12 cents per pound. Antimony is scheduled at 0¼ cent, and quicksilver at 7 cents per pound. Monazite and thorite are to be dutiable at 6 cents per pound.

Finally there is a general provision taxing all metals not otherwise provided for 20 per cent. *ad valorem;* while a similar rate is provided for all "metallic mineral substances" not otherwise specified. The law does not provide a definition of "metallic mineral substances."

The Production of Gold in the United States in 1896 and the Mint Reports.

In our issue of May 29th, we reported the production of gold in the United States in 1896 according to the statistics collected by *The Mineral Industry* as having been $58,660,637. The Director of the Mint soon afterward reported the domestic gold production in 1896 as having been $53,088,000 as compared with his earlier estimate of $51,500,000. The great discrepancy between our figures and those of the Director called for an investigation, to make which the publication of *The Mineral Industry* has been delayed. As a result of an error in the earlier Mint reports *The Mineral Industry* has been obliged to change the statistics we had already published to the smaller figure of $52,886,209 as representing the gold production of the United States in 1896. The causes which led to this change are so remarkable that we consider it proper to put them on record.

The production of gold and silver in the United States is arrived at by the Mint and by *The Mineral Industry* in the same manner; that is to say, reports are received from the private refiners of the amount of gold contained in bullion of domestic origin refined and put in final marketable form by them; the Mint reports the deposits of unrefined domestic bullion in its branches and assay offices, which is counted as the amount refined by the Mint; a small amount of gold and silver is exported from the United States in copper, copper matte and doré bullion. The sum of these three items should represent the production of precious metals in the United States as accurately as it is possible for any compilation of statistics to do.

In the early months of 1897 *The Mineral Industry* received as usual reports from the private refiners, and also from the United States Mint. With these data the gold production of the country was compiled in the customary manner, with the result first stated, *i. e.*, $58,660,637, which was published in *The Engineering and Mining Journal* for May 29th. Under date June 1st the Director of the Mint wrote us as follows:

"According to the figures prepared in this Bureau the production of gold in 1896 approximates closely $53,000,000. . . . . We have returns from every private smelting and refining establishment in the United States, giving their product from domestic as well as foreign ores, also showing the disposition of same. In addition to this we have complete accounts of the foreign and domestic bullion deposited at the Mints and Assay Offices which goes to complete the figures given above."

Since we also had reports from every private works in the United States, and a report from the Mint of the amount of gold deposited with it during the year, this statement by the Director induced us to go to Washington to ascertain the cause of the difference in our statistics. It was then ascertained that the Mint had changed its own figures of deposits, which it had officially reported earlier in the year as:

	Domestic, fine oz.	Foreign, fine oz.
Unrefined	1,230,346	126,903
Refined	1,581,775	515,074
Total	2,812,101	641,977

The Mint now, six months later, informed us that this report was incorrect and should have been:

	Domestic, fine oz.	Foreign, fine oz.
Unrefined	838,045	126,903
Refinery bars, under .992	329,542	.....
Refined, over .992	1,643,514	515,074
Total	2,812,101	641,977

In reply to our question as to the reason for this alteration the Director of the Mint replied that it was not until all the reports of private refiners were in that he was enabled to determine how much of the bullion deposited was foreign; and that when he got this information it caused him to make the change in his figures shown above; or, as he expressed it in a letter of June 23d:

"As I informed you when here a few days ago, in the statements given you under the head of 'domestic production,' were included all bars of private refineries deposited at the Mint during the year, as I had no means

of eliminating the amount of foreign gold in such bars until returns had been received from the private refineries covering their output for the calendar year 1896."

"In reference to the 838,045 fine ounces of gold referred to in your letter I would state that this is only the amount of unrefined domestic bullion deposited at the mints and assay offices, identified as such. The figures 1,230,346 fine ounces represent domestic refined bars and domestic refined bullion, and which should have been stated as 1,974,056 fine ounces, consisting of 329,542 fine ounces of bullion refined to .992 and over (*sic*) and of 1,644,515 fine ounces contained in bars containing less (*sic*) than .992 parts of gold, making the total amount of domestic deposits as enumerated in memorandum furnished you, when here last, 2,812,101 fine ounces.

"I cannot find that any change was made in the figures sent you reporting the amount of foreign bullion received, and which was classified as follows: Unrefined, 126,903 fine ounces; refined, 515,074 fine ounces; total, 641,977 fine ounces."

Although we were at a loss to know how the bullion deposited throughout the year as "domestic" could be re-identified as "foreign" at so late a day, we were ready to admit at least the rationality of this explanation; but we pointed out to the Director of the Mint that if unrefined bullion were deducted from the domestic deposits because it was really foreign it would be obviously necessary to add an equivalent amount to the foreign deposits; otherwise this gold would be unaccounted for. We furthermore pointed out that if any such addition were to be made to the "foreign," the amount of the latter would be incredible, far exceeding the total production of Mexico and Canada, whence most of the foreign gold refined in the United States is derived. We also asked an explanation of the reason why he increased his report of the amount of domestic refined gold deposited at the Mints from 1,581,775 oz. at the first of the year to 1,644,514 oz. six months later, and requested his definition of "refinery bars." To this letter the Director replied by telegraph under date June 26th as follows:

"The 641,997 fine ounces deposited was bullion known at the time to be foreign, and therefore properly entered as foreign and cannot be increased by foreign bullion included in bars deposited by private refiners. The first statement sent you was incorrect as to classification, hence corrections in statements two and three. All bars .992 and over are classed as refined and under refinery bars."

Notwithstanding these very courteous explanations by the Director of the Mint, the case still remained obscure to us. At the beginning of the year the Mint had reported to us deposits of 1,230,346 fine ounces in domestic unrefined bullion, and 126,903 in foreign, while at the beginning of June the former had been reduced to 838,045, "because some of it was foreign," though nothing had been added to the foreign. The Mint explanation being, therefore, imperfect, we had recourse to the private refiners and other sources of information, and finally learned that much of the bullion deposited, which the Mint classed as unrefined, and so reported to us, assaying in fineness a little less than .992 (say for instance, .989 to .990), had undoubtedly been entered in the first Mint statement as "unrefined domestic bullion," and in the second statement as "refinery bars." Assuming this to be the case, this bullion had been already counted by us in the reports of the private refiners, and should not be again counted in the report of the Mint. The "foreign bullion" referred to by the Director of the Mint had nothing to do with the case so far as the Mint explanation went, though it is evident that if the "refinery bars" originally counted by the Mint as "unrefined domestic" contained any foreign bullion, as they probably did, this would have been included in the 126,903 oz. foreign, and when these refinery bars were taken out of the Mint report of "unrefined," as already counted in the reports of private refiners, a corresponding reduction should have been made in the "foreign" gold to avoid duplication.

It appears from our investigations that the Mint in previous years classed the bullion received from private refiners as "refined," regardless of the standard, .992. Early in 1896 it adopted a new system, but made its report to us in the same form as it had done in previous years without advising that there had been a change in its classification. This was both misleading and surprising.

While the Director of the Mint has always replied with his accustomed courtesy to our many requests for explanations, we confess that it seems extraordinary that a public bureau of the government should deliberately issue erroneous official statements or statements that its officers know to be misleading, and that it is necessary to go outside of this bureau to find an explanation of the actual facts in the case. It should be the desire of the Director of the Mint, as it is ours, that all statistics published should be accurate, and the several private refiners who so courteously aid us in our efforts to secure accurate statistics use every effort to promote that end.

A few years ago *The Mineral Industry* pointed out a gross error in the silver statistics of the Mint, and the present Director subsequently corrected his predecessor's mistake. On the present occasion the Director corrects, at least in part, his own error, but allows his erroneous reports to be used in other published statistics. This we trust will not occur again. It seems, indeed, incredible that our Mint should keep its records of deposits in such a manner that those who receive its official reports cannot use them correctly without a tedious and annoying outside investigation to learn what they mean.

PRODUCTION OF GOLD IN THE UNITED STATES.

State or Territory.	1893.		1894.		1895.		1896.	
	Fine Ounces.	Value. (a)	Fine Ounces.	Value. (a)	Fine Ounces.	Value. (a)	Fine Ounces.	Value. (a)
Alaska	48,863	$1,010,100	53,868	$1,113,550	78,140	$1,615,300	99,444	$2,055,700
Arizona	57,286	1,184,200	96,313	1,990,966	95,072	1,965,300	124,770	2,579,000
California	584,370	12,080,000	656,468	13,570,397	722,171	14,928,600	737,036	15,235,900
Colorado	364,119	7,527,000	461,969	9,549,731	648,074	13,525,300	719,264	14,867,971
Idaho	79,669	1,646,900	100,682	2,081,281	86,088	1,779,600	104,263	2,155,300
Michigan	2,032	42,000	2,150	44,444	2,075	42,900	1,800	37,200
Montana	172,989	3,576,000	176,637	3,651,410	198,405	4,101,400	209,207	4,324,700
Nevada	46,367	958,500	55,042	1,137,819	75,088	1,552,300	116,620	2,410,538
New Mexico	44,171	913,100	27,465	567,751	23,810	492,200	23,017	475,800
Oregon	79,592	1,645,300	68,792	1,422,056	42,972	888,300	59,313	1,226,000
South Dakota	193,809	4,006,400	159,594	3,299,100	187,187	3,869,500	237,978	4,919,000
Southern States (b)	13,293	274,800	11,715	242,171	15,026	310,600	12,785	264,300
Utah	41,283	853,600	41,991	868,031	66,419	1,373,000	91,908	1,899,900
Washington	10,744	222,100	9,438	195,100	16,980	351,000	19,626	405,700
Other States	726	15,000	1,495	30,903	1,693	35,000	1,413	29,200
Total domestic	1,739,313	$35,955,000	1,923,619	$39,761,205	2,265,612	$46,830,200	2,558,433	$52,886,209
Foreign	103,878	.....	117,765	2,434,202	217,234	4,490,227	409,315	8,461,023
Grand total	1,843,191	.....	2,041,384	$42,195,407	2,482,937	$51,320,427	2,967,737	61,347,232
Total domestic—kgms	.....	.....	59,824	.....	70,468	.....	79,576	.....
Total foreign—kgms	.....	.....	3,653	.....	6,761	.....	12,731	.....
Grand total—kgms	.....	.....	63,487	.....	77,229	.....	92,307	.....

(a) 1 oz. gold = $20.87; 1 kgm. = $664.60. (b) South Carolina, North Carolina, Georgia and Alabama.

PRODUCTION OF SILVER IN THE UNITED STATES. (a)

Year.	1895.			1896.		
	Fine Ounces.	Kilograms.	Value.	Fine Ounces.	Kilograms.	Value.
Ores mined in United States	46,331,235	1,441,051	$30,254,296	58,488,810	1,819,208	$39,245,991
Ores or bullion imported	30,105,836	936,388	19,659,111	33,133,529	1,030,569	22,232,598
Totals	76,437,071	2,377,439	$49,913,407	91,622,339	2,849,777	$61,478,589

(a) The average commercial value of silver was 65.3c. per Troy oz. in 1895, and 67.1c. in 1896.

NEW PUBLICATIONS.

THE MINERAL INDUSTRY: ITS STATISTICS, TECHNOLOGY AND TRADE. VOLUME V.; 1896. Edited by R. P. Rothwell. New York and London; the Scientific Publishing Company. Pages, 865; illustrated. Price, $5.

The publication of *The Mineral Industry* has come to be an important event of the year among those who are engaged in mining and metallurgy and kindred industries. This series of annual volumes is intended by its publishers to cover the entire mineral industry of the world, giving its statistics, its technology and its trade, each succeeding volume not repeating the data given in previous issues, but supplementing them, and constituting a thoroughly up to date encyclopedia of the industry.

Extremely valuable technical articles give the most recent progress in each department of mining, metallurgy and chemical industry, including the best methods of production, the uses and properties of nearly all the minerals and metals. These articles are generally of an exceedingly practical and useful nature, bespeaking the excellent discrimination of the editor in confining the publication to its own field of mineral technology and trade. Thus papers of a purely scientific character, bearing only indirectly upon technology, find no place in *The Mineral Industry*, which is designed to deal solely with industrial conditions.

In the four preceding volumes of *The Mineral Industry* there have been many noteworthy contributions to metallurgical literature, and it is safe to say there has been no new process of technical importance during the years it covers, nor any new mining developments, which have not been recorded in its pages; while the existing condition of arts in which there have been no recent improvements, but which are not elsewhere described satisfactorily, has been recorded so thoroughly that after scanning each new volume the critic is left to wonder what there is left for another of such huge size as each of the five are. Apparently, however, the editor is troubled by no such apprehensions, and we conclude that the winning and utilization of the substances of the mineral kingdom is an industry of which the editor of this series appreciates the magnitude and ramifications better than we.

Vol. V. of *The Mineral Industry* contains many especially valuable technical papers; in certain instances, indeed, they are so elaborate as to deserve to be called treatises. Thus Prof. Henry Louis' monograph on the "Metallurgy of Tin" occupies 56 of the ample pages of this volume, which is equivalent to 100 pages of an ordinary octavo book. This noteworthy paper covers the subject of tin smelting in all its phases and as practised in all parts of the world. It is profusely illustrated with reproductions of photographs and engravings of sketches and working drawings, on which dimensions are plainly shown. There is no metallurgical treatise in any language in which this subject is so fully treated as in this monograph of Professor Louis.

"Cement Manufacture in Great Britain" is the title of a masterly paper by Messrs. W. H. Stanger and Bertram Blount, who are well known in England for their proficiency in this branch of industry. In this treatise they have gone minutely into the principles underlying cement manufacture, the chemical control of the process, and the testing of the raw materials and finished products for all factors that determine their value.

In papers bearing upon the metallurgy of the precious metals the fifth volume of *The Mineral Industry* is especially rich. John E. Rothwell contributes a paper on the "Design of Gold Chlorination Works," which is fully illustrated by valuable working drawings; Ottokar Hoffman, who has been the leader in the development of silver lixiviation in the United States and Mexico, describes the "Chloridizing Roasting of Calcareous Silver Ores, containing arsenic in large quantities," which must be of great value to all who are engaged in silver metallurgy; Titus Ulké describes "Improvements in Parting and Refining Gold and Silver"; while Dr. Henry Wurtz discusses the "Hydrometallurgy of the Precious Metals," in a paper of unusual interest, wherein he traces the development of the wet methods of extracting gold and silver and the reactions involved in them, making suggestions which are likely to be of importance.

In the department of coal and coke there is a paper by Richard Cremer on "The Present Practice of Coal Washing in Germany and England," in which the machines employed are fully illustrated by engravings; "The Collieries of France and Belgium" is the title of a statistical review by Paul Schneider and Gaston Le Bel; while "Modern Coke Ovens and their By-Products" are discussed by Professor Lunge in his customary lucid and instructive style.

Under the caption "Zinc and Cadmium," Walter Renton Ingalls reviews the industrial conditions of the year and the metallurgical literature bearing upon the subject; Prof. Bruno Kerl, the eminent German metallurgist, describes "Zinc Refining" as carried out in upper Silesia, which F. L. Bartlett, writing on the "Treatment of Zinc Lead Sulphide Ores," gives the practical details of the process successfully in use in the works at Canyon City, Colo., under his direction, illustrating his paper with drawings of the furnaces employed.

On the subject of Iron and Steel the fifth volume of *The Mineral Industry* is very full. Besides the reviews of trade conditions and the usual statistics there are several accompanying technical papers, of which the most important are "The Manufacture of Basic Iron in Alabama," by Dr. Wm. B. Phillips, an exhaustive discussion of the subject with accounts of the work actually done in this direction; and "Recent Economies in Iron and Steel Manufacture," by H. G. Graves, in which various late developments in the industry are reviewed.

On "Lead" there is a full statistical review of the industry in all countries of the world, and under the title "Recent Improvements in Lead Metallurgy" Prof. H. O. Hofman furnishes his annual summary of the publications in technical periodicals upon this subject.

In the chapter on "Chemical Industry," Professor Lunge writes of "Progress and Profits in Germany," and W. Borchers has a paper entitled "Progress in Electro-Chemistry and Electro-Metallurgy in 1896," in which he goes extensively into the subject of electric furnaces, setting forth their principles, their development, tabular data of their efficiency, and descriptions of the most important types, illustrating them by 25 engravings.

The fifth volume of *The Mineral Industry* contains several very important technical papers of a general nature, including an account of a series of extraordinary experiments by Prof. W. C. Roberts Austen, entitled "The Diffusion of Metals," and a paper by Prof. J. O. Arnold on the "Micrographic Analysis of Metals," in which the preparation of specimens, apparatus required and details of manipulation are fully and clearly described. W. F. Willoughby, who is an attaché of the Bureau of Labor at Washington, writes of "Mine Labor as Regulated by Law in the United States." Prof. R. H. Richards continues his annual review of "Progress in Ore Dressing," and T. W. Sprague recounts advances in "Electricity in Mining." These annual reviews, together with those of Prof. Hofman on lead metallurgy, Prof. Lunge on chemical technology, Dr. Borchers on electro-metallurgy, and Mr. Ingalls on the metallurgy of zinc, are of great value to the respective industries, since they put on permanent record, in easily accessible form, everything of importance on the subjects that has been published during the preceding year.

Among other technical papers *The Mineral Industry*, Vol. V., contains: "The Gold Arsenic Works at Bovisa, Italy," by F. Clerici; "The Manufacture of Copper Sulphate," by Albert Doerr; "Electrolytic Copper Refineries," by Titus Ulké; "Bismuth Metallurgy," by Albert Doerr; "Borax and Boracic Acid," by Walter Renton Ingalls; "Distribution and Character of Missouri Clays," by Chas. Rollin Keyes; "Sapphire, Corundum and Emery," by Chas. N. Jenks; "The Petroleum Fields of Wyoming," by Wilbur C. Knight; "Phosphate Mining in Tennessee," by Lucius P. Brown; "The Rare Elements," by L. M. Dennis, and "Salt in Austria," by R. Helmhacker.

Besides the above-mentioned special articles there are the usual reviews of industrial conditions and statistics of all the important mineral substances that are mined anywhere in the world, the list including: Abrasive materials (carborundum, corundum, emery, garnet, pumice, quartz); alum and sulphate of aluminum; antimony; arsenic; asbestos; asphaltum; barytes; bauxite; bismuth; borax and boracic acid; bromine; calcium carbide; cement; chemicals (soda ash, sulphuric acid, blue vitriol, copperas); chrome ore; clay (common, refractory, kaolin or China clay); coal and coke; copper; feldspar; fluorspar; gold and silver; graphite; gypsum; iron and steel; lead; magnesite; manganese; mica; mineral paints (white lead, zinc white, iron oxides, ocher, sienna, umber, ultramarine, vermilion); monazite; nickel and cobalt; nitrate of soda; petroleum; phosphate rock; platinum; pyrites; quicksilver; the rare elements; salt; slate; stone (bluestone, limestone, marble, granite); sulphur; talc and soapstone; tellurium; tin; zinc and cadmium.

There are also the usual reviews of the mining industry in foreign countries, and the statistics of their production, imports, exports, etc.

To the subject of Abrasive Materials, 17 pages are devoted; to Cement, 28; to the Chemical Industry, 27; to Coal and Coke, 64; to Copper, 32; to Gold and Silver, 84; to Iron and Steel, 56; to Lead, 30; to Tin, 66, and to Zinc, 44. The total number of pages in the book, not including index, table of contents, or prefaces, is 830.

In form, typographical work and binding this volume is uniform with its predecessors. Like them also it is provided with a very minute index and an exhaustive table of contents. We have observed a few typographical errors, but when we consider them in relation to the immensity of the book, we are ready to assent to the general excellence of the proof-reading.

A. R.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

The Bedford Oolitic Limestone of Indiana. By T. C. Hopkins and C. E. Siebenthal. Reprinted from the Twenty-first Annual Report of the State Geologist of Indiana. Pages, 140; illustrated.

Telegraphic Signals and International Code Vocabularies; with a Suggested Re-Classification of Conventional Telegraph Signals, Etc. By Jas. Nicolson. Glasgow, Scotland; William Asher, and New York; Charles D. Sibley. Pages, 53.

Gold Growth. Being a Demonstration of the Genesis and Growth of Gold. A Revelation of Science that Obliterates the "Money Question." By John Jacob Wagner. Cincinnati, O.; The Robert Clarke Company, 1897. Pamphlet, pages, 22. Price, 15c.

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.

Supplies and Prices of Lead.

Sir: Your report in last week's issue, with reference to the lead market, is, I think, misleading to your readers. From this report the state of the case, apparently, is that the market is advancing on account of short supplies and on account of the belief that for this reason lead will have to be imported to fill the demand, and that, on account of the increase in duty on ore, no relief can be obtained until the market price here pays at least 4c., which would admit of foreign ore being imported. I am sure you will agree with me that this intimates that the lead in foreign ores will come as a new supply to help in the shortage. The matter of fact, however, is that the country has been consuming all or nearly all of the lead imported in ores for the past six to nine months. No relief for the shortage, therefore, can come from this source, and if there is a shortage, as seems to be the case, the only relief can come from importing lead from bullion or pigs from Europe. Under the new tariff this cannot be done for less than 4·60c. with the present London market.

While I am on this subject, I will also call to your attention the fact that the total consumption of imported lead during the past five years largely exceeds the total importation of lead in ores, whereas the amount of lead imported in ores at the present time is considerably less than it was during the first half of the previous five years. This would seem to indicate that in the long run, at least, the price of pig lead is likely to be governed by the duty on bullion and pig lead rather than by the duty on lead in ore.

EDWARD BRUSH.

NEW YORK, July 6, 1897.

Mining Accidents in India.—The Government of India has requested all local governments to instruct mine-owners and managers to send to the Inspector of Mines, Calcutta, a notice of every accident leading to loss of life, within 24 hours of its occurrence, so that the cause of the accident may immediately be investigated and suggestions made, if possible, for the prevention of similar occurrences in future.

NOTES ON MINING IN OAXACA, MEXICO.

Written for the Engineering and Mining Journal by Maurice Clark.

The State of Oaxaca is but little known to the American miner, owing to its situation far to the south of the ordinary route of travel and to the fact that there was no railway communication up to a comparatively recent date. The latter cause has been removed by the completion of the Mexican Southern Railway from the City of Puebla to the City of Oaxaca, a distance of 367 km., and with improved means of transportation much ore is now being exported which formerly was unable to stand the heavy freight charges of carriage on mule back. At Puebla there is railway connection with the City of Mexico and Vera Cruz.

Oaxaca is one of the most southerly of the Mexican States, and extends from latitude 18° 20′ north for a distance of about 180 miles southwards to the Pacific, and from east to west some 300 miles, forming an area of 27,470 square miles, and embracing a large part of the Isthmus of Tehuantepec. The population is about 1,000,000. The great continental Cordillera occupies the greater portion of the country, the main range running diagonally across the State, with an elevation of 7,000 to 9,000 ft. The steep sides and summits of these mountains are covered with forests of oak and pine, and the deep gorges always contain swift-running streams. The table lands and broad valleys are well watered also, and large crops of tropical and semi-tropical products are raised; among them are coffee, sugar-cane, tobacco, rice, indigo, vanilla, corn, wheat and barley, while all kinds of fruit abound. The City of Oaxaca lies at the junction of three fertile valleys, at an elevation of about 5,000 ft., and rejoices in an almost perfect climate. The population is 40,000. The city is paved, has a good electric-light system, a street-car line from the railway to the plaza, a fine market, several small parks, a theater and three fair hotels. The principal mining districts are from 20 to 60 miles distant from the city, and may be divided into three groups: 1. That of the Sierra Juarez, to the northeast. 2. That of the central mountains, to the west and southwest. 3. That of the Tlacolula and Ocotlan districts, lying to the south and southeast.

1. *The District of Ixtlan in the Sierra Juarez.*—In point of age and the number of mines opened this district is the most important in the State, and embraces mines in the vicinity of the towns of Ixtepeji, Lachatao, San Antonio, Calpulalpam, Yavesia, Talea and others. The nearest of these are about 20 miles from the city of Oaxaca, while those most distant are three or four days' journey on horseback. There is a good wagon road to the town of Xia, about 25 miles, and from this road to the several mines are pack-trails, which could be made passable for carts without great expense. The entire country is well wooded and many streams furnish water-power for mining and milling.

The rock formation is usually granite, gneiss, slate and crystalline schists, and in some cases limestone. The veins are true fissures, and the gangue is generally quartz. Silver and gold are the metals sought, and are usually found associated with the base metals, lead, zinc, copper, and iron, though near the surface the ores are comparatively free. The methods of treatment in vogue are grinding and amalgamating in arrastras for the gold ores, the patio process for the more docile silver ores, roasting and barrel amalgamation for the base silver ores, while the high-grade ores are sent to Oaxaca to be sold to the ore buyers for shipment to the smelters. The freight to Oaxaca is from $16 (all prices are in Mexican money) to $40 per ton, and the charge made by the ore buyers for freight and treatment is from $30 to $35 per ton; therefore it does not pay to ship ore of less than $60 to $100 per ton. The working of the mines and the treatment of the ores are done on a small scale and by rather out-of-date methods, and the cost is in all cases high. It is estimated that the average cost of mining and treating a ton of ore is about $20, and this in mills run by water-power. These mills, however, are but small affairs and are not arranged for the economical handling of ore; mining is done on the tribute system, and the ore and waste rock are brought to the surface on the backs of men and boys. With the mines opened in proper shape, and the milling done on a large scale, the cost for mining and milling should not exceed $10 to $12 per ton. Labor is cheap, miners receiving 37c. per day and peons 31c. The natives are docile, strong and intelligent.

At present most of the mines are idle, or if worked at all, the extraction is very small. Various causes have contributed to this state of affairs; in some case the water level has been reached and the mines can not be drained with the primitive means at hand; in others the good ore is so far removed from the surface that the air is bad and the miners cannot work; in still others the mines have caved in and the owners are not disposed to spend the money necessary to open them up again. Many of the mines have large quantities of low-grade ores on the dumps and in place, but just now there is do means of treating them cheaply.

The principal ore-producer in the Sierras is the Natividad mine, situated near the town of Calpulalpam, about 40 miles from Oaxaca. This mine has been in bonanza for the past year, and is making monthly shipments to the value of $10,000, of ore running from 150 oz. of silver and 2½ oz. of gold, to 1,000 oz. of silver and 25 oz. of gold per ton. The vein is from 10 to 20 in. in width, and the high-grade ore has been opened for a length of about 160 ft. by a depth of 75 ft. This is not the main vein; that has been stoped out to a depth of some 550 ft. × 400 ft. along its length, and shows an average width of about 4 ft. The workings on the main vein are now down to water level, and it is the intention of the owners to erect a pump in the near future, and continue the extraction of ore from this chute, which in the past has given large quantities of rich ores. This mine is near the northern end of a mineral belt which runs through the country for a distance of over four miles, with a width of about three-quarters of a mile; in this mineral belt nine veins have been found and worked to depths varying from 50 to 500 ft. These veins are from 2 to 10 ft. wide, and have produced large quantities of ores. With the proper machinery and sufficient capital, there is no good reason why these mines should not become dividend-paying properties.

2. *The Districts of Etla and Zimatlan in the Mountains to the West and Southwest.*—The ores of these districts are altogether gold bearing, and the mines are from 25 to 35 miles from the city of Oaxaca. There are wagon roads for the first 10 to 15 miles of the way, and good pack-trails for the rest of the distance. As in the case of the Sierra Juarez the mountains are covered with oak and pine timber, and there are several fine water-powers near the mines. The principal mines of these mountains are near San Miguel Peras, Tlasoyaltepec and Penoles; those near Peras have been most worked, and are now producing about 500 oz. of gold bullion per month. The formation here is gneiss and bedded granite. The veins are quite flat and dip to the south, the angle being not more than 15° to 20°. In the high hill just back of the town there are 12 to 15 of these veins, from 1 ft. to 6 ft. in thickness, separated by intervals of 20 to 150 ft. Some of these veins have been worked to a depth of 1,000 ft, measured on the incline, by a length of some 1,200 ft. The gold is both free and combined with pyrites and chalcopyrites. The surface ores are oxidized and are treated in arrastras, of which there are 10 in operation at present. Some of the sulphuret ores are also treated in these arrastras, but with considerable loss. The ores from these veins are said to yield from 0½ to 1½ oz. of gold per ton, and some 150 tons are treated per month. There is a five-stamp mill on the property adjacent, which has been in operation about a year, with great success. This plant consist of a 7×9-in. Dodge crusher; challenge ore-feeder; five 1,000-lb. stamps; electroplated copper plates; three Triumph concentrators; reverberatory furnace, 14×90 ft.; chlorination barrel and the necessary vats. The mill is driven by a Pelton wheel, under a head of 75 ft., and there is a separate Pelton motor for driving the concentrators. The mortar-blocks and the battery frame for five additional stamps are in place, and it is the intention to put in the stamps very soon. The capacity of the mill is from 12 to 15 tons per 24 hours, and the saving is from 85 to 88%. I am told the cost of milling is less than $2, Mexican, per ton. The ores average about 1 oz. to the ton. The mines belonging to this mill are near those first mentioned, and at a distance of about a mile from the mill. There is also a mine about three miles from the mill from which considerable ore is now being extracted. This mine is said to have a vein 20 ft. wide which will average ½ oz. of gold to the ton, without sorting. On this property is the only steam hoist in the State, to the writer's knowledge, and this has been in operation for about six months only.

Some five miles from this property, and to the north, is the town of Tlasoyaltepec, near which are several important mines. Of these the largest is known as Las Angustias, and has been worked to a depth of 300 ft. for a length of about 400 ft., showing a vein from 3 to 8 ft. wide. The ores are said to assay from 0½ to 2 oz. per ton, but are difficult to treat in arrastras, and for this reason the mine is idle. There are many veins in this vicinity varying in width from a few inches to several feet, and in value from 0½ oz. to 6 oz. per ton. Some of these are being worked on a very small scale, and the ores treated in arrastras, driven by water-power. Near the town of Piñoles, some four miles farther north, are other mines of like characteristics; though here also but little work is being done. This gold belt is a fine field for the prospector and investor. The conditions for mining are excellent; the climate is good, labor is cheap, timber abounds, and there are numerous streams from which water-power can be obtained.

3. *The Districts of Tlacolula and Ocotlan.*—The principal mines of these districts are those in the vicinity of Taviche and Totalapa. The ores from the mines near Taviche are generally free, though there is an important group on what is known as Cubilete Hill, where base metals are frequent. As a rule, some gold is found with the silver in all of the ores in this vicinity, and in one instance the gold predominates in value. At this writing the mines of Taviche are the largest producers in the State; much of the ore is shipped to Oaxaca and sold to the ore buyers, though the larger part is thrown on the dump to await the erection of a mill in the neighborhood to treat those ores which cannot pay the heavy freight. Since the freight to Oaxaca is $6.66 per ton, and the freight and treatment charge to the smelters is $30 to $35, it will be seen that ores of less than $40 per ton cannot be shipped at a profit.

The silver occurs as pyrargyrite, proustite and other sulphurets, and sometimes as native silver; the gold is both free and combined with pyrites. The veins examined by the writer are fissure-veins, and vary in width from 3 to 15 ft. The greatest depth attained is 520 ft. Many of the mines have been opened systematically and are well drained and ventilated. Most of the mines are being worked, and with good results. There are large quantities of ore on the dumps, assaying from 0.2 oz. to 0.6 oz. gold, and from 15 to 30 oz. of silver per ton. In this neighborhood there is not enough water for power, though there is sufficient for steam and milling purposes. Wood is worth from $2.50 to $3 per cord. Labor is plentiful and cheap. There is a good wagon road from Oaxaca to most of these mines, and the distance is about 25 miles. The elevation is 5,200 to 6,000 ft. and the climate is mild and healthy.

The mines about Totolapa have not been visited by the writer, but ore is shipped from that vicinity in considerable quantities, and of a high grade. An attractive feature of the mines in that neighborhood is the docility of the ores. There are several *haciendas* for the treatment of the ores, and all are worked to their full capacity. Water-power is used exclusively. There is a wagon road, and the distance is about 50 miles. The elevation is 3,500 to 5,000 ft. and the climate, though warm, is healthy.

There are several other localities of importance, among which may be mentioned San Carlos, southeast from Totolapa; Teojomulco, about 120 miles southwest from Oaxaca; the district of Huahuapam to the northwest, where large bodies of lead-silver ores are said to exist, and where coal has recently been found; and Parian, a station on the Mexican Southern, about 60 km. north from Oaxaca. The writer has visited none of these districts, except the last named. These several gold prospects are being worked by some Americans, and the outlook is promising. The veins are small as a rule, but of a good grade. From one mine a shipment was made a short time ago of three carloads, assaying 3 oz. of gold per ton. The erection of a stamp mill is under consideration. The proximity of the railway makes this district attractive, and it has received more attention from prospectors within the last two years than any other part of the State.

Mention should be made of an English company formed a few months ago to work the gold mines about 15 miles to the southwest, near the road to Peras, and of the Compañia Mexicana Minera y Beneficiadora de Minas Auriferas en Oaxaca, a company which has just completed a 50-ton lixiviation plant on its mining properties near Taviche. This mill and the 5-stamp mill at Peras, already mentioned, together with a 5-

stamp mill at Totolapa, owned by Mr. Constantine Rickards, are the only modern plants in the State.

The writer has spent some three years in the Republic of Mexico, and has visited many of the important mining districts. In few, if in any, are the conditions more favorable for successful mining than in the State of Oaxaca. Here are united cheap labor, a fine climate, great quantities of timber, plenty of water, easy means of communication, abundant supply of provisions, veins of good width and ores in large quantities of paying grade.

THE WITWATERSRAND GOLD-FIELD AND ITS WORKING.—III

MINING DETAILS AND PRACTICE.

WRITTEN FOR THE ENGINEERING AND MINING JOURNAL BY W. Y. CAMPBELL.

The ore mined on the Witwatersrand is auriferous conglomerate. The seams vary from knife-edge selvages of black ferruginous sand, rich in gold, up to solid conglomerate seams of 10 and 15 ft. The bulk of the seams worked varies from an average of 3 in., which is common on the east sections, to from 2 to 4 ft. in the Central Rand.

The country rock is sandstone, quartzite and shale. The seams and country dip south at angles varying from 15° to 85° from the horizon, and the strike is mainly east and west. The dip flattens about 30° in 2,000 ft. of depth. The seams thin and bulge in their course both laterally and in depth, and attempted correlation of seams miles apart is dubious, if not impossible. The intervening distance between the parallel reefs varies very much, and the enclosing country likewise. Eruptive dikes are of common occurrence in all parts of the Rand deposits, and are probably of rather recent age. The accompanying sketches. Figs. 14—27 show sections at different mines on the Witwatersrand, which illustrate

FIG. 14.

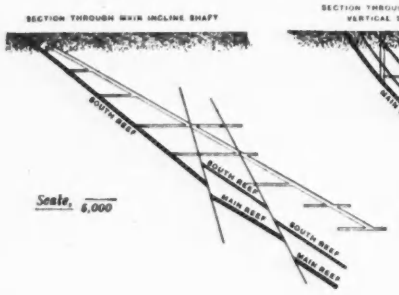


FIG. 15.

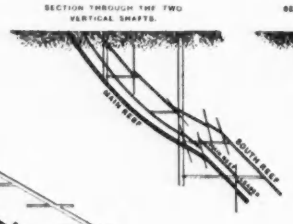


FIG. 16.

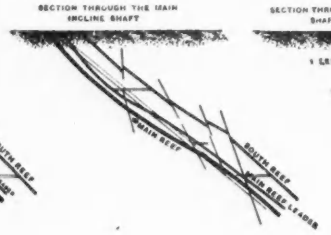


FIG. 17.

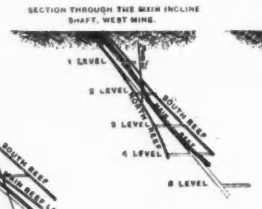


FIG. 18.

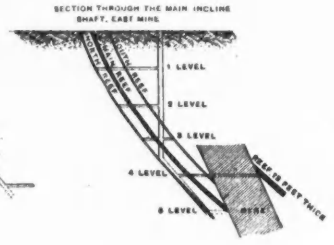


FIG. 19.

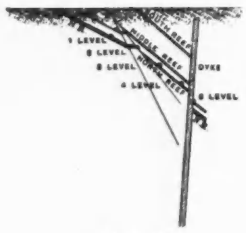


FIG. 20.

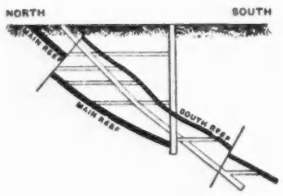


FIG. 21.

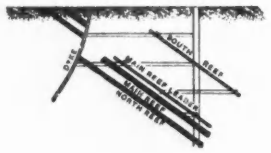
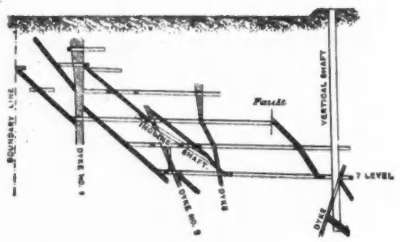


FIG. 22.



SECTIONS OF GOLD-BEARING REEFS ON THE WITWATERSRAND.

what is here said of the mines and reefs. Fig. 14 is in the City & Suburban mine; Figs. 15 and 10 are sections in the Meyer & Chartton; Fig. 17 in the George Goch; Fig. 19 in the Geldenhuis estate; Fig. 20 in the Durban-Roodepoort; Fig. 21 in the Aurora West; Fig. 22 in the Langlaagte Royal. Dikes and faults are shown in Fig. 23 from the Crown Deep; Fig. 24 from the Ferreira; Fig. 25 from the Wemmer; Fig. 26 from the Village Main Reef. Fig. 27 is a section in the Jubilee mine.

The gold is practically all in the conglomerate, that is, in the cement coating binding the pebbles; it is very seldom indeed in the pebbles themselves or in the country rock. The line of oxidation is erratic, following no apparent law, at times reaching to several hundred feet below grass roots, at others a few feet only, and in cases oxidized ore is found below unoxidized at depth. The average is about 200 ft. in depth when the blue or unoxidized rock comes in as a rule. The gold is, in practically all cases, very fine flasks or crystals, and in mechanical combination with the cement or pyrites. Water-worn nuggets are unknown, and visible gold in the ore is rare. Curiously, greenish diamonds are occasionally found in the mortar boxes.

The dikes neither enrich nor impoverish contiguous seams; this is a generally observed fact and is true despite assertions to the contrary. The narrow seams are much richer in gold than the large seams. Poor, or barren narrow seams are often met with, but never a large seam as rich as the lengthy stretches of "rich South Reef leader," the most southern seam of the Main Reef series.

The whole 30 or 40 miles of east and west run of conglomerate seams, known as the Main Reef series, is contained in a width of country rock only a few hundred yards wide. As a rule each mine has six or seven parallel seams, of which two, or at most three, are payable. In the west section of the Rand the best gold is in the southern seams, and in the east often in the northern only. In most cases there is no safe rule, and the pan and sampler must be kept in constant use. Neither is there any rule as to the gold being on the hanging or foot wall since it varies from one to the other in a few yards.

The so-called "rich gold shoots" are of very erratic occurrence in the seams, and of irregular form and extent. In some stopes the occurrences are sufficient to permit mining the entire seam. Up to date the aggregate evidence is that their occurrence, as huge or small irregular blotches, is just as common in depth as it was in the surface stopes. Everything points conclusively—and the available data are ample—to this, that in a mine with say 15 levels 150 ft. apart, by 1,000 ft. long, one level compared with another may be richer or poorer, but any block of five or six levels and compared with a similar upper or lower block, will show practically the same value of gold.

The numerous dikes met with show faulting, of course, and when a network of dikes is encountered much prospecting with little ore has to be faced. Some of the deep level developments dropped directly on such networks, but patient, shrewd prospecting located the formation and made the next levels plain sailing. Some companies waste much money in senseless crosscuts, instead of following the seam itself. There is no water difficulty in the Rand mines, which are situated on the top of the highest watershed of the country, with no higher ground within a hundred miles or more. The deepest levels will only have to deal with the very limited percolation of rain water.

Main shafts, at least two to each mine, in some cases follow the seam from the surface, and in others are sunk vertically to the seam and then turned off on the incline. The tendency is to sink on a curve from surface to seam and so prevent the "turn off" jar and defects of the old system of vertical to seam, then following the dip. Levels are put in every 100 to 200 ft., according to dip of ore body and stoping facilities, the aim being to compass overhead stoping with few level drivages.

The usual up-to-date mining practice in detail obtains generally and need not be described here. Hand drilling all over, stoping, shovel, barrow and tram work, sinking and rising, is practically all done by the black boys under white miner supervision or direction. Charging and firing is by law done by whites. The percentage of whites so supervising varies in the mines very much. In some cases it will be a boss to 10 boys, in another one to 50. Regulations compiled by the mine owners, mine managers and government mining officials, and with effect of law, govern all safety and precaution for life and limb points.

Very large equipments of power drills have been installed (doubtless the Rand orders for these things are the biggest of any country's); the competition for supply is successful for two United States makes, the Rand Drill Company, of New York City, and the Ingersoll-Sargeant Company. British drills do not hold the market, though in most other supplies of machinery Britain certainly does the bulk of the trade, 80% of the imports being British. The mining outfits generally are the best. Cash has been put up lavishly, in many cases extravagantly. The best makers in the world are in competition and the result is a 30 mile street of high-class mining outfits, such as can be seen nowhere else in the world. Similarly efficient outfits will be put up before five years are over for half the present costs.

Half the mine management is in the hands of Californian managers; the other half is that of British and British Colonial managers. There are very good men in both sections, but the Californians are credited with being too free spenders in outfits. If the allegation is true I would blame the commercial direction, not the engineers. There are very few Colorado men here yet.

The white miners are chiefly Cornish; a good few north countrymen are here also, and a small sprinkling from the United States and the Colonies. There are few from the Continent of Europe. Some managers indulge in the bonus system of wages to secure good work, but others discountenance it as pernicious in the end.

Stoping practice varies in the different mines. In the thin seams of the West Rand, where the average, as stated, is about 3 in. of ore matter, the average stope is 30 in., but one of the largest western mines is actually working a 23-in. stope, the dip being 45° from horizon. This is close mining, when it is remembered that there is an 80-head, heavy stamps, mill overhead of that mine to be supplied.

The hanging wall all along the Rand is exceptionally good, and this

enables, in flat seams (35° to 45°) long stopes to be carried without multiplying level drivages or timber costs. In one case a large stope is being worked a height on incline of 420 ft. with oblique face, and ore traveling to chutes by gravitation after each blast. Some two years ago, and in some mines still, such a length of backs would (the dips being 35°) have meant three level drives at least, at $12.50 a foot.

Stoping by power drills is only resorted to in cases of lack of native labor. During 1896 a considerable quantity of power drill stoping was done, but it killed the grade. The drills are suited for driving and sinking but not for the bulk of the stopes. There is an opportunity for the man who will produce a practical handy power drill to work in a 2 to 3 ft. stope. How to stope most economically at a depth of 2,000 to 3,000 ft. on ore beds dipping at only 10° to 15° from the horizontal is a question facing the deep level engineers just now.

In 1896 stoping in the current mines-outcrops and semi-deep was of an unsatisfactory nature. Head control, which should check policy of engineers and managers, was lax and demoralized owing to the persistent political unrest and distrust. Further, the utterly inadequate supply of stoping labor had a bad effect on not only the quantity of ore reserves on balance at end of 1896, but likewise on quality. The anxious times managers had with labor, and in keeping up their normal yield in the mill's monthly returns, led in many cases to erratic mining; and, assuming a mine which sent 50,000 tons to surface during 1896, and shows 50,000 tons on January 1st, 1897, ready to stope, the latter will probably be a dollar per ton less value than that already taken; all are incident of the wretched unrest the industry suffers from. Of course, the evil is temporary and only affects the question of open stopes, but it may lessen grade for a few months, till things are righted, and ample development ahead allows proper averaging in stoping.

A vast amount (quite unappreciated by the outside world) of footage is producing in deep-level mines, not only in main shafts, but in drives, crosscuts, winzes, rises, stations, etc. The footage runs into five figures monthly, and the basis is well advanced of a many-millioned tonnage of ore in readiness for the coming mills of the deep levels. Several millions sterling have been spent the last two years in this way, and when results come into play the output figures will run up. Most of those deep-level propositions are quite independent of the current-producing mines, which likewise are nearly all on lines of coming larger output.

Owing to causes recited elsewhere these huge deep level developments going on are being done at a fearful cost compared to what should obtain under ordinary conditions, and a few years hence the same work will be done for half at most of the current costs. Machine drills enter largely into their developments and the cost of working in the blue quartzites at depths of 800 to 1,500 ft., is approximately $32.50 per foot, driven, sunk and risen (excluding main shafts). This is for all costs of labor, explosives and the general details that make up mining costs in a mine and irrespective of head office, taxes, or depreciation; it is apportioned as follows: White labor, 40%; native labor, 16%; explosives, 22%; fuel, 9%; stores, 10%; general expenses, 3%; total, 100%.

Main shafts, full size, rectangular, cost from $175 to $325 per foot completed, and the speed of sinking varies from 50 to 130 ft. a month. Owing to the depth at which the ore reserves lie in deep level propositions, 1,000 to 4,000 ft., the expense of sinking to those ore reserves, and the outlay for adequate hoisting and reduction outfits is enormous under present conditions, and while one admits the commercial certainty of the quality and quantity of the ore reserves aimed at, one must regret the fact that all costs are just double what they should and easily could be.

THE PRESENT STATUS OF PYRITIC SMELTING.

Written for the Engineering and Mining Journal by Herbert Lang.

In its issue of May 15th the *Engineering and Mining Journal*, in commenting editorially upon the later experiences in pyritic smelting, used language that seems likely to convey erroneous impressions concerning that process. I quote: "Pyritic smelting as tried at Keswick, Cal., was not altogether successful, though the matte ran higher than at Tilt Cove, and the Mountain Mines Company is now smelting its ore after a preliminary stall roasting with a good deal of success."

This passage, taken in connection with the fact that the process was abandoned at Keswick, will, I fear, convey the impression to those who are not familiar with the actual facts, that the process itself was at fault and that it was discarded from inherent defects. But nothing could be farther from the truth. The experience had there confirmed in every respect what had been previously urged in behalf of the process, and the fact that the English company, after a hasty and incomplete trial, ceased its use does not prove anything whatever against it. All that was

FIG. 24.

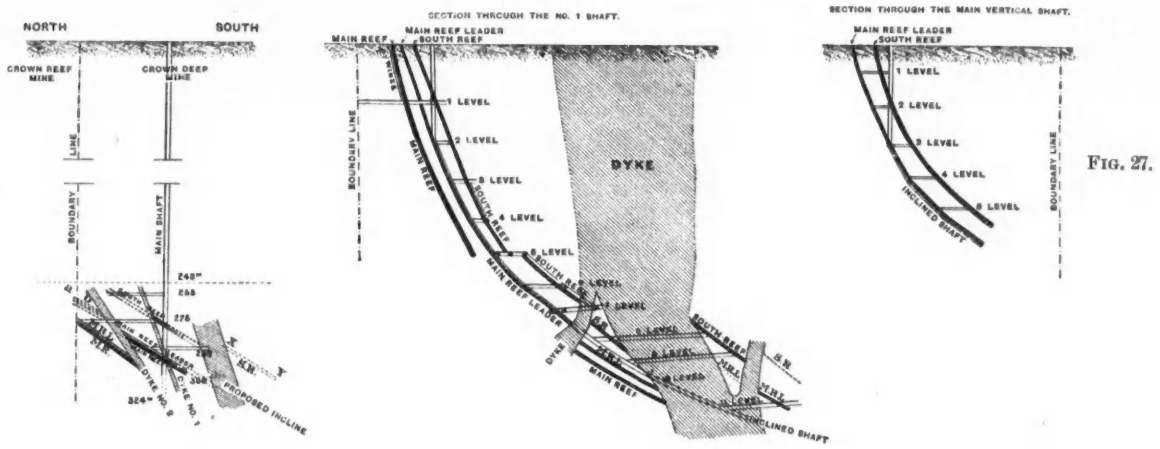


FIG. 23.

FIG. 27.

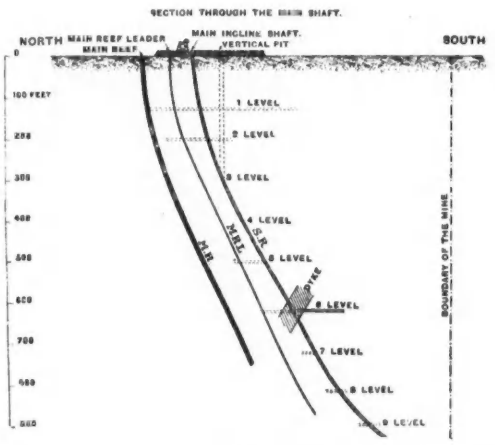


FIG. 25

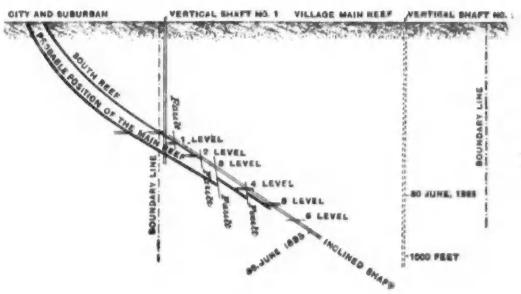


FIG. 26.

SECTIONS OF GOLD-BEARING REEFS ON THE WITWATERSRAND.

proved by the brief work there I have heretofore set forth in these columns in an accurate and careful report, and I challenge the criticism of all, interested or disinterested, in any phase of the matter. When the results of the work are removed from the obscurity cast around them by the various imperfections of the apparatus, the lack of skill in handling, the scarcity of appropriate fluxes, and various other obstacles, many of which are inherent to the starting of any process whatever, there is no chance to deny that the work at Keswick was successful, and that it met any reasonable expectation that could have been formed by any one conversant with the reduction of ores, and especially with the installation of processes of ore treatment in new fields.

What I, as a designer of the Keswick plant, undertook to do was to smelt six tons of copper-bearing pyrites, two tons of argentiferous limonite and two tons of gold quartz into one ton of matte, at a cost of $2.50 per ton of ore and with a consumption of not more than 5% of coke as reckoned on the charge. What I actually worked up to as the result of 50 or 60 days' smelting, was the production of one ton of matte from four tons of pyrites, two of limonite and nearly two of quartz. The corresponding fuel consumption was 2½% on the charge, and the cost of the smelting, as nearly as I was able to segregate it, was $1.63 per ton of ore. A process that can accomplish such results as these during the first few weeks of its installation, and in spite of serious obstacles, is able to meet the reasonable expectations of any intelligent man.

As to the reasons why I did not reach the higher degree of concentra-

tion which I set out to effect, there were several, and the two principal ones are worth discussing at some length, because they cut deeply into the theory and practice of this important art. In the first place I had not sufficient blast pressure; for our engine, put in for the temporary purpose, was too feeble to drive the blower at a rate which would produce more than 5¼ oz., while the exigencies of the higher concentration seemed to demand 8 oz. or more. In designing new apparatus I would not by any means limit myself to precisely what would be likely to do the work, but would provide a good margin, so as to make sure and have wind enough and to spare.

The other reason on which I lay much stress was that we had no steady and reliable supply of fluxing quartz with which to make up the charge. What there was came in small lots, of varying composition, and had to be used, as a rule, about as fast as it arrived, and without time to make the samples and analysis on which to base the necessary calculations. These analyses are even more necessary in pyritic smelting than in other forms, because the concentration depends directly upon the proportion of silica supplied. When the silica is diminished the iron remains in combination with sulphur and the matte fall is increased, while its copper contents are decreased. No matter how the charge is balanced the silica controls the chemical changes to a very great extent, and the policy should be to carry as high silica as the furnace will stand in order to induce the sulphur and iron to part company. If by reason of a change in the character of the silicious ore the available silica is momentarily decreased the quantity of matte is increased at once, and the copper assay runs down. On the other hand, an increase in the proportion of silica beyond what can be taken care of by the furnace produces crusts in the tuyere region and may injure the smelting for a considerable time, and even compel the stack to be blown out. It is in smelting ferruginous ores that we notice this effect the most, for any excess of quartz over the amount neces-sary to produce a singulo-silicate of iron is felt at once by the growth of the crusts. Ores containing alumina obscure the indications a great deal, and whereas a slag containing iron only as a base seems to form singulo-silicates in the pyritic stack, the aluminous slags vary quite widely. The iron singulo-silicate comes down with about 30% silica; while aluminous slags produced at the same temperature varied from 24 to 40% silica, and the effect of the changes in the silica remained quite obscure. It might be supposed that in the pyritic furnace, where the slag-making ingredients are freer to group themselves according to the play of chemical affinity than they probably are in other kinds of smelting, there would be a better opportunity to observe their behavior. But I can say little as to the alumina. As for the iron, my observation is that the tendency is invariably to the formation of the singulo-silicate, and that if left to itself the more acid silicates are not formed, unless in connection with the aluminous compounds which were run for a part of the time. I would call attention to the similarity in composition to the Bessemer slags formed in the air conversion of copper mattes, which also seem to consist mainly of singulo-silicates of iron as shown by the analyses which have been published. It was a curious thing that when the silica in the charge got too high, the slag did not increase in acidity, but fragments of unmelted quartz began to escape from the tap-hole. Possibly a higher temperature at the tuyeres would have caused this excess of quartz to combine with the already formed silicates, giving rise to bi-silicates or more acid ones, but this is only conjecture. The thing sought was to cause the quartz to take up more iron from the matte, thereby diminishing the amount of the latter, and consequently increasing its tenor. This required a higher blast, and was impracticable at the time.

It is not unlikely that the presence of alumina in the ore was the cause of at least one of the failures which are reported in attempting to smelt pyritically. The uncertainty as to what slag one is going to get, and also the difficult fusibility of the aluminous slags, which were felt severely at Keswick, make such aluminous ores seem a hard problem. Perhaps with an apparatus suited to a harder blast, and with faster driving, so as to generate a greater heat, the alumina may prove to be of little moment. I have been informed that the ore at Sudbury in a pyritic test run "came out just as it went in." At first sight one is disposed to blame the people in charge for not adding silica enough to take up the excess of iron; but it may have been the fault of the alumina, which we are informed exists in the ore to a large extent in the form of diorite. Ordinarily the fact of the ore going through with so little concentration would be evidence that the supply of silica was insufficient, for this would be the natural and unavoidable result of melting it without silicious flux. In those cases I am sure that if the experiments are resumed with a properly fluxed charge there will be no difficulty on this score. There seems to be a tendency on the part of pyritic experimenters to get discouraged too easily. There are a great many points about the work which cannot be settled hurriedly, as there always are in connection with all metallurgical processes. The idea that an old lead or copper furnace can be fixed up temporarily to demonstrate the truth or falsity of the claims of the pyritic advocates, and that the whole thing can be settled in a few days by people who have perhaps never seen such work done before, has something of the ludicrous. The success or failure of these attempts depends upon a number of contingencies outside of the character and adaptability of the ores.

A rational management, taking into account such casual obstacles as the shortage of fluxes, the insufficient blowing power of engines, etc., which would of course be brought to their attention, would not in justice to themselves and the process, fail to continue the work as long as there remained a reasonable hope of ultimately getting the thing on its feet. But a company of inexperienced individuals, of limited means and full of worry about the financial outcome, might excusably enough be discouraged if dividends were not immediately forthcoming, or repeated breakdowns of machinery. It requires considerable scientific knowledge to understand and appreciate furnace work, and it may well happen that the pyritic process may be discarded not from its lack of fitness but for erroneously assumed notions. This, I conjecture, must have been the case at Keswick, where careful preparations were rendered abortive by the impatience of the managing directors. I admit that I was clearly at fault in attempting to inaugurate a process of such novelty and complexity in the brief time which remained before the close of my engagement, and in having introduced a number of novel inventions, under the impression that a much longer time would be available. Most of these inventions demonstrated their usefulness, but they involved complications of apparatus which resulted in breakages and delays in a critical time. It is likely also that the directors became mystified by the peculiarities of the treatment, which involved at the outset the resmelting of a great deal of matte, whose behavior in the furnace was not at all understood by the people who sent reports to London. The directors were more anxious to obtain immediate results, and discarded my plan, working the richest sulphides only and neglecting the limonite.

The Mount Lyell mine, in Tasmania, is almost the exact counterpart of the Mountain Mines Company's property. It contains large quantities of ore the same in copper contents, precious metal value and chemical composition. It was opened at the same time and passed into the hands of a company who employed Mr. Stricht as metallurgist, and his recommendations, to further the parallel, were issued simultaneously with mine, and were alike in recommending pyritic smelting, Bessemerizing, and electrolytic refining as the then profitable course to pursue. But here the parallel ends. The Mount Lyell people adopted pyritic smelting, not for experimental purposes, but as a permanent method of treatment, and built durable works, with sufficient machinery and appliances to secure the best results. Treating the same ore, they have effected a concentration, as I judge from the meager reports which stray across the water, of five or over of sulphides to one of matte, and by resmelting this matte they get a final product running over 50% of copper, with the gold and silver, demonstrating thereby that the process is worthy of taking an important place in the domain of metallurgy.

That Tilt Cove smelts pyritically without fuel seems a great and notable achievement, reflecting great honor upon those in charge, as well as upon Mr. Austin, who paved the way to such a result. But Tilt Cove itself is no place for pyritic work; for coke, labor and transportation are far too cheap there for the process to show its great and undoubted advantages. Besides, there are no oxidized ores of copper, gold or silver which can be carried through with the sulphides at little cost, which is the great advantage of this process.

We can rightfully claim that the pyritic method has made substantial progress in the last few years. It has had a good many ups and downs, but it has made good headway. The question at issue seems to be narrowing itself down to a matter of definitions. "In its purity" pyritic smelting is smelting without fuel, but if this be the *sine qua non* then its opponents can take refuge in the definition and claim there is little of it done. Some will go farther and say that it is not likely, considering the conditions at most of our ore deposits, that there ever will be much pure pyritic work done. For my part it seems immaterial whether it is destined to be done entirely without fuel or with the very small proportion which it is ordinarily necessary to use. At Keswick the cost of the 2½% of coke was less than 35c. on each ton of the charge, and there is not much room for economy in the matter, even if all the work is done without fuel. It should also be said that the blast was heated by the waste heat of the slag, so that the sole fuel used was the 35c. worth of coke.

It is to be regretted that some very erroneous ideas about the scope of the process have gotten abroad. It has been held by some who ought to have known better that the real function of pyritic smelting was to reduce heavily sulphuretted ores, dense sulphides of iron, for example, which would so restrict the application of the process that it would be of little value. But the fact is, there is room for the application of the principle in nearly all kinds of blast-furnace work. I found that it required the presence of sulphides only to the extent of one-third of the charge to enable the coke to be reduced to 2%, or thereabouts. It follows from this that innumerable mixtures of oxidized and sulphide ores may be smelted with great economy, for with these mixtures the concentration can be got much higher than with high sulphur mixtures and the matte much richer. I believe the process will prove the most useful in such mixed charges, while at the same time it offers a cheap and easy means of concentrating the heavy sulphides. Under any ordinary circumstances the fuel costs ought not to exceed 50 or 75c. per ton of charge.

The ideal site for a pyritic smelter is where fuel is very expensive—coal and wood particularly, and coke not less than $25 per ton; where zinc, lead, lime carbonate and magnesia are found in such quantities in the ore as to hinder good roasting and obstruct the application of the leaching processes; where there are sulphides and arsenides in as many combinations as possible, but where the proportion of sulphides, etc., is not such as to admit of water concentration; where there are values in gold, silver and copper, and enough of each to render their saving important; where the ore is not so rich as to admit of shipping to market; and finally, where the silicious material for fluxing itself carries values and is of a refrac ory nature, not fit for free milling or concentration. If to this we add costly labor and transportation, it would seem that there could be no show for any other process.

If we take a retrospective view of the experience of the past two or three years, I claim that the following points have been proved with regard to pyritic smelting:

1. Charges containing no more than one-third of their weight of sulphides can be smelted with as little as 2½% of coke and with a very high concentration.

2. The slags made in pyritic smelting are as clean of copper as those from ordinary matting. This was in doubt until my work at Keswick demonstrated it.

3. Slags having iron as almost the only base, are as clean of copper, gold and silver as those containing lime or other base, or at least practically so.

4. Silica governs the concentration of pyritous ores to a great extent.

Electric Drills in Germany.—Electric rock-drills have been introduced in the Neustassfurt salt mines in Prussian Saxony, and are reported as working in a very satisfactory way. Hand-drills had previously been used in these mines.

Relics of an Old Mine Accident.—Recently an official of the Hartraton Colliery, Durham, England, while inspecting some old workings in the mine, discovered a human skeleton which had been in the mine since the explosion in 1794, when 28 lives were lost. A curious incident in connection with the discovery is that the previous day was the anniversary of the explosion.

ABSTRACTS OF OFFICIAL REPORTS.

Dominion Coal Company, Nova Scotia.

The report of this company for the year ending February 28th, 1897, shows that the net proceeds from coal mined were $303,038 and transportation profits $286,263, a total of $589,301. The payments were: General expenses, $80,548; interest, and sinking funds, $267 937; dividends, $166,667; total, $515,152. This leaves a surplus of $74,149, which added to the balance of $18,214 brought forward from the previous year, leaves a surplus of $92,363 carried forward to current year.

President Whitney's report says: "The output for 1896 was 1,169,785 tons. This is larger by 284 881 tons than for the previous year. During the latter part of the year it was found desirable to erect a coal-washing plant. This was proceeded with, and is now in operation. It has proved economical and effective in increasing the market value of the smaller grades of coal. The satisfactory results of last year's work were due largely to our increased output and saving in cost of mining and transporting the coal. There is no great profit in the United States business up to this time, largely for the reason that it has been simply introductory.

"Since the close of the year $54,172 for the sinking fund has been paid to the New England Trust Company. This, with previous payments and interest, amounting in all to $136,318, was in excess of the sum required as special deposit for sinking fund ($125,000) by $11,318, which has been used to the extent of $11,275 for the purchase and cancellation of 12 bonds. Hereafter all amounts paid into the sinking fund (5c. per ton on all sales) will be available for purchase and cancellation of the bonds."

North Boulder Gold Mining Company, Western Australia.

The report of this company for 1896 deserves notice from the facts that it has been to all appearances managed in a much more honest and straightforward way than many West Australian mines, and that it has been opened and developed with a very small expenditure.

Mr. A. G. Charleton, the consulting engineer, reports that to test the property two shafts were sunk. In all there were completed 515 ft. of shaft sinking, 315 ft. of crosscuts, 319 ft. of levels and 72 ft. of winzes. In the mill there were crushed 533 tons of ore taken out, yielding 1,160 oz., or 2·25 oz. gold per ton. All of this was average ore, and not selected. The extraction in the mill was 78% of the assay value. The work was done in a Huntington mill.

The directors' report says that crushing with a Huntington mill was commenced on September 1st. The entire working capital of £15,000 has been called up, the sum of £4,351 has been received in bullion and transfer fees, and there was in hand, after paying preliminary expenses, development, mining charges, building, plant, mill, machinery, equipment and management in West Australia and London, and after providing for all liabilities, the sum of £1.419. Out of the above £15,000 the directors also purchased and paid for Lease No. 975 E., 10 acres, which was subsequently sold to the North Boulder East Block, Limited. On this sale the North Boulder Gold Mining Company received 80,000 shares of 10s. each. In view of the satisfactory development of the mine, a second Huntington mill has been ordered and shipped. In addition to this a 10-stamp battery, made by Fraser & Chalmers, with an engine of sufficient horse-power to drive 30 head of stamps, has been purchased. This battery is already at Coolgardie. The mine will then be in a position to deal with about 60 tons of ore per day. The difficulty arising from the scarcity of water, with which the working of the mine has heretofore been hampered, and which did not admit of the Huntington mill being run more than about half-time, has been overcome, a quantity sufficient, it is estimated, to supply the three mills having been obtained from a neighboring mine.

St. John del Rey Gold Mining Company, Brazil.

The report for the year ending 31st May, 1897, states that the ore raised from the Morro Velho mine amounted to 88,691 tons, of which 73,630 tons were crushed, yielding 366,075 oitavas, or 42,202 oz. of gold, an average of 0·57 oz. per ton. The improvement in the duty of the mill has been more than maintained since February. Close attention to the ore breakers has resulted in the mineral being delivered to the stamps in better condition for crushing, and should the development of the lode as the No. 9 level is extended eastward continue to lay open mineral equal to that in the levels Nos. 7 and 8, a largely increased profit may be looked for in the current year; for, while the profit at the mine for the first six months of last year averaged £2,211 per month, the profit for the succeeding six months averaged £4,432 per month, and that for the first three months of the present year has averaged £5,600 per month. This improvement is due to increased tonnage of mineral raised and crushed, and to diminished cost. The improvement in the gold returns will be further increased, it is expected, when the oxygen-process permanent plant is in operation. Unwatering the old mine is proceeding, the hydraulic pumps work admirably; and in spite of the rainy season, the water had been lowered from the commencement of the pumping operations 500 ft. to the end of May, and the pressure of the water per square inch reduced from 650 to 420 lbs. Several additions and improvements to the engines for producing compressed air have been carried through the shops, and the satisfactory running of the plant during the year confirms the directors in their policy of equipping the mine and surface works with first-class machinery. The workshops are in a high state of efficiency, enabling all modifications or repairs of plant or machinery to be carried out at the mine. On the surface the work in connection with the additional power scheme was pushed on steadily, and the foundations of the house for the oxygen process permanent plant were completed before the rains set in. Bricks for the building are being made by the company, and in view of the improvement in the financial position, the superintendent has been authorized to complete these important works at the earliest possible date. The question of costs has been constantly before the superintendent and heads of the various departments, and an encouraging decrease has been obtained. The profit in Brazil, after deducting gold charges and the expenses of the Rio agency, was £39,488, and the London expenses to be deducted were £3,085, leaving £36,453. Bond and other interest incurred during the year absorbed £20,757, making the net profit £15,696. The directors have applied the balance of profit toward providing a sinking fund to amortize the interest paid during the construction of the surface works and recovery of the lode, up to the time the new mills and plant were started; they also purpose applying the balance of profit to the same fund, after declaring a dividend of 6d. per share free of income-tax at the approaching annual meeting which will amount to £10,992.

The directors invited the holders of the debentures which were to have fallen due in July next, amounting to £30,000, to continue their bonds for two or three years upon the existing conditions, and they have been renewed. The directors also considered it advisable to give the holders of the first and second series of mortgage bonds, which fall due March 1st, 1898, the option of renewing them at the same rate of interest for three or five years, provided this option was exercised by them before June 10th. The directors propose making arrangements to pay off at maturity those bonds the holders of which have not signified their desire to renew. The financial position on May 27th last was as follows: Cash at bank and on deposit, £32,180; gold due June, £15,300; total, £47,480; drafts against gold received, £15,500; stores in order and freight, £4,000; home pay and London expenses to August 31st, £2,000; interest due to September 1st, inclusive, and £2,600 balance of Cuiaba bonds, £12,873; total, £34,373, leaving a surplus of £13,107 at the close of the year.

Brunner, Mond & Company, Limited, Great Britain.

The last report of this chemical manufacturing company covers the period of nine months ending March 31st, 1897. The report of the directors says that the balance sheet and the profit and loss account presented, show a balance to the credit of profit and loss account on the working of the nine months, of £232,911, which, with the amount of £95,943, brought forward from June half-year, 1896, makes a total of £328,854. From this there were paid for dividends £243,622; written off patents account £500; a total of £244,122, leaving a balance of £84,732 to be carried forward. The dividends were at the rate of 7% yearly on the preferred stock and 30% on the ordinary stock.

At the annual meeting the chairman, Sir John P. Brunner, said that when they took into account the state of business which had obtained in the United States during this time the result was a very remarkable one. There had been new competitors in the trade there who had forced their way into the market apparently without consideration of where the market prices would go, and the result had been that in the United States alkali had been sold at a lower price than had ever been reached. They had during the period of nine months in review bought three mining leases in North Wales—mines which he might call zinc mines, although they also produced lead ores.

He intimated that by Dr. Carl Hoepfner's process, which they had adopted on terms which were considered satisfactory, they would be able to make use of waste residuum liquor which they had not hitherto been able to utilize. The mines also were very favorably situated for supplying the works at Winnington. The sum of £96,635 had been spent; firstly, in the plant necessary for this process; secondly, in entirely remodeling the works they bought in the year 1895; and, thirdly, on other necessary manufactories which they carried on mainly at Winnington, which contributed to their prosperity to a considerable degree. They had recently completed the purchase of the works belonging to the Cheshire Alkali and Salt Company at Middlewich; and, in addition to that, they were shortly completing the purchase of Messrs. Bell Brothers' works, near Middlesborough. In addition to these works they had acquired a very considerable freehold estate and very valuable salt rights. These purchases were looked upon as advisable for the consolidation and strengthening of the position of the company.

The Bureau of Foreign Commerce.—Formal notice is given that from July 1st the Bureau of the State Department at Washington having charge of the collection, preparation and publication of consular reports will be known as the Bureau of Foreign Commerce, instead of the Bureau of Statistics of the Department of State. The main reason for the change is to avoid confusion with the Bureau of Statistics of the Treasury Department.

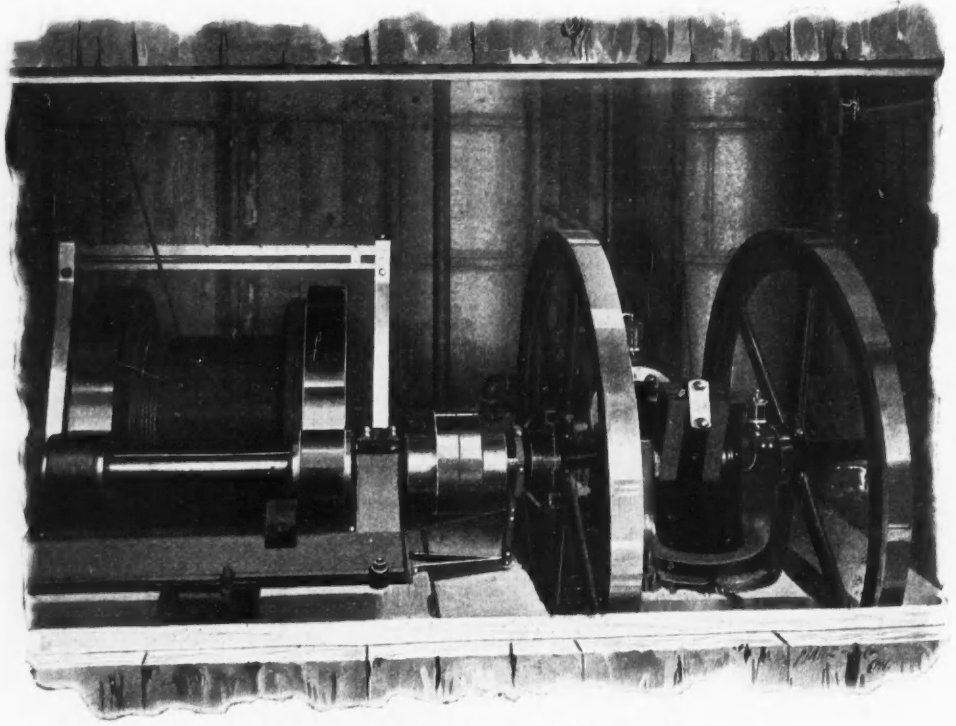
Sumatra Petroleum in the East.—Advices from Kobe, Japan, say that Raspe & Company, agents of the Sumatra Petroleum Company, have recently received at that port 30,000 cases of petroleum, and at Yokohama 35,000 cases. It is expected that this petroleum will establish a prominent competition with the American article, as the price at which it will be sold is about 15 sen per case below the price of the product taken from the United States.

Electric Power Transmission in California.—A contract for the transmission of power from the Santa Ana Canyon to Los Angeles and Pasadena has been concluded between the Southern California Power Company and the General Electric Company. The amount of power to be transmitted at first is 4,000 H. P. The station will be located in the Santa Ana Canyon, 12 miles from Redlands and about 80 miles from the towns in which the electric power will be utilized. The water will be taken from the river through canal, flume and tunnel along the side of the canyon. Here it will be led into a pipe line 2,200 ft. long, giving what will be equivalent to a vertical fall in the water of 750 ft. The wheels will be of the impact type, directly connected to the generators, of which there will be four, each of 750 kw. (1,000 H. P.) capacity, The maximum line potential will be 33,000 volts, to which potential the initial voltage will be raised by 12 step-up transformers of 250-kw. each. This transmission will be the longest commercial electrical power transmission as yet undertaken, as well as that using the highest voltage. At present the longest is that transmitting the power of the waters of the Ogden Canyon in Utah to Salt Lake City, a distance of 36 miles. The Los Angeles transmission will be over twice that distance, and three times longer than has yet been tried with the power of Niagara, which to date has only been transmitted to Buffalo, a distance of 26 miles.

MINERAL DEPOSITS OF THE COAST REGION OF BRITISH COLUMBIA.

By G. F. Moncton.

In this paper, read before the British Columbia Association of Mining Engineers, Mr. Moncton says that the greater part of the coast region of the Province is composed of granite, intersected by dikes of diabase, felsite and other intrusive rocks, with which many of the veins appear to have an intimate connection. There are also small areas of slate, quartzite and limestone, and on the islands lying between Discovery Passage and the mainland a considerable quantity of trap-rock. Copper occurs in considerable quantities on Burrard Inlet and Howe Sound. On the Salmon Arm, above Sechelt, some well-defined veins have been developed in the past decade, and outcrops of copper pyrites have been found very recently on the upper part of Jervis Inlet. These latter occur in connection with diorite, and are associated with pyrrhotite, which may be found to contain nickel as development proceeds, At the mouth of the inlet copper has been found in granite on Nelson Island. On Texada Island the same ores are found in granite intersected by diabase dykes. Further to the northward copper is found again on the Ragged Islands in quartzite. Quartz porphyry dikes occur near this point. On the southeast point of Redonda and at Martin Island it was discovered by A. J. Colquhoun recently, and work has been proceeding there ever since. A vein carrying it occurs also in Refuge Cove. These deposits are in granite and adjoin diabase. On Razor Island bornite is found in granite, and again in Stuart Island copper occurs in several claims, forming in one of them a body of stringers intersecting granite, which seems to be of enormous extent. Again to the northeast of this, about three miles distant, have been found within the last three months some of the high-



GASOLINE ENGINE AND HOIST, SOUTHERN EUREKA MINE, UTAH.

est grade deposits of this coast, those of the Estero Basin, and almost in line with them lie on the west side of Phillips Arm the large bodies of low-grade copper ore outcroppings in the Shoofly and Nelly Bly claims. These last are at the junction of diorite and limestone. Half a mile from Shoal Bay on Thurlow Island are the Matterson claims, which were only located last September. These carry copper in considerable quantity. Copper is found in several places on the west side of Valdez Island and also as far north as Calvert Island and the Nimpkish River. But little galena has yet been found, some small veins occurring near Sechelt and also in the Medora claim, Redonda Island, and in the limestone of Fanny Bay, Phillips Arm. Of iron ores there may be said to be no end. A large deposit occurs near the junction of granite and limestone on Texada Island. Another exists on the north end of Redonda Island. Both these have been worked to some extent. Other bodies of iron ore are known on Valdez Island, Jervis Inlet, Toba Inlet and Rivers Inlet. At present these deposits have little value, but copper or lead smelters would create some demand for the ores as a flux. Of zinc there are deposits on Lynn Creek and other places near Burrard Inlet. It also occurs on Bowen and Bowyer islands and all along the coast with the other metals. Of gold, it may be said that the number of veins carrying the metal on the coast is legion, The richest specimens have been brought from Texada Island, although the charge is often made that the veins there are pockety. It is found in considerable quantity also in most of the copper ores of the coast, although in the Jervis Inlet ores silver has the predominance. The chief gold-bearing mineral here as elsewhere is arsenical iron pyrites. In the Medora, Redonda Island, it has been shown that the value of the vein is gold, when iron pyrites is chief gangue, and silver when galena occurs instead. Gold-bearing veins occur to the writer's knowledge as far north as River's Inlet, the best of them probably being those in the slate belts which are found at Cape Neck, Phillips Arm, Cordero Channel. Although bodies of free milling quartz do exist, so far as is yet known they are very low grade and are not very large deposits. Some gold-bearing veins which promise well occur in the quartzites, probably those of the Alexandria and the Channe properties near Shoal Bay. These are all associated with intrusive rock, quartz felsite in the first, and diabase in the other. But little work has been done to develop the coast deposits and that has not always been done well, but certainly for the time that prospecting has been carried on and the amount of capital expended the results have been remarkable

RECENT MINING IN ALABAMA.

Written for the Engineering and Mining Journal by W. M. Brewer.

Near the State line between Haralson County, in Georgia, and Cleburne in Alabama, there are several prospect holes, most of them sunk about 1893, in which gold bearing ore was discovered. The nearest location to the line where any extensive work has been done is at the head of Trickam Valley, which extends southwesterly toward Arbacoochee and the Tallapoosa River. This is at the Head mine, where a five-stamp mill has been operated irregularly, and I am informed that a syndicate proposes to expend about $2,000 in further development work.

About two miles westerly from this work is located the old Hicks-Wise mine, renamed Winnebago by Mr. Cook, and associates, of Oshkosh, Wis., who are prosecuting the development. The ore body at the surface is about 30 ft. thick, as exposed by a cave in the workings. The old shaft has been cleaned out, retimbered, and sunk about 50 ft. deeper, on an incline of about 30°. A drift 20 ft. in length has been run at the 130-ft. level, which is all in ore. From the southwest end of this drift a cross-cut is being made to determine the thickness of the ore body. It is proposed by the management to ship a car-load of ore taken from the cross-cut to the Mecklenburg Iron Works at Charlotte, N. C., for treatment in the sampling works.

Between the Winnebago mine and Arbacoochee there has been prospecting work on several properties. The Anna Howe and Anna Howe Extension mines, which have been idle for several years past, are located in this district to the northeast of the placer mines, which made the Arbacoochee famous about 1848. Some work is still being done in these placer mines, principally with a view to locating veins of gold-bearing quartz and determining their value.

Traveling across Turkey Heaven Mountain to the south from Trickam, one passes the Lucky Joe mine and mill, idle since 1894; next the old Smith copper mine recently purchased by Capt. John A. Grant, of Atlanta, Ga. This has not been unwatered since about 1879, but it is the purpose of the present owners to pump out and thoroughly explore the old workings at an early date. About half a mile further southwest is located the Mossback gold mine, which was shut down some years since.

Beyond this, about a mile, the old Wood's copper mine, or Copper Hill mine, is situated. After being abandoned in 1879 it was unwatered in 1895 by D. W. Detrick, a Western man. The ore is a pyrrhotite, and the body so far as exposed shows a thickness of over 20 ft. From the country rock, which is apparently an altered eruptive, it seems possible that this mine and the Mineral Farm in Carroll County, Georgia, are on the same lead as the Ducktown, Tenn., mines. In order to prove this assertion it would be necessary to study the geology between, because if such a theory is correct the formations which in Alabama are about 6 miles wide, intervening between the semi-crystalline slates and this copper belt must have wedged out almost entirely in North Georgia and Tennessee.

One carload of the highest grade ore has lately been shipped to the

Balbach smelter at Newark, N. J., from Heflin, on the Southern Railway, and teams are engaged hauling for another shipment. The distance from the mine to the railway is about 18 miles by wagon road. The old workings have been carried down about 80 ft., and the incline shaft sunk on the foot wall of the ore body. At that level the present management crosscut to the supposed hanging-wall and continued sinking on that. About 80 ft. below the old workings a drift was started in both directions, and stoping commenced. From a close examination of what appeared to be the hanging wall it is demonstrated that the permanent wall has not yet been reached, and a crosscut will be run from the south drift to determine its location.

An excellent opportunity to study the structural geology of this district is afforded in the north end of the old workings, where a perfect anticlinal is exposed, which has been folded after formation, so that the strata making the sides have all the same dip slightly south of east. While at the top of the curve each stratum of ore and country rock, which alternate in regular order, is only a few inches thick, yet this thickness is increased on the sides, until at the floor of the drift it will aggregate about 30 ft. Because at the east wall of the drift there is unmistakable evidence that the strata of the anticlinal have been continuous beyond; the running of the crosscut was begun at the lowest level.

Some prospecting is being done a few miles westerly from this copper mine, and a body of quartzite bearing gold has been discovered on the Blake property. This has been cut in five shallow trenches, showing its apparent continuity at that depth for from 900 or 1,200 ft.

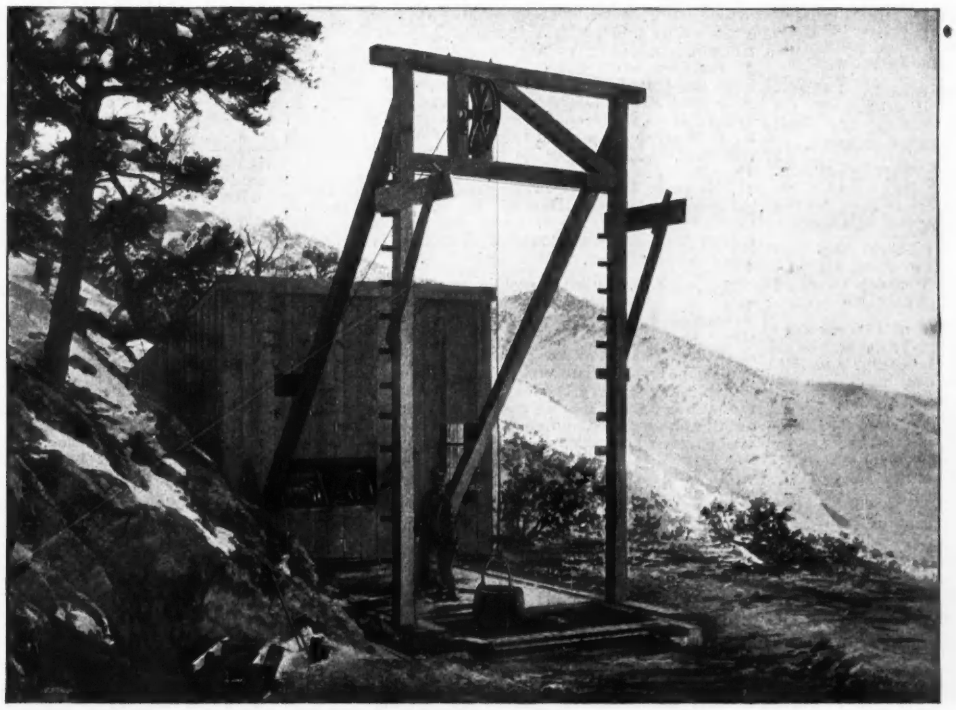
At the Pinetucky gold mine, which is being operated by the Alabama Belt Gold Mining Company on a long lease, ore is being mined from the new 80-ft. shaft and milled in the 10-stamp mill on the property. The ore milled looks well; the value per ton was not ascertained, but it is quite easy to find free gold specimens from the ore now being hoisted. The company has recently put in an air compressor, and is running two air drills on both day and night shifts. The ore body is about 20 in. thick, enclosed by walls of very hard mica schist. From the character of the country rock and surrounding geology, the theory that Pinetucky and the Creighton mine in Cherokee County, Ga., are on the same level is quite tenable. At the present level the drift has been run about 40 ft., showing the continuity of the ore body from a comparison between it and the condition of the old 55-ft. level that the rich shoot worked at hat level has maintained continuity of grade with depth to the present evel, about 65 ft. deeper on the dip, which has only about 20° incline.

The conditions of the mineral industry in Clay County are somewhat more promising than has been the case for some time past. The operations which were commenced at the Idaho mine last September are being successfully carried on, and it has been demonstrated that with crushing capacity sufficient to treat 100 or 200 tons of ore per day, this property will be made to pay. The extent of the ore body has been partially demonstrated and the proposition presented at this property is similar to that at the Homestake mine, as it was in 1877, a large body of low-grade ore above water level. This can be milled and mined at less than 40c. per ton, if the operations are conducted on a sufficiently extensive scale. Mining is being done in a large open cut, from which the ore is put into the mill to-day for 15c. per ton; three men, two at 75c. each per day and one at $1, with 50c. per day expense for powder, will supply the mill with 20 tons of ore daily. If 200 tons per day were necessary, the cost of mining it from this open cut should not exceed 10c. per ton, provided necessary tracks and trams were supplied to transport the ore to the mill by gravity. A Huntington mill is in use here with success.

A problem which has been solved here is that the surface clays associated with the placer gravel, and the clay formed from the decomposing saprolites immediately at grass-roots will sicken mercury and prove detrimental to amalgamation because of their talcoid nature. This solution is of interest because it furnishes the reason why, when operations have been conducted to save the gold by amalgamation, which showed by panning the surface material, they have invariably resulted in flouring quicksilver and losing gold. Recently Mr. Franklin, superintendent of the Idaho mine, had some little experience in the Huntington mill with this material, of which there is a quantity above the ore body proper and on the side of the mountain in which the mine is located. He made several tests and determined beyond doubt that the clay was the disturbing element. The remedy is simple, because if this material is deposited in a tank with water the clay will gradually become thoroughly broken up and dissolved, thereby releasing the gold and black sand, which will sink into the settler, while the dissolved clay will pass off in suspension. After this the gold which is mixed with the sand will amalgamate freely. In this operation the quicksilver must not be introduced until after some of the clay has passed off in suspension.

A GASOLINE ENGINE MINING PLANT.

The engravings herewith show a Fairbanks-Morse 25-H. P. gasoline hoisting engine as operated by the Southern Eureka Leasing Company at its mine in Robinson, Utah. The first is taken from a photograph of the shaft and engine-house and No. 2 represents the method of installation in the engine-house. Some reference was made to this plant when it was first put up; but the present illustrations show it much more fully than was then possible. This plant has now been in operation six months and the management of the mine reports that it has solved for them the question of economical operation of their plant. Gradually the shaft has been sunk until at the present time it is down 300 ft. and each day the engine averages a hoist of 26 buckets of rock, the combined weight of bucket and load being nearly 1,200 lbs. Knowledge of the working of the engine has been gained fully, and now it takes but from 45 to 50 seconds to hoist a load and the round trip can be made usually in a minute and a half. The cost of gasoline at the mine has averaged 19c. per gallon and the gasoline consumption has been but seven-tenths of a gallon per hour, thus making the cost of fuel 13½c. per hour. The operator is placed near the shaft and starts the engine by means of an automatic starter. He also dumps and trams away the output of the mine. The engine is more than ordinarily heavy and consequently very substantial. Immediately on ceasing operations all fuel expense stops.



SHAFT-HOUSE AND HOIST, SOUTHERN EUREKA MINE, UTAH.

Utilization of Water Power in Spain.—A company is reported to be in course of formation at Santander for the purpose of putting down plant to utilize certain available water power of the River Ason, in the generation of electrical energy for lighting and power purposes.

Puget Sound Brick for South Africa.—A recent shipment of 200,000 brick from Puget Sound to Delagoa Bay in South Africa, is one of the curious cross-currents of trade. It would seem as if the distance would prevent shipments; but the brick were taken as ballast by a sailing ship, and at a nominal rate.

A New Water-Power Scheme At Niagara.—Another scheme for the development of power in Niagara River is reported. C. H. Mitchell, of Niagara Falls, Ont., is the father of the new idea, and he has made application to the Council of that village for a franchise. There is said to be a fall of 46 ft. in the river between the Cantilever Bridge and the whirlpool, and Mr. Mitchell believes it is the most valuable water-power available in the locality at the present time.

PERSONAL.

MR. GEORGE H. ROBINSON is in the Kootenay District, B. C. He will not return to Salt Lake for several weeks.

MR. T. E. SCHWARZ, mining engineer of Denver, Colo., is engaged on professional work in the Horseshoe District and at Alma, Colo.

MR. A. E. REYNOLDS, the well-known mining operator of Denver, Colo., left that city June 28th for a trip to Europe, which will be extended to October.

MR. THERON GEDDES, auditor of the Rio Grande Western Railway, and general manager of the Swansea Mining Company, left Salt Lake, July 3d, on a vacation trip to Alaska.

MR. JOHN MOKATE, superintendent of blast furnaces at Cleveland, O., has been engaged by the Carnegie Steel Company to assume a similar position at the Duquesne (Pa.) furnaces.

MR. DAVID BLYTH BOGLE, managing director of the Kootenay Goldfields Syndicate, Limited, has been in New York City, and on July 7th sailed for London in the interests of his company.

SENATOR TURNER, president of the Le Roi Mining Company, was recently in Ottawa on business connected with the mining interests of the Kootenay and Yale districts, British Columbia.

MR. W. SCOTT CRISMON, treasurer-secretary of the Utah and Galena, in Fish Springs District, Utah, is on the Mother Lode, California, inspecting ground in which he recently became interested.

MR. WILLIAM GUGGENHEIM and a party of Western capitalists have been visiting Rossland, B. C., mines. They have also been visiting the Hall mines and making a tour of Southern Kootenay.

MR. WILLIAM GRAY, mining engineer, of London, has been in New York this week. He recently returned from Western Australia and is now on his way to British Columbia on professional business.

MR. HORATIO V. CROLL, the efficient superintendent of the Denver Engineering Works Company, of Denver, Colo., is spending the month of July in California on a business and pleasure trip.

MR. J. T. MILLIKEN, an assayer of large experience in the Cripple Creek District has accepted a position with the Colorado Ore Sampling and Reduction Company, whose works are in course of construction near Elkton, Colo.

MR. W. H. BUSH, of New York, president of the Gold Coin Mines Company in Gilpin County, Colo., and who is largely interested in the Gregory-Bobtail and Buell mines, is spending a few weeks in looking over the various properties.

MR. G. R. FEARBY, mining engineer, who has been for some time past in Western Australia, passed through New York this week on his way to British Columbia. He expresses himself very hopefully as to the future of the Westralian mining industry.

MR. MILO HOSKINS, who has been superintendent of the Anaconda mine, Cripple Creek, Colo., for the past four or five years, has resigned. His place will be taken by MR. N. H. CONE, who also has charge of the Victor mine. The change will be made at once.

MR. FRANK C. SMITH, professor of chemistry and metallurgy at the State School of Mines, Rapid City, S. Dak., will sever his connection with that institution, having accepted the position of general superintendent of metallurgical operations of the Golden Reward Mining Company, in Lawrence County, S. Dak.

MR. P. T. FARNSWORTH, manager of the Horn silver mine, left Salt Lake on July 3d for Austin, Nev., to meet MESSRS. ALLEN C. WASHINGTON, ANSON PHELPS STOKES and others, who are to drive across country to De Lamar, thence to State line, Utah, reaching rail connection again at Frisco, the home of the Horn silver mine.

HERR A. SCHMEISSER, whose work on the Transvaal gold mines attracted much attention two years ago, has for some time past held the rank of bergrath and has been attached to the government mining bureau for the district of Aachen (Aix-la-Chappelle). He has lately been promoted to the rank of oberbergrath and transferred to the district of Clausthal.

MR. WILSON H. LOW, a brother of the well-known chemist of Denver, Colo., has accepted the position as assayer at the Brodie Reduction Works, where MR. J. Q. MCDONALD is superintendent at present. Mr. McDonald until lately had charge of the laboratory of the Gold and Silver Extraction Company, the representatives of the MacArthur-Forrest process at Denver.

THE names of several of England's technical and scientific men appear in the list of honors in commemoration of Her Majesty's Jubilee. MR. LINDSAY WOOD, a coal owner, of Durham, and a past president of the North of England Institute of Mining and Mechanical Engineers, is made a Baronet. PROFESSORS CROOKES and FRANKLAND, the chemists, are made Knights. MR. DAVID GAMBLE, of the United Alkali Company, is made a Knight, and MR. J. WOLFE BARRY, the president of the Institution of Civil Engineers, is made a Baronet.

OBITUARY.

JAMES ANDREWS, one of the most prominent mechanical engineers of the country, died at his home, in Allegheny, Pa., on July 6th. Colonel Andrews was associated with Capt. James B. Eads in the construction of the Mississippi jetties and the St. Louis Bridge. He was also interested in the Tehuantepec ship railway project. He was 60 years of age.

GEORGE H. BARRETT, of Denver, Colo., died suddenly at Windsor, on June 27th. He was born in New Hampshire in 1836, and for 36 years has been a resident of Colorado. He went to Colorado in 1861, and settled at Boulder, and removed to Georgetown in 1866 and engaged in the mining business and sent the ore to the Paris exposition, for which he received a gold medal. In 1889 he went to Leadville and engaged extensively in mining business, and at the time of his death was treasurer of the Marion Consolidated Mining Company.

SOCIETIES AND TECHNICAL SCHOOLS.

IRON AND STEEL INSTITUTE.—The autumn meeting will be held at Cardiff, Wales, on August 3d, 4th, 5th and 6th, 1897. The following papers have been offered for reading: "On Passive Iron," by J. S. de Benneville, Philadelphia; "On the Diffusion of Sulphides through Steel," by E. D. Campbell, Ann Arbor, Mich.; "On the Manufacture of Tin Plates," by George B. Hammond, Penarth; "On a Spectroscop c Analysis of Iron Ores," by Prof. W. N. Hartley and Hugh Ramage, Royal College of Science, Dublin; "On Improvements in Shipping Appliances in the Bristol Channel," by Sir W. T. Lewis, Bart.; "On the Iron Industry of Hungary," by D. A. Louis, London; "On the Thermo-Chemical Study of the Refining of Iron," by Prof. Honoré Ponthière, Louvain, "On Carbon and Iron," by E. H. Saniter, Wigan; "On Some Mechanical Appli. pliances at Penarth Docks," by T. Hurry Riches, Cardiff; "On the Application of Traveling Belts to the Shipment of Coal," by Thomas Wrightson, Thornaby-on-Tees.

MONTANA SOCIETY OF ENGINEERS.—A special meeting was held in Helena on June 26th. Professor L. S. Griswold deliverd a lecture upon the "Geology of Helena and Vicinity," having spent the past year in examining and classifying the formations in the vicinity of Helena, where his work has been very thorough and complete. Specimens of different geological formations were shown during the lecture, which was illustrated by charts. Mr. R. H. Chapman, of the United States Geological Survey, then delivered a short address upon what that department has done and is doing in Montana. The first surveys were made in 1882, and 16 sheets have been published, embracing 38,000 square miles. A party is now outfitting in Helena, which will extend the system of triangulations, after which topographical surveys will be made. Five parties will be placed in the field in different parts of the State. Mr. Walter H. Weed, United States geologist, is now in the State and will remain during the season, engaged in geological work.

INDUSTRIAL NOTES.

The Cincinnati Rolling Mill Company, of Riverside, O., and the Marion Iron and Steel Company, of Marion, Ind., have signed the new wage scale of the Amalgamated Association.

At the Akron (Ohio) Iron and Steel Company's plant the shafting department was destroyed by fire on July 4th. The loss is reported to be $100,000, fully insured. The fire throws 100 men out of employment.

The National Tinplate Company, of Anderson, Ind., and the American Tinplate Company, of Elwood, started their plants July 6th according to the new wage scale, which gives the workers an advance of 8¾% in wages.

The Bellaire Steel Company, of Bellaire, O., has closed down its plant and will not resume work until about the middle of August. Meantime extensive improvements are to be made, which will nearly double the output of the steel mill.

At the Birmingham (Ala.) Rolling Mills the work on the steel plant is progressing very satisfactorily and the prospects now are that basic open-hearth steel will be produced in Birmingham before August 1st on a commercial scale and a satisfactory basis in all respects.

The Belmont Iron Works of Philadelphia were granted a charter on July 6th under the laws of Pennsylvania. The capital is $25,0 0, and the incorporators are: S. Genge Brown, Joseph B. Willits, Joseph Willits, H. B. Hirsh, Henry Carlisle, Walter W. Pharo, A. B. Hirsh, Samuel Ashhurst, L Ellis Pharo, Charles L. Huston, J. Pearson Willits.

The two rolling mills at Birmingham, Ala., and at Gate City have closed down, pending the signing of the scale of the Amalgamated Association of Iron and Steel Workers. The miners are still at work, and the companies operating them have asked the men to accept a small reduction. Indications point to their acquiescing.

The Eleanor Iron Works' rolling mills, at Hollidaysburg, Pa., which have been idle for a month on account of the puddlers refusing to accept a reduction in wages, resumed operations in all departments July 6th. The puddlers go back to work at the company's terms, $2 75 per ton. Two hundred people are affected by the resumption of work.

The Union Steel Company, of Madison County, Ind., signed the new wage scale of the Amalgamated Association, July 2d, and the big plant was put into operation at once. Only 300 men will be employed for a time, but before the year is out the capacity of the plant, 1,600, will be working. It is thought this break will be followed in short order by others.

The Lackawanna Iron and Steel Company's north mill, at Scranton, Pa., resumed operations July 6th after an idleness of several months, giving employment to 300 men. It is said that there are sufficient orders on hand to keep a double turn working at the mill for several months. The south mill of the company, where the men quit work 10 days ago on account of a reduction of wages, is still idle.

American manufacturers of tinplate are said to be trying to organize a trust with a nominal capital of $20,000,000, this amount to be increased if the formation of the trust goes through. There are 189 tinplate mills in the United States, all of which are to be brought into the combine. As a preliminary step there was a general shut-down of all plants last week, and 140,000 employees were thrown out of work. The shut-down was caused primarily by a strike, but manufacturers assert there would have been no strike if there had been a compact between employers, and the labor situation is being used as one of the arguments for the formation of a trust.

The Wellman Steel Company, of Chester, Pa., has instituted proceedings through William B. Broomall and J. Howard Roop, trustees for the bondholders, with the view of foreclosing the mortgages against the property, and it is believed that a sale will take place in the fall. The bonded debt of the company is $100,000 first, $200,000 second mortgage bonds, both drawing interest at 6%, and $300,000 5% bonds. The foreclosure is being made on the first-named bonds, the interest of which has been in default since July 1st. If the plant comes to a sale it is believed that S. A. Crozer, in the absence of strong bidders, will take the property to protect his interest. The estimated value of the real estate is $120,000, and there is scrap about the plant worth about $150,000. The plant was sold at sheriff's sale some years ago and was bought by a syndicate, but has not been operated since. Some time ago the Russian Government bought the machinery, to the amount of $500,000.

TRADE CATALOGUES.

Henry R. Worthington, New York, has issued a special catalogue on Worthington jet surface self-cooling condensers. These condensers, by reason of their peculiar construction, can be readily attached to simple, compound or multiple expansion engines in any location, whether a water supply is available or not. Worthington condensing apparatus have been attached to engines of almost every kind and size, and to such extent that at the present time they are maintaing a vacuum upon engines aggregating 1,000,000 H. P.

NEW PATENTS.

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 JUNE 29TH, 1897.

585,182. CRUSHING MACHINE. Morton G. Bunnell, Chicago, Ill. Assignor to Frederick C. Austin, same place. The combination of a crushing-hopper comprising upper and lower reciprocating jaws; a pivotally-supported swinging link pivotally connected to the jaws at points which are situated to the rear of the crushing faces of the latter and on opposite sides of the point of support of the link.

585,190. CRUSHING MACHINE. Melker J. Eichhorn, Chicago, Ill. Assignor to Frederick C. Austin, same place. The combination of a crushing-hopper comprising upper and lower reciprocating jaws; mechanism for thrusting the jaws forward in alternation; and a connector having one end applied to the mechanism so as to form an abutment in opposition to the forward strokes of the jaws, and having the other end connected with the frame of the machine forward of the point of application thereof to the mechanism.

585,191. CRUSHING MACHINE. Melker J. Eichhorn and Morton G. Bunnell, Chicago, Ill. Assignors to Frederick C. Austin, same place. The combination of a crushing hopper comprising a movable jaw, a lever having a jointed connection with the jaw; and a link having one end pivotally connected with the lever, and the other end supported forward of such point of connection.

585,214. METAL BENDING MACHINE. Charles Kling, Chicago, Ill. The combination with a set of bending rolls, of a guide mounted alongside the entering path of the member to be bent, a second guide placed alongside the leaving path of the member.

585,268. ORE ROASTING FURNACE. August Heimbach, Butte, Mont. The combination of an annular cham-

ber provided with feed and discharge openings and a pair of gravitating doors extending transversely across the chamber between the openings, one of the doors being arranged to close before the other is opened.

585,275. CUPOLA OR FURNACE BREAST. George W. Moore, Philadelphia, Pa. The combination of a tapering body formed of plumbago and provided with an extension and having inlet and signal holes or openings formed in the walls thereof.

585,295. CHLORINATION PROCESS OF OBTAINING GOLD FROM ORE. Jacob J. Storer, New York, N. Y.; Frank Martin, Townsend, Mont.; and George O. Eaton, New York, N. Y.; said Storer assignor to Mary L. Storer, and said Eaton assignor to Emma C. Eaton, New York, N. Y. The process consists in reducing the ore, by suitable mechanism, to exceedingly fine powder, then floating it, in separate, independent particles, on a current of air into and through a hot furnace to oxidize the base elements precipitating the hot nonvolatile particles continuously, separately and without aggregation directly into a bath containing free chlorine; in keeping the pulp and liquid in constant agitation to better expose the gold particles to the action of the solvent, and in conducting the liquid containing the soluble chloride of gold into suitable filters or precipitating tanks and there precipitating the gold.

585,297. BLAST FURNACE. Richard H. Terhune, Salt Lake City, Utah. The combination of a grating placed over the top of the furnace and inclined downwardly from the outside toward the center of the furnace; the grating being provided with openings gradually increasing in width from the outside toward the center of the furnace.

585,304. LIMEKILN, CUPOLA AND METALLURGICAL FURNACE. Edward J. Bird, Big Stone Gap, Va. In a furnace, a plurality of safety devices disposed at different planes of elevation and communicating with the interior of the furnace, each safety device comprising two valves, one of which is adapted to be opened before the other by gas-pressure within the furnace.

585,334. APPARATUS FOR MANUFACTURING SHEET IRON. Samuel Burton, Martin's Ferry, O. Assignor to himself and Thomas Delaney, Pittsburg, Pa., and Henry Koehnlein and James Boston, Bridgeport, O. The apparatus consists in parallel closed chambers, having doors at one end and a bridge-wall at their other end, the firebox and combustion-chamber at the bridge-wall over the tops of both chambers and closed at its side, and rear end, a central vertical flue spacing the chambers apart and communicating with the horizontal top flue, transverse flues leading from the lower end of the central vertical flue to the lower ends of vertical flues at the opposite sides of the chambers and a tack with which the side flues communicate at their upper ends.

585,355. PROCESS OF OBTAINING METALLIC ZINC AND COPPER FROM ORES. Charles A. Burghardt and Gilbert Rigg, Manchester, England. The process consists in treating the roasted and ground ores with an ammoniacal solution, then in precipitating the iron dissolved in the resultant liquid by the addition of hydrated oxide of tin, and in finally effecting the electrolytic deposition of the metallic zinc.

585,359. PROCESS OF OBTAINING POROUS METALS BY ELECTROLYSIS. Ludwig Höpfner, Berlin, Germany. The process consists of electrically precipitating a porous or spongy metal, and stiffening the same by precipitating thereupon a denser metal.

585,361. LOCK-BEARER FOR FURNACES. Peter Maddocks, Midway, Cal. The inclined tile surfaces, in combination with a bearer therefor, consists of a block having a projecting lug at the lower end fitting corresponding-shaped openings in the edges of the supporting-tiles, the bearer having in its upper end a channel which extends at right angles with the major axis of the lug and receives and supports the lower edge of the opposite inclined tile above.

585,387. ELECTROLYTICAL DIAPHRAGM. Carl Kellner, Vienna, Austria-Hungary. Patented in Austria April 6th, 1894, No. 44/841; in Germany April 19th, 1894, No. 79,258; in Switzerland April 19th, 1894, No. 8,341; in France April 19th, 1894, No. 237,896; in Belgium April 19th, 1894, No. 109,513; in England April 19th, 1894, No. 7,801; in Norway April 19th, 1894, No. 3,655; in Sweden April 23d, 1894, No. 5,468; in Hungary May 14th, 1894, No. 430, and in Italy June 30th, 1894, XXVIII., 36,199, and LXXI., 60. An apparatus composed of a slab of soap and a suitable reinforcing backing.

585,404. APPARATUS FOR MAKING SULPHUROUS ACID. Ernst Porak, Kienberg, Austria-Hungary. The combination of a closed reservoir, a pipe system, a pump, an apparatus for the production of gas and pipe connections to one pipe, the connections terminating in a nipple whereby the fluid passing around the nipple acts by suction to draw in the gas to the reservoir, where it is washed and compressed, and a discharge-conduit.

585,442. PORTABLE MELTING APPARATUS. Newell S. Jenkins, Dresden, Germany. The muffle of refractory material having an open end and a hole in the bottom, in combination with the supporting-arm, the ladle and the handle-support, by which the ladle can be sustained within the muffle and above the bottom hole.

585,492. METHOD OF AND APPARATUS FOR SEPARATING PRECIOUS METALS FROM THEIR SOLVENT SOLUTIONS. Jean F. Webb, St. Louis, Mo. The method consists in passing the solution first in a downwardly direction through a body of carbon, then in an upwardly direction through a body of zinc and then downwardly again through a body of carbon.

585,513. PROCESS OF AND APPARATUS FOR REMOVING SCALE FROM METAL PLATES. Thomas H. Desmond, Middletown, N. Y. The process consists in agitating the plate in flowing water while the plate is hot, and then subjecting the plate to the blowing action of steam.

585,522. PROCESS OF MAKING TIN OXIDE. Hermann Jaeger, Kalk, Germany. Assignor to Wassermann & Jaeger, same place. The process consists in raising metallic tin to a high temperature, approximately 1,200° Cent. in the absence of air, then, when at the high temperature, admitting abundance of air to the molten metal, and finally removing the tin oxide formed.

585,552. ORE SEPARATOR. William R. Bushby, Pueblo, Colo. The combination of a centrifugal receptacle or bowl of inverted conical construction, and a plurality of conveyors having a common mouth arranged contiguous to the wall of the receptacle and provided with a plurality of scrapers corresponding in number with the conveyors.

585,591. METHOD OF MANUFACTURING BRIQUETTES OF IRON ORES OR IRON COMPOUNDS. Gustaf W. Petersson, Stockholm, Sweden. Assignor of one-half to Louis Wilhelm Alwin Jacobi, same place. The method consists in first partially reducing the ore to form iron sponge, and then compressing the mass into blocks or briquettes of the desired size and form.

585,596. CHARGING APPARATUS FOR BLAST FURNACES. William Rotthoff and George K. Hamfeldt, Duquesne, Pa. The combination of an inclined endless bucket conveyor leading to its top, means for feeding stock to the lower part of the conveyor, a preliminary hopper into which the stock is continuously delivered by the buckets, the hopper having a sealing bell-bottom, and a second hopper below the preliminary hopper, the lower hopper having also a bell bottom, by which the stock may be dropped at intervals.

585,618. APPARATUS FOR RECOVERING SODA. Alexander H. Twombly, Yarmouth, Me. The combination of a separator closed at the top and bottom and provided with an exit-pipe, a flue conducting air or gas into the separator, a storage tank for water or other liquor and connections from the same to the upper and lower portions of the separator.

585,622. FURNACE FOR HEATING INGOTS, BILLETS, BLOOMS, ETC. Fred D. Daniels, Worcester, Mass. The combination with the longitudinal way along which the billets are advanced and on which they are supported while being heated, of an inclined way within the furnace at the end of and extending crosswise of the longitudinal way to receive the billets as they drop one by one from the longitudinal way, and a lateral discharge door on the prolongation of the inclined way through which the successive billets as they descend the inclined way by gravity are discharged end foremost.

585,625. ACETYLENE GAS GENERATOR. James F. Dougherty, Philadelphia, Pa. The combination with a gas holder and generator, a sprinkler mounted for rotary movement within the generator, a wheel on the shaft of the sprinkler, a cord passed around the wheel and connected thereto, and its other end passed through pulleys and connected with the holder, a connection between the sprinkler and the source of supply, and automatically operated valves for controlling the supply.

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GENERAL MINING NEWS.

BITUMINOUS MINERS' STRIKE.—President Ratchford, of the United Mine Workers, on July 7th, gave out these revised estimates of the number of men out on strike on that day: Of the 21,000 miners in the Pittsburg District, 15,000 are out. Of the 8,000 in Indiana, 6,400 are out. There are 3,000 out in West Virginia, 16,000 in Kansas, Iowa and Alabama, and 5,000 in Kentucky and Tennessee. The strike is almost complete in Ohio. Probably by the end of the week, it is asserted, the mines will practically all be shut.

The Board of Control of the Ohio Coal Association met in Detroit, Mich., July 7th, but soon adjourned to meet in Put-in-Bay on Wednesday next. The meeting was secret and was participated in by D. R. Hanna, of Cleveland, son of Senator Hanna; T. E. Young, Cleveland; B. F. Berry, Detroit, vice-president of the Wills Creek Coal Company; R. H. and Thomas Johnson, Columbus; J. S. Morton, Columbus; F. S. Brooks, Columbus, and H. J. Booth, Toledo. Mr. Young said afterward that, although the entire coal situation was discussed informally, nothing was done, and no attempt was made to accomplish anything definite. Other members of the board confirmed the statement, and said that while all were anxious to see the strike broken speedily there was absolutely nothing that could be done at the present time. Mr. Hanna spoke of the coal supply, and said that for the present there was plenty for everybody, and that there was very little cause for either railways or firms getting in a panic over a prospective famine.

MINERAL LANDS ON FOREST RESERVES.—Much attention has been paid recently by the General Land Office to the preparation of rules and regulations applicable to the government of all the various forest reserves of the United States, and Commissioner Hermann has now formulated these for the approval of the Secretary of the Interior.

The mineral lands of the forest reserves are subject to location and entry under the mining laws in the usual manner. Owners of mining locations are authorized to fell and remove from their mining claims any timber growing thereon, for actual mining purposes, upon their particular claim. The free use of timber is allowed to bona fide settlers, miners, residents and prospectors for minerals, for firewood, fencing, buildings, mining, prospecting and domestic purposes, where actually needed by such persons for such purposes. This privilege is restricted to persons resident within the forest reserves, who have not a sufficient supply of timber on their own claims. The sale of timber from the reserves will be permitted in limited quantities, and this is done for the purpose of preserving the living and growing timber and permitting the younger growth of timber on the reserves. Dead, matured or large growths of trees found upon the reserves shall be designated and appraised so far as the same may not be necessary for the forest preservation and water cover, and may be sold for not less than the appraised value in such quantity as shall be prescribed to each purchaser and to be used in the State or Territory in which the reservation may be. In order to avoid a monopoly the department may, in sales in excess of $500, make allotmonts of equal quantity to the several bidders, and the right is reserved to reject any or all bids. Within 30 days after an award of timber to the bidder payment must be made in full to the receiver of the local land office before the purchaser will be allowed to cut, remove or dispose of the same. Within one year it must be removed.

The estimated area of the existing forest reserves is 18,993,280 acres. The estimated area of the suspended forest reserves is 19,951,360 acres. The aggregate area of the existing and suspended reserves is 38,944,640 acres.

ALABAMA.

(From Our Special Correspondent.)

The question between the colliery owners and coal miners as to scale of wages to go into operation July 1st has not yet been definitely settled. I am informed by reliable authority that the Clocton mines of the Tennessee Coal, Iron and Railroad Company shut down July 1st, but that the miners are all working at the other mines in the district. Whether this means that the employees propose to accept the reduction suggested some time since for mining or whether an understanding has been arrived at between the operators and the miners I am unable at this time to state. The big strike in this district in 1893 cost the companies nearly $500,000 and five months' idleness. It would produce a very deplorable condition at this time if the experience of '93 were repeated, because neither the companies nor the miners are in as good condition as at that time for a strike.

CLAY COUNTY.

(From Our Special Correspondent.)

HOLLINSWORTH-WATTS.—Dr. Wm. B. Phillips, who is conducting an experimental test at this old property, started the Huntington mill some days since. He experienced the same trouble with regard to the surface clay as was experienced at the Idaho mine. Although this clay yields value by panning, yet it has some constituent which sickens quicksilver, and caused a consequent loss of both gold and quicksilver. Below this material no such trouble is encountered. The thickness of this clay throughout this district averages about 4 ft.

JEFFERSON COUNTY.

(From Our Special Correspondent.)

ENSLEY MINES.—The plant of by-product retort coke ovens, which is being erected by the Semet Solvay Company at Ensley, under contract with the Tennessee Coal, Iron and Railroad Company, by the terms of which the Tennessee company is to furnish the coal, the Semet Solvay Company coke it and retain all by-products except surplus gas, is being erected as fast as possible. This plant will be about 320 ft. long and 30 ft. wide. It will be charged with about 275 tons of coal per day and produce about 200 tons of coke, about two tons sulphate of ammonia, between 2,000 and 3,000 gals. of tar, and about 600,000 cu. ft. of surplus gas. This latter will be used by the iron company as fuel for their boilers. No gas producers will be added to the plant, at least not at present. This plant was designed by W. H. Blauvelt, chief engineer for the Semet Solvay Company.

ARIZONA.

PIMA COUNTY.

TANQUE VERDE.—In this mining district, situated about 18 miles east of Tucson, among the foothills of the Rincon Mountains, there has been recently located a group of four mining prospects, which, from present indications, give promise of value. At a depth of 22 ft. a lead is shown of over 5 ft. in width, carrying copper ore of various grades, largely high-grade oxide, and on the footwall there is found, in considerable quantity, flakes of native silver. Development is being pushed by a few men at present, and the value of the prospects determined as rapidly as possible, consistent with the means at the command of the owners, who are J. E. Danker, C. E. Elliott and Martin Wier.

YAVAPAI COUNTY.

LOTTIE.—About 24 men are employed in this mine at Big Bug. Fred Carrigan is mining foreman for the owners, Kent Brothers, of New York, and the Lottie is reported to be one of the liveliest camps in the Bradshaws.

YUMA COUNTY.

KING OF ARIZONA.—This new discovery has been incorporated by Charles E. Eichelberger, the discoverer; H. B. Gleason, Col. Epes Randolph, division superintendent of the Southern Pacific Railroad, at Tucson; Eugene S. Ives, an attorney, of Phœnix, and R. J. Duncan. The mill is in operation, working ore from the mine with good success.

CALIFORNIA.

AMADOR COUNTY.

BAY STATE MINING AND DEVELOPMENT COMPANY.—This company filed its petition of insolvency June 26th. Liabilities, $14,000; assets, certain mining property in Amador County of uncertain value and now under attachment.

(From Our Special Correspondent.)

ARGONAUT.—A mill at this mine is in course of erection. A recent test of the ore at the Zella mill yielded an average of $11 per ton in free gold. The stock of this company is constantly appreciating in value.

KENNEDY.—This company recently bought 30 acres directly east of its location, on which will be sunk a perpendicular shaft to a depth of 2,500 ft. Sixty additional stamps will then be added to the mill.

MIDDLE BAR.—A bond on this mine was recently given for three years for the sum of $40,000. The mine is situated 4 miles east of Jackson.

ROBINSON.—A Huntington mill is in course of erection at this mine, 6 miles north of Volcano.

UNION CONSOLIDATED GOLD MINING COMPANY.—At the 500-ft. level in the Union Consolidated mine the ledge has been encountered 22 ft. from the shaft. The improvement of the rock will no doubt keep the 30-stamp mill going in the near future.

CALAVERAS COUNTY.

(From Our Special Correspondent.)

GWIN MINE DEVELOPMENT COMPANY.—This company recently declared its first dividend of 30c. per share, aggregating $6,000.

MADERA COUNTY.

(From Our Special Correspondent.)

SYNDICATE MINING COMPANY.—The Lucky Bill mine on the east side of Potter Ridge, 6 miles southeast of Grub Gulch, owned by this company of San Francisco, shows a mill test of 150 tons to average $25 per ton. They have reached a depth of 100 ft. and the vein is 18 ft. wide between the walls and they are now crosscutting. A recent mill run of selected ore yielded $72.50 per ton.

SAN DIEGO COUNTY.

STONEWALL.—T. B. Shide and George Campbell have made a strike on the north extension of this mine, near Julian. Some months ago they procured a lease of the property from the owners, the Sather Banking Company of San Francisco, to prospect along the line of the main lead. The strike made is northwest of the present big shaft, and the ore was taken from a 30-ft. working shaft. The ledge is 4 ft. wide, and the ore, which averages about $35 to the ton, is free milling and uniform in quality.

SHASTA COUNTY.

EUCLID MINING COMPANY.—A transfer has been made by which Howard White, as trustee, conveys to the above company all the property of the Gladstone Mining Company. This seems to mean a reorganization of the old company and the operation of some good mines. The property is located on Kline Gulch, near the town of French Gulch.

HARRISON GULCH.—At present 25 men are employed in the mines and 7 men in the mill. Ferd Hurst is foreman of the mine and August Hurst has charge of the mill. Only 5 stamps are in operation, as the new process for treating the pulp is not conducted on a scale large enough to utilize the product of 10 stamps.

LUCKY HALL.—The Kendall mill, of 4 tons capacity per day, which was formerly operated at Harrison Gulch by Fowler & Hurst, is being operated at Hall City by Hall, Carpenter & Sons. The ore is from the Lucky Hall mine and of high grade. The vein averages 9 in. in width. The end of the tunnel in this mine is about 60 ft. from the end line of the Sabbath mine, one-half of which was recently leased and bonded by J. C. Chambers, of Redding, and T. G. Harrison, of Quartz Hill, the other half being owned by Mr. Hall. These parties have also bonded the Isabel and Evaleen claims, owned by Hall & Landis. They will commence at once to develop the property. They have 50 tons of ore out, and expect to have a 5-stamp mill in operation this month.

SIERRA COUNTY.

(From Our Special Correspondent.)

PLUMBAGO.—This mine, 2½ miles south of Alleghany, is known as a pocket mine. It has a 10-stamp mill. The ore is found in bunches. Last year the mill yielded $120,000. The present owners purchased the mine 2 years ago, and $13,000 has been paid for adjoining ground which has yielded $40,000 over the purchase price.

TRINITY COUNTY.

BLOSS & MCCLEARY.—This hydraulic mine, at Trinity Center, is being energetically worked by the new owners, Messrs. Reel & Terry, and a large yield for the season's run is anticipated.

TUOLUMNE COUNTY.

(From Our Special Correspondent.)

GRAY EAGLE.—At this mine, at American Camp, a foundation for a gasoline engine to run a hoist and a jackhead pump is being laid. The pump will have a capacity of 10,000 gals. per hour. Sinking has been suspended on account of the great influx of water and the incapacity of the old machinery to handle it.

GRIZZLY.—A new hoist is in course of construction at this mine ¼ mile north of Priests. A new flume is being built to convey the water from the river to the mine. Sinking on the vein still continues.

LADY WASHINGTON.—The mill on this property is nearing completion. It is one quarter mile southeast of Carters. Its working will be watched with considerable interest, as it is the only one of its kind in the county. The ore is pulverized by rollers.

MCKINLEY.—This property was recently bonded and development work resumed.

RIVERSIDE.—Recent assays of the ore at this mine went as high as $2,600.

COLORADO.

BOULDER COUNTY.

CASHIER.—A quantity of ore from this mine, in Central Gulch, being assayed went 18·28 oz. gold, 9·7 oz. silver and 15% lead. The total value of the ore per ton is $371. The mine is located in Central Gulch, about three-quarters of a mile west of the Golden Age mine in the Jamestown District. The Golden Age yields white quartz and free gold, the Cashier an iron and lead sulphide.

CHAFFEE COUNTY.

GOLDEN EAGLE MINING COMPANY.—At a meeting of the stockholders of this company, held in Boulder June 29th, the following were selected as directors for the ensuing year: John N. Wilhaus and Thomas Danford, of Boulder; Dr. W. Myron Reynolds, H. L. Rogers and H. W. Greenough, of New York. The report of the manager, Mr. Williams, showed that during the year 270 tons of ore had been shipped from development work only, which averaged $54.30 per ton, and that some 250 tons were still on hand, worth from $10 to $20 per ton. Only development work has been done. This amounts to a total length of 1,931 ft. in the way of shafts, winzes, drifts, etc. The mine is near Salida.

CLEAR CREEK COUNTY.

BIG FLAT.—This mine, owned by James and John Creighton, of Omaha, has been sold to an Illinois syndicate for $12,000 cash. The property is located on Ute Creek to the west of Idaho Springs, and has been idle for a number of years. A hoisting plant will be installed and the shaft will be sunk.

EL PASO COUNTY.

COLORADO ORE SAMPLING AND REDUCTION COMPANY.—Mr. Robert B. Turner, the manager, expects to commence sampling about July 15th and hopes to start the cyanide plant up about July 25th, while the chlorination plant is expected to commence operations about August 1st.

EL PASO COUNTY—CRIPPLE CREEK DISTRICT.

(From Our Special Correspondent.)

ACACIA GOLD MINING COMPANY.—The Burns property, formerly of the Calumet Company but now of the above company, is under bond and lease to Michigan parties. A new boiler and a 3-drill Leyner air compressor are being put in.

CHICAGO-CRIPPLE CREEK GOLD MINING COMPANY.—Some ore has been shipped recently from the Nolan lease on this company's tunnel. The ore was taken from an upraise which is being made for air.

HULL CITY PLACER.—The White lease on this property recently shipped 32 tons of ore to the Taylor & Brunton sampler. The ore was divided into two lots: 12 tons running 1¼ oz. per ton and 20 tons running 3.1 oz. per ton in gold. This property has been a regular shipper for some time past.

JEFFERSON MINING COMPANY.—This company has been sinking again in its shaft on the Mattie L. for the past month. The shaft is now about 725 ft. deep.

MOON-ANCHOR GOLD MINING COMPANY.—Drifting is being done for the ore chute on the 500-ft level. Most of the ore being shipped is taken from the 400-ft. level. A new 80-H. P. double friction hoist has been ordered from the Mine and Smelter Supply Company, of Denver. When this is put in sinking will be commenced again. About 200 gals. of water per minute is being pumped from the shaft. The water is pumped through the Gold Hill tunnel which cuts the shaft about 320 ft. below the surface. This mine recently paid its first dividend, amounting to $6,000.

ORPHAN BELL MINING AND MILLING COMPANY.—Parker & Gardiner who have a lease on the Orphan Bell property adjoining the Maloney lease, recently put in a new hoisting plant and air compressor. The shaft is now 68 ft. deep.

REBECCA GOLD MINING COMPANY.—The French engineer sent out by this company to examine the C. O. D. mine is still here. Nothing in regard to the future intention of the company has yet been given out. Some ore is being taken out of the upper level by lessees.

SOUTH PARK.—This property, on Ironclad Hill, is pushing development work. The shaft is about 450 ft. deep and still going down. No water has yet been encountered.

GILPIN COUNTY.

OLD KENTUCKY.—This group of mines, between Central City and Pine Creek, is being developed rapidly by night and day shifts. It is owned by Samuel Lesem, who has enlisted the assistance of New York capital. The main shaft is down 550 ft., and for the last 60 days it has passed through a solid body of ore, yielding, from mill-run tests, $50 to $100 per ton, mainly in gold. The company will not commence shipping until a large body of ore is blocked out. The equipment of the mine is strictly up to date.

TOPEKA GROUP.—Henry P. Lowe, the mining engineer, has concluded the sale of this well-known group in Russel gulch. The group was sold to a syndicate of New Yorkers, headed by John F. Lovejoy for $160,000. Mr. Lovejoy, however, retains his interest. He has been engaged as manager, and has had $50,000 deposited to his credit to continue operations. The Topeka shipped $500,000 in 1892 and 1893, closing down in that year on account of trouble among the owners. That trouble being settled, the sale of the mine was made.

HINSDALE COUNTY.

YELLOW MEDICINE.—This mine is about to resume operations. The Colorado Fuel and Iron Company is pushing the enterprise to a shipping mine. A. B. Wiley, an employee of this company, will have charge of the work, and is now on the ground looking after the arrangements of buildings and machinery. Three carloads of machinery and mining apparatus have arrived and were immediately hauled to the mine. R. J. Hills and W. P. Thompson have been looking through the mine. Mr. Hills is a well-known geologist and is in the employ of the Colorado Fuel and Iron Company.

HUERFANO COUNTY.

UNION COAL AND COKE COMPANY.—This company, of Denver, has opened a mine on the Santa Clara, near Walsenburg.

LAKE COUNTY.

(From Our Special Correspondent.)

NEW ENTERPRISES.—The fact that the pumps for the Downtown mines, at Leadville, are now on the road and will soon be in place has given a new impetus to the mining industry. During the past few days a number of leading capitalists of Denver have been in the city looking over old locations or inquiring into probable leases. These gentlemen also represent Eastern capital, and while they did not talk for publication it is learned that there are a number of very good deals on foot and that a number of new propositions are to be added to the list here within a very short time.

As per the pumping agreements, the downtown mines that are to assist in the work of drainage are preparing to resume by having the required number of bailers, tanks, etc., made and the same are to be put in place just as soon as possible. This will give the operators the four big new pumps, the pumps on the Coronado and Northern and tanks on the Bohn, Sixth street and Weldon properties. There will be two tanks on the Weldon property and they will have a capacity of 300 gals. per minute. Conservative mining men figure that even should the pumps work entirely satisfactorily to start with that it will be close on to the last of the year before the properties which were drowned out will again be on the shipping list. It is figured that it will take at least from 60 to 90 days to get the water down to the old level. Then it will take four to six weeks more to repair the damage done by the water. It is expected in most cases where the water has been running rampant, to find that the drifts have caved in and that the stopes are filled with the dolomite sand which when water soaked runs like mud.

FIRST NATIONAL.—It was expected that these people would start up their property shortly, but matters tending in that direction have been dropped for the present. Mr. O'Neill has a good body of ore, but it runs only about $20 to the ton, and by the time that work, hauling charges and smelter treatment are taken out of this it leaves no margin. It has therefore been decided not to start up the property at the present time.

LEADVILLE & CHICAGO GOLD MINING COMPANY.—These people control the Josie, Charleston and Famous properties, which are well located in Big Evans Gulch. Active operations will be resumed on this group this week under the management of Frank G. White. The work will be conducted through the Josie shaft, which is now down 200 ft. The shaft is to be sunk to contact, no matter how deep it will be necessary to go. The Josie workings lie about 500 ft. from the rich Midnight ore chute and there are other rich ore chutes crossing this ground, so that the management feel quite sure of catching an ore body.

MAB.—These people are sinking their new shaft about 900 ft. from the Mahala, and feel quite confident they will catch the same rich ore chute. They are down with this shaft over 850 ft. and should be ready to drift after sinking only about 100 ft. farther. In accordance with the lay of this ground it will not be necessary for the Mab people to sink to as great a depth as the Mahala people were compelled to do.

MAHALA MINING COMPANY.—These people are working a large force and are doing a vast amount of work. Shipments at the present time are over 150 tons of good ore per day. This comes from the big ore chute in the lower levels and is improving every day. This chute, it will be remembered, was prospected for and located with diamond drills during the strike and proved to be what these people were looking for. It lies over 1,000 ft. from the main shaft and the ore is being mined at a depth of over 1,100 ft. The main shaft of the Mahala is about 900 ft. deep, and it was from this point where a drift was started and run in over a thousand feet. They then went down some 200 ft. farther and encountered the big ore chute. This stuff runs on an average of 20 to 40 oz. silver and 5 to 15% lead. Some of it is much richer, but no distinction is made in the mining and the general run is hoisted to the surface and shipped. It is but natural that shipments are as heavy as possible for the reason that the work of mining this ore is quite expensive and the management is anxious to take

out all the ore as fast as possible as long as it is opened up.

STEWART LEASE.—Supt. J. J. Stewart, of the Maid is working under sub-lease a piece of this ground adjoining the Seneca and Dennison leases. Mr. Stewart has just made a fine strike in these workings. In a drift run from the 500-ft. level some 40 ft. he found indications of ore, and upraising 30 to 40 ft. he has uncovered a fine body of chlorides averaging 260 oz. to the ton. Shipments from the new strike will be commenced July 10th.

LARIMER COUNTY.

Several capitalists of Pittsburg, Pa., through Mr. Haymaker, of Greeley, have become interested in the mines near Camp Carter and have commenced to drive a tunnel. They have secured some good prospects and propose to develop them. The tunnel will cut the vein at a depth of about 250 ft.

MONTEZUMA COUNTY.

Messrs. Geo. N. Hicks, Geo. E. Gibson and Frank Crowell, of Omaha, on June 26th purchased 190 acres of placer ground from M. B. Marshall, Charles Day and J. H. Burghardt. These placers have produced about $10,000 by ground sluicing and are located on the east fork of the Rio Mancos. The new company will put in a hydraulic plant immediately. The price paid is said to be quite large. All the gold is coarse.

PARK COUNTY.

BLUE BIRD.—This property is in Sacramento Gulch, near Fairplay, and is owned by Sanderlin & Troustein. They struck a 4-ft. vein of black sulphurites and galena in a drift from the bottom of a 30-ft. shaft.

SHERWOOD.—A strike was made in this property on the same vein as that made in the Blue Bird, about 400 ft. from the first strike. The ore was encountered in the bottom of a shaft 32 ft. in depth, and the body covers the entire bottom of the 4 x 7 shaft. A. B. Crooks and others own the Sherwood group. The property in which this strike was made contains large quantities of gray copper nuggets.

SAN MIGUEL COUNTY.

(From Our Special Correspondent.)

BELLE CHAMPION.—This property, located at Saw Pit, comprised in a large group of claims owned by James McKay, of Pittsburg, Pa., is producing from 2 to 3 carloads of gold and silver ore per week which runs from $50 to $60 per ton in the two metals and nets a handsome profit. Heavy development is being vigorously prosecuted in the mine, and from all indications another large ore chute is being closely approached. After it is reached and some of the mineral blocked out the shipments will be materially increased. Since the completion of the crosscut tunnel which tapped the ore chute at the lowest point it is known to have dropped, and with an incline gravity tramway in part of the tunnel the product can be handled very rapidly and at a nominal cost per ton which together with the small charges for smelter treatment enables quite low grade ore to be mined at a profit.

BUTTERFLY AND TERRIBLE.—K. Benson, the owner of these properties, located near San Bernardo station, is now shipping three and four carloads of high-grade gold and silver ore per week from them. The mineral is yielding a good profit over all expenses and shipments of this character will be continued for an indefinite period. A force of about 15 men is engaged developing in the mine, and the low-grade ore encountered is being stacked up for concentration as soon as the concentrating plant now in course of construction is completed, which will be in the course of the next month or two. This plant will have a capacity of treating from 75 to 100 tons of mineral daily, and after it is put in operation the force on the mines will be largely increased. These properties have been undergoing systematic development for eight or ten years past, and there are large areas of ore blocked out and in sight and ready for stoping. H. Bratnober and John B. Farrish, two well-known mining experts, examined these mines several weeks ago for the London Exploration Company, owner of the Tom Boy mines, but it is not known whether or not a sale of them is pending to this company at present.

CANTON.—The lessees of this gold mine, located in Bear Creek, have as many men as can be worked to advantage developing and blocking out quartz, and before long it will be in condition to regularly supply 10 or 20 stamps of the Telluride Power Transmission Company's 120-stamp mill, situated about ¼ mile distant and connected with the property by a surface tramway, which enables the product to be conveyed down very cheaply. A large lot of mineral from this property was recently put through the mill, and it yielded values averaging an ounce in gold per ton on the plates and concentrates worth $70 per ton, showing that the mine can be worked at a good profit. Ten years ago the Canton was one of the most noted gold producers in this section of the State. The present exploitation work is being prosecuted from the intersection of a crosscut tunnel which cut the lead in the sandstone formation, 150 ft. below the old upper workings, and as soon as the raise now being made to connect with the old workings is completed the extraction of ore for treatment will be commenced. The lead carries about 4 ft. of quartz, about 20 in. of which is exceptionally fine.

COLUMBIA-MENONA MINING AND MILLING COMPANY.—This company's mines and 30-stamp concentrating plant, located in Savage Basin, are running full capacity both night and day, under the general superintendence of Austin H. Brown, formerly superintendent of the Tom Boy Gold Mines Company. The mill is turning out from 1 to 1½ carloads of concentrates daily, which give high values in gold, silver and lead. The product is yielding much larger gold values on the plates and in the concentrates this year than last, owing to the gold values in this mine increasing with depth, the mill now being principally supplied with ore from the lower workings. The first of the year the Columbia-Menona vein was intersected 450 ft. below the lowest of the upper workings by a crosscut tunnel from the surface, 1,450 ft. in length, and since then east and west drifts have been in progress on the vein, and it is from overhead these drifts that the bulk of the ore for the mill is being taken. There are over 100 men employed on the mine and mill, and everything is being pushed to its full limit.

HECTOR MINING COMPANY.—This company's tunnel, being driven on the vein of the Ophir mining claim, in Middle Basin, to intersect the lead of the Montana properties, located in the same basin, is going ahead several feet a day with machine drills, under the supervision of Frank Everett, formerly superintendent of the Cimarron mine. The tunnel is now in the mountain a distance of about 900 ft., with 800 or 900 ft. more to drive to reach its objective point.

JAPAN MINES COMPANY.—The management of this company has commenced sinking the 100-ft. shaft from the main level several hundred feet deeper, and as it progresses levels will be driven on the vein both ways from it. It is also proposed to enlarge the concentrating plant in the near future and put in some entirely different machinery, that in service at present, a Huntington mill, jigs and rolls, not effecting as close saving as desired. It is, however, turning out concentrates at the rate of 45 carloads per month, which are worth, on an average, $100 per ton in gold, silver and lead.

MT. WILSON GOLD AND SILVER MINING COMPANY.—J. P. Colp, superintendent of this company, will in the next few days be working a force of 150 men on its group of properties, on Mt. Wilson, called the Silver Pick group, and in the company's concentrating plant. There is now a force of about 50 men employed on the mines and it is being added to daily. For three or four weeks past the mill has been stamping ore from the Tam o'Shanter, a claim of the Silver Pick group, which for a year past has been worked under lease by C. M. Maddy. This mineral carries from $50 to $200 in gold per ton, and it is yielding some valuable concentrates. The pay streak averages from 15 to 20 in. in width, and it is the largest and richest lead discovered in the Mt. Wilson District. One of the lower levels of the Pick is being extended to intersect it at great depth, one lead crossing the other at right angles.

NORTH AMERICAN EXPLORATION COMPANY.—This company has lately bonded a group of 10 claims in Prospect Creek basin, owned by Davis, Johnston and Leiner, and it will shortly commence general development work. Among the claims is the noted Lone Star, which has produced tellurium ore worth $40,000 per ton, together with several others that have achieved considerable local notoriety. From all accounts this company will shortly purchase the Nellie mine, in Bear Creek, which it has been working under lease and bond since January 1st. For some time past E. I. Field, superintendent of the company, has been supplying 10 stamps of the Telluride Power Transmission Company's 120-stamp mill with mineral from the mine, and it has been yielding very satisfactory values. A clean-up from 140 tons a few days ago gave a retort weighing 142 oz., and in addition to this several tons of concentrates were caught that are worth from $75 to $100 per ton. The new Huson tramway, over a mile in length, recently erected between the Nellie mine and the big mill, is ready for operation, and from now on 60 to 100 tons of mineral will be conveyed down to the mill for treatment, which will keep 25 or 30 stamps running steadily. About 50 men are employed on development work in the mine, and from 4 to 6 ft. of mineral is regularly opened up by extending the various levels further into the mountain.

PULASKI MINING COMPANY.—This company's stamp mill, in Bridal Veil Basin, will be put in operation in the next day or two treating ore from the Pulaski group of mines. Its saw-mill, located in close proximity to the stamp-mill, will also be started to saw out lumber for a large stamp mill which the company intends erecting near the site of the present one this summer. The Pulaski has been undergoing systematic development work for a dozen years past and there are large areas of ore in sight. The mine is now in such condition that it could regularly supply a mill of a large capacity with splendid gold ore. The present mill has demonstrated that the ore can be treated at a good profit. It is owned by Chicago and New York capitalists and several of the largest stockholders will be in Telluride shortly to look over the situation.

IDAHO.

BLAINE COUNTY.

(From Our Special Correspondent.)

CAMAS NO. 1.—Messrs. P. J. Donohue, Henry M. Ryan, Will G. Nebeker, all of Salt Lake, and E. J. Dockery, of Ashland, Wis., have secured a year's bond for $50,000 from the Big Camas Gold Mining Company for its mine in Mineral Hill District, near Hailey. The prospective owners visited the property last week, and were favorably impressed. Everything is in good trim for further exploration, with steam hoist and other essentials. Shaft is down 200 ft., exposing a strong quartz fissure in granite. Some of the ore carries as high as $42 gold, though it is mostly a low-grade milling proposition. Work is to be started in a few days under the direction of Mr. Nebeker, who for the past few years has been successfully operating at Tintic, Utah.

CUSTER COUNTY.

(From Our Special Correspondent.)

LUCKY BOY.—Vivian Thorne has a bond on this property on Custer Mountain, owned by W. S. McCornick and Nick Treweek, of Salt Lake. Thorne has brought it to the attention of an English syndicate for whom D. B. Huntley, superintendent of the De Lamar mine at Silver City, has just completed an examination. Property has 75 ft. gold ledge seamed with rich veins of varying size. A 30-stamp mill with combination process has been treating ores; now being modified by introduction of dry process.

LEMHI COUNTY.

(From Our Special Correspondent.)

SALMON RIVER MINING COMPANY.—T. F. Singiser, president and general manager, was in Salt Lake the last week in June, where he closed a contract with the Risdon Iron Works for machinery for a 50-ton mill. The plant is to be in operation October 1st, and embraces the Pelatan-Clerici process.

OWYHEE COUNTY.

DE LAMAR MINING COMPANY, LIMITED.—Mr. D. B. Huntley, the manager of this company's property at De Lamar, reports as follows for the month of May: Number of tons crushed (wet), 4,662; number of tons crushed (dry), 4,196; average assay value of pulp, $14.72, of which $12.41 was gold and $2.31 silver; average assay value of tailings, $4.50, of which $3.77 was gold and $0.53 silver; total percentage saved, 70·79%; number Doré bars produced, 10; number ounces fine gold produced, 1,738·49; number ounces fine silver produced, 16,515; value of gold produced (at $20 per ounce), $34,770; value of silver produced (at 60c. per ounce) $9,909; ore sales (estimated,) $400; miscellaneous revenue, $154; total, $45,233; expenses for the month, $34,430; estimated profit for May, $10,803.

GOLDEN STATE.—The difficulties which arose between the stockholders of this property, and which has kept the mine closed for about three months past, have been amicably adjusted and operations were resumed last month. The water has been taken from the shaft and drifting is being started from the 90-ft. level. The north drift at the surface, now 375 ft. in, will also be extended. Seven men are now employed.

(From Our Special Correspondent.)

BLACK JACK.—Mill is closed for annual overhauling and preparations for a new campaign. A larger compressor plant is to be installed—an Ingersoll-Sergeant, 14 × 14¼ × 18 in.—which will provide power for drills, and a 30-H. P. underground hoist. It is planned to start the mill on July 12th.

FLORIDA MOUNTAIN MINING COMPANY.—A 7 × 8-ft. tunnel to tap the Florida vein at a depth of 1,800 ft. was started from the level of the Dewey mill last week, and will be driven 6,700 ft. It will be double track and has a sub-drain 16 × 36 in. The new tunnel will have 585 ft. more vertical depth than the Idaho tunnel run by the Black Jack Company, and until now the deepest workings on Florida Mountain.

MORNING STAR.—Owing to insufficient pumping capacity sinking below the 5th level is discontinued. The 4th and 5th levels are being driven ahead in ore and an upraise in ore from 4th to 3d level is nearly completed.

POORMAN.—Winze from Belle Peck level down 200 ft. is to be sunk on ore to greater depth. Levels are run at 50 and 150 ft. stations. A gasoline engine, 2,000 ft. below surface, furnishes the power. At present a force of 30 men is employed.

SHOSHONE COUNTY.

COLWYN.—This mine has commenced shipping ore. The tunnel is located on the west side of Sunset Peak, below Sunset road.

GRANITE.—Lessees are working now on the south lead and are taking out some fine ore near the east line of the ground.

ST. REGIS & CŒUR D'ALENE MINING COMPANY.—This company was to begin work on its Saltese property July 1st. The company owns the Bryan, on Packer Creek; Montana, near the Last Chance, and the Lucky Dog, on Canyon Creek, between the Frisco and Standard. The latter claim will have a tunnel run on it, the contract for which will soon be let.

ILLINOIS.

OHIO VALLEY COAL AND COKE COMPANY.—This company has been incorporated at Spillertown, with $40,000 capital stock, to mine coal and manufacture coke.

INDIANA.

MINERS' STRIKE.—Report from Terre Haute on July 8th states that a climax in the miners' strike has apparently been settled upon tentatively, and the strike, involving the four States of Pennsyl-

vania, Ohio, Indiana and Illinois, may be ended by arbitration. This is the result of the efforts of President Knight, Secretary Kennedy, State Labor Commissioners McCormick and Schid, of Indiana, and Commissioner Bishop, of Ohio. These five succeeded in arranging for a meeting, at which it is hoped an agreement will be reached. The plan upon which the expected settlement is to be made is as follows: A meeting will be called to take place at Indianapolis or Pittsburg, probably the latter place, to which will be invited Governors Tanner, of Illinois; Mount, of Indiana; Bushnell, of Ohio, and Hastings, of Pennsylvania; also all the officials and representatives of the miners and all of the extensive operators concerned. It is expected that this meeting will be held Saturday or the early part of next week, and that a settlement will eventually be reached through their efforts and those of the arbitration committee.

MICHIGAN.

COPPER.

ATLANTIC MINING COMPANY.—The Atlantic copper mine output for June was 291¼ tons, compared with 296⅛ tons last month and 257⅝ tons for June, 1896.

CENTRAL MINING COMPANY.—The output of the Central mine for June was 23 tons, as compared with 35 tons the previous month.

FRANKLIN MINING COMPANY.—The Franklin copper mine output for June was 147¾ tons, compared with 149½ tons last month and 150⅝ tons for June, 1896.

TAMARACK MINING COMPANY.—The Tamarack mine made a new record for itself during June, when 1,500 tons of mineral were turned out by the mill, the mineral averaging nearly 73⅞ refined copper, giving a product for the month equivalent to almost 1,100 tons of refined copper. The average monthly output of last year was a trifle over 1,000 tons of mineral and under 700 tons refined copper, showing a gain of over 55⅞ for last month over the average of last year's work. The actual gain over June of last year is even greater, as the mine did better in the last three months of 1896 than earlier in the year. No. 5 shaft at the Tamarack mine is now down 1,595 ft.

WOLVERINE MINING COMPANY.—The output of the Wolverine mine for June is 107½ tons, compared with 107¼ tons last month and 106⅝ tons for June, 1896.

MINNESOTA.

(From Our Special Correspondent.)

The volume of traffic out of Lake Superior for the month of June was the greatest in history, exceeding, to the great surprise of all, the corresponding month of 1896. Over 2,800,000 tons of freight passed up and down in the month, the iron ore traffic being nearly half, and in excess of any preceding month in history. Duluth, Two Harbors and Superior sent out in the month a trifle less than 1,000,000 tons, the amount from Two Harbors being 474,000 gross tons, the greatest volume in the port's history. The Duluth & Iron Range road owns about 2,000 ore cars, and its average daily receipts at the docks have been about 900, while on last Wednesday there were received 935 cars. The longest ore haul on the road is little less than 100 miles, and the shortest about 75, and that such traffic can be handled without friction and trouble, as well as without loss from accidents and delays, is a tribute to the management of the road that is more emphatic than words. It is probable that this little line of road will handle considerably over 3,000,000 tons of traffic of all kinds this year, nearly all of it in seven months. Ore traffic is peculiar in that conditions enter it and interfere with calculations made in advance that do not hold in any other branch of the railway business, and a storm on the lakes, perhaps 500 miles away, is liable to congest traffic in a way that would put to despair all the knowledge of a traffic manager. J. L. Greatsinger, president and manager of the Duluth & Iron Range road, has been in iron ore business for a number of years, and probably takes a foremost place in his business in America.

The tonnage of the Minnesota Iron Company for June, 474,000 tons, and for the season, 732,000 tons, equaling over 800,000 net tons, indicates what this company intends doing for the season. It will probably ship nearly, if not quite, 3,000,000 tons, and put itself in a position to demand 50% of the tonnage from Minnesota for next year in any ore pool that is formed to include the Mesabi Range. The expectation of such a pool, and the fight between the two great Minnesota interests for tonnage, explain the cuts that have been made in ore, putting Biwabik at $2.25, that price being made possible by a reduction of freight rates, etc.; Fayal at $2.10, Duluth at $1.90, and other ores of like grades under control of these interests at like figures.

The average size of cargoes that load at the head of Lake Superior is now about 3,250 tons, gross, showing how wonderfully the lake traffic has increased the size of ships in the past two or three years.

About all the men on the Minnesota ranges who want work are busy, and mine employers who have been anxious to increase their forces slightly the past week have found it difficult to do so. This is a very pleasant contrast to the situation of a few months ago, or even to a month ago, when the city of Virginia was called upon to ask Messrs. Carnegie and Rockefeller for aid in caring for its poor.

IRON—MESABI RANGE.

(From Our Special Correspondent.)

BIWABIK BESSEMER COMPANY.—At the Biwabik mine about 140,000 cu. yds. of earth are being removed by the Drake Stratton Company. Three shovels are stripping, two in the west cut and one in the newer east cut. Four additional dinkey engines have just arrived to help in the work. The mining company has three shovels working in the ore, and is loading with all in day time and with one at night. The mine is shipping about 7,000 tons a day.

FAYAL IRON COMPANY.—This Minnesota Iron Company mine is working a shovel in the stockpile day and night, and is hoisting about 2,500 tons a day from the shafts.

LAKE SUPERIOR MINING COMPANY.—The Hull mine of this company was flooded last week by the breaking of a cave which clogged the pumps with mud. The mine is still flooded. It has been bailed out in part and additional pumps are at work. Winston & Dear are building a connection of railroad between Rust and Hull mines.

MISSOURI.

JASPER COUNTY.

(From Our Special Correspondent.)

JOPLIN ORE MARKET.—The past week was one of activity in mining operations and the sales were an increase of 22 cars of zinc ore and one car of lead ore. Compared with the corresponding period of 1896 the sales were an increase of 40 carloads of zinc ore and a decrease of 7 carloads of lead ore. The first six months of this year ended Saturday, and the total sales, given at the bottom of the tabulated report, shows an increase of 440 cars of zinc ore, but a decrease of 33 cars of lead ore compared with the first six months of last year.

The big pile of zinc ore at Midway was shipped the past week to Europe and there is practically no surplus zinc ore in the entire district, which is a good indication that the price of zinc ore will advance. Several parties at Webb City and Galena, Kan., are holding their lead ore expecting a still further advance in the price. The highest price paid for zinc ore during the week was $21.75 per ton for the Becky Sharp lease's ore. The Carthage product sold at $21.50 per ton, and in the balance of the district $21 per ton was the top price. Lead ore was advanced to $21 per 1,000 lbs. during the week and closed firm at that figure, with the St. Louis pig lead market strong at $3.50 per 100 lbs., bringing the price of lead ore back to old basis. The same period last year zinc ore sold at $20.50 per ton, top price, and lead ore advanced from $16.50 to $17 per 1,000 lbs. Following are the sales of zinc and lead ores for the week and six months ending June 3d: Joplin zinc, 1,010,810 lbs.; lead, 236,000 lbs.; value, $16,525. Carterville zinc, 992,070 lbs.; lead, 147,340 lbs.; value, $12,513. Webb City zinc, 1,656,320 lbs.; lead, 54,040 lbs.; value, $16,681. Galena zinc, 2,390,000 lbs.; lead, 325,000 lbs.; value, $28,932. Aurora zinc, 630,000 lbs.; lead, 25,000 lbs.; value, $4 790. Granby zinc, 665,000 lbs.; value, $5,316. Oronogo zinc, 168,040 lbs.; lead, 5,200 lbs.; value, $1,833. Alba zinc, 104,000 lbs.; value, $1,092. Springfield zinc, 40,000 lbs.; value, $420. District totals for last week: Zinc, 7,832,460 lbs.; lead, 792,580 lbs.; value, $89,219. District totals for 26 weeks: Zinc, 169,249,490 lbs.; lead, 29,360,940 lbs.; value, $2,136,753. District totals for the first 26 weeks of last year: 149,901,950 lbs. of zinc ore, 30,784,730 lbs. of lead ore, valued at $2,010,556.

BANKERS' MINING COMPANY.—They have sunk the pump shaft 106 ft., although the water is getting very strong, and the company has ordered a large Worthington duplex sinking pump that handles 650 gallons of water per minute. Their 150-H. P. engine for the concentrating plant has arrived, and will be put in place, and they expect to have it completed in three weeks.

BLACKEY, STEPHENS & COMPANY.—They are operating the Blackey mine No. 1, and have a steam hoister, crusher, a set of rolls and four hand jigs. They are drifting at 130 ft. on a 20×20-ft. face of zinc ore in hard ground. They employ six men in the ground and seven men on top, producing 18 tons of zinc ore weekly. They have three lots.

BULL PUP MINING COMPANY.—This company commenced drifting at 54 ft. in their prospect at Rex City and have a 7-ft. face of lead ore in red dirt.

EMPIRE ZINC COMPANY.—They are operating the shaft near their pump shaft and are drifting at 176 ft. on a 12-ft. face of zinc ore in hard ground with strong water. They clean the ore on their plant and produce from 15 to 20 tons of jack weekly and are working only four men in the ground.

HENNESSY, FERRICK & COMPANY.—They have four lots on the Empire land and are drifting at 130 ft. on a 30×80-ft. face of zinc ore in flint ground. They are producing from 22 to 25 tons of zinc ore weekly and they struck pay dirt only five weeks ago.

HOLDEN BROTHERS.—They are sinking shafts on drill holes on their lease, 1½ miles north of Belleville. They developed 27 ft. of good ore at the depth of 78 ft. The main shaft is down 40 ft., and they are still sinking.

IOWA LEAD AND ZINC COMPANY.—This company is prospecting its land with a drill. Lead ore was struck at 35 ft. and 50 ft., and from 95 to 120 ft. the drill passed through a body of zinc ore.

LIEDDY & COMPANY.—This company has a lease on Short Creek, and is one of the busiest camps there. This tract of 110 acres of the Porter land and every lot on the lease is taken by prospectors who are sinking shafts. A 50-ft. shaft is taking out from 8,000 to 10,000 lbs. of lead ore weekly, while at the same depth they have several fine zinc ore mines not prospects.

LOCUST MINING COMPANY.—They have a fine large steam concentrating plant, two steam drills and an 8 in. pump. They are drifting at 147 ft. on a large face of zinc ore in hard ground with just enough water to run the plant. They employ six men in the ground and eight on top, and produce 30 tons of high-grade zinc ore weekly.

MONTANA.

NORTHERN PACIFIC COAL COMPANY.—Articles of incorporation have been filed by this company with the Secretary of State. The capital stock is $100,000, divided into 1,000 shares. The articles of incorporation provide that Helena shall be the principal place of business, and part of the operations will be carried on at Timberline, in Gallatin County; part at Cokedale, in Park County, and part at Bull Mountain, in Yellowstone County, and in the several other counties of Montana and elsewhere.

FLATHEAD COUNTY.

BIG EIGHT.—Work on this property, 6 miles from Troy, on Callahan Creek, is said to be going ahead at a rapid rate. The owners recently let a contract for a crosscut tunnel 270 ft. in length, of which 50 ft. has been completed. The ore is silver-lead, and is said to be a good concentrating product. This property was located 7 years ago, and bonded for $65,000. After doing 200 ft. of work the bond was thrown up and the property was not again worked until last spring, when active development was commenced.

GRANITE COUNTY.

ALPS MINING COMPANY.—This company has bonded the Goldbug mining claim from Messrs. Gundecker, Champee and others for a consideration of $5,000, the bond to extend over a period of 9 months. It is the intention of the company to prospect the Goldbug, which adjoins the Golconda, and in that way more fully demonstrate the extent of the Golconda lead. Development work in the Golconda is proceding with good results. When the Golden Scepter Company discontinued work on the Golconda last fall they left the bottom of the shaft in solid ore. This ore body has now been sunk through and a crosscut on the lead is now under way.

MADISON COUNTY.

IRON ROD.—Herman Thofehrn, the well-known metallurgist, has organized a company to work the tailings at this mill. The property is owned by P. A. Largey and has been worked off and on for a number of years. It is estimated there are 20,000 tons of rich tailings on the dump. An electrical process will be used and all the machinery is now on the ground. The plant will be in operation before the end of July. Several attempts have been made in recent years to work these tailings, but without success until the application of the electrical process.

PARROT SILVER AND COPPER MINING COMPANY. The annual meeting of the directors of this company was held June 29th. The resignation of J. E. Gaylord as secretary and general manager was read and accepted. The following officers were then elected for the ensuing year: President, Franklin Farrell; vice-president, A. F. Widgeon; secretary and general manager, R. D. Grant; treasurer, J. P. Matthews. The directors are the president, vice-president, secretary and treasurer, and Thomas Wallace of Connecticut, A. M. Holter, of Helena, and A. J. Davis, of Anaconda.

MEAGHER COUNTY.

NEW ERA.—At this mine, in Townsend District, the pumps have been pulled from the lower levels, it being the intention to limit the work at present to the upper levels, where better shipping ore abounds.

IRON MASK.—Charles Whitcomb, who has charge of this mine, at Townsend, is getting ready to pump the water from the mine preparatory to taking ore from the lower levels. The property will be worked under a lease.

SILVER BOW COUNTY.

BUTTE REDUCTION WORKS.—The work of enlarging this plant to meet the requirements of the increased shipments of ore from the Colusa Parrott and the original mines has commenced. One of the new improvements consists of a matting furnace and a building to cover it. The furnace which has been ordered will be 55 ft. in length over all, and the building will be 50 by 80 ft. This improvement will increase the smelting capacity of the plant 3,000 tons a month. Plans are being prepared also for a new blast furnace inclosed in a building of iron, with a daily capacity of 100 tons. Many other improvements are going on at the present time, including a new brick building over the machine and blower rooms. Most of the buildings at the Butte Reduction Works are iron and are generally absolutely fireproof. Over $100,000 has been spent in new improvements at the works this season, and modern machinery has taken the place of what was getting antiquated, until the whole plant has been put in excellent condition. The shipments of ore from the Original have steadily increased from the time the lead was cut several

weeks ago, and there is now plenty of ore from the two mines to test the full capacity of the plant.

NEVADA.

ELKO COUNTY.

COMET.—This mine is bonded for $10,000. It is virtually a sale and a small cash payment was made when the bond was taken. The rest is to be paid before July 10th. It is a location in Patterson gulch, about 2½ miles north of Gold Creek. It is an antimony property that has been located several times. The last time it was taken up by J. W. McDonald in 1895. The next year he gave the Mahan Brothers a half interest to do the assessment work of a $100. There is a big body of quartz in this claim that runs high in antimony. Returns on this also give $30.60 in gold and 2 oz. silver. There is a lower grade of quartz that carries $10.70 in gold.

SUNSET.—This group is in Tennessee gulch, about 10 miles north of Gold Creek, and is owned by Lewis Burkhart and J. D. Abel. The group consists of 11 claims, which include some placer ground in the gulch. The principal claim, the Sunset, is a large ledge between porphyry and granite.

HUMBOLDT COUNTY.

(From Our Special Correspondent.)

GOLDEN EAGLE GOLD MINING COMPANY.—The capital is $400,600 in $1 shares. The officers are: Dr. F. S. Bascom, president; Charles H. Wilbur, vice-president and general manager; Dr. J. F. Millspaugh, secretary; Dr. G. B. Pfoutz, treasurer, all of Salt Lake. The company owns 22 unpatented claims in the Eugene Mountains, Central District, about 20 miles west of Winnamucca, on the Central Pacific Railway. The ledge is exposed by an open cut showing 4 ft. of ore that is now being shipped, averaging $60 gold, 29 oz. silver, 12% lead, and by 220 ft. of shafts and over 1,000-ft. levels, showing an average width of pay ore of 33 in.; the general ore goes $20 gold. 10 oz. silver, 6% lead. The ledge has never been crosscut, but is known to be 30 ft. wide, under a porphyry hanging, with foot of slate filled with cube iron, which at 140 ft. was displaced by porphyry. It is a strong vein standing nearly vertical, the variation from perpendicular being but 3 ft. in 220 ft. of depth. A shipment of 80 tons is now on the Salt Lake market, being made up of two lots assaying $32 gold, 47 oz. silver, 21% lead, and $62 gold, 29 oz. silver, 12% lead. A proposition is on for the erection of a stamp mill with pans and settlers.

LANDER COUNTY.

(From Our Special Correspondent.)

AUSTIN MINING COMPANY.—The first air connection in the Austin tunnel, now in 5,935 ft., was made June 30th, when the sump of the Frost shaft, 660 ft. deep, was tapped. The accumulated waters had drained through the formation some time earlier, so no flood attended the connection. The tunnel has crosscut 67 independent ledges, has one lateral of 2,000 ft. and will now be driven ahead on the main trunk.

BATTLE MOUNTAIN DISTRICT.—This district is 13 miles south of Battle Mountain on the Central Pacific Railway. Within the past month it has been subjected to an almost analytical scrutiny by two corps of experts, one in the service of a California estate with ten millions of money to invest in mines; the other operating under orders from Capt. J. R. De Lamar. Running north and south through the district are a number of parallel ledges in porphyry, having a dip to the west of 80 degrees, the ledges carrying, usually, low but practical values in gold and silver, with occasional strata of very high-grade matter. The district is admirably located for a perpetual water supply and has an altitude of 7,200 ft., but fuel is a problem. Cord wood, in quantities, costs $7 per cord; coal at Battle Mountain, $8 per ton, but to offset these is suggested crude oil from Southern California. On the preliminary tests with cyanide on these ores the experts made a recovery of 96% of gold and 80% of silver, and opined that the gold extraction could be raised to 99%. The principal mines are the Humbug Series and the Buena Vista.

BUENA VISTA.—This is on a parallel ledge with the Humbug, and has been worked 25 years, ores being shipped to remote smelting points at profit. It has a foot-wall ledge 32 ft., averaging $4.12 gold, 0·3 oz. silver, and between this and the main ledge is 35 ft. of country rock. The main ledge is over 100 ft. wide, and from this the rich ores shipped have been taken, the values being found in streaks or bunches, varying from 10 in. to 3 ft. An average of the big ledge, excluding the rich bunches, and 20 ft. of higher grade on hanging wall, gave returns $6 gold, 3·7 oz. silver. The tunnel crosscuts the ledge at a vertical depth of 150 ft., and is driven 900 ft. farther, the object being to cut a rich gold and silver ledge beyond. About 10,000 tons of $6 gold ore are on the dump. Former shipments from the mine ran from $30 gold and 95 oz. silver to $70 gold and 200 oz. silver. The ore is capable of reduction by cyanide.

HUMBUG SERIES.—This comprises the Humbug, Cleveland and Red Cross claims. The Humbug is developed by 650 ft. of tunneling, 150 ft. shaft and winzes, exposing a ledge 30 ft. wide. The center of the ledge is decomposed, oxidized red iron quartz, while on either side is a heavy sulphureted black iron ore, oxidized matter averaging $10.27 gold, 7·7 oz. silver; sulphurets, $5 to $24 gold. Many years ago this ore was treated by some milling process that lost a heavy percentage of the values and resulted in financial failure. Some extensive experiments have been conducted by a California metallurgist demonstrating that the ore is ideal for cyanide, and such a process is recommended.

STOREY COUNTY—BRUNSWICK LODE.

CHOLLAR MINING COMPANY.—Shaft No. 1 has been sunk 9 ft. on the incline during the week and is now down 960 ft. The bottom is in porphyry. 300-ft. level—They continue to stope on the 6th, 7th and 8th floors south from the 200 winze, the ore maintaining its width and grade. They are sinking a winze 20 ft. from the north line and are down 7 ft., the bottom showing streaks of fair grade ore. 400-ft. level—They are stoping south on the 10th floor of the 400 upraise on a streak of good ore. 500-ft. level—No. 4. east crosscut has been advanced 28 ft. for the week; total length, 48 ft. The face is in porphyry. The crosscut has passed through several small streaks of quartz, some giving fair assays. The winze started 25 ft. north of No. 4 crosscut is down 10 ft. in porphyry, with a 6-in. streak of quartz in the bottom giving low assays. 600-ft. level—The south drift has been driven 35 ft. for the week, and is now out 88 ft. south of the north line. The face is in porphyry and low-grade quartz, with the foot-wall exposed on the west side of the drift. They have saved from all points since last report 182 tons of ore, which has been shipped to the Nevada Mill for reduction, sampling as follows: Battery sample, gold, $13.76; fine ounces, silver, 13·19; top car sample, gold, $15.01; fine ounces, silver, 15·16. They are doing a large amount of prospecting and other dead work throughout the mine. Have shipped to the United States Mint at Carson three bars of bullion, of the par value of $10,558, of which $4,955 was gold.

STOREY COUNTY—COMSTOCK LODE.

ALPHA CONSOLIDATED MINING COMPANY.—The south drift from the west crosscut, 500 level, has been advanced 14 ft. during the past week, total length, 28 ft; face in porphyry. Are engaged at present in opening up ground from the old south drift near the south boundary of the mine, all of which is in quartz, average assays from $8 to $18 per ton.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—The official report of the operations in the mine for the week ending June 26th is as follows: 1,000 level—West crosscut No. 1 has been advanced 31 ft., passing through soft porphyry showing clay seams; total length, 380 ft. 1,550 level—The double compartment incline upraise No. 1 has been carried up along the footwall 15 ft.; total height, 163 ft.; top of opening in porphyry streaked with quartz in the lower half of the face assaying $1 per ton. 1,650 level—From the ninth floor south drift a west crosscut has been started and advanced 25 ft., passing through quartz assaying from $1 to $4 per ton. From the incline upraise No. 1 the upraise has been carried up on the footwall 6 ft., passing through low-grade ore 6 in wide, assaying from $7 to $12 per ton; total height above the sill floor 69 ft. In the top of the opening the quartz is 6 in. wide, assaying $1 and $2 per ton. Along the south end of the upraise, from the sill floor upward for 50 ft., we have extracted 4 tons of ore, assaying per mine car samples $7 per ton. North from No. 2 upraise from the point 40 ft. above the sill floor we have upraised 10 ft. on the footwall, passing through quartz assaying from $5 to $10 per ton; total height 50 ft. We have extracted from this point one ton of ore, assaying, per mine car samples $30 per ton. The top of this opening shows old timbers of former workings. From No. 2 upraise on the sill floor of this level a north drift skirting along the footwall has been started and advanced 23 ft., passing through a quartz formation assaying from $2 to $7 per ton. No ore has been hoisted from the mine during the week. We have shipped to the Morgan mill during the week 265 tons and 1,340 lbs. of ore, assaying, per railroad car samples, $71 86 per ton. The average assay value, per battery samples, of all the ore worked at that mill during the week, 385 tons and 620 lbs., was $68 per ton. This was the closing run. Bullion on hand in assay office—clean-up—assay value about $36,000.

MEXICAN MINING COMPANY.—On the 1,000 level the south drift from the northwesterly openings has been advanced in a southwesterly course 17 ft., passing through hard porphyry, seams of clay, streaks of quartz and soft vein matter assaying 75c. to $1 per ton; total length 242 ft.

SIERRA NEVADA MINING COMPANY.—On the 900-ft. level, west crosscut No. 2 was advanced during the week 15 ft.; total length 83 ft. At this point work was stopped. This crosscut passed through 23 ft. of ledge matter, all of which assayed from $1 to $3 per ton in gold. Have resumed work in the north lateral drift, 900 level, and advanced the same 17 ft.; total length, 214 ft. north from the Sierra Nevada shaft. In the Cedar Hill workings of the Sierra Nevada mine east crosscut No. 5 was advanced 30 ft.; face in porphyry, clay and quartz; total length, 51 ft.

NEW MEXICO.

BERNALILLO COUNTY.

BLAND MILLING COMPANY.—A new engine has been added to this company's plant and will be run in connection with the engine formerly in use. The large ore roaster is completed and the large stack is nearly finished. Two large structures have been added to the main building, and the rest of the work of improvement is making rapid strides toward completion. It is expected that the mill will be in operation on ore of the district at a very early date.

COCHITI DISTRICT.—With a smelter assured at Cerrillos and one in project at Algodones, a successful mill of 40 tons capacity assured at Bland and a 50-ton capacity mill soon to be constructed at Allerton, this district is in a fair way to be provided with the facilities for treating the ore now lying on the dumps and in the many mines awaiting means to extract the gold and silver values, says the Bland *Herald Weekly*.

RIO ARRIBA COUNTY.

Word has been received of a remarkable strike of copper ore in the Vallecitta Valley, near Hopewell. The strike is in the Hopewell mining district, a short distance from the town. The vein is said to be a large one, from 4 to 6 ft. wide, and is mineralized from wall to wall, the ore running 20% and up in copper, from $3 to 3 oz. in gold and high in silver. The operators have found large masses of copper so nearly pure as to be malleable.

SANTA FE COUNTY.

Special contracts were signed at Santa Fe, June 30th, for the erection of another ore mill in the southern part of the county. R. C. Weyer, of Summerfield, Kan., and J. L. Fieldy, of California, on behalf of a syndicate composed of Kansas City and St. Joseph men, have secured a fine mill site at Dolores from the Ortiz mine grant and have the machinery en route for a 60-ton plant of the McGee pattern. They also took a long lease on three mining properties on the grant.

SIERRA COUNTY.

(From Our Special Correspondent.)

H. M. PORTER.—These gold properties, at Hillsboro, give employment to from 30 to 40 miners, and are proving a paying investment.

LLEWELLYN CYANIDE PLANT.—Major W. H. H. Llewellyn is in Denver, Colo., purchasing material and machinery for a 50-ton cyanide plant to be placed in Dutch Gulch, Hillsboro District, for treatment of the low-grade free gold ores of which there is abundance in that vicinity, the gold being too fine and flaky for stamp mill or Huntington.

MESA DEL ORO PLACER MINING COMPANY.—J. B. Tully, the hydraulic engineer, has arrived in Hillsboro from California to take charge of the inaugural work for this company. A large force of laborers is to be employed.

MILWAUKEE & HILLSBORO GOLD MINING COMPANY.—An important strike was made recently at the Eighty-Five mine, the crosscut from the 400-ft. station of the shaft developing a fine body of sulphide ore and establishing the location of the ore vein. The mine but very recently resumed operations.

PERCHA.—In this mine, at Hillsboro, endlichite, a very rare ore of lead, has been found, beautifully crystallized and in appreciable quantity. Endlichite is a variety of vanadinite, but resembles mimetite in having arsenic as one of its constituents. It was discovered and named by F. M. Endlich at Lake Valley in the 80's, and at present is known to exist only at this place.

WICKS.—This gold mine has doubled the underground force and is rapidly increasing the output of high-grade ore.

OHIO.

MINERS' STRIKE.—A dispatch from Columbus states that unless the striking coal miners of the various States, who went out in obedience to the orders of the Executive Board of the United Mine Workers of America, are soon reinforced by their co laborers in the Eastern districts, the strike will be a failure.

HAMDEN FURNACE COAL COMPANY.—This company, of Lancaster, representing a capital stock of $20,000, and the Traphagen Coal Company, of Lancaster, with a capital stock of $10,000, have recently been incorporated. The incorporation of these companies will probably mean, on the completion of the Lancaster & Hamden Railroad, that the coal-fields belonging to the Hamden Furnace Company will be developed, as will also those belonging to Charles Traphagen and others, and lying but a short distance northwest of Hamden. A new receiver (W. F. Black, of Columbus,) has been appointed for the above road, and from the shape that things in general are assuming, the prospects are favorable for the early completion of the road to Hamden and into the heart of the Hamden Furnace coal-fields.

OREGON.

JACKSON COUNTY.

ELK CREEK DISCOVERIES.—This new mining region, in the upper Rogue River section, consists of a big extent of quartz rock, which is in the shape of a blanket formation spreading over miles of country, which will prove to be of low grade, says the *Oregon Mining Journal*. If the sulphurets which underlie the lava-rock formation at a depth of a few feet prove to carry enough gold to work even on a very small margin it would make a good proposition on account of the large quantity of them easily mined. A number of tests were made and almost without exception gold in some quantity was found. It is learned, too, that tests made in Ashland recently have shown all the way from $5 to $30 per ton in gold in the Elk Creek rock. A test made for J. A. Jennings on rock from Elk

Creek is reported to have gone $6.03 per ton, about half free gold and the other half in sulphurets.

JOSEPHINE COUNTY.

MT. REUBEN DISTRICT.—Samples of ores from this district have lately been sent to Portland by J. C. Lewis. Many of them contain free gold and will go as high as $100 a ton, while the sulphurets in them run high. Mr. Lewis says they are crushing ore that runs as high as $500 a ton, and that parties are negotiating for all the properties in that district.

OREGON BONANZA COMPANY.—This company is conducting operations night and day at the Anderson mill on Eclipse ore. The ledge shows 2 ft. of high-grade quartz.

SISKIYOU COPPER MINES.—Word has been received at these mines from the Pittsburg owners that all arrangements had been completed for the resumption of work. Operations will be done under the supervision of Mr. Keller, who some months ago made an expert report upon the property.

SNOWGOOSE BROTHERS & TREFERN.—This firm has nearly all the machinery on the ground for their new pumping plant on Rogue River, where they are about to begin operations.

PENNSYLVANIA.

ANTHRACITE COAL.

DELAWARE & HUDSON COAL COMPANY.—On July 3d this company's old dismantled breaker at Mill Creek, near Wilkes-Barre, was totally destroyed by fire, started, it is thought, by an incendiary. The breaker had not been in operation for some years, all the machinery having been removed therefrom three or four years ago. The damage is not heavy, as the structure was old and in bad repair.

LEHIGH COAL AND NAVIGATION COMPANY.—After months of continuous labor this company has succeeded in extinguishing the fire which has been raging for three years in the mines at No. 6 mountain, near Tamaqua. They have now commenced on an enlarged scale to extinguish fires in the famous burning mines at Summit Hill. Holes are being driven all over the mountains at intervals of 100 ft. Into these cavities culm and water will be run in the hopes of extinguishing the flames.

MINE FOREMEN'S EXAMINATIONS.—The examination of applicants for mine foreman's certificates will be held at Carbondale (First District) on July 21st and 22d. The examination for the Second District will be held on the same dates in the City Hall, Scranton. Applicants for assistant foremen's certificates will be examined July 21st.

BITUMINOUS COAL.

MINERS' STRIKE.—Reports sent out from Pittsburg on July 7th were to the effect that the mining strike situation had changed greatly in favor of the strikers. Of the 5,000 men who went to work on Tuesday morning about 2,000 stayed out next day. This is a remarkable showing, considering that the miners have no strike funds. Patrick Dolan, district president of the Mine Workers, is confident that all the men will be out before the end of the week, including the miners of the New York & Cleveland Coal Company, who number more than 1,000. All the mines on the P. V. C. Railroad running on Tuesday closed Wednesday. This includes the Allen, Courtney, Stockdale, Vigilant, Hatsburg, Williams and Hurst mines. Only 26 of M. A. Hanna's men reported for work and 40 of Beadling Brothers. Not a mine was operated on the Bell Vernon branch of the Pittsburg & Lake Erie. The Columbia Gas Coal Company, on the Baltimore and Ohio, had been paying its men 54c., and they returned to work yesterday at 60c. a ton. The Eureka mine worked fully on Tuesday, and had only four miners at work the day following. The men at Morgan, Moore & Bains' Banning mine worked on Tuesday, but not Wednesday. The men at the Euclid mine of the Ohio & Pennsylvania Company also quit, but Osborne & Saeger worked the West Newton mine with 40 more men, and loaded 40 cars of coal July 7th, and 600 cars of coal were loaded at the Whitsett mine.

SOUTH DAKOTA.

PENNINGTON COUNTY.

KEYSTONE.—It is said that there is little or no doubt that the English syndicate operating this mine under bond will take up the property. It is also reported that the main object in bonding rather than buying the Keystone was to get a bond on the Holy Terror and consolidate the two properties. This has been done and the syndicate will take both properties and put up a 100-stamp mill.

TENNESSEE.

HAMILTON COUNTY.

UNION MINING COMPANY.—A charter has been granted to this company for the purpose of mining gold, silver, copper or other metals, minerals and ores. The capital stock is named at $400,000 and the incorporators are W. S. McCall, Wm. Cummings, Franklin Harris, F. F. Weihl and David Burkofzer.

UTAH.

(From Our Special Correspondent.)

ONE PHASE OF THE MINING LAW TO BE TESTED.—General interest is taken in the first test case of the new mining law, or at least the section abolishing the office of district recorder. Ex-Recorder James T. Monk, of the Big Cottonwood mining district, Salt Lake County, has caused something of a sensation by failing to deliver the records to the county recorder by June 10th, as the statute provided. On a complaint sworn to in proper form he was arrested, brought before a justice of the peace, tried, convicted of a misdemeanor and fined $50 beside the costs. Later, he was again arrested on a second complaint, sworn to before another justice, but was acquitted on the ground that the first conviction is a bar to further criminal proceedings for the same offense. The first case has been appealed to the district court, for the purpose of contesting the constitutionality of the law, a fund for which purpose, it is said, has been raised chiefly by ex-recorders of several districts and their friends. Meanwhile, the records of Big Cottonwood District are missing, and their disappearance is occasioning great anxiety among owners of unpatented mining property, who talk of bringing an action of fraud and conspiracy. By some it is charged that the records were tampered with before they left Monk's possession, which has caused a number to oppose the ex-recorder whom he counted on to aid him in his contest. This unexpected opposition has acted as a counter-irritant, to the extent that Monk's attorneys have come forward and stated that the records will be produced at the citation of a higher court. Here the matter rests for the present. This incident demonstrates the imperative need of a safe and secure repository for the records of mining claims, representing the only title of record to tracts of mineral ground, some of which at any day are liable to become of great value. The consensus of opinion among mining men is that ex-Recorder Monk has made an egregious mistake in his method of contesting the new law.

SHIPMENTS FROM SALT LAKE.—During the week ending July 3d there were shipped East: 28 cars, or 1,073,906 lbs. lead-silver bullion; 1 car, or 47,367 lbs. copper bullion; 37 cars, or 759 tons lead-silver ore.

UTAH AT THE GOLD MINING CONVENTION.—President John Dern, of the Mercur Company, gathered a number of leading mining men in his office at Salt Lake on July 3d to urge the desirability of having Utah fittingly represented at the First International Gold Mining Convention held in Denver this week. As previously stated in this column the only delegates appointed from the youngest State are those at large, named by Governor Wells, several of whom refused to serve. Mainly due to Mr. Dern's efforts Utah was represented in this gathering that has just adjourned sine die. The delegation was composed of Hon. Orlando W. Powers, chairman; Messrs. John Dern, E. A. Wall, C. L. Dignowity, Horace D. Andrews, Elias Morris, John J. Daly, L. W. Colbath, Angus M. Cannon, James Chipman, Edward H. Airis, W. A. Sherman, Geo. W. E. Dorsey, W. D. Johnson and S. B. Miller.

BOX ELDER COUNTY.

(From Our Special Correspondent.)

COAL DISCOVERIES.—What appears to be a genuine uncovering of coal near Yost, in the extreme northwest corner of Utah, 30 miles north of the Central Pacific Railway, is creating interest. No qualified examination has been made, but the coal has been successfully tested in forge work and is pronounced of good quality. Its discovery followed the cleaning of a well, since which the croppings have been traced for a considerable distance. Prospecting has shown the vein to be 7 ft. wide.

JUAB COUNTY.

(From Our Special Correspondent.)

BULLION-BECK.—At the winze on the 900-ft. level north of the main shaft, a 35-H. P. engine is being put in place. Below the horizon a chute of paying mineral is opened, the limits of which are to be determined. It is about decided to make additions to the mill plant in the way of pans and settlers. Values in these low-grade products cannot be saved by simple concentration, though good results can safely be counted on by a combination treatment. With this plant idle Eureka town almost loses its identity.

EMERALD.—A report of a change in the country rock at bottom of shaft, 640 ft. down, is a hopeful news jotting from this deep development undertaking. Streaks of mineralized quartz are coming in, an encouraging sign that an ore body is not far away.

SILVER CITY MINING COMPANY.—Articles of incorporation were filed on July 3d. The capital stock is $100,000, divided into 200,000 shares of par value of 50c. Officers and directors are: D. S. Taggart, president; John Dubei, vice-president; W. E. Hubbard, treasurer; L. J. Keyes, secretary; C. M. Hammond and J. A. Bard—all of Salt Lake. The realty consists of the Dubei and X-Rays lode claims.

SUNBEAM.—Last week the directors decided to resume operations on July 13th, which is good news to many holders of these shares.

TINTIC SHIPMENTS.—For the week ending July 3d: Bullion-Beck, 25 cars; Centennial-Eureka, 3 cars; Gemini, 15 cars; Uncle Sam, 6 cars; Ajax, 7 cars; Swansea, 5 cars; South Swansea, 7 cars; North Star, 4 cars; Governor, 1 car. This was all ore; there were no concentrates sent forward.

VALLEY VIEW.—A contract has been taken by Capt. J. A. Bard and others to sink 150 ft. This ground is desirably situated between Silver City and Diamond.

PIUTE COUNTY.

(From Our Special Correspondent.)

BOLITHO-HESS PLACER.—Piping is cut short off by falling water, to remedy which a ditch is being dug from Mill Creek. It will avail but little the present season. Messrs. D. W. Davis and William Rouff have proved anew the existence of paying dirt.

HOLLAND.—Placer operations are at an end, the water supply failing before the outcropping of the ledge was exposed. However, the clean-up is reported as satisfactory while the long open cut shows seams of bonanza dirt. W. F. Snyder and A. J. Moore, the owners, propose to continue the systematic development of this promising vein.

SILVER KING.—This mine, at the head of Deer Creek, is a new shipping gold prospect that recently opened a seam of great richness. In a 50-ft. tunnel through soft decomposed rock is the top of a vein which carries $95 gold, 4 oz. silver, while a 4-in. seam runs about $1,000 gold. B. D. and P. S. Darger and Arthur Robinson are mining here. Should the present showing hold, on deeper exploration, it will ere long prove a notable gold producer.

TRAPPER'S PRIDE.—This property is owned by G. S. Holmes, of Salt Lake. A contract has just been closed with W. F. Mitchell for the erection of an Acme amalgamator, to be run in connection with the present crushing plant.

WEBSTER MILL.—On June 30th the stamps droppped for the first time since the closing down of the mill in June, 1893, owing to silver's historic drop. The present run is on a concentrating test of crystal ore, mostly a silver-lead carbonate in quartz gangue carrying gold. It is not an ideal concentrating product, and some other scheme will have to be determined on for handling the vanner tailings.

TOOELE COUNTY.

(From Our Special Correspondent.)

BRICKYARD—GOLD DUST—GOLDEN GATE EXTENSION.—A month ago Captain De Lamar obtained a 60-day option on 125,000 shares of the Brickyard, owned by John Dern, E. H. Airis and Col. E. A. Wall—the remaining 125,000 shares being his own—on which a $5,000 payment was made. While not exactly an open secret it is said to be a fact that he has endeavored to tie up the Gold Dust as a factor in this latest big combination, which also includes the Golden Gate Extension owned by J. R. Walker. Just what the knock-down price is on these several tracts cannot be approximated, but they are among the most valuable in the district and adjoin the extensive workings in Golden Gate territory, where mammoth ore bodies are blocked out. In the event of the absorption of the Golden Gate Extension, it would be very desirable for Captain De Lamar to include the Wonder, as it separates this tract from the remainder. The Wonder is owned by P. J. Quealey, of Rock Springs, Wyo. In the event of all this ground being consolidated with the Golden Gate, as is broadly hinted, it would form an auriferous estate that will require years to exhaust, even though twice 800 tons are daily mined.

GOLDEN GATE.—By the time this issue of the *Engineering and Mining Journal* makes its appearance Captain J. R. De Lamar will probably be in camp from his visit abroad. Manager H. A. Cohen states that the contracts for the mill construction will not be signed until he is on the ground. Additional information to what was first given in these columns a fortnight ago indicates that the outer shell of this structure is to be corrugated iron; the initial crushing capacity 800 tons, with roasting and leaching capacity of 500 tons daily. In anticipations of approaching changed conditions Mercur camp continues to take on renewed youth; property in town and on the hillsides is bounding upward, and it is a conservative statement that, on the surface, this is to-day the most prosperous section of Utah.

GREAT WESTERN MINING AND MILLING COMPANY.—This company was incorporated June 29th, with a capitalization of $200,000 in $1 shares. Officers and directors are: John Kelley, president; Henry Kramer, vice-president; A. S. Fowler, secretary; George Martin, treasurer; W. W. Fowler, Frank Fowler, Fritz Kautzman, W. H. Morgan. The company owns the Great Western and Dolphin claims in Grantsville mining district.

UTAH COUNTY.

(From Our Special Correspondent.)

AMERICAN FORK CANYON.—Indications point to a season of great activity in this district, which 20 years ago was operating a smelter, but has been abandoned since 1880. The most active producer is the Live Yankee, owned by A. F. Holden, of Salt Lake. Shipments last season were regular and heavy. This year jigs, to be run by water power, are being installed to concentrate dumps and second class. The ore carries greatest values in gold. Deep snows and snowslides prevent operations in the winter months.

INTRINSIC MINING AND MILLING COMPANY.—Articles of incorporation were filed June 28th; the capital stock is 30,000 shares at 25c. par. Officers and directors are: J. H. Bennett, president treasurer; T. J. Driscoll, vice-president; Joseph Brinker, secretary; George W. Heintz, J. F. Evans. The company owns the Indiana, Michigan, Iowa, Illinois, Kansas, Nebraska, Texas and Illinois claims in Camp Floyd District, near Fairfield station. A shaft 300 ft. deep is sunk on the property and equipped with a whim. Development has exposed gold values in shale of $2; the strata are similar to the central portion of the Mercur gold zone. The company reserves 10,000 shares of treasury stock for development purposes.

WASHINGTON.

KING COUNTY.

Quite an extensive deal in coal lands was recently consummated, the selling party being the Northern Pacific Railway Company. The property involved is 320 acres of land in section 33, township 24 north, range 6 east, adjoining the coal mines of the Seattle Coal and Iron Company, at Issaquah. Charles D. Ross, of New York, is the purchaser for $25,000.

The purchaser, Charles D. Ross, is a well-known New Yorker. The transfer of the property is of some local interest, owing to the fact that it adjoins the mines. Receiver John H. Bryant, of the Seattle Coal and Iron Company, recently secured an order from the Superior Court permitting him to enter into a contract with the owner of the northwest quarter of section 33 to mine coal on the land, paying therefor a royalty of 10c. per ton on merchantable coal. The Northern Pacific secured a patent to the land late in 1896, and at the end of a long contest L. C. Gilman filed a mineral claim on the west half of the section, but the Northern Pacific set up a claim to the land as being part of its land grant. Finally the land office awarded the northwest quarter to the Northern Pacific and the southwest quarter to Mr. Gilman. The railroad company thereupon served notice upon Mr. Gilman that it would contest his title to the land. It follows, therefore, that the Northern Pacific only conveyed to Ross its claim to this land.

OKANOGAN COUNTY.

OCEAN WAVE & PHILADELPHIA.—It is reported that G. D. Keeney has purchased these claims in the Squaw Creek District, on the Methow. Mr. Keeney is said to be arranging to begin development work at an early date. The Ocean Wave has a 70-ft. shaft which shows a 6-ft. ledge on which another shaft is down 20 ft.

RED SHIRT.—This mill has again been shut down, according to reports received from the upper Methow, but it is uncertain whether the mine has been closed. The Red Shirt has a 20-stamp mill through which, it is said, it has been running all of its ores. What could not be saved in this way was concentrated and the concentrates shipped. It is said the company has not been able to save its values, and that improved mill machinery is to be put in.

TRIUNE.—This mine, after a shut down of several weeks, owing to excess water, has been working again, and the result of an 11-day run of the mill was $2,300 in gold. The Triune is owned principally by Charles May and ex-Governor Luce, of Davenport, and Del Hart, of Golden.

SNOHOMISH COUNTY.

WHITE SWAN.—On this property, at Silverton, a tunnel 30 ft. has been driven that shows 5 ft. of ore similar to that in the New Seattle.

STEVENS COUNTY.

COAL LANDS.—Around Ione coal lands have been located to the amount of 800 acres, and parties are there from St. Louis looking over the ground with a view of making further locations.

OLYMPIC ANDES MINING COMPANY.—This company, of Seattle, is doing considerable work on the Leona group, on Granite Creek, a tributary of the Snoqualmie. An assay of the quartz shows from $13 to $35 in gold, silver and copper. On the Rosalie, in the same locality, a streak of 30 in. of quartz has been struck, which assays over $9 in gold and silver.

REPUBLIC.—Patrick Clark, the well-known Spokane mining man, has purchased of Ryan & Creaser their interets in the above mine. It is understood that the price paid was $55,000 cash. The Republic is one of the best known properties in Eureka camp, on the Colville Indian reservation.

WEST VIRGINIA.

MARION COUNTY.

MINERS' STRIKE.—A press despatch from Fairmont under date of July 7th states that the miners at the Mongah Pits and all the diggers from the Wheeling Creek District are out to the number of 5,000 men. Many Pittsburg operators had coal ordered from this district. The Mongah Mining Company is advertising for men.

WYOMING.

ALBANY COUNTY.

On the old Fort Halleck military road in Halleck canyon, 15 or 20 miles from the Cheyenne & Northern Railway, are found two leads of graphite or plumbago. These leads, one 12 ft. wide, the other 4 ft., lie in a micaceous felspatic granite on the south and a micaceous schist on the north. Between the two veins, which are 20 ft. apart, lies an iron garnet schist. The croppings of this plumbago run from 20 to 30% pure, but 8 ft. from the surface it runs from 60 to 70%. These mines are in the midst of an abundant supply of timber and water, and are only 26 miles west of Rock Creek station.

FOREIGN MINING NEWS.

AUSTRALASIA.

NEW SOUTH WALES.

The report for 1896 of the New South Wales Mines Department was laid before Parliament recently. It mentions that the enactment and initiation of several important measures—the Coal Mines Regulation Act and the bills to amend the Mining Laws and Mining Act—naturally involved much extra work, but by re-arrangement of the staff, effected during the year, increased efficiency and more expeditious dispatch of work were secured. The Mining Law Amendment act came into force only on December 11th last, so that during 1896 comparatively few persons had an opportunity of availing themselves of the extended privileges for prosecuting operations on private lands. It is anticipated, however, that during the present year the facilities provided will be largely taken advantage of. The reduction of the rate and rearrangement of tenure of the miner's right and mineral license have borne good results. It is observed that the area of Crown and private land held under lease on December 31st last shows an increase of fully 30% compared with the previous year. The following business was transacted during the period covered by the report: Gold leases on Crown lands applied for show an increase of 685; gold leases on Crown lands dealt with, an increase of 1,173; mineral leases on Crown lands applied for, an increase of 335; mineral leases on Crown lands dealt with, an increase of 350; leases on private lands applied for, an increase of 147; leases on private lands dealt with, an increase of 436; 27th and 28th sections applications applied for, a decrease of 24; 27th and 28th sections, applications dealt with, an increase of 120; area held under lease at end of December, an increase of 17,813 acres; number of gold leases canceled, a decrease of 344; number of mineral leases canceled, a decrease of 87; number of mining surveys made, an increase of 1,062; gold and mineral leases dealt with by the Charting Branch, an increase of 1,406; number of miners' rights issued, an increase of 353; number of business licenses, a decrease of 1,319; number of mineral licenses, a decrease of 36; number of samples received for assay and analysis, an increase of 1,187; number of applications dealt with by Prospecting Board, an increase of 58.

The notable decrease in the number of leases canceled during 1896 is evidence of a greater tendency to comply with the conditions of the leases issued. It is also worthy of mention that during the last six months of 1896 nearly 90% of the leases tendered were issued. A few years ago it was customary to find at least 70% of the leases tendered for execution returned to the department for voidance. The appointment of a qualified officer to investigate titles under the Mining on Private Lands Act has since April, 1896, done much to expedite the transaction of business in connection with applications under that measure. To this and many other important arrangements may be attributed the fact that, notwithstanding increase of work in all branches, as shown in the above statement, the issue of leases has been attended to with such dispatch that on December 31st the number of cases (other than a few blocked through litigation) remaining undealt with represents scarcely 1% of the applications received. To the same cause is due the marked decrease in the area of Crown lands held under application to lease. The Minister points out that on the whole the report reveals much evidence of increased activity in mining operations, and the healthy condition of the mining industry is further borne out by the number of transfers of mining properties registered in the department, many of these involving a large amount of capital. The output returns showa decrease, but this has been largely due to the inability to work owing to the scarcity of water, and consequently a temporary falling off in the returns for gold, silver, tin and shale, as well as the fact that a considerable proportion of the work carried on has been in the development of new centers of operation. There can be no doubt, however, that the returns for the present year will, in the event of an adequate water supply, show a large increase. In October the Coal Mines Regulation act came into operation, and arrangements were at once made to carry out the many provisions it contains for the better and safer working of our coal mines. A board was appointed to control the examination of candidates for managers' certificates, and the regulations concerning the eligibility of miners to work alone in the face of workings, with other important clauses, have been put into force. The report contains a number of valuable tables and returns concerning the mining industry, and many reports with plans and diagrams relating to the development of the mineral resources of the colony during the past year.

The following is the aggregate value in pounds sterling of minerals produced during 1896: Gold, £1,073,360; silver, £26,518; coal, £1,125,280; shale, £34,201; coke, £21,850, tin, £102,117; copper, £200,311; iron, £33,283; antimony, £1,834; bismuth, £490; silver-lead and ores, £1,758,933; manganese, nil; oxide of iron, £801; chrome, £11,280; lead (pig), £259; limestone (flux), £54,261; alunite, £4,116; the noble opal, £25,000; cobalt, nil; fireclay, £69; platinum, £3,479; sundry minerals, £924; total, £4,478,368; net decrease, £73,649. The aggregate value of the mineral products of the colony to the end of 1896 is £118,367,234. The value of such products for 1896 was £4,478,368, a net decrease of £73,649 on the value of the minerals won in 1895. The total quantity of gold won in New South Wales to the end of 1896 was 11,690,634 oz., valued at £43 399,948. The number of miners employed during the year was 12,069 in reefing, 9,428 Europeans and 710 Chinese in alluvial workings, making a total of 22,207 men—an increase of 773 on the number so employed during 1895. A reduction occurs of 1,193 Europeans and Chinese on the alluvial fields, but there is an increase of 1,960 in the number of quartz-miners at work. Though there has been an increase of 773 men employed in gold-mining, there has been a decrease of 64,094 oz. in the gold yield for 1896. The average yield of gold per ton from New South Wales quartz mines in 1895 was 1 oz. 7 dwt. 1 gr., and in 1896 it was 17 dwt. 20 gr. The rich stone raised in the Lucknow Mine in 1895 accounts for the decrease in yield in 1896. Taking the quantity of gold won during the year, viz., 296,071 oz., and dividing it by the number of men employed, it is found that the average to each man was 13 oz. 6 dwt. 15.5 gr., valued at about £51 13s. 3d. The output of coal for 1896, namely, 3,909,516 tons, shows, as compared with that of 1895, an increase of 170,927 tons, and the year's output, with the exception of 1891, is the highest since the opening of the coalfields in 1829. On the other hand, the average price per ton, viz., 5s. 9.06d., is the lowest yet recorded, and is 1.23d. per ton lower than the previous year and fully 50% lower than the price prevailing 20 years ago. The result is that, although our output is increasing, its value only increased by about £30.000. The foreign export trade is still increasing and is likely to completely recover from the severe shock it received during the troubles of recent years.

QUEENSLAND.

The Mines Department reports the total output of gold for May at 67,030 oz., showing a gain of 2,638 oz. over the April return. Of the May yield 2,625 oz. were alluvial or placer gold, and 64,405 oz. gold from quartz mines. The total quantity of ore worked was 59,559 tons, giving an average return of 1·08 oz. per ton. The highest return from any district was 27,185 oz. from Charters Towers, and the second was 16,687 oz. from Mount Morgan. For the five months ending May 31st the total output reported was 299,293 oz. gold.

TASMANIA.

The following is a return showing the quantity and value of minerals exported during the month of April: Gold, 5,687 oz.; value, £2,610. Gold-bearing pyrites, 32¼ tons; value, £323. Tin, 137 tons; value, £8,361. Silver ore, 1,700 tons; value, £17,474. Blister copper, 395 tons; value, £28,152. Total value, £77,093, against £56,612 for the corresponding period in 1896.

The total amount of mining dividends paid by Tasmanian mines in April was £15,445, made up as follows: Gold: New Golden Gate, £4,000; Tasmania, £2,920; total, £6,920. Silver: Oonah, £1,325; Silver Queen Extended, £450; Western, £750; total, $2,525. Tin: Mount Bischoff, £4,500; Briseis, £1,500; total, £6,000. The total amount paid for April, 1896, was £12,660. Up to April 30th there have been paid in mining dividends this year £42,460 as compared with £40,640 for the corresponding period of last year.

CANADA.

BRITISH COLUMBIA.

(From Our Special Correspondent.)

NEW MINING REGULATIONS.—The new regulations imposed on joint stock mining companies operating in British Columbia came into effect the first day of the present month. Companies with a capital of $100,000 are required to deposit $50; upward of $100,000 to $1,000,000, $100 and so on. The new regulations have had the effect of preventing the formation of many wild cats.

BRITISH COLUMBIA—AINSWORTH DISTRICT.

SILVER GLANCE.—The final payment on this mine, on Woodbury Creek, about 3½ miles north of Ainsworth, has been made by John S. Baker, of Tacoma, and associates. The claim was bonded in January for $10,000. The property is developed by a tunnel on the vein for a distance of 100 ft., besides considerable surface work. No work has been done for some time, but it is announced that development will commence again in the course of a few days. The formation is slate shale and hornblende. The vein is said to be 3 ft. wide in the face of the tunnel. The claim is made that the 70 tons of ore on the dump will average 70 oz. of silver and $8 in gold. The tunnel at a distance of 400 ft. will give a depth of 500 ft. The silver glance carries dry ores, the minerals consisting of gold, silver, telluride and a small percentage of lead, carried in a white quartz gangue, brittle and easily reduced to pulp.

BRITISH COLUMBIA—CARIBOO DISTRICT.

CARIBOO HYDRAULIC MINING COMPANY.—It is reported from Vancouver that the clean-up made by this company has yielded 4,152 oz. gold, valued at $71,414.

BRITISH COLUMBIA—KOOTENAY DISTRICT.

DIBBLE.—This group of mines has been sold to a Spokane syndicate represented by C. S. Warren and John M. Burke. The consideration was $20,000, the first payment being $2,000. The property includes the Last Chance, Last Chance Extension, Richmond Hen and Beaver claims, and is located about 10 miles northeast of Wardner, on Chloride Mountain. Two shipments have been made, and the ore showed returns of $115 and $125 to the ton.

HORSEFLY GOLD MINING COMPANY.—About 2½ acres of surface gravel to a depth of 6 to 15 ft. has been piped off. The Miller hydraulic elevator has been running steadily for some time, and the Evans across the river has done a little work. Plenty of water is at hand for the entire season, and the gravel is showing up rich. No wash-up has as yet been made, although Mr. R. T. Ward took out about $2,000 from a few boxes where it was necessary to make a change. He is now on a business trip to Seattle, and on his return will make a clean-up in

the mine, and $6,000 to $10,000 will probably be taken out.

MIOCERNE MINING COMPANY.—This company has its shaft down over 225 ft., and has a small stream of water conveyed by a pipe from the main of the Horsefly Gold Mining Company. Some gold is found. The shaft is thought to be going down at the lowest point in the channel. If, as is now expected, pay is found on bedrock, there will be a large area of ground for drifting, and it will open up a vast system of old channels in that section.

BRITISH COLUMBIA—NELSON DISTRICT.

(From Our Special Correspondent.)

HALL MINES SMELTER.—This plant is credited with turning out the first copper made in British Columbia. The grade is very fine. The percentage is given at 97 and this includes silver and gold, the value being $530 per ton, the gold percentage being placed at $50 and the percentage of silver not having been given. The output is about 10 tons daily. The copper is to be shipped to England in quantities of 200 tons for final treatment.

BRITISH COLUMBIA—RAINY LAKE DISTRICT.

TILSON.—This property, owned by J. F. Tilson, is on Grassy Island. He has discovered several promising veins, and on one of them he has a shaft down 8 ft. The vein has widened somewhat in that distance, being nearly 6 ft. wide. The vein is a true fissure cutting the formation at an angle of about 45°. There is another vein, from 8 to 10 ft. wide, but a short distance from the first and the two can be worked by a single shaft and crosscut, making it possible to produce ore very cheaply.

GRANITE.—A strike of considerable size was made on this property on June 19th. The Granite is a southerly extension of the White claim of the Poorman group, and is owned by J. P. Swedberg and J. W. Johnson. For several weeks they have been ground-sluicing along the end line of the White claim, and uncovered a 4-ft. ledge of free-milling quartz. Considerable work was done upon this ledge on the White. A tunnel was run in upon it for about 125 ft. The ledge, however, was found to be very much broken up, and in running 125 ft. not more than 35 ft. depth was obtained. In this 125 ft. between 400 and 500 tons of ore were taken out. Where this ledge has been uncovered on the Granite is 800 or 900 ft. distant from the point at which the work was done on the White, so that the White will catch a large slice of the new find. The ledge is well in place and the rock will mill $20 to the ton.

BRITISH COLUMBIA—TRAIL CREEK DISTRICT.

(From Our Special Correspondent.)

HATTIE.—This property adjoins the Sunset, in the South Belt. At a depth of 80 ft. in the shaft a considerable body of fine grade chalcopyrite has been found.

JUMBO.—There are two tunnels on this property; the upper one is in about 300 ft. and the lower tunnel is in over 360 ft. The management is having a crosscut made in the lower tunnel, in which it is expected that the ore body found in the upper tunnel will be encountered.

LILLOOET, FRASER RIVER & CARIBOO GOLD FIELDS COMPANY.—The City of Spokane mine, which is the property of this company, has been closed for some weeks. The location is on the west slope of Monte Cristo Mountain. Extensive building improvements were made last fall on the grounds near the tunnel, nine buildings having been erected, nearly all of which are now unoccupied. There is a Rand 3-drill air compressor and building and a 45-H. P. boiler and a large amount of development work has been done. Mr. Carlyle, in his report of last year, says of this property: "A prospect shaft having disclosed the presence of ore, a tunnel 6 × 5 × 6½ ft. in the clear was being run easterly from a point near the center of the claim just above the road and on a level with the tramway 500 to 600 ft. distant and in the face of the tunnel 85 ft. in is a width of nearly 3 ft. of solid pyrrhotite and iron pyrites carrying some gold.

The local reputation of this property in the camp is very good, but a similar opinion does not appear to be entertained with regard to the local management. The sudden cessation of the work was a great surprise, though there is good reason for believing that the company, which is a very strong one, will resume work under more competent management than that which is said to have caused the suspension.

MORNING STAR.—The work of sinking the shaft of this mine is being vigorously proceeded with. A depth of 120 ft. has been reached, and a considerable body of granite and syenite fairly mineralized has been encountered, indicating proximity to the ore body. The superintendent thinks this will be met with in the crosscut, which is to be made from the shaft at a depth of 150 ft. The machinery in use is a 35-H. P. boiler, a Jenckes hoist and automatic bucket with a set of ore cars. There has recently been a change in the directorate of the company. The local superintendent is Mr. L. Henderson.

WHITE BEAR.—The management of this company has a night and day shift vigorously pushing development. Work on the shaft has now reached a depth of 160 ft., with a decided improvement in the grade of the ore. Mr. Cole, the manager, and Mr. Lodge, the superintendent, confidently expect to encounter pay ore at a further depth of 40 ft.

ONTARIO—RAT PORTAGE DISTRICT.

(From Our Special Correspondent.)

BLACK STURGEON.—A steam pump and boiler are being sent out to this property upon which development is being pushed night and day.

BULLION MINING COMPANY.—The Monarch mine is owned by this company, which has done considerable development work upon it, but which was not attended with very great success. Latterly, however, the location has been more thoroughly developed, and a rich lead has been discovered which shows plenty of gold. Two offers have already been made for the property from representatives of English and French capital.

FOLEY.—A gold brick has been shipped from this mine during the week valued at $5,000.

GOLD HILL.—It is stated that a rich strike has occurred at this property.

MIKADO.—The building for the 20-stamp mill is about completed. A cyanide plant is also to be installed there.

REGINA.—Operations continue to reveal very promising indications at this mine.

SULTANA.—The contractors are hard at work putting up a 30-stamp mill which is to take the place of the present 10-stamp output.

WINNIPEG CONSOLIDATED.—Captain Triggs, of Duluth, has secured an option on this mine, which was opened out in the early days, and was then regarded as a good thing. Work will be resumed upon it at once.

YUM-YUM.—Prospecting work is almost completed at this location, and boring tests will shortly commence with the diamond drill.

MEXICO.

United States Consul R. M. Burke, at Chihuahua, reports as follows to the Department of State at Washington, D. C.:

The Mexican government has officially promulgated a concession for a railroad from Chihuahua to the Pacific Coast. Messrs. Alfred A. Spendlove and E. C. Creel are empowered to construct a railway to start from the city of Chihuahua, or from a point on the Mexican Central Railroad south of Chihuahua, and to extend in a westerly direction to a point on the Pacific Coast in the State of Sonora.

Within one year from April 13th, 1897, the concessionaries must submit to the Department of Communications the plans for the first section of 200 km. (124 3 miles). The subsequent plans shall be presented in sections of at least 25 km. (15½ miles) and in such manner that the construction may not be retarded for lack of plans.

Construction shall begin as soon as the Department of Communications has approved the plans, and within two years 200 km. must have been completed. Subsequent construction shall proceed at the rate of 100 km. annually, and the entire road, with its telegraph line, must be completed within seven years from April 13th, 1897. Construction work may begin at either end of the line. A telegraph line shall be built for the exclusive service of the road. The company, with the consent of the Department of Communications, may build a terminal of the road on the Pacific with piers, wharves and warehouses for the handling of merchandise, and may charge for their use by the public a moderate schedule of rates, to be submitted for approval to the Department of Communications. The plans for the wharves and other structures shall also be submitted for the approval of the same department.

The Mexican government agrees to pay a subsidy of $4,600,000, subject to certain conditions

Mr. Alfred A. Spendlove is the general manager of, and a large stockholder in, the Chihuahua Mining Company, in Chihuahua; also a stockholder in the Santa Helena Mining Company, at Cusihuirachic, two of the best mining properties in Mexico. Mr. E. C. Creel is a local banker and the manager of the Banco Minero, of Chihuahua.

Since the above concession was announced, the Mexican government has granted to Col. A. K. Owen a concession for a railroad from Presidio del Norte, on the Rio Grande, State of Chihuahua, west, via the city of Chihuahua, to a point on the Pacific coast in the State of Sinaloa. This last concession is without subsidy or government aid. The mineral wealth of the State of Chihuahua, through which these railroads must pass, is great beyond calculation. Notwithstanding the impediments in the way of transportation and fuel, there are many mines in the Sierras that are to-day being worked with profit, and with the shortening of distance and the cheapening of transportation, there are many small enterprises that will become large and profitable mines.

The mining industry in Chihuahua is as yet in its infancy. The introduction of the railroad will open up a wonderful country and greatly increase the importance of Chihuahua and Sonora.

ZACATECAS.

SAN CRISTOBAL GOLD MINES COMPANY.—This company, of Jersey City, N. J., has been formed to operate mining properties, particularly in the State of Zacatecas. It is capitalized for $1,000,000. The incorporators are the following: Charles J. Horton, Edward S. Long and James C. Weston, of New York City; Charles N. King, Jersey City; Thomas S. Smith, Brooklyn, N. Y.; J. V. H. Lawrence, Astoria, N. Y., and H. J. Tuttle, Englewood, N. J.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, July 9.

Statement of shipments of anthracite coal (approximated) in tons of 2,240 lbs., for the week ending July 2d, 1897, compared with the corresponding period last year:

	1897. Week.	1897. Year.	1896. Year.
Pennsylvania Railroad.....	41,102	1,611,725	1,799,247

PRODUCTION OF BITUMINOUS COAL in tons of 2,000 lbs. for week ending July 2d, and for years from January 1st, 1897 and 1896:

Shipped East and North:	1897. Week.	1897. Year.	1896. Year.
Allegheny, Pa.....	52,740	1,168,216	1,209,567
Barclay, Pa.....	*1,088	23,812	‖21,930
Beech Creek, Pa.....	*87,956	1,821,888	1,557,001
Broad Top, Pa.....	**9,703	202,886	‡221,563
Clearfield, Pa.....	9,295	2,263,870	2,617,320
Cumberland, Md.....	74,264	1,850,671	‡2,004,979
Kanawha, W. Va.....	§54,901	1,520,729	‖1,730,339
Phila. & Erie.....	3,773	162,004	37,081
Pocahontas Flat Top.....	†57,596	1,208,032	.....
Totals.....	432,316	10,222,108	9,399,780

Shipped West:	1897. Week.	1897. Year.	1896. Year.
Monongahela, Pa.....	31,213	709,529	524,361
Pittsburg, Pa.....	34,800	866,997	953,835
Westmoreland, Pa.....	41 337	951,762	1,016,919
Totals.....	107,349	2,528,288	2,495,115
Grand totals.....	539,665	12,750,396	11,894,895

Production of coke on line of Pennsylvania Railroad for the week ending July 2d, 1897. and year from January 1st, 1897, in tons of 2,000 lbs.: Week, 85,312 tons; year, 2,216,427; to corresponding date in 1896, 2,285,301 tons.

† For two weeks ending June 19th. § For week ending June 7th. * For week ending June 30th. ‖ For year ending July 11th. ‡ For year ending July 18th. ** For week ending June 26th.

Anthracite.

The dullness that was expected to follow the advance in the price of anthracite coal is very noticeable this week, the trade being extremely slow. Buyers are holding off, without really knowing why, except for the disinclination they naturally feel to pay more for the same material they had previously been buying at lower figures. Sellers, on the other hand, are surveying the trade with the satisfaction that is justly theirs through the consciousness that they hold the balance of power. While new business is reported very scarce, shipments are of a fair volume on orders previously taken, so that the trade is not suffering in the least from inactivity. It is reasonably expected that business will be better before the end of the month and that the volume of coal now moving will not be lessened even temporarily. The market is firm, but just how well the producers are succeeding in obtaining the advanced prices for their prepared sizes of coal is difficult to say. It is certain, however, that none of them have the least inclination to dispose of any coal at a sacrifice.

The troubles of the bituminous coal trade are talked of to some extent, but it is thought that the strike will not affect the anthracite coal trade in the East. Should the strike be prolonged for some months its effect on the tonnage of anthracite might then become apparent, particularly in the sales of the steam sizes.

The new circular makes the price of anthracite coal as follows: Broken, $4; egg and chestnut, $4.25; stove, $4.50 per ton f. o. b. New York.

Bituminous.

The Eastern seaboard soft-coal trade is quiet, though the articles in the daily papers regarding the strike in the Western regions have scared some consumers into taking some coal where they have heretofore held back from ordering. The market in the consuming territory east of Cape Cod is slightly improved from what it has been, though nothing to brag about. This is the season when this territory puts in most of its coal, and if the coal is to be taken it should be moving forward now. Long Island Sound business is quiet and is even slower than last week. New York harbor trade is slow. All-rail trade is fairly active, and is going forward in its regular volume.

The chief talk in the trade at this time is on the Western labor problem. There are no men out on strike in any of the regions supplying the Atlantic seaboard trade. In case the strike now on should prove effective, those operators in the Virginias and Pennsylvania who have reduced their men's wages will, of course, be attacked first, and only through sympathy can the other regions suffer. The general feeling is that the Atlantic seaboard soft-coal trade will not suffer from this strike. The operators themselves believe that a strike, although always more or less disastrous, would have rather an efficacious effect on the trade.

Transportation from mines to tide is fairly good, though there is yet some coal blocked up along the line of the main roads at shipping ports, but the amount is not as large as it has been. These accumulations have delayed shipments somewhat, and in cases where it has been desirable to have coal hurried through it has been found difficult on the above account to do so. In the matter of car supply the transportation superintendents are watching very keenly any possible overshipments on the part of the operator, and even in the cases of larger shippers where expected and chartered vessels have not arrived on time to take coal waiting, the main

line transportation superintendents have not hesitated to cut off the supply of empties at mines. This year there seem to be no embargoes on all-rail shipments to points on foreign roads, and even Buffalo and Canadian points have been allowed at times, where heretofore there has been strict embargoes on them.

In the coastwise vessel market vessels are in poor supply, and if the coal market proper was not in as poor shape as it is, and the demand was not so small, rates would advance. As it is they keep about in the same figures as for some time past. We quote current rates of freight from Philadelphia to Boston and Portland, 55c.; Salem, 55@65c.; Providence, New Bedford and the Sound ports, 50c.; Portsmouth, Bath and Gardner, 55@60c., with tonnage to the last named; Wareham, 70c.; Lynn, 65@75c.; Newburyport, 65@70c.; Dover, 90c. and towage; Saco, 75@80c. and towage; Bangor, 65@70c. Five and 10c. above these rates is asked from Baltimore, Norfolk and Newport News.

NOTES OF THE WEEK.

Coal receipts at San Francisco in June were 144,-093 tons. For the six months ending June 30th the receipts were: Eastern, anthracite and Cumberland, 6,528; Oregon and Washington, 288,420; Alaska, 1,000; British Columbia, 250,867; Australia, 102,991; Japan, 160; Great Britain, 35,557; total, 685,-523 tons, showing an increase of 47,996 tons as compared with the first half of 1896. There were 18 cargoes from Australia in June, a larger number than for the previous three months. There was also a cargo from Alaska in June, an unusual source of supply.

Buffalo. July 8.

(From Our Special Correspondent.)

The only important item in the anthracite coal trade was the advance on July 1st of 25c. per ton on all sizes excepting pea and buckwheat. The demand continues very light. Consumers are not in an agreeable state of mind just now and give coal dealers the go-by. Bituminous coal merchants are firm in their views and keep close to the published scale of quotations. Demand is fair, although many consumers laid in supplies, fearing a shortage in consequence of the labor troubles in the mining districts.

The official reports of the canal collector of the Erie Canal at Buffalo show that no coal has been received or shipped from opening of navigation to July 1st.

The exports of coal from Buffalo by lake for the month of June, 1897, aggregated only 231,393 net tons. The exports by lake thus far this season to July 1st were 430,243 net tons, as compared with 644,190 net tons for corresponding period in 1896—quite a large falling off.

The production of anthracite coal for the first six months of 1897 was about 16,000,000 net tons, as compared with 18,800,000 net tons in 1896, and 20,-600,000 net tons in 1895.

The shipments of coal westward by lake from Buffalo for the week ending July 3d, inclusive, aggregated 62,956 net tons, distributed as follows: 20,496 tons to Chicago, 14,200 tons to Duluth, 13,450 tons to Milwaukee, 1,900 tons to Racine, 9,200 tons to Superior, 500 tons to Bay City, 530 tons to Saginaw, 600 tons to Sault Ste. Marie and 2,080 tons to Toledo. The rates of freight were unchanged, viz.: 20c. to Chicago, Milwaukee, Duluth, Superior, Bay City, Portage and Toledo, 25c. to Racine, Kenosha and Sault Ste. Marie and 40c. to Saginaw. Closing steady and quiet.

Chicago. July 7.

(From Our Special Correspondent.)

Anthracite Coal.—There has been an increase of 25c. per ton in list prices of hard coal as anticipated. This advance has been talked of for some time, and does not come as a surprise. It affects all grades of hard coal and took effect July 1st. The amount of business transacted during the past week has not been large, the majority of sales having been for carload lots. There is an occasional good contract booked, but there is considerable competition for such orders. The advanced prices are certainly not due to any increased business so far as this center is concerned, and they certainly will not represent by any means the cost of anthracite coal, for it is positive that the cutting that has prevailed for some time past will continue, and good big concessions will be granted on large orders. The strike in the bituminous coal fields has not affected hard coal as yet, but it is expected that should the strike be maintained for any length of time, the buying of hard coal will be considerably augumented. New circulars prices are: Grate, $5.65; egg, stove and chestnut, $5.85 per ton.

Bituminous Coal.—Business in soft coal continues moderate and very little large buying is observed. Contracts are still being made by some of the larger concerns, but outside of that sales are for unusually small quantities, showing that consumers are still continuing the plan of buying only enough for immediate wants. The strikes in the soft-coal fields are expected to affect this market greatly should they continue long. The quantity of soft coal on hand hereabouts is ample for temporary wants, but a few weeks would reduce it to what might be called an alarming extent and a soft-coal famine would surely result. It is said that most of the soft coal stored on the docks in the Northwest is of a high grade, and those consumers who have been used to the lower grade of soft coal may soon have to spend more money for their fuel. Prices have suddenly strengthed, for, in anticipation of a long-continued strike, those who have soft coal are demanding their own terms.

Pittsburg. July 8.

(From Our Special Correspondent.)

Coal.—The situation at this time is such that a satisfactory report seems out of the question; meetings appear to be held in most parts of the country, and very little is talked of except a general strike. Quiet prevails along the Monongahela, mining generally being near a standstill. The Monongahela will be free the present week; the last supply of red tape is about exhausted, but there will be no attempt at mining until after the big jollification has taken place.

In the Pittsburg harbor and in the pools the amount of coal loaded is estimated at 20,000,000 bu., and as there is no prospect for water the owners show no anxiety to start their mines, as it would take two runs to convey the coal loaded to the lower markets, and it would be a very unusual circumstance to have the rises before fall. The rail road district operators are preparing for a general strike. More coal is now going forward to the lake ports than at any time since last October, and there is a scarcity of cars on all roads. Large contracts were closed within a few days with Northwestern buyers, and operators have done all they could to be prepared not to be caught in the sneeze.

At Akron, O., there will be no miners' strike. Bellefonte advices say that there will be no miners' strike in the Clearfield District.

At Uniontown, Pa., options on 5,000 acres of coal land near Salem, which expired July 1st, are being taken up, and by Pittsburg parties. Some of the owners have been notified that their coal will be taken.

On July 7th the government officers gave the Slackwater Company a check in full, and now the government owns a "free Monongahela." A big jubilee will take place next week. The amount of the check was $3,601,615.

It is impossible to get reliable information in regard to the coal situation. It looks a good deal like a general strike. It will be some days before all the facts can be obtained

Connellsville Coke.—The reported strike of the miners throughout the Ohio, West Virginia and Pittsburg districts has caused some stir among the workmen and operators in the Connellsville coke region; the coke trade in consequence took a slight boom; the indications are that the men in the coke region will join a general strike. The trade showed an increase in demand last week to the extent of 108 cars and a much better outlook can be recorded. The orders for coke to supply three Ohio furnaces going in blast came to the Connellsville region and a 70-car order for the Hamilton furnace at Hamilton, Ont. The demand was so much greater that the loaded cars on the sidings were all given destination and taken out and very little coke left on the yards; the trade continues very brisk and the trade looked so encouraging that the operators fired up 525 ovens. The summary for the region shows 10,900 ovens in blast, with 7,477 idle; the production of the region amounted to 104,493 tons, increase in tonnage of 495 tons. In the running order 3,947 ovens made six days; 616 ovens made five days; 210 ovens four days, and 50 ovens, the Semet-Solvay, seven days. The shipments from the region amounted to 6,442 cars, against 6,334 cars the week previous, an increase of 108 cars. The shipments from the the region for the week were as follows: To Pittsburg, 2,715 cars; shipped West, 2,259 cars; sent East, 1,468 cars; total, 6,442 cars.

Shipments reached 110,796 tons, an increase over the preceding week of 1,852 tons; prices nominally unchanged.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, July 9, 1897.

Pig Iron Production and Furnaces in Blast.

Fuel used.	Week ending July 10, 1896.		Week ending July 9, 1897.		From Jan., '96.	From Jan., '97.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
Anthracite.	41	25,900	24	13,800	781,638	463,686
Coke...	135	161,170	107	152,900	4,624,819	3,991,214
Charcoal...	19	6,130	15	3,450	148,540	132,986
Totals	195	193,200	146	170,150	5,554,997	4,587,886

A holiday always makes a dull week, and the present has been no exception to the rule. The closing down of many large plants for the usual summer vacation—stock-taking, repairs and the like—has had its effect on the market also. The volume of business has been moderate, and new transactions of importance are few. As to the immediate future of the market there is a good deal of doubt. We hear of coming prosperity, and some of the more sanguine are inclined to believe that better times are really at hand, pointing to some indications of increased activity which are apparent here and there. These are scattered and sporadic, however, and a good many observers hesitate about putting reliance upon them. At best, they say, these show only local and intermittent demand, and the real signs of general improvement are not to be found. It is true that this is always the dull season of the year, and that traders do not look for an active market in July and August; and we must wait for further developments before anyone can safely predict a general revival.

Prices continue low and there are no present signs of improvement in this respect. Deliveries on contracts made at low figures will extend over several months yet, while furnacemen and millmen are well aware of the number of idle plants ready to start up on any signs of increased demand. Stocks in some directions are very low and any general improvement would be manifested by heavy buying; but the production could be increased so largely and so rapidly that consumers are not troubling themselves, believing that they can buy all they want and at about the low range of prices now in force. The speculative element is out of the market just at present and will very probably stay out until August is over.

In a word, it is a waiting market, with some elements in it that puzzle the closest observers; but on the whole the advantage is with buyers.

In the absence of active business there has been a good deal of talk about the revival of certain pools, the steel rail, the billet and the nail combinations being prominently named. Most of the rumors of this class now current, however, seem to have a very slender basis of fact to go upon. Some sort of reorganization of the nail pool is the most probable, but even this is doubtful.

The discussion over the new scale of the Amalgamated Association goes on very slowly. Only a few firms have agreed to the new scale, and most of the large concerns are holding back. The general claim is that reductions of wages are necessary.

Iron men are watching the progress of the great strike of the coal miners with a great deal of interest. So far it has not extended in directions which will directly affect the iron trade, and the Connellsville coke region especially is untouched. There is an uneasy feeling, however, and some fear that the striking fever may prove contagious. The iron trade has labor troubles of its own on hand, and can well feel anxious about those in the allied trades.

Export business continues large, and promises well for the future. At present the chief difficulties in the way of this trade are found in freight rates, and, in some cases, in the difficulty of securing ocean freight accommodations at all.

New York. July 9.

The local market looks rather uncertain just now owing to the reports of trouble with the coal miners. Sales-agents are showing uneasiness, as they are aware that should their mills shut down they will be unable to fulfill their contracts. Manufacturers, on the other hand, state that they have quite a quantity of material on hand, which will carry them along for a short time at least, but even they have become apprehensive of the future. An early settlement of the labor dispute is wished for by everyone in the iron and steel trade.

Orders are coming in from contracts that have been pending several weeks, and in structural material especially we note a good-sized order. The Arbuckle sugar refinery contract in Brooklyn for about 1,800 tons is understood to have gone to J. B. & J. M. Cornell, of New York. It is said that this contract was awarded to a local concern as a result of co-operation between the representatives of the unions in the iron trades here and the Building Department. Cases have been reported to this department, by the unions, of defective ironwork, where the metal was from other cities. Contracts for material to extend a dry goods store in Brooklyn and for a building in New York were also given out this week which aggregated several thousand tons.

Railroad and bridge work has been somewhat quiet, although several good-sized orders were taken. The Maryland Steel Company has received an increase in its order of 7,600 tons of steel rails for the East Indies, making the total 8,850 tons. This firm has also taken an order for 8,000 tons of steel rails for Mexico, and has the contract to build an iron bridge over Herring Run on the Belair road in Baltimore, Md., besides three small bridges near Gardenville, Md.

The Pencoyd Iron Works, of Philadelphia, are understood to have secured the contract for a steel arch bridge to replace the suspension bridge at Niagara Falls, N. Y. Contract for the Coney Island Creek bridge will probably be awarded on July 12th.

In cast-iron pipe a few contracts are pending, and among these we note 900 tons for Washington, D. C., which will be given out in a day or so.

Export trade has slackened up somewhat within the last week, although there has been rather encouraging talk of the near future. Hardware and nails show light shipments, while only small quantities of mining machinery are being exported from this port. Civita Vecchia, Italy, has taken 1,282 tons of steel rails, and Nova Scotia a quantity valued at $787. Moscow, Russia, will receive 275 pieces of iron pipe, valued at $1,096, and St. Petersburg 176 casks of ferro-manganese, valued at $3,700. A small lot of pig iron, valued at $246, was shipped to London. There were exported also to Liverpool 2,692 steel bars, valued at $7,200, and 24 casks of ferro-manganese. Swansea also took 32 and Glasgow 24 casks of ferro-manganese, which shows that a fair business has been done in this article on export account. A few days ago, upward of three car-loads of iron castings were purchased for railroad purposes in Mexico.

Sales agents of pig iron here say that inquiries from abroad have become less in number. Furnacemen, however, inform us that their export trade is quite active just now, and that all the spare room they can secure on vessels is taken up with pig iron for foreign countries.

Pig Iron.—The local market, while it is somewhat quiet, nevertheless shows some fair selling of pig iron. The foundrymen report business rather slow, although we understand that one large concern is doing considerable buying, and is stocking up a lot of pig iron. We are informed that some brands of Northern iron continue to be sold at less than our quotations, but we are also assured that the Pennsylvania irons generally are ruling pretty stiff. A few of these concerns have been asking higher prices, but it is doubtful whether any orders were taken at the advance.

Southern irons are understood to hold their prices, and a number of small sales have been made. At furnace in Birmingham, Ala., quotations are given as $6.25 for gray forge; $6.25 for No. 4 foundry; $6.50 for No. 3 foundry; $6.75 for No. 2 foundry; $7.50 for No. 1 foundry; $6.75 for No. 2 soft, and $7.25 for No. 1 soft. We understand that the soft irons are very scarce just now. It is probable that these prices can be shaded in some instances. Speculation in warrants in New York has lessened somewhat, although the brokers' quotations are less than those given above.

For the present no very large orders are about and, in fact, none are expected for the next three weeks at least, as July is always a very slow time for sales agents here. Quotations are: Northern No. 1 X Foundry, $12@$12.50; No. 2 X Foundry, $10.50@$11.25; No. 2 plain, $10.25@$11; gray forge, $9.75@$10.25; Southern No. 1 Foundry, $10.50@$10.75; No. 2 Foundry, $10@$10.25; No. 1 soft, $10.75@$11; No. 2 soft, $10.25@$10.50; gray forge, $9.50@$9.75; Basic, $10.50@$10.75. All prices are for tidewater delivery.

Cast-Iron Pipe.—A few small orders were taken this week; otherwise the trade is quiet. Prices are still low.

Spiegeleisen and Ferro-Manganese.—Local trade is quiet, but for export we note several sales. Quotations are: Spiegeleisen, 20%, $19@$19.50; ferro-manganese, 80% foreign, $46, delivered at buyer's mill.

Steel Billets and Rods.—There is nothing of special interest being done in the local market, and the quotation is about $16.25 per ton, New York delivery.

Merchant Iron and Steel.—Business is distributed sparingly among the trade, and prices are easy. Quotations are: Common bars, 1@1·05c.; refined, 1·10@1·15c.; soft steel bars, 1·05@1·10c.; steel hoops, 1·25@1·35c.; steel axles, 1·50@1·60c.; tire steel, 1·05@1·10c.; spring steel, 1·40c., base; links and pins, 1·50@1·60c.; light cotton ties, 60c. per bdl. at mill.

Plates.—Buying generally is only in a small way, and orders thus received have kept mills pretty busy. We quote for universal mill plates 1·10@1·15c. For steel plates prices are: Tank, 1·10@1·15c.; boiler shell, 1·20@1·30c.; flange, 1·25@1·40c.; firebox, 1·60@1·75c., and 2·25@2·50c. for locomotive firebox, according to quality. Charcoal iron plates are 2·25c. for shell, 2·75 for best flange and 3·25 for firebox. Rivets are 2·25@2·50c. for iron and 1·75@1·85c. for steel. Prices are for tidewater delivery in large quantities.

Structural Iron and Steel.—Some good sized orders were taken this week. We quote for angles, 1·10@1·15c.; tees, 1·35@1·50c.; channels, 1·25@1·50c. The price of beams, New York delivery, is 1·25@1·30c. for ordinary sizes, 1·45c. for 20-in., and 1·50c. for 24-in., carload lots.

Steel Rails and Rail Fastenings.—Market continues very quiet. Mill quotations are $18.50@$20 per ton for standard sections and $23 for girder rails. Lighter rails are figured on by a reliable concern as follows: 12-lb. rails, $26 per ton at mill; 16-lb., $24; 20-lb., 25-lb. and 30-lb., $22 per ton.

For rail fastenings quotations are: Angle bars, 1·05@1·10c.; spikes, 1·45@1·50c.; bolts, 1·75@1·85c. square nuts, 1·80@1·85c.; hexagon nuts, 1·90@1·93c.

Wrought-Iron Pipe.—Business is fair locally, while export trade is good. Discounts are as follows: For plain pipe, out of store: 1½ in. and over, 67, 10, 10, 10, 10 and 10%; 1¼ in. and under, 50, 10, 10, 10, 10 and 10%. Galvanized pipe, 1½ in. and over, 55, 10, 10, 10, 10 and 10%; 1¼ in. and under, 50, 10, 10, 10, 10 and 10%. For fair-sized orders these discounts are made with an additional 5% for less than carload lots. For carload lots this additional discount is 7½% to 10%.

Nails.—The market for wire nails has been very quiet this week, and prices hold at $1.50@$1.55 per keg. A like condition exists in the cut nail trade, with the mill price for carload lots $1.20 base.

Old Material.—The market is somewhat unsettled owing to labor troubles which caused a number of mills to withdraw their offers. The export trade for old iron and steel rails is rather active at full market prices, but the offerings of stock here are very light just now. In steel rails about 800 tons of standard section tees are reported sold at $10.50 per ton delivered at a Pennsylvania mill. A sale is also noted of about 500 tons of girder rails at $9 per ton, delivered to lighter at Brooklyn. In old iron rails two sales are noted for export, amounting to 1,000 tons of heavy section tees at about $12@$12.50 per ton, delivered to steamer in New York. Quotations are: Steel rails, all sections, $9@$10.50; iron rails, $10.50@$12.25; No. 1 wrought scrap iron, $10@$11; hammered car axles, $15@$16; all f. o. b. cars; machinery scrap, $9@$10; wrought pipe and tubes, $7.50@$8; car wheels, $9@$10, delivered at buyer's works; wrought turnings, $8@$8.50; cast borings, $6.50@$7; burnt iron, $5.50@$6.50 per ton, delivered at mill.

Buffalo. July 7.

(Special Report of Rogers, Brown & Co.)

The pig-iron market for the past week has been less active than either of the last three or four weeks, which, however, is not surprising, as it would be difficult to keep up the recent pace indefinitely. The sales for June in our own local office exceeded all previous records and we presume other sellers must have experienced similar activity. While the volume of business has been large, the prices were and continue to be, exceedingly low and very unsatisfactory to the manufacturers of pig iron. Nothing but a desire to keep works in operation and hopes for a better future would warrant existing figures. The prices named below are on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $10.75; No. 2 strong foundry coke iron, Lake Superior ore, $10 50; Ohio strong softener No. 1, $10.75; Ohio strong softener No. 2, $10.50; Jackson County silvery No. 1, $14; Southern soft No. 1, $10.75; Southern soft No. 2, $10.50; Niagara malleable, $11.

Chicago. July 7.

(From Our Special Correspondent.)

Pig Iron.—Sales of pig iron during the past week were not quite as extensive as those of the week before, but, on the whole, a fair week's tonnage was placed. Orders running from a carload up to some of a few thousand tons were received, the buying continuing to be done by concerns throughout the entire Chicago territory, and in various lines of business requiring iron. Inquiries still continue to come in in good shape and the situation is decidedly encouraging for a continued run of the good business that has characterized this market for weeks past.

The recent advance in Southern iron appears to be maintained well, though there is some tendency observed toward cutting. In Northern iron prices are being held to firmly and consumers appear very willing to buy at standing prices.

Quotations are as follows: Lake Superior charcoal, $13@$13.25; local coke foundry No. 1, $10.50@$10.75; No. 2, $10.25@$10.50; No. 3, $10@$10.25; local Scotch foundry No. 1, $10.50@$10.75; No 2, $10.25@10.50; No. 3, $10@10.25; Southern coke, No. 1, $10.50@$11; No. 2, $10@$10.25; No. 3, $9.75@$10, Southern No. 1 soft, $10.50@$11; No. 2 soft, $10@$10.50; Southern silveries, $10.25@$10.50; Jackson County silveries, $13@$15; Alabama car wheel, $15.50@$16; coke Bessemer, $11.50@$12.

Bar Iron.—Business in bars has not been heavy, and but few sales of any large quantities have been made. There is yet a considerable business to be had, a number of buyers being very slow about placing contracts. Prices have a tendency to more firmness, and are for common iron, 1@1·10c; guaranteed, 1·10@1·20c.

Steel Rails.—Small orders in both the lighter and heavier sections comprise the transactions in rails during the past week. There is not much inquiry and there appears but little new business in sight. Rails are quoted $19@$21, Chicago.

Billets and Rods.—Business in billets and rods continues light, but a few small sales having been made. The price of billets, for quite a long time maintained at $16, has been reduced to $15, Chicago. Rods are quoted $21.50.

Structural Material.—But few contracts of any size are being closed, the buying continuing in small lots. Prices are fairly firm and are: Beams and channels, 1·15@1·20c; plates, 1·10@1·15c.; angles, 1·10@1·15c.; tees, 1·30@1·40c.

Cleveland. July 7.

(From Our Special Correspondent.)

Iron Ore.—The volume of business transacted during the past week has been small, the majority of the sales being in small lots. What has been mostly non-Bessemer, and the heavy shipments from the independent mines of the Mesabi Range indicate that Fayal is being sought. The ore shipments have been heavier than was expected and as a result there is a congestion of ore on the Lake Erie docks. The big companies were prepared for it, however, and are not discommoded, but dockage is quite an important factor with the smaller dealers. It is thought in this city that the coal strike will have the effect of increasing the rail shipments to the furnaces, by the release of cars, and some of the dealers are ready to take advantage of the situation. With the exception of the ore from the independent Mesabi mines, the following prices prevailed in the sale of all ores: Specular and magnetic, Bessemer quality, $3@$3.75; specular and magnetic, non-Bessemer quality, $2.50@$2.75; hematites, Bessemer quality, $2.50@$3; hematites, non-Bessemer quality, $2@$2.50.

The same rates are being paid for bringing ores down from the mines as were reported three weeks ago, 40c. from Escanaba and 50c. from all ports on Lake Superior.

Pig Iron.—The market has been quiet during the past week, and the business done has been chiefly confined to foundry irons. Notwithstanding the fact that the trade is light, sellers are holding iron for the same prices as were reported a week ago. Following are the quotations: Lake Superior charcoal, $13.25; Bessemer, $9.75@$10; No. 1 foundry, $10.25@$10.50; No. 2, $9.75@$10; No. 1, Ohio Scotch, $10.40; No. 2, $9.90; gray forge, $8.50@$8.75.

Pittsburg. July 8.

(From Our Special Correspondent.)

Raw Iron and Steel.—Business during the week was not very active; the progress toward improvement is moderately maintained; generally speaking, the last of June and the early part of July are usually set down as about the dullest portion of the year, and will remain so until the wage question is satisfactorily arranged and the Amalgamated scale signed. It looks at this time as if there would be several non-union mills. There seems to be a desire to cut loose; how it will terminate will be learned later. There have been so many people waiting for orders that it has been found impracticable to do much beyond holding the market steady. The strong feature is that there is more business to be had, and, as a rule, it can be secured at about current rates, but the talk of higher prices seems premature.

Sheet bars are in good demand. Sales last week were 5,300 tons at $16.85@$17.25. Wrought iron and steel pipe in good demand; prices have an upward appearance. The business for some time has been fair, with several good contracts booked for foreign parts. A. M. Byrns & Company closed their pipe mill for repairs; it will start in a week or 10 days in all departments. In finished iron and steel there is little change perceptible; prices are fairly maintained. For wire nails the demand has fallen; prices are weakening. Steel rails show demand light; the Carnegie Company is turning out between 3,000 and 4,000 tons a week.

Latest.—There is little of importance to note; signers to the Amalgamated scale are coming in slowly. The Big Painter Company will start non-Union, and have advertised for heaters, roughers and catchers for 8 and 10 in. mills. At McKees Rocks, Anderson, Depuy & Co.'s men will not accept a reduction, and are out. The Wayne Iron Company employees are out for a raise in wages. Several meetings have been held between Jones & Laughlins and their old employees, but so far nothing has been accomplished. It looks as if the Amalgamated Association had a big fight ahead.

COKE, SMELTED, LAKE AND NATIVE ORE.

Tons.		Cash.
6,000	B., J., A., S., O. P.	$9.65
5,000	B., A., S., Pitts.	9.30
3,000	B., S., O., Val.	9 20
3,000	B., S., O., Pitts.	9.60
2,000	B., A., S., O., Pitts.	9.70
2,000	Bess., S., O., Val.	9.00
2,000	B., J., A., Pitts.	9.65
2,000	B., J., A., Pitts.	9.70
2,000	B., S., O., Pitts.	9.75
1,000	B., A., S., Pitts.	9.60
500	B., S., O., Pitts.	9.75
500	Mill I., J., A., Pts.	8.70
500	Mill I., A., Pitts.	8.60
200	No. 2 Fdy., pt., P.	10.00
100	No. 1 Fdy. pt., P.	10.65
50	No. 3 Foundry, all ore, Pitts.	10.00
50	No. 2 Silvery, P.	11.65
25	No. 1 Fdy., Pitts	10.50

CHARCOAL.

100	Cold Blast, Pitts.	$21.00
50	Cold Blast, Pitts.	21.50
50	Cold Blast, Pitts.	22.00
50	W. B. Ex., Pitts.	21.00
25	C. Bl., Ex., Pitts.	26.50

BLOOMS, BILLETS, SLABS.

2,000	Bill., A., S., Pitts	$14.70
1,000	Bill., A., Pitts	14.60
1,000	Bill., J., Pitts	14.70
1,000	Bill., J., A., Pitts.	14.50

Tons.		Cash.
500	Bill., J., A., Pitts.	14.25
500	Bill., prom't, Pitts	14.60
500	Bill., J., Pitts	14.10

SHEET BARS.

1,000	Delivered, Pitts.	$17.10
800	Delivered, Pitts.	17.25
500	Delivered, Pitts.	16 85
500	Delivered, Pitts.	17.25

SKELP IRON.

800	W. G., Pitts.	$1.10 4 m.
700	N. G., Pitts.	1.10 4 m.
500	Sheared, Pitts	1.20 4 m.

SKELP STEEL

860	W. G., Pitts.	$0.90 4 m.
550	Sheared, Pitts	1.05 4 m.
500	N. G., Pitts.	.90 4 m.

STEEL WIRE RODS.

1,000	Delivered, Pitts.	$21.00
500	Delivered, Pitts.	21.50

MUCK BAR.

1,000	Neu., Pitts.	$18.00

BLOOMS, BILLETS, BAR ENDS

500	Billet ends, Pitts.	$3.80

FERRO-MANGANESE.

50	80% Pitts.	$46.0

OLD RAILS.

500	I. R., gr., P.	$11.50
500	S. R., gr., P.	9.50
300	I. R., gr., P.	12.00

Philadelphia. July 9

(From Our Special Correspondent.)

Pig Iron.—Despite some high coloring by brokers who have considerable iron to turn into cash, the week's business has been disappointingly small. The fact that two or three makes have been marked up a trifle means nothing when other fair brands are privately offered at concessions. The big contracts we were promised for the early days of July are not heard of and buyers manifest indifference. Production, particularly in certain kinds, is in excess of demand. Prices remain where they were; as to what consumers are likely to do, the least said is the best. No. 1 X foundry is $11.75@$12.50; No. 2 X foundry, $10.75@$11.25; plain, $10.50; standard forge, $10.25@$10.50; basic, $10.50; low phosphorus, $14.50.

Billets.—Business in billets is very dull. Buyers have made no attempt to bring recent negotiations to a head.

Merchant Bars.—The suspension of work will continue in some mills until next Monday. Store sales have been unexpectedly light, but prices are firm where they are. Agents are scouring around after car building orders, but even if all the talked-of work is placed it will not help out.

Sheets.—The sheet mills are all picking up work, some of this week's business coming from large customers who have wisely decided to contract for prospective requirements. There is a good prospect this week for galvanized.

Skelp.—Two fair-sized orders were captured this week, according to reports from mills.

Pipes and Tubes.—A fair amount of retail business is being transacted and to-day's mail brought fresh inquiries from parties who showed some disposition to buy a month ago.

Merchant Steel.—Local requirements are shaping up nicely to usual midsummer requirements. All kinds coming under the head of merchant steel are meeting with sale, particularly machinery and tool steel.

Plates.—Local stocks have been run on within a few days. Boiler plate is called for frequently. Quite a number of small jobs are now being figured on. The larger mills are filling up and the prospects for full time are excellent. No change in prices.

Structural Material.—The week's business was exclusively small orders; small bridge work is quite a feature of present demand. On the whole, it pays better, though it takes up time to keep changing the rolls.

Steel Rails.—Several arrivals of girder rails are noted from interior mills; new work in standard sections is fair, but orders are mostly small.

Old Rails.—The stocks of old rails in sight are large enough to warrant the few buyers in expecting concessions. Agents will lose business rather than name any lower prices.

Scrap.—The scrap dealers are not delivering much scrap, though a good many purchases were made since last report was written. For desirable scrap, such as heavy machinery, axles and railroad scrap, there is a fair demand, at usual prices.

METAL MARKET.

NEW YORK, Friday Evening, July 9, 1897.

Gold and Silver.

Prices of Silver per Ounce Troy.

July.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.	July.	St. Ex.	London Pence.	N. Y. Cts.	Value of sil. in $1.
3	48⅝	27 7/16	60	.464	7	48⅝	27 7/16	60⅛	.465
5	.....	.....	.....	.....	8	48⅞	27 7/16	60¼	.466
6	48⅝	27 7/16	60	.464	9	48⅞	27 7/16	60¼	.466

Silver has slightly improved, owing to moderate selling. As much of the product of the smelters has been placed ahead, the pressure to sell is not great, and consequently the chances of a material decline are not apparent, distribution keeping pace with offers.

The United States Assay Office in New York reports the total receipts of silver at 44,000 oz. for the week.

Gold and Silver Exports and Imports

At all United States ports, May, 1897, and years from January 1st, 1897 and 1896:

	Coin and bullion.		In ores.		Total excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
GOLD					
May.	$9,466,711	$559,958	$1,260	$389,118	E. $8,518,895
1897..	17,376,839	3,064,897	93,058	1,779,674	E. 12,625,326
1896..	36,020,485	24,351,762	87,341	560,298	E. 11,195,766
SILV.					
May.	4,337,342	766,704	12,200	1,990,080	E. 1,592,758
1897..	22,808,037	3,465,007	259,150	8,556,468	E. 11,045,712
1896..	25,579,452	4,956,084	589,916	6,929,276	E. 14,284,008

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

Gold and Silver Exports and Imports, New York

For the week ending July 9th, 1897, and for years from January 1st, 1897, 1896, 1895, 1894:

	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$9,303	$40,940	$808,275	$55,585	E. $721,053
1897..	14,157,264	1,891,365	21,315,533	1,426,375	E. 32,155,057
1896..	33,817,752	17,225,837	19,393,248	1,187,433	E. 34,797,724
1895..	32,818,909	21,744,300	21,935,410	921,292	E. 32,788,72
1894..	68,591,982	10,871,317	19,599,515	831,005	E. 76,489,185

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

FINANCIAL NOTES OF THE WEEK.

Business generally continues quiet and has also been affected by the holiday and the approach of the midsummer season, when it is growing each year more and more customary to postpone all business not absolutely necessary. The week has been without incident, except that the Senate has reached a vote on the Tariff bill, which now goes back to the House and to be fought over in Conference Committee. How long that will take no one can tell. It is clearly apparent, however, that no action on currency questions is to be looked for at this session.

The gold movement seems to have ended for the present, and no exports are reported this week. The Treasury statement shows a slight increase in the gold balance. This is sure to be the case when no gold is being taken for export, and is the result of our production of the metal, which is running up to nearly $5,000,000 a month.

The specie receipts from Mexico at the port of San Francisco for the six months ending June 30th were as below:

	1896	1897.
Silver dollars	$3,781,140	$2,094,098
Silver bullion	572,820	338,343
Gold "	339,854	385,067
Total	$4,693,814	$2,817,508

Shipments were made principally by rail during the period noted. The figures given show that there has been a decrease of $1,876,306 in receipts in the first half of 1897 from the corresponding period in 1896.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending July 3d gives the following totals, comparisons being made with the corresponding weeks in 1896 and 1895:

	1895.	1896.	1897.
Loans and discounts.	$513,604,700	$476,199,300	$532,767,900
Deposits	569,873,200	499,046,900	604,983,700
Circulation	13,134,000	14,556,960	13,781,200
Reserve:			
Specie	64,496,500	61,866,300	90,496,600
Legal tenders	110,145,500	83,223,700	102,134,200
Total reserve	$174,642,000	$145,090,000	$192,630,800
Legal requirement	142,468,500	124,761,750	151,245,975
Surplus reserve	$32,173,500	$20,328,250	$41,384,875

Changes for the week this year were increases of $11,026,300 in loans and discounts, $7,889,100 in deposits, and $96,400 in specie; decreases of $89,700 in circulation, $5,978,400 in legal tenders and $7,854,275 in surplus reserve.

The statement of the United States Treasury, on Thursday, July 8th, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	July 1.	July 8.	Changes.
Gold	$140,754,114	$142,062,813	I. $1,308,699
Silver	31,102,355	31,682,169	I. 579,814
Legal tenders	35,761,622	36,681,322	I. 919,700
Treasury notes, etc.	30,500,752	30,955,478	I. 454,726
Totals	$238,118,843	$241,381,782	I. $3,262,939

Treasury deposits with national banks amounted to $17,717,770, an increase of $386,835 during the week.

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

	1896.		1897.	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Asso.	$61,866,300	.....	$90,496,600	.....
England	239,465,845	.....	183,598,760	.....
France	409,218,720	$251,243,361	403,047,300	$245,660,100
Germany	217,930,000	.....	235,020,000	.....
Austro-Hun.	136,210,000	61,294,000	179,720,000	63,407,000
Netherlands	13,178,000	35,086,000	13,153,000	35,183,000
Belgium	19,209,000	.....	20,451,000	.....
Spain	42,028,000	56,811,000	44,597,000	54,448,000
Italy	60,625,000	10,350,000	58,715,000	10,910,000
Russia	443,165,000	.....	479,590,000	.....

The return for the Associated Banks of New York is of date July 3d; all the others are of July 8th, except the Bank of Italy, May 31st, and the Bank of Russia, May 22-June 4th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England and the Bank of Russia report gold only. 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 June 24th are reported by Messrs. Pixley & Abell's circular as below:

	1896.	1897.	Changes.
India	£1,791,298	£2,501,100	I. £706,802
China	513,244	90,742	D. 422,502
The Straits	509,032	93,905	D. 415,127
Totals	£2,816,574	£2,685,747	D. £130,827

Arrivals for the week this year were £225,000 in bar silver from New York, and £27,000 from the West Indies, a total of £252,000. Shipments for the week were £109,650 in bar silver to Bombay, and £10,000 to Calcutta, a total of £119,650.

The coinage executed at the Mints of the United States during the fiscal year, ending June 30th, 1897, is reported by the Bureau of the Mint as below:

Denomination.	Pieces.	Value.
Double eagles	2,999,211	$59,804,820.00
Eagles	804,301	8,043,010.00
Half eagles	747,802	3,739,010.00
Quarter eagles	23,946	59,865.00
Total gold	4,566,290	$71,646,765.00
Standard dollars	21,203,701	21,203,701.00
Half dollars	2,741,774	1,370,887.00
Quarter dollars	4,915,541	1,228,885.25
Dimes	5,243,134	524,313.40
Total silver	34,104,150	$24,327,786.65
Five cents	12,196,389	609,819.45
One cent	37,469,014	374,690.14
Total minor	49,665,403	$984,509.59
Total coinage	88,335,843	$96,959,001.24

In addition to the domestic coinage there were coined at the Mint at Philadelphia, for the Government of Costa Rica 10-Colone pieces of the value of $279,291.81, and for San Domingo 306,141 pesos, composed of 35% silver and 65% copper and nickel.

Indian exchange has again risen, under the impression that offerings of bills will be light for some time to come. Only 30 lakhs weekly are now sold, and the price has risen to 14·84d. per rupee. It is now understood that no new issue of rupee paper will be made, but that the India Council will make a new sterling loan in London. This will reduce considerably the amount of Council bills to be drawn for the rest of the fiscal year.

Prices of Foreign Coins.

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

	Bid.	Asked.
Mexican dollars	$ .47½	$ .49
Peruvian sols and Chilean pesos	.42½	.45
Victoria sovereigns	4.88	4.90
Twenty francs	3.87	3.90
Twenty marks	4.78	4.80
Spanish 25 pesetas	4.78	4.85

Other Metals.

Copper.—The market, though very quiet, has ruled steady, notwithstanding the unfavorable course of events in the foreign market. The shipments for export continue on a very large scale; in fact, are much heavier than they have been at any time in the past, but the movement being a legitimate one and the copper going direct into consumption, it ought not to have any lasting or unfavorable influence on foreign quotations, and at the same time ought to be beneficial to the domestic market. Manufacturers are fairly busy. There is a slight improvement noticeable, which, however, is not likely to grow during the summer months. Quotations are unchanged at 11¼@11⅝c. for Lake, 10¾@10⅞c. for electrolytic in cakes, wirebars or ingots; 10½@10⅝c. for cathodes and 10½c. for casting.

The foreign market, which closed last week at £48 15s. for spot, has since suffered a very serious decline, the lowest price touched during the week having been £47 12s. 6d. for spot, and £47 17s. 6d. for three months prompt, but has since improved, closing to-day at £48 2s. 6d. @£48 5s. for spot, and £48 7s. 6d.@£48 10s. for three months prompt, with the tendency in an upward direction. The cause for the decline appears on the one hand to have been the extraordinarily large exports, and on the other, the fear that the strikes which have been threatening in the coal region would interfere with the consumption of copper. However, no apprehension is felt of the coal strike assuming very serious proportions, and as long as consumption on the other side keeps up, the shipments—even if heavy—are likely to be readily absorbed. In the event, however, of consumption

Imports and Exports of Metals.

Port.	Week, July 1.		Year, 1897.	
	Expts.	Impts.	Expts.	Impts
*New York.				
Aluminum, boxes	.....	.....	1,556	.....
Antimony ore...short tons	.....	33	.....	761
" regulus...casks	.....	.....	.....	474
Brass, old.....short tons	.....	3	365	98
Copper, fine.....long tons	$875	2,444	17,818	6,572
" matte.... " "	$150	.....	4,619	111
" sulphate " "	50	.....	4,580	.....
Ferro-mangan'se " "	165	.....	1,456	52
Iron ore..... " "	.....	.....	.....	9
Iron, pig, bar, rod " "	11	50	6,072	1,675
" pyrites..... " "	.....	.....	.....	5,570
Lead, antimonial " "	.....	100	.....	100
" bullion..... " "	$640	1,251	20,075	32,759
Manganese ore.. " "	.....	.....	.....	3,545
Nickel ..... " "	16	.....	741	20
Rails, old ..... " "	.....	.....	4,061	.....
Spiegeleisen..... " "	.....	.....	9,123	11,462
Steel, billets, rods " "	.....	.....	12,983	10,882
Tin..... " "	.....	330	1,119	3,129
" dross..... " "	.....	.....	.....	41,793
" and black plates, boxes	.....	35,554	.....	102,825
Zinc .....long tons	.....	.....	1,119	.....
" dross..... " "	6	.....	317	.....
§Baltimore.				
Chrome ore.....long tons	.....	.....	10	5,511
Copper, fine..... " "	3,273	27	20,558	27
" sulphate " "	10	.....	1,537	.....
Ferro-manganese " "	736	100	3,170	225
Ferro-silicon..... " "	.....	.....	.....	69
Iron ore..... " "	.....	11,926	.....	142,396
" pig, bar, etc. " "	100	2,895	180	4,556
Lead ..... " "	.....	.....	120	500
Manganese, ... " "	.....	1,700	.....	6,459
Spiegeleisen..... " "	.....	45	.....	830
Steel ..... " "	.....	.....	2,710	920
wire.....bundles	86	262	1,593	8,026
Tin..... long tons	100	.....	711	4,317
" and black plates, boxes	.....	100	.....	18,507
Zinc.....long tons	11	.....	13	48
" dross..... " "	.....	.....	46	115,202
††Philadelphia.				
Antimony.....casks	.....	.....	.....	2,712
Copper ore.....long tons	.....	.....	.....	28,350
Ferro-manganese " "	.....	.....	.....	.....
Iron ore..... " "	.....	.....	.....	.....
Manganese ore.. " "	.....	.....	.....	62,505
Tin..... " "	.....	.....	.....	398
" and black plates, boxes	.....	.....	.....	.....

*New York Metal Exchange returns. †From our Special Correspondent. †† Week ending June 25. §Week ending July 8.

abroad falling off, and that here not improving, prices would necessarily suffer, and probably not inconsiderably, in view of our large production. We quote: English tough, £51@£51 10s.; best selected, £51 10s @£52; strong sheets, £58; India sheets, £53 10s.@£53 15s.; yellow metal, 4⅛d.

Tin has been very quiet throughout the week, prices at the close being somewhat easier, in sympathy with the tendency abroad and on account of a more plentiful supply of spot, which had been rather scarce during the last few weeks. Consumption now does not appear to be as brisk as during last month, and with the expected heavy shipments from the East during this month, the prospects for a permanent improvement are not very promising. We quote spot 13·95c. and futures nominally at 13¾c.

The foreign market at the beginning of the week opened at £62 12s. 6d., declined since to £62 5s., but closes at £62 10s. for spot and £63 for three months prompt.

Lead, though firm, has not been very active. Consumers only reluctantly pay the higher prices established, but being only moderately supplied they will soon have to meet refiners' views. Consumption in this article appears to be very much on the improvement and with the supplies not at all excessive and the prospect of a higher duty, it seems to be the general opinion that present values will not only be maintained, but improve still further. We quote the market at 3·65c.

The foreign cables report another advance, Spanish being quoted £12 3s. 9d.@£12 5s., and English £12 6s. 3d @£12 7s. 6d. The conditions which have tended to steadily advance values abroad still exist.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is strong but quiet. Common is worth 3·50c., and argentiferous corroding, 3·52½@3·55c. Demand is fairly active for forward delivery, but spot lead is difficult to place at the current quotations.

Spelter is very quiet at about 4·30c. New York, and 4·10c. East St. Louis.

The foreign market has been quiet but steady at £17 3s. 9d. for ordinaries and 2s. 6d. more for specials.

Antimony is unchanged at 7¼c. for Cookson's; 7c. for Hallett's; 6¾c. for U. S. Star, and 6⅜c. for Japanese.

Nickel.—Business continues quiet, and no change in prices can be reported. We quote for ton lots 33½@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16d. per lb., according to size of order. The London price is about on a parity with New York, allowing for the duty of 6c. per lb.

Platinum.—Prices are firm at $14@$15 per oz. New York. The London quotation is 55s.@56s. per oz.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, 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, 51c., 55c. and 56c. per gram. Wire and foil are 52c., 53c. and 54c. per gram.

Quicksilver.—The New York quotation remains unchanged at $40 per flask. The London price has been reduced 2s. 6d., and is now £7 5s. per flask, with £7 3s. 9d. quoted from second hands.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum:		Bismuth, ₹ lb.	$1.80@$1.80.
No. 1, 98% ingots, ₹ lb.	37@41c.	Phosphorus, ₹ lb.	50@55c.
No. 2, 94%, " "	31@34c.	Tungsten ..... ₹ lb.	70c.
Ingots, scrap, "	30c.	Tungstic acid.....	45c.
Rolled sheets, "	46c. up	Ferro-tungsten, 69%	60c.
Alum.—Nickel, "	35@40c.		

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

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements see page 60.)

New York. July 9.

Heavy Chemicals.—There has been no general improvement during the week, and none is looked for in the very near future. Bleaching powder has been active during the past few days, and on sales made the top price quoted below was realized. The Senate bill proposes to reduce the duty on cyanide, which will result in more of the foreign article coming in than before, and the miner will get the benefit of cheaper prices. The 99% white or gray quality is quoted to-day at 26c. for import lots.

We quote: Caustic soda, 60%, $2.10@$2.15; 70@76%, $1.90@$2 per 100 lbs. Alkali, 58%, 60c. for 50-ton lots and over, and 70@80c. for smaller quantities; alkali, 48%, $1@$1.20 for jobbing lots. Carbonated soda ash, 48%, 90@95c. per 100 lbs.; 58%, 75@80c. per 100 lbs. Bleaching powder, prime brands, $1.75@$1.87½; Continental, $1.55@$1.75 per 100 lbs.; Continental F brand, $1.60@$1.65. Bicarb. soda, English, 1·75@2c. per lb.; American, bulk, $1.50@$3.50 per 100 lbs., according to brand. Sal-soda, English, 60@65c. per 100 lbs.; American, 55@60c. (in barrels), and 75@80c. in kegs. Chlorate of potash, 9c. per lb.

Acids.—Business during the week has been a little better, but the market is without feature. Prices are firm and unchanged. Quotations per 100 lbs. in New York and vicinity in lots of 50 carboys or over are as follows: Acetic acid, commercial No. 8 (in barrels), $1.40@$1.50; in carboys, $1.50@$1 65; redistilled, 28%, in bbls., $1.70@$1.80; in carboys, $1.90@$2 05. Muriatic acid, 18°, 75@85c.; 20°, 85@95c.; 22°, $1.15@$1.25, according to make and quantity. Nitric acid, 36°, $3.50@$4; 40°, $4@$4.50; 42°, $4.50@$5.50. Oxalic acid, $7 25 ex-dock and $7.50 ex-store. Mixed acids, according to mixture. Sulphuric acid, 66°, 85c.@$1 in carload lots, 10@15c. higher for small quantities. Chamber acid, $6@$6.50 per ton at factory. Blue vitriol, $4@$4.25, according to grade and order.

Brimstone.—The quietness previously noted continues in this market with prices practically unchanged. Best unmixed seconds are still quoted at $20 per ton for spot sales, and $19.50 for shipments. Thirds are 50c. per ton less.

Fertilizing Chemicals.—The week has been rather a quite one after the brisk trade recently enjoyed. In the ammoniate market there has been little doing. In general prices have been firm and in some cases are slightly higher. We quote:

Sulphate of ammonia, gas liquor, $2.12½ for shipment, and $2.20 for spot; bone, $2.05@$2.10 per 100 lbs. Dried blood, high grade Western, $1.75@$1.80 per unit New York; f. o. b. Chicago, $1.55@1.60 per unit. Azotine, $1 67½ basis New York. Concentrated phosphate (30% available phosphoric acid), 57½c. per unit. Acid phosphate, 13%@15%, av. P_2O_5, 54@65c. per unit at sellers' works in bulk. Dissolved bone black, 17%@18% P_2O_5, 80c. per unit. Acidulated fish scrap, $9.50, and dried scrap $17.50@$18, f. o. b. fish factory. Tankage, high grade, $14 per ton; concentrated, $1.32½ per unit, f. o. b. Chicago; New York, $18.50; low grade, $16.50@$17. Bone tankage, $19@$20; ground bone, $21@$23. Bonemeal, $19.50@$22 50.

Sulphate of Potash: 90%, New York and Boston, $1.99½; Philadelphia, Baltimore and Norfolk, $2.01; Southern ports, $2.03.

Double Manure-Salt: Quotations for 48@49%, less than 2½% chlorate, are 1·01@1·01¼c., to arrive, and 1·02@1·03c. on spot: basis of 48%. High grade, 90@95% sulphate of potash, 1·96½@2·00½c. to arrive; basis of 90%. In bulk 24@36%, 56½@37½c. per unit O. P.

Muriate of Potash: We quote: New York and Boston, 1·75@1·78c. Philadelphia and Norfolk, 1·76@1·79½c.; Charleston, Savannah, Wilmington and New Orleans, for 80@85% basis of 80%, 1·78½@1·81c. in lots of 50 tons and upward.

Kainit.—Invoice weights, as taken at port of shipment, per ton of 2,240 lbs., testing 12·4% actual potash, equivalent to 23% sulphate of potash, $9 25. Actual weights, ex-vessel at port of New York per ton of 2,240 lbs. (testing as before), $9.50.

Nitrate of Soda.—Prices have gone still lower on this commodity, and it is not an easy matter to tell where they will end. In general we quote: For spot, 1·70@1·72½c.; to arrive, 1·70c.; for shipment, 1 67½@1·70c.

Liverpool. June 30.

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

Although the Jubilee festivities are over and the markets have resumed again, a holiday feeling still prevails. In chemicals there is nothing new to report in the position.

Soda ash is in fair demand. Quotations vary considerably according to export market and nominal spot range for tierces may be called about as follows: Leblanc ash, 48%, £4 10s @£4 15s. per ton; 58%, £4 15s. @£5 per ton, net cash; ammonia ash, 48%, £3 7s. 6d. @£4 per ton; 58%, £3 12s. 6d.@£4 5s. per ton, net cash. Bags 5s. per ton under price for tierces. Special terms for American business.

Soda crystals are in request, and £2 17s. 6d. per ton, less 5%, is general quotation for barrels, and 7s. per ton less for bags. Special quotations for American orders.

Caustic soda is selling to a fair extent and stocks are light. We quote spot range, as to market, about as follows: 60%, £6 3s. 9d.@£6 5s. per ton; 70%, £7 3s. 9d.@£7 5s. per ton, net cash; 74%, £8 2s. 6d.@£8 5s. per ton; 76%, £8 15s.@£9 per ton, net cash.

Bleaching powder is dull, but at the same time prices are well maintained, at £6 15s.@£7 per ton, net cash, for hardwood packages, as to destination.

Chlorate of potash is steady at 4d. and further sales reported this week for immediate shipment to the United States.

Bicarb. soda finds a ready sale at £6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is inactive and nominally is quoted at about £7 15s.@£8 per ton, less 2½%, for good gray 24%@25% in double bags f. o. b. here, as to quality.

Nitrate of soda is very slow and may be called about £7 15s.@£7 17s. 6d. per ton, less 2½%, for double bags f. o. b. here as to quality and quantity.

Carb. ammonia, lump, 3d. per lb.; powdered, 3½d. per lb., less 2½%.

MINING STOCKS.

Complete quotations will be found on pages 56, 57 and 58 of mining stocks listed and dealt in at:

Aspen.	Helena.	London.
Baltimore.	New York.	Mexico.
Boston.	Philadelphia.	Paris.
Butte.	Pittsburg.	Rossland.
Cleveland.	Salt Lake.	Shanghai.
Colo. Springs.	San Francisco.	Valparaiso.
Denver.	Los Angeles.	

New York. July 9.

The market is somewhat better, and the Colorado silver stocks absorb most attention on the Consolidated Stock and Petroleum Exchange. Holders, however, are not very anxious to dispose of their securities, and it appears as though they were looking forward to some more rich strikes on their properties. The Mining Exchange continues to do a fair business, though not a very active one from an outsider's point of view.

The Comstocks were quiet and show many fluctuations. The Colorados ruled rather firm, and some heavy buying took place. The Californias were dull, with only two stocks dealt in.

Considerable dealing is noted in the cheaper stocks on the Mining Exchange, and especially Cannon Ball quotations have risen notably. A broker purchased about 35,000 shares of this stock some time ago at $3.50 per thousand, and to-day this price has doubled.

Recently there were two sales of Horn Silver (Utah) at auction in this city; one of 500 shares at $1.57½, and the other of 1 000 shares at $1.70. These were presumably from an estate.

Boston. July 8.

(From Our Special Correspondent.)

The market has been fairly strong the past week, and in some stocks a goodly advance is noted.

The trading in Boston & Montana has been very light, and early in the week it advanced to $134¼, but later it reacted to $132¾ and closed to-day at noon at $132¾.

Calumet & Hecla gained $5 with sales at $395 and is very firm. Tamarack advanced from $125 to $132, and Quincy from $116 to $120; both held the advance to within a fraction. The good reports concerning the Osceola advanced that stock from $32½ to $36, with only a slight reaction. Kearsarge was also bought on the supposition that whatever helped the Osceola was a bull argument for the Kearsarge, and the stock advanced from $18¼ to $20¼ and held there. Tamarack, Jr. was also firm and in good demand at $1 advance over last week with sales at $21½.

Butte & Boston touched $23 this week, which is a gain of over $1. The stock was the most active on the list and closed within $½ of the highest point; sales about 15,000 shares. Atlantic was dull but steady at $22½, and Franklin sold at $15, same as last week. Old Dominion advanced to $19¾, losing $½ in closing sales. Centennial declined from $7⅞ @$6½ with $¼ recovery to $6¾. Wolverine sold at $10⅞@$10¾, Arnold was steady at $3¼@$3⅜, and Tecumseh sold at $1.

In the gold stocks Merced and Santa Ysabel record good advances, the former from $8 to $9½, with reaction to $9, and the latter from $13 to $15¾, closing to-day at $15¼. Pioneer has ruled quiet at $5⅝@$5¾, and Gold Coin at $4½@$4⅝. Boston & Cripple Creek sold at 8c.

3 P. M.—At the afternoon call Boston & Montana advanced $½ to $133. Kearsarge was steady at $20½ and Butte & Boston firm at $22¾@$22¾. Old Dominion was firm at $19½. Tamarack advanced from $132 to $136 and Osceola to $36; Santa Ysabel declined to $15 and Centennial advanced to $7. Atlantic declined to $22.

Cleveland. July 7.

(From Our Special Correspondent.)

The Cleveland iron mining stock market has had an upward tendency for a week, and as a result the brokers have been busy and some of the securities have been active. Minnesota advanced from $46 to $56, with prospect of a still further rise, and Pittsburg & Lake Angeline is worth $5 more than a week ago. With the exception of Republic, which has declined slightly, there are no changes in the quotations of the other stocks dealt in at Cleveland.

Salt Lake City. July 3.

(From Our Special Correspondent.)

Friday brought the first activity in the mining share market since the closing of the local exchange for the midsummer season. As purchasers found ready sellers no particular advances were scored, save in a few silvers where sensational strikes made exceptions to the rule. Ajax fell off a point or two, due to discontinuance of the machine drills and a popular belief that forces were being reduced. Hand labor had to be substituted because of insufficient ventilation. Conditions are reported as exceedingly favorable, but no attempt is made to establish the heavy output the workings are capable of. Anchor is weaker with no inquiry; the company is conducting experiments with a view of erecting a modern concentrator on the mine, the old mill being of ancient style and remotely situated. Alliance is absolutely without action. Bullion-Beck improved somewhat, with no sales, though there is an apparent demand. The management is arranging to commence extraction on the virgin ore bodies below the 900-ft. level, while an auxiliary to the mill in the form of pans and settlers is talked of. Centennial-Eureka is featureless beyond the fact that that the stock is offered down to $15. Dividends are not expected during the life of the present ore contract, which runs until next October, but nothing certain is announced. The recent strike of argentiferous lead in Chloride Point and the fact that shipments are being made with moderate regularity has developed an inquiry for the stock, without affecting the price. Nothing tangible appears yet of the promised mill. Dalton is in moderate demand at shaded prices. Dalton & Lark scored a strong advance in the week and was in demand at 9c. At the mines large bodies of low-grade ore are blocked out, and the

recent advance in lead is coupled with the active inquiry for the stock.

The announcement of two successive disclosures of rich silver ore on the 1,200-ft. level of Daly caused a slight advance in the stock, but, details being scarce, the spurt was of short life. Daly-West remains unchanged. The flattering conditions at the Dexter are not reflected in the stock, offerings scoring no advance. Eagle is stationary at last week's figures, while Emerald was quite active and did business at improved prices. Some mineralized quartz from 600 ft. in the shaft leads to the belief that an ore body is near at hand.

Geyser-Marion is in demand with about all the loose stock taken up. Sales were made at from $1.27½@$1.29. Mammoth's friends were in evidence, well maintaining the gain of last week. Date of the resumption of mill work is not officially announced, but is anticipated within a week. Ontario took a spurt, the result of a shipment of very rich silver ore taken from below level of drain tunnel, where it is said a magnificent body of the same grade is uncovered. Brokers report bids of $6.25 with no shares to be had. Sunbeam remains steady and featureless. At the coming annual meeting a decision as to resumption of work is expected.

Swansea paid its extra June dividend of 5c. per share to-day. Stock is strong and firmly held, selling above last week's quotations. South Swansea is a so on the up grade and the two are perhaps the most popular of Utah silver-leads. At a directors' meeting this afternoon the July dividend of 5c. a share, $7,500, payable July 21st, was declared.

San Francisco. July 3.

(From Our Special Correspondent.)

There was a better opening this week, prices being firmer and stocks more in demand. Nearly as much business was done on Monday and Tuesday as for the whole of last week, and the quotations responded. There were reports of a promising find in the Sierra Nevada ground, and more faith was attached to this than is usually shown in these Comstock finds.

Later there was a little settling down, with no marked decline in prices, however. On Thursday the influence of the coming holiday was felt, and matters were very quiet. The exchanges adjourned over from Thursday to Tuesday morning, so that Friday and Saturday were blank days. It was just as well, since very little would have been done if they had kept open.

Some closing quotations were: Consolidated California & Virginia, $1.40@$1.45; Confidence, $1.15; Sierra Nevada, 88@92c.; Challar, $77@79c; Ophir, 72@76c.; Yellow Jacket, 49@51c.; Best & Belcher, 43@45c.; Gould & Curry, 34@36c.; Mexican, 33@36c.; Challenge, 25@27c.; Crown Point, 21@23c.. A little was done in Standard Consolidated, which closed at $1.45 bid and $1.55 asked.

The first half of 1897 has passed and one cannot see that any advance has been made or any change for the better. We are still going on in the same old round, with the same little turns up and down. Month after month it has been a small market, with the chippers making their few dollars now and then on a rise or a fall. The public does not come in—and will not until the mining market has something better than the old Comstock shares, in which they have put no faith for many a month. A change is needed if we are going to do business. A good many brokers think that a few stocks of genuine value, of which there are plenty in California, would attract the buyers; but more are ready to keep on in the beaten track, though it brings them no business. But the genuine mining stocks do not come to our exchanges. Perhaps they are frightened away because their owners do not care to come into competition or comparison with the old stocks. Anyhow a change is needed, and the sooner we have it the better.

Sales of mining stocks on the San Francisco Stock Exchange for the six months ending June 30th were as below :

	1896.	1897.
January	295,415	274,280
February	183,790	166,695
March	246,105	188,745
April	264,735	239,765
May	818,610	189,395
June	479,135	190,600
Total	2,288,790	1,249,480

It will be seen that the sales made in June, 1897, were less than half the amount recorded last year. For the six months we note a decrease of 1,039,310 shares in 1897 from the preceding year, which shows a declining speculation in mining stocks here.

London. June 29.

(From Our Special Correspondent.)

The London mining stock market is very uninteresting at the present time. The Jubilee has stopped all business not only in ordinary trading on the Stock Exchange, but also in the preparation of new ventures. At the time of writing there is still a holiday air and there seems little prospect of things settling down again for some time.

The South African section has in no way suffered from the death of Mr. Barnato. Some little depression occurred at first, but was caused only by sentimental reasons, and all the Barnato stocks have since recovered and slightly advanced. The release of the two remaining prisoners at Pretoria and the promises of President Kruger to reduce the railway rates and the dynamite charges have operated favorably on the market, and have caused the tone to be generally firm. All the gold producers and the deep level companies show advances as compared with a fortnight ago. The only shares that have suffered have been Chartered, for a rumor has been sent round to the effect that the charter of the British South Africa Company is to be modified radically within a short time. Rumors also were circulated that the company is contemplating the issue of new capital, but this, I think, will be incorrect, at least, at present.

The West Australian, New Zealand and American sections have been almost non-existent. Indians as usual have been firm and Coromandels have advanced to £4 on the excellent reports. Copper shares have been strong in sympathy with the metal.

A great spread is being made in the financial papers here by the Doric Gold Mining Company, an English company formed a year or two ago to work the Doric and other properties on Saxon Mountain, Colo. Mr. W. Weston has examined these properties, and his report is being disseminated widely in London and elsewhere. The brightest part of the report is where he quotes the profits made by neighboring mines. He recommends that some $15,000 be expended in completing a tunnel and in providing a concentrating mill. The ore seems to vary in value considerably, but its average may be about $5 gold and 10 oz. of silver. Many parts show less than this, and are considered as prospecting propositions.

The report of the De Lamar Mining Company, Limited, for the year ended March 13th last, shows that the company has come to the end of its dividends, at least under present circumstances. During the year 40,000 tons of ore were crushed, yielding 18,557 oz. of gold and 276,000 oz. of silver; while 115 tons of ore were shipped to the smelter, producing $373 per ton. The total income was £126,141, and the expenditure £92,629. Out of the profit a dividend of £200,000, or 5%, was paid. During recent years the dividends have been 20% and 25%. On March 31st the total reserve of milling ore was only 9,350 tons, and the veins have ceased producing further supplies. There were also reserves of over 100,000 tons of second-class ore, but this cannot be treated until the Pelatan-Clerici plant is put up. This plant is a long time in erection, for the original contract was made over two years ago. The process does not seem to have been tried on a practical scale as yet, so its success at De Lamar is entirely problematical. The available assets of the company are nearly £60,000, so it is possible the directors may decide to acquire a new property somewhere else.

Paris. June 7.

(From Our Special Correspondent.)

Our mining stock market for the past week has been somewhat affected by the holidays in London, since a good deal of the interest shown has been in the gold stocks, and their course depends very largely upon that of the London Exchange. The quotations for these stocks have varied very considerably during the past week, and in different directions. The shares of the older companies and of those in whose management some confidence is felt have improved, but, on the other hand, there have been some sharp decreases, showing generally a lack of confidence in the management. The belief in a better future for the Witwatersrand is now growing stronger here than it has been for some time, under the influence of an increase in the production of gold and the intention of the government to remedy some abuses in administration. Under these influences there is less pressure to sell on the part of those who bought the stocks for investment, and who now begin to incline to the belief that they may do better after all to hold them for that purpose. We shall see; my own fear is that the mine managers, as a rule, will not do their part toward the improvement.

There has been some reaction in the copper shares, and several of them show prices a little lower. This is due partly to the withdrawal of the strong support which Rio Tintos have been receiving from Berlin and partly to a weakening in the price of copper. The dividend period for Boleo having passed, there has been, of course, a corresponding reduction in the price of the stock, which is still in active demand. In the zinc and lead shares there has been comparatively little doing.

The metallurgical stocks continue very strong, and are selling at very high prices, although we have not yet come to the higher dividends which may be expected from the active business which they are now doing. A good many people think that the current quotations discount the future rather too much; but that is the way of speculation.

The foreign trade of France for the five months ending May 31st is reported by the Ministry of Commerce as follows:

	1896. Francs.	1897. Francs.
IMPORTS:		
Food	430,264,000	363,704,000
Raw Materials	1,020,116,000	1,052,261,000
Manufactures	262,957,000	263,187,000
Totals	1,713,337,000	1,679,152,000
EXPORTS:		
Food	264,854,000	274,056,000
Raw Materials	342,8 5,000	395,811,000
Manufactures	753,530,000	789,622,000
Postal Parcels	61,386,000	71,198,000
Totals	1,428,585,000	1,530,687,000
Excess, imports	284,752,000	148,465,000

There was a decrease of 34,185,000 fr., or 2·0%, in the total imports, wholly in the articles classed as food, since there was a decided increase in raw materials. The exports showed an increase of 102,102,000 fr., or 7·1%, of which nearly half was in manufactures and in postal parcels, which are chiefly small manufactured articles. The net result was a decrease of 136,287,000 fr., or 47·8% in the excess of imports. The best features about this return are the increases in imports of raw materials and in exports of manufactures.

The discussion over the Bank charter still continues, the propositions of interest submitted lately being for the establishment of an agricultural bank, the chief object of which will be to discount for farmers and land owners. To this it is proposed that the Bank of France shall subscribe a considerable part of the capital.

The Madagascar projects are slowly maturing, notwithstanding some unfavorable reports which have been circulated. These, it must be noted, have come entirely from British sources—which is a very significant fact.

AZOTE.

Rossland, B. C. June 30.

(From Our Special Correspondent.)

The first half of the present year ending to-day suggests a comparison of the output with that which is given in the earlier days of the camp, and a very good idea of the progress made by the Rossland camp may be formed from the figures presented.

Mr. Carlyle, Provincial Mineralogist, in Bulletin No. 2, issued a year ago, gives the total number of tons of smelted ore from the Rossland camp up to July 1st, 1896, as 27,085 tons, the gross value being given at $1,007,007, the average value per ton being placed at $37.18. The official tabulation of the figures for the past six months is in course of preparation, but not waiting until they appear in official form, I have tabulated them from the various statements so far published, and the following is the result: Smelting ore shipped from the Rossland camp from January 1st to June 30th, 1897, was 30,154 tons; concentrating ore, 2,702 tons; total, 32,856 tons, being 5,771 tons more than the entire production in all up to July 1st, 1893. If Mr. Carlyle's average, viz., $37 18, be given it would give a total valuation of $1,221,586 for the first half of the present year, but this is a very conservative average, the average this year being nearer $40, with a valuation of $1,314,240.

The shipments from the four mining divisions of Slocan for the first half of the present year reach 20,000 tons which, it is claimed, will average $70 per ton or $1,400,000, being a total of $2,714,240. In addition to this total matte the product of local smelters is placed at $1,500,000, making a total of $4,214,240 for the first half of the present year in West Kootenay.

LATE NEWS.

INTERNATIONAL GOLD MINING CONVENTION.—At the opening session at Denver, Colo., there were at least 400 delegates in the city, representing 20 States, and 200 more are expected. There are representatives from Venezuela, Mexico and British Columbia. At the Miners' National Bureau of Information are arranged displays of rich metallic ores from nearly every mining district on the continent. Probably the richest of these came direct from the Nashville Exposition. They represent the mines of North Carolina and Georgia, and are valued at $1,000,000. A. F. Hunter, Chairman of the Executive Committee, called the convention to order. Acting Mayor O. B. Scobie welcomed the delegates on behalf of the city, and was followed by Governor Alva Adams, temporary chairman, who delivered an address of welcome and explanation of the purposes of the convention. At the session on July 8th a large number of resolutions were introduced. One of these, by B. F. Gilture (California), was to the effect that development of mines in California, Arizona, New Mexico and Colorado is greatly hindered by reason of the claims of Spanish land grant owners to all mineral that exists within the boundaries of such grants, and urging Congress to take prompt action toward affording relief by legislation, throwing open to prospectors, miners and mining operators all mineral land within Spanish land grants. The resolutions were referred to the committee on resolutions.

[BY TELEGRAPH.]

(From Our Special Correspondent.)

LEADVILLE, COLO., July 8.—A fierce fire took place in the workings of the Big Four Mining Company this morning, which destroyed the engine, boiler and shaft-houses. A lot of machinery was also damaged and the flames made a rapid headway, burning down the shaft about 50 ft. The fire originated in the drying-room and it is supposed that a candle left burning by a miner was responsible for it. The estimated loss of the company is $8,000, but there is insurance on the property valued at $2,500. At the time the fire started there were five miners in the property, but all climbed up the 400 ft. to the air shaft safely, and thus escaped. One miner, James Gallagher by name, however, was killed. He had been climbing with the others and when within 7 ft. of the top of the air shaft he lost his balance and was thus dashed to death. The Big Four is considered a valuable property, and is owned by Farwell, Chase and other Chicago parties. The workings that were destroyed will be rebuilt at once.

STOCK QUOTATIONS.

NEW YORK.‡

Name of Company.	Location.	Par val.	July 3. H.	July 3. L.	July 5.§ H.	July 5.§ L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	July 8 H.	July 8 L.	July 9. H.	July 9. L.	Sales
Alamo	Colo.	1	.04						.03						500
*Anaconda	Colo.	1						.42							
*Anchoria-Le.	"	1													
Annetta	"	1	.38				38¼		.38⅜	.38⅛	.40	.39	.40⅛	.40	5,000
*Argentum-Jun	"	5		.56											
Barcelona	Nev.														
Belcher	"	100													
Best & Belcher	"	100													
Brunswick	Cal	1													
Cannon Ball	Colo.	1							.08	.005			.01	.008	11,000
Chollar	Nev	10													
Chrysolite	Colo	50													
Colombian Gold	R. of C	1									.83	.80	.80		400
*Comstock T	Nev	100					.05								1,900
Con. Cal. & Va.	"	100	1.5				1.2								200
Con. Imp	"	100													
Creede & C. C.	Colo.	1							.04		.04		.02		1,900
Cripple Cr. Con.	"	1	.12				.10		.10		.10				2,500
Crœsus	Colo.	1													
Crown Pt	Nev	100													
Deadwood	S.Dak	2													
Eagle	Colo.	5									.02		.02	.01¼	7,000
*Elkton	"	1						1.00							
Fanny B.	"	1	.05						.06						1,100
Favorite	"	1													
Garfield Gro'se	"	1							.05						500
Gold Cliff	Colo.	1													
*Gold Coin	"	5					4.75	4.25							
*Golden Fleece	"	1		.25											
Gold. San Juan	"	1	.20								.20				1,000
Gould & Curry	Nev.	10													
Hale & Norcross	"	100							.75						200
*Homestake	S.Dak	100	40.00	35.00			40.00	35.00	40.00	35.00	40.00	35.00			
Horn Silver	Utah	25													
Iron Silver	Colo.	2													
Isabella	"	1							.32						200
Jack Pot	"	1	.05⅛								.06		.05⅛		2,700
Japan	"	10													
Jefferson	"	1													
King & Pemb.	Ont	10									.28				100
Lacrosse	Colo.	10					.13								1,300
Leadville Con.	"	10	.13				.13						.14		2,800
Little Chief	"	50													
Mercur	Utah	25													
Mexican	Nev.	100													
Miami	Colo	1	28⅞	28⅛			.30	.28⅛	30⅛	.29⅛	21	3¼	.31⅜	.30⅜	22,800
Mollie Gibson	"	5					.77								
Moulton	Mont	5													
Mt. Rosa	Colo.	1							.09				.09		1,100
New Haven	"	1	.02½								.02½	.01½	.02		6,000
Old Dominion	Ariz.	25													
Ontario	Utah	100													
Ophir	Nev	100							.90						250
Pharmacist	Colo	1	.11				.11		.10		.10				4,200
Phœnix Con.	Ariz.	100											.09		1,000
Plymouth	Cal	10													
Portland	"	1	.74												200
Potosi	Nev.	100													
*Quicksilver	Cal.	100	2.50	1.00			2.50	1.00	2.50	1.00	2.10	1.00			
*do. pref.	"	100	8.10	7.00			8.00	7.00	8.00	7.00	8.00	7.00			
*Red Mountain	Colo.	5	.12	.10			.12	.10	.12	.10					
Russell	N. C.	1	.53						.51	.50	.52	.51	.51	.50	5,700
Sierra Nev.	Nev.	100							1.00						200
Small Hopes	Colo	20							.62				.62		
Specimen	"	1									.02½	.02			2,000
Standard Con.	Cal.	100	1.55												100
Syndicate	Colo.	100					.05								2,000
Templar	"	1													
Union	"	1		.14				.14		.14		.14		.14	
Union Con.	Nev.	100													
*Utah Con.	"	100													
*Victor	Colo.	5													
Work	"	1	.05⅛						.05						1,000
*Yellow Jacket	Nev.	100													

COAL AND INDUSTRIAL STOCKS.

Name of Company.	Location.	Par val.	July 3. H.	July 3. L.	July 5.§ H.	July 5.§ L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	July 8 H.	July 8 L.	July 9. H.	July 9. L.	Sales
*American Coal	Md.	25	125	110			125	110	125	110	125	10			
*Col. C. & I. Dev	Colo.	100	1	⅛					1	⅛	1	⅛			
Col. Fuel & I.	"	100	17⅛	17⅛			17⅛						17		525
Col. & H. C. & I.	Ohio.	100	5	3⅛			5	3½	5	3⅛	5	3⅛			
*Con. Coal	Md.	100	38				38		38		58				
Edison E I of B.	N. Y	100									108½				
do. E. I of N. Y	"	100					116						116	113⅛	
General Elec.	"	100	33¾	33⅝			33⅜	33¼	34	33⅛	33¼	33⅛	33⅝	53⅛	1,716
Illinois Steel	Ill.	100	40	34			39	34	38	34	38	35			
*Maryland C pr	Md.	100	60	40					60	40	60	40			
Minnesota Ir.	Minn.	100					52¼						55	52	857
National Lead	N. J.	100	29⅞				29⅛	28⅜	30⅛	29⅞	30	29⅛	30¼		2,773
New Central C	Md.	100					7	5⅛	7	5	7	5			
New N.S. & D D.	Va.	100													
Oregon Impr	Ore.	100													
*Pennsylv'nia C	Pa.	100	325				320		320		320				
Penn. Steel	"	100													
*Standard Oil		100	322½	322			321½	320	317	316	316	315½			
Tenn. C., I. & R.R.		100	24						23⅜	22	23¼	22⅝	23	22½	9,078
Worth. Pump	N. Y.	100													
*Worth P., pref	"	100	84	80			84	80	84	80					

‡Official quotations. New York Stock Exchange, mining, 200 shares; other stocks, 14,943 shares; Consolidated Stock and Petroleum Exchange, mining, 8,250 shares; Mining Exchange, 68,800 shares. Total shares sold, 92,193. * Bid and ask quotations. † Ex-div. § Holiday.

PHILADELPHIA, PA.†

Name of Company.	L'cation.	Par Val'e	July 1. H.	July 1. L.	July 2. H.	July 2. L.	July 3. H.	July 3. L.	July 5.§ H.	July 5.§ L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	Sales
Cambria Iron	Pa.	50	35.13				35.25	35.00							203
Choc.&Glf.Ctfs	I. T.	50	7.88	7.63											325
Conn'ls.Gas C	Pa.	5													
Hunt & Br.Top.	"	50													
" pref	"	50													
Penn.Gas Coal	"	50													
*Pa.S'ltMfg.Co	"	50		102		102								102	
Penna. Steel	"	100											25.13	25.00	35
" pref.	"	100													
UnitedGas Im	Can.						73⅜‖								62
Welsb. of Can	"	5											1.63		150
Welsb. Com'l	Pa.	100													
" Com.pr.	"	100			68.00										15
" Light	"	100	46.00	46.50	46.00	45.50							45.75	45.50	451
*West. Coal	"	50	50.00	49.00	50.00	49.00							50.00	49.00	

† Official quotations Philadelphia Stock Exchange. *Bid and asked quotations Total sales, 1,241. § Holiday. ‖ Ex-dividend.

PITTSBURG, PA.*

Week ending July 7.

Name of Company.	Location.	Par val	Bid.	Ask.	Selling price	Name of Company.	Location.	Par val	Bid.	Ask.	Selling price.
Allegheny	Pa.	$100				N.Y. & C. Gas C.	Pa.	$50			
Carborundum	"	100				Peoples' Nat. Gas.	"	50			
Chartiers Val.	"	100				Peoples' Pipeage.	"	25	11	14½	
Enterprise Mg	Colo.	5				Pennsylvania Gas	"	50	6		
Lustre Mg.	Mex.	10	10	10¼		Philadelphia Gas	"	50	18	18⅜	
Mansfield Coal	Pa.	50				Silverton Mg	Colo.	10			
Manufact. Gas	"	50				Wheeling Gas	W.V.	50			

* Official quotations Pittsburg Stock Exchange.

BOSTON, MASS.‡

Name of Company.	Location.	Par val.	July 2. H.	July 2. L.	July 3. H.	July 3. L.	July 5.§ H.	July 5.§ L.	July 6. H.	July 6. L.	July 7. H.	July 7. L.	July 8. H.	July 8. L.	Sales.
*Ætna Con, q	Cal	5		4.00		4.00				4.00		4.00	4.00	3.50	
*Allouez, c	Mich.	25	.75	.50	.75	.50			.75		.75		.75		
Anaconda, c	Mont.	25													
Arnold, c	Mich.	25	3.43		3.63	3.43			3.63		3.75	3.63	3.75		3,250
Atlantic, c.	"	25											22.50	22.00	250
Bonanza	Colo.	10													
*Bost. & C.C., g.	"	1									.08				200
Bost.&Mont,gsc	Mont.	25	134	132¾	134¼	133⅝			133¾	133⅛	133⅛	132⅜	133⅛	132⅛	3,237
Butte & Bost., c	"	25	23.00	21.88	23.00	22.50			22.63	22.13	23.00	22.00	23.00	22.38	15,030
Cal. & Hecla, c	Mich.	25	390		390				395		395		395		93
Catalpa, s l	Colo.	10													
Centennial, s.	Mich.	25	7.38	7.13	7.38	7.25					7.25	7.13	7.25	6.50	1,543
Central, c.	"	25													
Dominion Coal.	N. S.	100	10.50		10.50						10.50		10.50		490
do. pref.	"	100	84.50		84.50						83.00		83.00		172
Franklin, c.	Mich.	25	16.00	15.00							15.00				160
Gold Coin, g	Colo.	5	4.63	4.50	4.50				4.50		4.50	4.38	4.63	4.50	2,120
*Humboldt, c.	Mich.	25									1.00	.75			
Illinois Steel	Ill.	100	37.00												10
Kearsarge, c.	Mich.	25	19.00	18.25	19.50	19.00			19.13	18.88	21.25	19.25	21.00	21.13	6,069
Lake Sup. Iron	"	25													
Merced, g.	Cal.	15									9.50	8.50	9.00		1,480
*Napa Con, q	Cal.	7	6.50	6.00	6.50	6.00			6.50		6.50		6.50		
National, c	Mich.	25													
Old Dominion, c	Ariz	25	19.25	19.13	19.75	19.25			19.25	19.13	19.25		19.50	19.38	1,745
Osceola, c.	Mich.	25	36.00	32.63	35.25	35.75			36.00	34.75	36.00	34.5	35.00	35.25	4,930
Pioneer, g.	Cal.	10	5.88	5.63	5.63				5.75		5.63	5.56	5.88	5.75	2,966
Quincy, c	Mich.	25	116		118	116⅛			118		120	118	119⅛		339
Ridge, c.	"	25													
San. Ysabel, g.	Cal.	5									15.75	13.50	15.75	15.00	2,725
Tamarack, c.	Mich	25	128	125	128				128		132	128	135	132	495
Tamarack, Jr., c	"	25	21.50	20.25	21.74	21.50			21.0	20.75	21.50	20.75	21.50	21.25	1,958
Tecumseh, c.	"	25	1.00												500
Wolverine, c.	"	25	10.63		10.63	10.50			10.63	10.38	10.63	10.50	11.00	10.75	1,735

‡ Official quotations Boston Stock Exchange. *Bid and ask quotations. Total sales, 51,547. § Holiday

BALTIMORE, MD.*

Week ending July 8.

Name of Company.	Location.	Par value	Bid.	Ask.	Name of Company.	Location.	Par value.	Bid.	Ask.
Atlantic Coal.	Md.	$10			Howard C.&C	Md.	$5		
Big Vein Coal	"	10			Newburg Orrel C.	"	25		
Consolidation Coal	"	10	38½		Silver Valley	N. C.	5		
Georges Creek Coal	"	10	104⅛	106					

*Official quotations Baltimore Stock Exchange.

CLEVELAND, O.*

Name of Company.	Par value.	July 7. Bid.	July 7. Ask.	Name of Company.	Par value	July 7. Bid.	July 7. Ask.
Aurora	$25		$4	Lake Superior	$5	$18	$20
Chandler	25	$38	40	Minnesota	100	54	56
Cleveland-Cliffs	100	27	30	Pittsburg & L'ke Angeline	25	65	
Jackson	25			Republic	25	8⅛	10

*From our special correspondent.

ASPEN, COLO.

July 2.

Name of Company.	Location.	Capitalization	Par value.	Quotations. Bid.	Quotations. Ask.
Agnes C	Manitou, Colo.		$1.00		
Alta Argent	Aspen "	$2,000,000	1.00	$0.03¾	$0.04¼
Argentum-Juniatâ	" "	2,600,000	2.00	.38⅛	.40
Aspen Contact	" "		5.00		.12
Aspen Deep	" "		1.00	.03	.03⅛
Aspen Mining and Smelting	" "	2,000,000	10.00	1.20	1.25
Bank ok Cora Bell	Leadville "	600,000	1.00	.02⅛	.03
Best Friend	Aspen "		1.00	.01⅛	.02
Bi-Metallic	" "		1.00	.00⅞	.01⅛
Bushwhacker	" "	2,000,000	1.00	.04¼	.05¼
Della S. Consolidated	" "	1,000,000	1.00	.21	.23
Gold Valley Placer	" "		1.00	.01	.0 ⅛
Homestead	Rapid City, S. D.			.08	.09
Ingersoll	Neihart, Mont.			.02¼	.02⅛
Little Annie	Aspen, Colo			.01½	.02
Mineral Farm Consolidated	" "		1.00	.01	.02⅛
Mollie Gibson Consolidated	" "	5,000,000	5.00	.56	.61
Roaring Fork	" "	3,000,000	1.0		.12
Sheep Mt Tunnel	" "	2,000,000	1.00	.01⅜	.02
Smuggler	" "	1,000,000	1.00	.65	.66
Tenderfoot Consolidated	" "	2,000,000			.01⅛
Union Leasing & Mg.	Leadville, Colo.	500,000	1.00	.03½	.04⅛

COLORADO SPRINGS, COLO.‡

Name of Company.	Par val	June 28. H.	June 28. L.	June 29 H.	June 29 L.	June 30. H.	June 30. L.	July 1 H.	July 1 L.	July 2. H.	July 2. L.	July 3. H	July 3. L	Sales.
Alamo	$1	.03¼				.03⅜						.03¼	.03	8,000
Anaconda	5	.52½	.52	.50				.50				.52	.40	1,900
Arg'ntumJ	2	.39	.37⅛	.40	.37	.39⅛	.38⅛	.39	.37⅛	.39	.37	.37	.38¼	27,450
Banner	1													
Bob Lee	1					.006½								1,000
Cr. & C. C.	1													
C. C. Con.	1	.11⅜	.09¾	.12	.11	.11⅛	.10⅜	.10⅜	.10	.10		.09⅛	.09	17,875
Des Moines	1													
Elkton	1	1.02	1.01	1.01	1.00	1.01⅛	1.01	1.02	1.01	1.01⅛	1.01	1.01⅛	1.01	9,100
Fanny R.	1	.14⅝	.14½			.15¾	.15¼	.15¼	.15					8,500
Favorite	1													
Findley	1													
Franklin	1													
Gold Fl'ce.	1													
Gold & Gl.	1			.12¾	.10	.12						.20	.09⅝	5,500
Hayden G.	1	.007												14,000
Isabella	1	.31¾	.31⅛	.31¾	.31	.31⅛	.31	.31⅛	.30⅛	.30⅛	.30⅛	.30⅛	.30	29,406
do. stamp.	1													
Jack Pot	1	.05⅝	.05⅛					.05½				.05½	.05¼	12,500
Lillie	1									.15				500
Magnet R.	1													
Marion	1													
Matoa	1													
Mollie G.	5	.56	.32½	.57	.50	.70	.63	.78	.71	.70	.60	.56	.55⅛	104,250
Mt. Rosa	1													
NewHaven	1			.01⅜	.01¼									9,000
Oriole	1									.01¼				12,000
Pharmacist	1	.09		.09¼	.09	.09		.09				.09	.08	20,600
Pilgrim C	1							.01⅜				.01½	.01⅜	5,000
Portland	1	.75		.78		.76	.73	.78	.76½	.78	.76	.76	.74	2,050
Specimen	1			.03¼				.03½		.02⅜		.03⅞	.03⅜	7,500
Trachyte	1			.01¼								.01¼		1,000
Union	1			.16¾	.16¼	.16½	.16⅜	.16	.15⅛	.14⅛	.14¼	.13⅛	.13¼	45,450
Work	1			.05	.04⅞	.05						.05	.04¾	4,000

‡Official quotations Colo. Springs Mining Stock Assoc. Total shares sold Listed, 345,581; unlisted, 137,500.

STOCK QUOTATIONS.

DENVER, COLO.‡

Name of Company.	Par val	June 28. B.	June 28. A.	June 29 B.	June 29 A	June 30. B	June 30. A.	July 1. B.	July 1. A.	July 2. B.	July 2. A.	July 3. B.	July 3. A.	Sales
*Adrie C	$1	.004¾	.006	.004¾		.004								
*Ætna Gold	1					.003	.004			.002½	.003⅛	.003		
*Agate	5									.00⅜				
*Alamo	1			.02¾	.03¼			.03⅜	.03½	.03¼	.03⅝			
Anac'da G	1	.51⅛	.52½	.49	.53	.45		.45		.44	.46	.45½	.46	10,600
*Anchoria	1	.98	1.02	.98	1.02									
*Andes	1	.12	.03					.002		.002½	.005			
Aola	1	.009¼	.01	.01		.009¾	.010	.009¾	.010	.009½	.010	.009¾	.010½	3,000
ArcadiaCon	1	.02¼		.02¾	.02½									5,000
Arg. J	1	.36	.37½	.39	.39⅛	.38⅛		.37½	.38¾	.39	.39⅛	.37⅛	.38⅛	3,500
*Bangkok	1					.02¼				.02		.01¾		
*Bankers	1	.03	.05	.03	.04	.03⅜	.04⅛	.03¼	.04⅛	.03⅛	.04			
Ben Hur	1	.03⅛		.04⅛	.04⅛	.03⅜	.04¼	.03⅜	.04	.03⅜	.04			6,000
*BigJohnny	1	.002½	.002¾	.002½	.003			.002½	.003	.002½	.003	.002½	.003	
*Buckhorn	1			.01⅜	.02⅛									
CannonBall	1	.004	.005	.003¾	.005	.004⅛	.004¾	.004⅛	.004¾	.004¼	.004⅛	.004¼	.004⅛	12,000
Champagne	1	.002½	.002⅛	.002⅛	.002⅛	.002	.002⅛	.002⅜		.002	.002⅛	.002⅛	.002⅛	18,000
*Colo.C.&M	1	.01⅛	.01⅞	.01⅛	.01⅞			.01⅛	.01⅜	.01⅛	.02			
Colo Giant	1	.008½	.009	.007¾	.008¼	.007¾	.008⅛	.007¾	.008¼	.007⅛	.008	.007⅛	.008⅛	41,000
C. K. & N	1	.009	.009¾	.007	.009	.009¼	.009⅛	.008		.005	.007	.006	.008	8,000
Cr. & C. C.	1	.02⅛												2,000
C. C. Con	1	.10⅜		.12		.11⅛	.12	.09⅛	.10⅜	.09⅜	.09⅞	.09		6,000
Dictator	1	.001		.00¾	.001	.001		.00¾	.001	.00¾		.00¾	.001	52,000
Drexel	1	.05¼			.07	.06								32,000
*Elkton	1	1.00	1.05			1.01⅛	1.04	1.02	1.04⅛	1.02				
Finance	1					.003⅛	.004	.003¾	.008					50,000
Findley	1	.01	.010¼			.01	.010⅛	.01		.009	.010¼	.010⅛		6,000
*Garf. Gr	1	.04	.05	.04⅝	.05	.046	.04	.04						
Geo. Wash	1	.03						.002⅛	.003	.002⅛	.002¾			1,500
Gold Field	1	.00¾	.001¼	.001		.001	.001⅛	.001¼	.001⅛	.00¾	.001⅛	.001	.001⅛	4,000
*G. Fleece	1									.21	.25			
*Gold & Gl.	1							.10		.15				
Gold. Hope	1			.003¼		.003⅛		.001⅜		.001¾	.002⅛			158,000
GoldStand	1			.03		.03	.03⅛	.03	.03⅛	.02¾	.03⅛			29,500
Gregory	1	.005		.005		.004¾		.004¾	.005	.005½		.004⅛	.005	39,000
" Leasing	1					.01⅜		.01	.02	.01	.01⅜	.01	.01⅛	11,000
Hansel	1							.03¼	.03⅛					50,000
Hayden	1			.07⅛										2,000
*Henrietta	1	.002⅛	.002⅛	.002¾	.004			.003		.003	.004⅛	.003¼	.004	
Illinois	1	.006		.006		.006		.006		.006½	.07	.006⅛	.008	27,000
*Iron Clad	1	.04¼	.04⅞	.04	.05	.03⅜	.06			.06				
Isabella	1					.30	.31	.31	.32	.31		.20	.3½	6,100
*Jack Pot	1									.0⅜		.05¾	.05⅝	
*Jefferson	1	.08	.09											
*Justice	1	.01¼	.01⅛			.01¼	.02			.01¾	.02	.01¼	.02	
Justine	1	.00⅛	.002			.001⅛		.01	.02	.001½	.02			10,000
*Kimberly	1	.02¾	.02⅝	.02⅛	.03⅛	.02⅞	.03¼	.02¾		.02¾		.03	.04	
Mollie Gib	5	.50	.51			.60	.66	.74	.76⅛	.63	.71	.55	.56	38,000
*Monon	1	.001⅛	.001½					.00½		.00½	.001¼			
Mt. Beauty	1			.02¼	.02⅜							.02	.02¼	2,000
Old Gold	1	.004	.004⅛	.004¾	.005¼	.005	.005¾	.004¾	.005⅛	.004⅛	.005	.004	.004⅛	222,000
Old Greg.	1					.05	.05⅛							40,000
Peoples	1			.01⅜		.00⅜				.01⅜				
Pharmac't	1	.08½				.08¼	.09⅛			.08	.09			300
Pilgrim	1	.003	.004											4,000
Portland	1	.70	.75	.74	.77	.65	.78	.70	.75⅛	.70	.76	.65	.79	
Puritan		.002		.002¼	.003					.002				5,500
Q. Victoria	1	.002		.01⅜		.01½								1,000
Royal Age	1	.01⅜	.002¼	.001⅜		.00⅜		.001⅜		.001⅛	.001⅜	.001⅛		54,000
Santa Fe	1	.001½		.001½	.002							.001¼		18,000
Senator	1					.00⅜	.001	.001⅜				.00⅛	.001	6,900
Sentinel	1					.001⅜	.002¼	.002		.001⅜	.002¼	.001⅜		20,000
Seven Hills	1							.004⅜	.005	.005	.007⅜			7,000
Smuggler	1			.75								.74	.75	
Tamarack	1					.02¼	.02⅜	.02¼	.02⅜	.02¼	.03	.02⅛	.03	
Three H's	1	.002¼		.002⅛	.003	.002	.002⅛	.002⅛	.002⅛			.002	.002⅛	79,000
Union Gold	1	.16⅜			.17⅛	.16⅛	.17	.15	.16¼	.14⅛	.16	.13	.14⅛	7,000
Va. M.	1	.03		.02⅝	.02⅜			.02¾	.03			.02⅛	.03	2,000
W. Cr. Con.	1	.00⅜	.00⅜									.00¼	.00⅜	
Work	1	.04		.04	.05⅛	.04⅛	.05⅛		.05⅛					

‡Official quotations Colorado Mining Stock Exchange. *Bid and ask. quotations. Total shares sold, 1,286,200.

BUTTE, MONT.

July 2.

Name of Company.	Par value.	Bid.	Ask.	Name of Company.	Par value.	Bid.	Ask.
Alice, g. s	$25	$0.70	$0.75	Havana G. & S. M.		$0.50	$0.55
Am. Dev. & M.	1	1.00	1.15	Hope (Granite Co.)	$10	1.50	2.00
Bald Butte	1	.80	1.00	Iron Mtn., s. l	10	.35	.38
Bi-Metallic, g. s	25	1.80	1.85	Merrill Gold	1		
Combination	10	.20	.25	Moulton	5	.20	.25
Con. Tiger & Poorman.	1	.30	.35	Potosi		.05	.06
Elizabeth				Royal Gold		.15	.16
Exemption			.05	Southern Cross			.15
Granite Mtn., g. s	25	1.00	1.10	Sunrise			.20

HELENA, MONT.*

Week ending July 1.

Name of Company.	Location.	Company's office.	Par value.	Bid.	Asked	Shares sold.	Price.
Am.Dev.&M.Co.	Mont. & Idaho	Boston, Mass., & Butte, Mont.	$1	$1.00	$1.25		
Bald Butte	L. & Cl'ke Co.	Helena "	1	1.50	2.50		
Bi-Metallic	Granite "	St. Louis, Mo.	5				
Combination	" "	" "	10				
Granite Mt	" "	" "	25				
Helena & Frisco	Shoshone "	Helena, Mont.	5	5.00	7.50		
Iron Mountain.	Missoula "	" "	10	.25	27½	7,000	25-27½
Judge	Meagher "	" "	5	.07½	.09		
Merrill (Gold)	Jefferson "	Butte "	1				
Ontario	DeerLodge "	Helena "	1				
Yellowstone	Meagher "	" "	5	.07½	.10		

* Special Report of Samuel K. Davis. Total shares sold, 7,000.

SAN FRANCISCO, CAL.*

Name of Company.	Location.	Par. value.	July 2.	July 3.	July§ 5.	July 6.	July 7.	July 8.
Alpha Con.	Nev.					.18	.12	.13
Alta	"							
Andes	"	100				.16	.15	.15
Belcher	"	100				.2	.18	.18
Best & Belcher	"	100				.43	.44	.44
Bullion	"					.10	.10	.10
Caledonia	"	100				.09	.09	.08
Challenge	"					.43	.41	.38
Chollar	"	100				.78	.78	.74
Confidence	"	100				1.10	1.05	1.15
Con. California & Virginia	"	100				1.40	1.35	1.35
Crown Point	"	100				.22	.20	.18
Exchequer	"					.01	.01	.01
Gould & Curry	"	100				.35	.34	.34
Hale & Norcross	"	100				.50	.85	.85
Julia	"							.04
Kentuck Con	"					.05	.05	.04
Mexican	"	100				.39	.35	.35
Occidental Con	"	100				.15	.15	.14
Ophir	"	100				1.08	.68	.65
Overman	"					.10	.10	.08
Potosi	"	100				.40	.40	.38
Savage	"	100				.27	.25	.24
Sierra Nevada	"	100				1.00	1.00	.91
Silver Hill	"					.01	.01	.01
Standard	Cal.	100				1.50	1.50	1.50
Union Con.	Nev.	100				.45	.43	.41
Utah Con.	"					.05	.07	.07
Yellow Jacket	"	100				.54	.48	.47

*Official telegraphic quotations, San Francisco Stock Exchange. § Holiday.

LOS ANGELES, CAL.*

Name of Company.	Location.	Par val	June 14. H.	June 14. L.	June 15. H.	June 15. L.	June 16. H.	June 16. L.	June 17. H.	June 17. L.	June 18. H	June 18. L.	June 19. H.	June 19. L.	Sales
Anaconda	Colo.	$1	.48	.45	.46	.45	.47	.45							1,000
Argentum-J	"	2													
Brown Dake	Ariz.	1											.44		
Brown M. & M.	Cal	1	.15	.10			.15	.10			.12½	.10	.12	.11	
Cariboo	B.Col.	1	.50	.49	.49	.48	.49¼	.48	.49¼	.49⅜	.48⅜	.48⅛	.49⅛	.49⅜	3,000
Iron Mtn.	Colo.	1	.02	.01⅛	.01⅛	.01¼	.02	.01⅛					.01⅜	.01⅝	9,000
Laguna	Cal	2½	.09¾	.09⅛			.09¾	.09½	.09⅜				.09⅛	.09	6,000
Little Butte	"	1											.2	.10	
Mollie Gibson	Colo.	2	.64	.63	.65	.64									5,000
Pacific Con.	Cal	1											.01⅜	.01	
Portland	Colo.	1							.57	.56			.58	.57	100
Rand Mtn	Cal	1	.01	.01	.01⅛	.01	.01⅛	.01⅛	.01⅛	.01⅛	.01⅜	.01⅛	.01⅛	.01⅜	133,000
Red Cloud	Colo.	1	.01⅛	.01	.01⅛	.01¼	.01⅛	.01¼					.01⅛	.01¼	3,000
Wedge	Cal.	1	.86	.85	.86	.85⅛	.86¼	.85⅜	.86⅛	.86	.87	.86⅛	.89	.88⅛	43,000

*Official quotations, Los Angeles Mining and Stock Exchange. Total sales, 203,100 shares.

SALT LAKE CITY, UTAH.*

Week ending July 3.

Stocks.†	Numb'r of shares	Par val.	Bid.	Asked.	Actual selling price.	Stocks †	Numb'r of shares	Par val.	Bid.	Asked.	Actual selling price.
Ajax	300,000	$10	$0.40	$0.45	$0.45	Homest	400,000	$1	$1.01¼	$0.02½	
Alliance	100,000	1				Horn Silv.	400,000	25			
Anchor	150,000	10	.60	1.00		LittlePitts	400,000	5	.03¼	.03¾	
Annie		1				Lucky Bill	120,000	2½			
Bogan.	120,000	10				Malvern		5			
§BrickCon	500,000	1		.70		Mammoth	400,000	5	1.30	1.40	$1.35
B. B. & C.	100,000	10	5.25	5.50		Mercur	200,000	25	7.75	7.85	7.75
Buckeye	500,000	1	.08	.10		No. Light	400,000	5	.85	.90	
Cent. Eur.	30,000	50	31.00	45.00		Omaha	100,000	2	.25	.30	
Dalton	100,000	5	.01½	.02		Ontario	150,000	100	6.25	6.50	6.25
Dalt'n & L	2,500,000	1	.09	.12		Opex	300,000	1			
Daly	150,000	20	2.50	3.25		Rich.-An	500,000	1	.01	.02	
Daly West	75,000	20	6.00	7.00		Sacram	1,000,000	5	.19	.20	.19
‖Dexter.	200,000	5	1.75	1.80	1.77½	Silver K.	150,000	20	12.00	14.00	
Eagle	150,000	1	.03½	.05	.04	Sunbeam	250,000	1	.06	.07	.06½
Emerald	100,000	1	.07½	.08	.07½	Sunshine	250,000	10	.25	.30	.29
Four Aces	250,000	1	.05	.08	.07	Swansea	100,000	5	2.20	2.35	2.15
Galena	100,000	10	.85	1.00		So. Swan.	150,000	1	1.52½	1.60	
G'ser-Mar	300,000	5	1.27½	1.32½	1.29	Tetro.	500,000	1	.02½	.03½	
Gr. Cent	250,000	1		1.15		Utah	100,000	10	.75	.80	

*From Our Special Correspondent. † Utah companies. § Mines in Vanderbilt, Cal. ‖ Mines in Tuscorora, Nev.

ROSSLAND, BRITISH COLUMBIA.*

June 23.

Name of Company	No. of shares.	Par value	Selling price.	Name of Company.	No. of shares.	Par value.	Selling price.
Alberta	1,000,000	$1	$0.06	Monte Cristo	1,000,000	$1	$0.18
Big Chief	1,000,000	1	.07	Morning Star	1,000,000	1	.05
Big Three	3,500,000	1	.05	Nest Egg		1	
Blue Bird	600,000	1	.04	Noble Five	1,200,000	1	.25
Butte	1,000,000	1	.05	Novelty	1,000,000	1	.04
Caledonia Con	1,000,000	1	.04	O. K	1,000,000	1	.15
California	2,500,000	1	.04	Palo Alto	500,000	1	.05
Cariboo	800,000	1	.50	Phœnix	500,000	1	.03
Curlew		1	.05	Poorman	1,000,000	1	.07
Colonna	1,000,000	1	.18	Rambler Con	1,000,000	1	.50
Commander	500,000	1	.15	Reco	1,200,000	1	
Delaware	1,000,000	1		Red Eagle	1,000,000	1	.10
Deer Park	1,000,000	1	.16	Red Mt. View	1,000,000	1	.08
Dundee		1	.20	Red Point	1,000,000	1	.07
Ellen	1,000,000	1	.05	Rossland Develop. Co.		1	
Eric	1,000,000	1	.05	Rossland Homestake.	1,000,000	1	
Evening Star	1,000,000	1	.10	Rossland R. Mtn.	500,000	1	
Giant	2,750,000	1	.07	Rossland Star	1,000,000	1	.10
Great Western	1,000,000	1	.15	St. Elmo	1,000,000	1	.05
Hattie Brown	1,000,000	1	.05	St. Paul	1,000,000	1	.05
Helen	1,000,000	1	.06	Silver Bell	1,000,000	1	.08
High Ore	1,000,000	1	.14	Slocan Star	500,000	1	2.45
Ivanhoe	1,000,000	1	.05	Sunshine		1	
I. X. L.	1,000,000	1	.15	Sunset		1	.12
Josie	700,000	1	.43	Union	600,000	1	
Jumbo	500,000	1		Virginia	500,000	1	.07
Le Roi	500,000	5	7.50	War Eagle	2,000,000	1	.98
Lily May	1,000,000	1	.18	White Bear	2,000,000	1	
Mayflower	1,000,000	1	.10	Yale	1,000,000	1	
Monita	750,000	1	.10				

* From Our Special Correspondent.

MEXICO.

Week ending June 30.

Name of Company.	State.	No. of shares.	Last dividend.	Last assessment.	Prices. Opening.	Prices. Closing.
Alianza	Hidalgo	12,800			$5	$5
Amistad y Concordia	"	9,600	$0.70		22	25
Angustias	Guanajuato	2,400	10.00		825	810
Arevalo y Anexas	Hidalgo		10.00		860	800
Asturiana y Anexas	Zacatecas	2,500	10.00		210	200
Barradon y Cabras	Durango	2,100			300	300
Bartolome de Medina	Hidalgo	2,000	3.50		85	90
Cabezon y An	Zacatecas	2,400			30	30
Candelaria de Pinos.	"	2,500			100	120
Candelaria dePanuco	"	1,200			20	20
Candelaria deChalch	"	1,600			80	80
Capuzaya	Durango	2,400			160	120
Carmen	Hidalgo	1,100	7.75		400	410
Castellana y SanRam	Tepic	2,448	3.00		100	80
Cerro Colorado	Chihuahua	15,000		$1.00	10	10
Cinco Senores y An	Guanajuato	2,000	25.00		800	780
Concepcion y Anexas	S. Luis Potosi	2,700			100	100
El Oro	Guanajuato	500			40	60
Esperanza y An	Mexico	3,000			1,600	1,700
Guadalupe	Guanajuato	10,000	2.00		200	180
Huautla	Santa Ana	4,000			70	70
Luz de Borda	Michoacan	4,000			40	50
Luz de Maravillas	Hidalgo	1,100			160	200
Pabellon	"	1,000	27.89		180	200
Palma	Zacatecas	2,400			250	200
Purisima de los Com.	"	2,400			10	5
Real del Monte	Hidalgo	2,554	10.00		900	950
Refugio y Va	"				6	6
Restauradora	Durango	10,000			60	60
Rosario y Anexas	"	4,800			50	60
San Francisco	Hidalgo	3,000	3.00		310	300
S. Ped. Chalchihuites	"	1,000	2.00		80	100
San Rafael y Anexas	"	1,200	20.00		900	850
do. free stock.	"	1,200	14.00		450	400
San Rafael del Oro	Hidalgo	3,000			30	30
Sta. Maria de la Paz.	S. Luis Potosi	2,400			550	570
Sirena	Durango	2,400			80	100
Soledad	Hidalgo	960	7.50		440	400
Sorpresa	"	960	5.00		300	250
Trinidad	Guanajuato	2,000			60	50
Tlauzingo	Puebla	2,400			30	40
Union	Hidalgo	2,000	8.00		350	300
Zaragoza	"	1,100			15	15
Zomelahuacan (gold)	Vera Cruz	5,000			100	100
Zona Min. de Pozos	Guanajuato	2,400		1.50	20	10

NOTE.– In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $50 or $100. Prices are in Mexican dollars.

STOCK QUOTATIONS.

LONDON.

June 25

NAME OF COMPANY.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
			£ s. d	s.d.		£ s. d.	£ s. d.
Alaska-Mexican, g	Alaska	£300,000	1 0 0	3 4.8	Apr., 97	1 5 0	1 10 0
Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	3 17 6	4 2 6
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¼	May "	6 3 9	6 6 3
Cariboo Goldf., pref., g	British Col	100,000	1 0 0			15 0 0	1 0 0
Chiapas, g., s., c	Mexico	252,500	1 0 0			5 0	7 0
De Lamar, g. s	Idaho	980,000	1 0 0	1 0	Nov., 1896	4 1	5 0
Dorlc, g	Colorado	125,000	5 0			3 6	4 3
Elkhorn Priority (New), s	"	80,000	1 0 0			12 6	17 6
Golden Feather, g	California	200,000	1 0 0			6 3	8 9
Golden Gate, g	"	80,000	1 0 0			2 6	3 6
Golden Leaf, g	Montana	350,000	1 0 0			0 6	1 0
Grand Central, g., s	Mexico	250,000	1 0 0	2 0	Dec., 1896	11 3	13 9
Hall Mines, c., s	British Col	250,000	1 0 0			1 5 0	1 7 6
Lillooet, F. R. & Car., g	" "	300,000	1 0 0			1 10 0	1 15 0
Montana, g., s	Montana	660,000	1 0 0	0 6	June, 1896	4 0	5 0
Palmarejo, g., s	Mexico	800,000	1 0 0			1 3	1 9
Plumas-Eureka, g	California	281,250	5 0 0	0 6	Oct., 1896	2 6	5 0
Richmond, g., s., l	Nevada	270,000	5 0 0	0	Dec., "	8 9	11 3
Sierra Buttes, g	California	245,000	5 0 0	0 6	Apr., "	1 5	3 9
Central Chile Copper	Chile	225,000	1 0 0			1 5	7 6
Colomb. Hydraulic, g	Colombia	45,000	1 0 0	1 0	July, 1895	1 5	7 6
Copiapo, c	Chile	200,000	2 0 0	1 6	June, 1897	2 0 0	2 5 0
†Frontino & Bolivia, g	Colombia	140,000	1 0 0	2 0	Mar., "	1 11 3	1 13 9
Santa Anna, g	Brazil	150,000	1 0 0			3 6	4 6
St. John del Rey, g	"	562,000	1 0 0	xn	Jan., 1895	1 0 0	1 2 6
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	Mar., 1896	3 15 0	4 5 0
Tolima B., s., g	"	3,000	5 0 0	5 0	" "	3 0 0	4 0 0
Libiola, c	Italy	252,500	5 0 0	4 0	May 1897	2 2 6	2 7 6
Mason & Barry, c., sul	Portugal	1,650,000	4 0 0	2 6	" "	2 17 6	3 10 0
Rio Tinto, c	Spain	3,250,000	0 0 0	£1	" "	22 7 6	22 12 6
Tharsis, c	"	625,000	2 0 0	7 6	April, "	5 15 0	6 0 0
Bayley's United, g	W. Australia	600,000		5 0	Dec., 1894	4 0	4 6
†Broken Hill Prop., s	N.S. Wales	384,000		8 0	Apr., 1897	2 10 0	2 12 6
Con. Gold Mines, g	W. Australia	375,000	1 0 0			3 9	6 3
Great Boulder, g	"	175,000	1 0 0	4 0	May, 1897	8 0 0	8 2 6
Harquahala, g., s	"	300,000	1 0 0	6	Nov., 1894	1 6	2 0
Hauraki, g., s	New Zealand	4,000	2 6	0 6	Apr., 1897	8 6	9 0
Kapanga, g	"	250,000	1 0 0	b.&it	May, 1896	7 0	8 0
Lake View Consols, g	W. Australia	250,000	1 0 0			7 8 9	7 11 3
Menzies Gold Reef, g	"	175,000	1 0 0	2 0	June, 1896	7 6	10 0
†Mt. Lyell Min & R., l., c	Tasmania	900,000	3 0 0	rts.	" "	10 7 6	11 12 6
Mt. Morgan, g	Que ns and	1,000,000	1 0 0	6	" 1897	3 7 6	3 12 6
Waihi, g	New Zea and	160,000	1 0 0	2 0	" "	6 0 0	7 5 0
Waitekauri, g	"	136,000	1 0 0	1 0	Feb., "	2 10 0	2 15 0
Wentworth, g., s	N. S. Wales	500,000	1 0 0	1 0	Apr., 1896	8 9	11 3
White Feath. Rew., g	W. Australia	80,000	1 0 0			1 0 0	1 2 6
Champion Reef, g	Colar Fields	200,000	10 0	3 0	Apr., 1897	4 11 3	4 3 9
Coromandel, g	"	120,000	1 0 0	1 0	Feb., "	3 18 9	4 1 3
†Mysore Gold, g	"	250,000	10 0	3 6	Mar., "	4 18 9	5 1 3
Nundydroog, g	"	230,000	1 0 0	2 6	" "	4 7 6	4 10 0
Ooregum, g	"	145,000	1 0 0	2 0	Apr., "	3 0 0	3 2 6
Ooregum, pref., g	"	120,000	1 0 0	2 0	" "	3 15 0	3 17 6
British S. Af., chartered	So. Africa	2,500,000	1 0 0	xn	Jan., "	2 8 9	2 11 3
Cape Copper, c	"	600,000	2 0 0	2 6	June, "	2 6 3	2 8 9
†City & Suburban, g	Transvaal	1,360,000	4 0 0	2 0	Jan., "	4 13 9	4 16 3
Con. Deep Level, g	"	240,000	1 0 0	6 0	Oct., 1895	4 15 0	5 0 0
Crown Reef, g	"	120,000	1 0 0	6 0	May, 1897	11 10 0	11 5 0
De Beers Con., d	"	3,950,000	5 0 0	£1	Jan., "	29 3	29 3 9
†Durban Roodepoort, g	"	135,000	1 0 0	2 0	May, "	7 2 6	7 7 6
Ferreira, g	"	90,000	1 0 0	5 0	Jan., "	20 0 0	21 10 0
Geldenhuis Est., g	"	200,000	1 0 0	3 0	Apr., "	3 3 9	3 16 3
†Geldenhuis Main Reef, g	"	150,000	1 0 0	2 0	Feb., 1896	1 0 0	1 2 6
Goldfields Deep, g	"	600,000	1 0 0			7 14 9	8 1 3
†Henry Nourse, g	"	125,000	1 0 0	6 0	Jan., 1897	7 15 0	8 0 0
Heriot (New), g	"	115,044	1 0 0	5 0	May, "	8 5 0	8 11 0
Jagersfontein, d	Orange Fr. St	400,000	5 0 0	5 0	Apr., "	9 2 6	9 7 6
Langlaagte Estate, g	Transvaal	50,000	1 0 0	3 0	Jan., "	4 7 6	4 12 6
Matabele G. Reefs, g	So. Africa	60,000	1 0 0			2 17 6	3 2 6
Namaqua, c	Cape Colony	300,000	2 0 0	1 6	Dec., 1895	2 0 0	2 5 0
Primrose (New), g	Transvaal	300,000	1 0 0	4 0	May, 1897	4 3 9	4 6 3
§Rand Mines, g	So. Africa	400,000	1 0 0			26 17 6	27 0 0
Rhodesia, Exp., lands, etc	"	50,000	1 0 0			4 17 6	5 2 6
Robinson, g	Transvaal	2,750,000	5 0 0	5 0	Jan., 1897	7 17 6	8 2 6
†Sheba, g	"	1,000,000	1 0 0	1 0	Mar., "	2 3 9	2 6 3
Sim. & Jack (New), g	"	5,000,000	5 0 0			3 10 0	3 15 0
Wemmer, g	"	84,000	1 0 0	15 0	Jan. 1897	8 0 0	8 5 0

†Dividend pending. §Rights pending.

PARIS.*

Week ending June 25.

NAME OF COMPANY.	Country.	Product.	Capital Stock.	Par value.	Divs. last year.	Prices. Op'ning.	Prices. Closing
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs	27,000,000	2,000	80.00	2,070.00	2,065.00
" " Firminy	"	" "	3,000,000	500	85.00	1,875.00	1,875.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	790.00	795.00
" " la Marine	"	" "	40,000,000	500	37.50	1,105.00	1,100.00
" " Longwy	"	" "		500	35.00	875.00	910.00
Aguas Tenidas	Spain	Iron pyrites	10,000,000	500	25.00	86.00	81.00
Anzin	France	Coal			170.00	5,025.00	5,010.00
Blache-St. Vaast	"	Steel	1,000		160.00	3,650.00	3,650.00
Bully Grenay	"	Coal		500	80.00	2,360.00	2,360.00
Boleo	Lower Cal	Copper		500	94.50	1,190.00	1,875.00
Briansk	Russia	Coal & Iron				1,355.00	1,257.50
Bruay	France	Coal	3,000,000	400	700.00	26,200.00	26,150.00
Callao	Venezuela	Gold	32,200,000	125		3.25	3.50
Cape Copper	S. Africa	Copper		50	1.50	65.50	63.50
Champ d'Or	"	Gold		25		38.00	33.50
Courrieres	France	Coal	60,000,000	300	160.00	1,630.00	1,664.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	74.50	75.50
Denain-Anzin	France	Steel		500	23.00	561.00	610.00
Dombrowa	Russia	Coal		600		590.00	584.00
Donetz	"	Steel				975.00	950.00
Dourges	"	Coal		1,000	200.00	11,325.00	11,250.00
Dynamite Centrale	France	Explosives		500	12.50	450.00	450.00
Epinac	"	Coal		2,500		695.00	690.00
Fraser River	Brit. Col'mb	Gold				40.55	37.00
Huanchaca	Bolivia	Silver		125	5.00	61.00	55.50
Huta-Bankowa	Russia	Iron & steel				3 880.00	3,93 .00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	145.00	141.00
Lagunas	Chile	Nitrates		125	12.50	70.00	68.00
Laurium	Greece	Zinc & lead	16,300,000	500	40.00	675.00	680.00
Lautaro	Chile	Nitrates		125		139.0	136.00
Malfidano	Italy	Zinc	12,500,000	500	40 00	1,015.00	1,010.00
Metaux, Cie. Fran. de	France	Metal d'iers.	25,000,000	500	12.00	672.00	663.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	737.0	74 .00
Napthe Baku	Russia	Petroleum				518.0	522.00
Napthe, Le	"	"				2,7 .00	2,700.00
Naphthe Nobel	"	"				419 0	415.00
" " parts	"	"				8,4 0.00	8,450.00
Nickel	N. Caled'nia	Nickel	2,720,000	500	30.00	416.0	3 5.00
Paccha-Jazpampa	Chile	Nitrates				15 00	15.00
Penarroya	Spain	Coal, etc		500	65.00	1,9 0.00	1,94 .00
Rebecca	Colo'do, U.S.	Gold				4.00	4.25
Rio Tinto	Spain	Copper	41,250,000	250	27.63	689.0	718 0
Rive-de-Gier	France	Coal				17.00	17.50
Robinson	S. Africa	Gold		125	12.50	200.00	2 4.00
St. Etienne	France	Coal			15 00	390.00	391.00
Saint Elie	Fr. Guiana		4,000,000	25		24.50	24.50
Salines de l'Est	France	Salt		500	20.00	267.50	27 .00
Salines du Midi	France	" etc		5 0	4 00	8 0.00	850.00
Sels Gem. de la Rus. Mer	Russia	" etc			2 .00	617.00	613.00
Tharsis	Spain	Copper		50	8.75	152.50	153.00
Vicoigne-Nœux	France	Coal		1,000	700 00	19,65 .00	19,750.00
Vieille Montagne	Belgium	Zinc	9,000,000	80	20.00	532.00	534.75

*From our special correspondent.

VALPARAISO, CHILE.*

May 22.

NAME OF COMPANY.	Location.	Capital paid.	Sh. Val. paid up.	Last Dividend.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile	$3,300,000	$100	1 per cent	$18	$2	$18
Caracoles, silver	"	315,000	100	5 "			
Huantajaya (mine) silver	"	1,000,000	100	13 "			
Huantaca, silver	Bolivia	8,000,000	25	4 "	23	23	23
Oruro, silver	Chile	800,000	200		310	320	320
S. Agus. de Huanta, silver	"	1,500,000	100	2½ per cent.			
Todos Santos, silver	"	2,000,000	100	1 "	8	10	10
Agua Santa, nitrate	"	3,000,000	50	7 "	135	140	135
Antofagasta, nitrate	"	2,000,000	200		125	130	130
Huantajaya (mill) nitrate	"	500,000	100	5 "			
Madera, coal	"	460,000	92				
Union, nitrate	"	2,140,000	200		16	18	18

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

SHANGHAI, CHINA.*

June 11.

NAME OF COMPANY.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price.
Jelebu Mg. & Trad	China	45,000	$5	$5	Oct., 1896	$0.25	Taels 5.64
Punjom Mg., Ltd.	"	59,343	4	4	Jan., 1897	.20	" 5.84
do. pref	"	37,500	1	1	" "	.50½	" 1.35
Raub Australian G. Mg	"	200,000	£1	13s. 10d.	June, 1896	.52	" 21.90
Sheridan Con. M. & M.	Colorado, U.S	2,000	Taels 100	Taels 100			" 2.00

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

DIVIDENDS.

NAME OF COMPANY.	Current Dividends. Date.	Current Dividends. Am't.	Paid since Jan. 1, 1897.	Total to date.
*Aetna Con. Q			$60,000	$100,000
Alaska-Mexican			36,000	209,031
Alaska-Treadwell			150,000	3,175,000
Alice			20,000	1,015,000
Anaconda			1,500,000	3,750,000
*Anchoria-Leland			36,000	66,000
Arizona Copper			48,000	
Atlantic Copper			40,000	740,000
Bald Butte			2,500	482,500
Big Six			12,500	5,000
Boston&Montana			900,000	5,825,000
Bullion Beck			170,000	2,117,000
Calumet & Hecla	July 7	1,000,000	3,000,000	49,850,000
Cariboo			32,000	156,965
Centennial Eureka			90,000	2,010,000
*Central Lead			4,000	4,000
*Champion			17,000	86,700
Charleston			10,000	150,000
Coronas			4,500	9,500
Daly			37,500	2,925,000
*Deadwood Terra			80,000	1,320,000
Della S			10,000	60,000
*Elkton Con			125,000	286,950
Florence			18,030	132,530
Galena			5,000	71,000
Garfield-Grouse			12,000	24,000
*Geyser-Marion			27,000	27,000
Gold Coin			35,000	140,000
Golden Fleece			6,000	569,179
Gwin			6,000	6,000
Hecla Con			30,000	2,175,000
Highland			20,000	3,244,918
*Homestake			187,500	6,275,00
Hope			40,000	692,25
Idaho			80,000	152,00
Iowa Gold			5,000	65,000
*Isabella			67,500	270,000
Last Chance			20,000	40,000
Le Roi	July 1	25,000	150,000	425,000
*Mercur			150,000	725,000
Merrimac			9,400	9,400
Mont. Ore Pur. Co	July 15	10,000	120,000	600,00
Moon-Anchor	" 1	6,000	6,000	30,000
*Morning Star			69 600	519,600
Napa Con	July 10	20 000	40, 00	859,000
*New Idria Quicksilver			10,000	10,000
*N. Y. & Honduras Rosario	July 20	15,000	105,000	787,50
*Ontario			90,000	13,445,000
Osceola	July 26		100,000	2,172,500
*Pennsylvania			10,300	15,500
*Portland			180,000	1,043,000
Princess			5,000	45,000
Quincy			400,000	9,070,000
Rambler-Cariboo			40,00	40,000
Reco			150,000	187,500
Sacramento			15,000	22,000
*Silver King			225,000	1,087,500
Slocan Star			50,000	350,000
*South Swansea			37,500	44,950
Standard Con			20,000	3,737,868
Swansea	July 3	5,000	30,000	51,500
Tamarack			180,000	4,950,000
Utah			2,000	175,000
Victor			60,000	765,000
Western Mine Enterprise			6,000	12,000
Totals			$1,111,000	$7,904,880	$129,398,363

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

ASSESSMENTS.

NAME OF COMPANY.	Location.	No.	Dinq.		Sale.		Am.
Alta	Nev	56	June	25	July	16	.05
Anchor	Cal		July	7			.80
*Benton Con	"		Aug.	2			.25
Brunswick	"	12	July	22	Aug.	14	.03
California	Utah	5	"	7			.01
Christmas	"		July	23	Aug.	17	.0016
Columbia	Cal		"	6			.25
*Confidence G	"		Aug.	2			.10
Emerald	Utah		July	15	Aug.	7	.00½
*Eureka	Cal	9	Aug.	7	Aug.	28	.02
Gibraltar Con	"	15	July	5	"	5	.001
Goleta	"	5	"	12	"	9	.10
Hale & Norcross	Nev	111	June	24	July	15	.10
Homestake	Utah		July	17	Aug.	9	.01
Merrill Con	Mont		"	20	"	7	.15
Montecito	Cal	4	"	12	"	9	.10
*Mountain Mill	Nev		"	22			.03
*North Gould & Curry	"	18	"	28	Aug.	14	.10
Pine Hill	Cal	10	"	1	July	22	.05
Rescue	Utah		"	3	"	19	.10
Shasta Iron	Cal	4	"	20	Aug.	10	.00½
Star G. & S.	Utah		"	5	July	21	.02
Sterling	Cal	4	"	12	Aug.	9	.10
Sunbeam Con	Utah	11	June	26	July	13	.00½
Tecumseh C	Mich		July				1.00
Tetro	Utah	5	June	17	July	10	.01
Transit	S. D.	9	Aug.	2	Aug.	17	.001½
Troy	Alaska	4	July	6	July	22	.10
Undine	Utah		June	19	"	17	.00¾
West Cable	"		"	12	"	14	.00½

* New assessment.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.				Dividends.			
				No.	Par Val	Total Levied.	Date and Amount of Last.			Total Paid.	Date and Amount of Last.		
1	Adams, s. l. c	Colo..	$1,500,000	150,000	$10	*				$693.500	Oct...	1895	.04
2	Ætna Cons., q	Cal ..	500,000	100,000	5	*				100,000	June.	1897	.10
3	Alaska-Mexican, g	Alask	1,000,000	200,000	5					209,031	April.	1897	.10
4	Alaska-Treadwell, g	Alask	5,000,000	200,000	25	*				3,175,000	April.	1897	.37½
5	Alice, g. s	Mont.	10,000,000	400,000	25	*				1,015,000	April.	1897	.05
6	Anaconda Copper	Mont.	30,000,000	1,200,000	25					3,750,000	May..	1897	1.25
7	Anchoria-Leland, g	Colo..	600,000	600,000	1	*				66,000	June.	1897	.01
8	Argentum Juniata, g.s.l	Colo..	2,600,000	1,300,000	2	*				39,000	July..	1895	.03
9	Aspen Mg. & S., s. l	Colo..	2,000,000	200,000	10	*				900,000	July..	1894	.10
10	Atlantic, c	Mich.	1,000,000	40,000	25					740,000	Feb..	1897	1.00
11	Aurora, i	Mich.	2,500,000	100,000	25	*				700,000	April.	1896	.50
12	Bald Butte	Mont.	250,000	250,000	1	*				482,500	May..	1897	.03
13	Bangkok-Cora Bell, s. l.	Colo..	600,000	600,000	1					107,510	July..	1896	.01
14	Belden, F. E., m	N. H.	500,000	100,000	5	*				217,000	Jan ..	1896	.04
15	Big Six, g. s	Colo..	500,000	500,000	1					5,000	April.	1897	.00½
16	Bi-Metallic, g. s	Mont.	5,000,000	200,000	25	*				1,630,000	June.	1893	.10
17	Boston & M. Cons., g.s.c	Mont.	3,750,000	150,000	25	*				5,825,000	May..	1897	3.00
18	Brotherton, i	Mich.	2,000,000	80,000	25	*				120,000	Mar..	1893	.50
19	Bullion, Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,117,000	Mar..	1897	.50
20	Calumet & Hecla, c	Mich.	2,500,000	100,000	25					49,850,000	July..	1897	10.00
21	Cariboo	B.C..	800,000	800,000	1					156,965	May..	1897	.02
22	Centen'l-Eureka, g.s.l.c	Utah.	1,500,000	30,000	50	30,000	Mar..	1889	1.00	2,010,000	Mar..	1897	1.00
23	Central, c	Mich.	500,000	20,000	25	100,000	Oct...	1861	.65	1,970,000	Feb..	1891	1.00
24	Champion, g. s	Cal...	340,000	34,000	10					86,700	June.	1897	.25
25	Charleston, p. r	S. C..	1,000,000	10,000	100	*				150,000	Feb..	1897	1.00
26	C. O. D., g	Colo..	500,000	500,000	1	*				25,000	Mar..	1896	.01
27	Cœur d'Alene, s. l	Idaho	5,000,000	500,000	10					340,000	June.	1893	.06
28	‡Cons. Cal. & Va., g. s.	Nev..	21,600,000	216,000	100	5,014,130	April.	1897	.25	3,898,800	Feb..	1895	.25
29	Coptis, g. s	Nev..	10,000,000	100,000	100					77,000	Feb..	1895	.01
30	Dalton & Lark, s. l	Utah.	2,500,000	2,500,000	1					87,500	Aug..	1896	.00½
31	Daly, s. l	Utah.	3,000,000	150,000	20					2,925,000	Mar..	1897	.25
32	†Deadwood-Terra, g	S. D..	5,000,000	200,000	25	*				1,240,000	Aug..	1896	.50
33	De Lamar, g. s	Idaho	2,000,000	400,000	5	*				2,250,000	Oct...	1896	.25
34	Della S	Colo..	1,000,000	1,000,000	1					60,000	Jan ..	1897	.10
35	Doe Run, l	Mo...	(500,000	5,000	100						April.	1897	.50
36	Elkhorn, s	Mont.	1,000,000	200,000	5					1,212,000	June.	1895	.06
37	Elkton Cons., g	Colo..	1,250,000	1,250,000	1					286,960	June.	1897	.02
38	Enterprise, g. s	Colo..	2,500,000	500,000	5	*				825,000	May .	1893	.25
39	Florence, s	Mont.	2,500,000	500,000	5	*				132,530	May .	1897	.01
40	Franklin, c	Mich.	1,000,000	40,000	25					1,240,000	Jan ..	1894	2.00
41	Galena, g. s. l	Utah.	1,000,000	100,000	10					71,000	Jan ..	1897	.05
42	Garfield-Grouse, g	Colo..	1,200,000	1,200,000	1	*				24,000	Dec..	1896	.01
43	Geyser-Marion, g	Utah.	1,500,000	300,000	5					27,000	June.	1897	.03
44	Gold Coin, g. s	Colo..	1,000,000	200,000	5	*				140,000	May..	1897	.10
45	Golden Eagle, g	Colo..	1,000,000	1,000,000	1	*				10,000	Sept..	1896	.01
46	Golden Fleece, g. s	Colo..	600,000	600,000	1	*				569,179	Feb..	1897	.01
47	Gold & Globe, g	Colo..	750,000	750,000	1					36,000	Aug..	1896	.00 3/10
48	Granite Mountain, g. s.	Mont.	10,000,000	400,000	25	*				12,120,000	July..	1892	.20
49	Gt. West'n Quicksilv., q.	Cal ..	5,000,000	50,000	100					388,366	Nov..	1893	.10
50	Harquahala, g	Ariz..	1,500,000	300,000	5					126,000	Nov..	1894	.12
51	Hecla Cons., g. s. c. l..	Mont.	1,500,000	30,000	50	*				2,175,000	Feb..	1897	.50
52	Helena & Frisco, s. l	Idaho	2,500,000	500,000	5	*				475,000	Aug..	1896	.04
53	Highland, g	S. D..	10,000,000	100,000	100					3,244,918	Feb..	1897	.20
54	Homestake, g	S. D..	12,500,000	125,000	100	200,000	July..	1878	1.00	6,275,000	June.	1897	.25
55	Hope, s	Mont.	1,000,000	100,000	10	*				692,252	May .	1897	.10
56	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,130,000	Jan ..	1896	.12½
57	Idaho	B. C..	500,000	500,000	1					152,000	Mar..	1897	.05
58	Iowa, g	Colo..	1,000,000	1,000,000	1					65,000	Feb..	1897	.00½
59	Iron Mountain, s. l	Mont.	5,000,000	500,000	10	*				492,500	Nov..	1896	.06
60	Iron Silver, s. l	Colo..	10,000,000	500,000	20	*				2,500,000	April.	1889	.20
61	Isabella, g	Colo..	2,250,000	2,250,000	1					270,000	June.	1897	.00½
62	Kearsarge, c	Mich.	1,000,000	40,000	25	190,000	Oct...	1887	1.00	120,000	Dec..	1895	1.00
63	Kennedy, g	Cal ..	10,000,000	100,000	100					1,796,000	Aug..	1895	.48
64	Last Chance, s. l	B. C..	500,000	500,000	1	*				40,000	Jan ..	1897	.04
65	Leadville Cons., s. l	Colo..	4,000,000	400,000	10	*				316,000	Feb..	1893	.03
66	Le Roi	B. C..	500,000	500,000	1					425,000	July .	1897	.05
67	Little Chief, s. l. i-o	Colo..	10,000,000	200,000	50	*				820,000	Dec..	1890	.05
68	Maid of Erin, g. s. c. l..	Colo..	3,000,000	600,000	5	*				740,000	Nov..	1895	.02
69	Mammoth, g. s. c	Utah.	10,000,000	400,000	25	*				1,150,000	Nov..	1896	.05
70	Mayflower Gravel, g	Cal ..	1,200,000	60,000	20					166,897	Dec..	1895	.10
71	May-Mazeppa Con., l. s.	Colo..	1,000,000	1,000,000	1	*				170,000	Oct...	1891	.03¾
72	Mercur, g	Utah.	5,000,000	200,000	25	*				725,000	June.	1897	.12½
73	Minnesota Iron, i	Minn.	16,500,000	165,000	100	*				3,240,009	July..	1896	1.50
74	Mollie Gibson, s	Colo..	5,000,000	1,000,000	5	20,000	Jan ..	1891	.02	4,080,000	Jan ..	1895	.05
75	Monitor, g	S. D..	2,500,000	250,000	10					45,000	Oct...	1890	.03
76	Montana, Ltd., g. s	Mont.	3,300,000	660,000	5	*				2,890 637	Oct...	1895	.06¼
77	Montana Ore Purchas'g	Mont.	1,000,000	40,000	25	*				600,000	July..	1897	1.00
78	Moon Anchor Gold		600,000	600,000	1	*				24,000	July..	1896	.01
79	Moose, g	Colo..	600,000	600,000	1					186,000	Jan ..	1896	.01
80	Morning Star, g	Cal...	240,000	240,000	100	70,800	Feb..	1887	.75	510,000	May .	1897	.50
81	Mt. Rosa, g	Colo..	1,000,000	1,000,000	1					30,000	Oct...	1896	.00½
82	Napa, q	Cal ..	700,000	100,000	7	*				850,000	July..	1897	.20
83	New Elkhorn	Colo..	1,500,000	300,000	5					72,000	Sept..	1896	.24
84	New Guston, g. s. c	Colo..	550,000	110,000	5	*				1,198,120	Oct...	1892	.25
85	New Hoover Hill, g	N. C..	300,000	120,000	2.50	*				22,500	Dec..	1885	.20
86	New Idria Quicksilver..	Cal...		100,000						10,000	June.	1897	.10
87	N.Y.&Hon.Rosario, s.g.	C. A..	1,500,000	150,000	10	*				772,500	June.	1897	.10
88	North Star, g	Cal ..	2,000,000	200,000	10	20,000	June.	1885	.02	450,000	June.	1893	.50
89	Nugget, g	Colo..	1,000,000	1,000,000	1	*				10,000	Jan ..	1895	.00½
90	Ontario, s. l	Utah.	15,000,000	150,000	100					13,445,000	June.	1897	.10
91	Osceola, c	Mich.	1,250,000	50,000	25	*				2,172,500	July..	1897	1.00
92	Pacific Coast Borax, b..	Cal ..	2,000,000	20,000	100					422,500	July..	1893	1.00
93	Parrot, c	Mont.	2,300,000	230,000	10	*				1,622,215	June.	1894	.05
94	Pennsylvania Cons	Cal...	5,150,000	51,500	100	14,000	Feb..	1892	.05	15,500	June.	1897	.05
95	Pharmacist, g	Colo..	1,200,000	1,200,000	1					80,000	Jan ..	1893	.01
96	Portland, g	Colo..	3,000,000	3,000,000	1	*				1,043,000	June.	1897	.01
97	Princess, g	Colo..	1,000,000	1,000,000	1					45,000	Feb..	1897	.00½
98	Quincy, c	Mich.	2,500,000	100,000	25	*				9,070,000	Feb..	1897	8.00
99	Rambler-Cariboo	B. C..	1,000,000	1,000,000	1					40,000	April.	1897	.02
100	Reco, s. l	B. C..	1,000,000	1,000,000	1					187,500	May .	1897	.50
101	Reed National, s	Colo..	500,000	500,000	1	*				45,000	Dec..	1890	.01
102	Robinson Cons., s. i	Colo..	10,000,000	200,000	50	*				585,000	Mar..	1886	.05
103	Running Lode, g. s. i	Colo..	1,000,000	1,000,000	1	*				27,000	June.	1893	.00 1/10
104	Sacramento, g	Utah.	5,000,000	1,000,000	5					22,000	Mar..	1897	.00½
105	St. Joseph. l	Mo...	2,500,000	250,000	10						Mar..	1897	.15
106	Silver King, g. s. l	Utah.	3,000,000	150,000	20	3,000	Jan ..	1897	.02	1,087,500	June.	1897	.25
107	Slocan Star	B. C..	1,000,000	2,000,000	0.50					350,000	Mar..	1897	.05
108	Small Hopes, s	Colo..	5,000,000	250,000	20	*				3,275,000	Mar..	1896	.10
109	‖Smuggler Union, g. s..	Colo..	5,000,000	50,000	100					150,000	Oct...	1896	1.00
110	South Swansea, s. l	Utah.	150,000	150,000	1					44,960	June.	1897	.05
111	§Standard Cons., g. s..	Cal...	20,000,000	200,000	100					3,737,868	Mar..	1897	.10
112	Swansea, s. l	Utah.	500,000	100,000	5					46,500	June.	1897	.05
113	Tamarack, c	Mich.	1,500,000	60,000	25					4,950,000	June.	1897	3.00
114	Tom Boy, g	Colo..	2,000,000	200,000	10	*				410,000	Mar..	1896	.20
115	Trinity River, g	Cal ..	500,000	500,000	1	*				15,000	July..	1893	.00½
116	Union, g	Colo..	1,250,000	1,250,000	1					73,000	June.	1896	.01
117	Union Leasing	Colo..	500,000	500,000	1					340,000	July..	1895	.04
118	Utah	Utah.	1,000,000	100,000	10	*				175,000	Feb..	1897	.02
119	Victor, g	Colo..	1,000,000	200,000	5	*				765,000	Mar..	1897	.10
120	War Eagle	B. C..	500,000	500,000	1	32,500	Dec..	1894		187,000	Oct...	1896	.06
121	Western Mine Enterp..	Mont.	500,000	500,000	1	*				12,000	Mar..	1897	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.			
				No.	Par Val	Total Levied.	Date and Amount of Last.		
1	Ada Cons., s. l	Utah.	$100,000	100,000	$1	$3,333	Nov..	1895	.01⅛
2	Ajax, g	Colo..	1,000,000	1,000,000	1				
3	Alice, g. s. c	Colo..	5,000,000	5,000,000	1	*			
4	Alliance, g. s. l	Utah.	100,000	100,000	1	200,000	Dec..	1895	.10
5	Alpha Cons., g. s	Nev..	10,500,000	105,000	100	262,750	April.	1897	.05
6	Alta, s	Nev..	10,080,000	108,000	100	3,601,360	June.	1897	.05
7	American, c	Idaho	5,000,000	500,000	10	*			
8	¶American Belle, g.s.c	Colo..	2,000,000	400,000	5	*			
9	¶Anaconda, g	Colo..	5,000,000	1,000,000	5				
10	Anchor, g. s. l	Utah.	1,500,000	150,000	10	560,000	Aug..	1893	.20
11	Aola, g	Colo..	1,000,000	1,000,000	1	*			
12	Argonaut Cons., g. s,	Colo..	1,000,000	1,000,000	1	*			
13	Belcher, s. g	Nev..	10,400,000	104,000	100	3,338,420	April.	1897	.25
14	Belle Isle	Nev..	10,000,000	100,000	100	240,271	July..	1896	.10
15	Ben Hur, g	Colo..	900,000	900,000	1				
16	Blue Bell, g	Colo..	500,000	500,000	1	*			
17	Blue Jay Cons., s. l..	Utah.	2,000,000	400,000	5	4,750	July..	1893	.004
18	Bob Lee, g	Colo..	1,200,000	1,200,000	1	*			
19	Boston & Crip. Creek	Colo..	200,000	200,000	1				
20	Bullion, s. g	Nev..	1,000,000	100,000	100	3,050,000	June.	1897	.10
21	¶Bunker Hill & S., s.l.	Idaho	3,000,000	300,000	10				
22	Burlington, g. s	Cal...	10,000,000	100,000	100	3,000	May..	1896	.03
23	Butte & Boston Con., c	Mont.	2,000,000	200,000	10				
24	Butte Queen, g	Cal...	1,000,000	100,000	10	16,000	Feb..	1893	.10
25	Calumet, g	Colo..	1,400,000	1,400,000	1	*			
26	Centennial, c	Mich.	2,000,000	80,000	25	220,000	April	1897	1.00
27	Central Lead, l	Mo...	400,000	4,000	100	*			
28	Central North Star, g.	Cal...	1,000,000	100,000	10	10,000	July..	1893	.10
29	Challenge, s, g	Nev..	5,000,000	50,000	100	305 000	June.	1897	.10
30	Chollar, g. s	Nev..	11,200,000	112,000	100	2,038,400	June.	1897	.15
31	¶Chrysolite, s. l	Colo..	10,000,000	200,000	50	*			
32	Cleveland Cliffs, i	Mich.	5,000,000	50,000	100	*			
33	Columbine. g	Colo..	1,000,000	1,000,000	1	*			
34	¶Confidence, g. s	Nev..	2,496,000	24,960	100	1,644,462	April.	1897	.30
35	Cons. Imperial, g. s..	Nev..	5,000,000	50,000	100	2,082,500	Mar..	1897	.01
36	Creede & C. C., g	Colo..	800,000	800,000	1				
37	Cripple Creek Cons., g.	Colo..	2,000,000	2,000,000	1				
38	Crip. Cr'k Gold Expl'n	Colo..	1,800,000	1,800,000	1				
39	Dante, g	Colo..	1,250,000	1,250,000	1	*			
40	Denver City, s	Colo..	5,000,000	500,000	10	*			
41	Denver Gold, g	Colo..	300,000	60,000	5				
42	Dickens-Custer, g. s..	Colo..	2,100,000	420,000	5				
43	¶Enterprise, g	Colo..	800,000	800,000	1				
44	¶Eureka Cons., g. s. l.	Nev..	1,000,000	50,000	20	567,500	Feb..	1897	.25
45	Eureka Con. Drift, g.	Cal...	500,000	500,000	1	140,000	May..	1897	.05
46	Exchequer, g. s	Nev..	10,000,000	100,000	100	725,000	Dec..	1896	.05
47	Favorite, g	Colo..	1,200,000	1,200,000	1	*			
48	Free Coinage. g	Colo..	1,000,000	1,000,000	1	*			
49	Galena, l. s	Idaho	500,000	500,000	1				
50	Gold Belt, g. s	Utah.	500,000	500,000	1	3,012	July..	1896	.00⅛
51	Golden Age, g	Colo..	1,000,000	1,000,000	1	*			
52	Golden Dale, g	Colo..	2,000,000	2,000,000	1	*			
53	Golden Fleece Grav. g	Cal...	130,000	130	1000	56,260	Mar..	1897	2.00
54	Gold Flat, g	Cal...	1,000,000	100,000	10	13,000	Aug..	1893	.03
55	Gold King, g	Colo..	1,000,000	1,000,000	1	*			
56	¶Gold Rock, g	Colo..	1,000,000	1,000,000	1	*			
57	Gold Standard, g	Colo..	1,000,000	1,000,000	1	*			
58	Gould & Curry	Nev..	10,800,000	108,000	100	4,872,000	June.	1897	.20
59	¶Hale & Norcross, g.s.	Nev..	11,200,000	112,000	100	5,798,000	April.	1897	.10
60	Head Cent. & Tr., g.s.	Ariz..	2,000,000	200,000	10	22,824	Mar..	1892	.03
61	Hidden Treas., g. s..	Cal...	20,000	20,000	1	1,000	Nov..	1893	.05
62	Humboldt Cons	Colo..	2,000,000	2,000,000	1				
63	Idaho Co., Ltd., g	Idaho	100,000	1,000	100	*			
64	Idlewild, g	Cal...	1,000,000	100,000	10	*			
65	Jack Pot, g	Colo..	1,250,000	1,250,000	1				
66	Jackson, l	Mich.	300,000	12,000	25	*			
67	Justice, g. s. c.	Colo..	500,000	500,000	1	*			
68	Keystone, g	Colo..	1,500,000	1,500,000	1	*			
69	Lacrosse, g	Colo..	1,000,000	100,000	10	*			
70	Matoa, g	Colo..	5,000,000	1,000,000	5				
71	Mayflower, g	Colo..	1,000,000	1,000,000	1	*			
72	Merced, g	Cal...	1,500,000	100,000	15	200,000	July..	1896	2.00
73	Mexican, g. s	Nev..	10,080,000	100,809	100	3,104,240	April.	1897	.20
74	Milwaukee, s. l	Idaho	500,000	500,000	1				
75	Modoc Chief, g. s. l..	Idaho	1,000,000	200,000	5	4,375	Jan..	1892	.00⅛
76	Monarch, g	Colo..	1,000,000	1,000,000	1				
77	¶Mt. Diablo, s	Nev..	5,000,000	50,000	100	145,000	Nov..	1896	.10
78	Mutual, g	Colo..	500,000	500,000	1				
79	New Gold Hill	N. C..	1,750,000	350,000	5				
80	New Viola, s. l	Idaho	750,000	150,000	5	*			
81	North Banner, g. s	Cal...	1,000,000	100,000	10	21,794	Oct...	1896	.02
82	¶North Belle Isle, s..	Nev..	10,000,000	100,000	100	523,074	July..	1896	.10
83	Occidental Cons., g.s.	Nev..	10,000,000	100,000	100	473,652	June.	1897	.10
84	Original Keystone, s.	Nev..	10,000,000	100,000	100	250,000	Mar..	1892	.10
85	Oro Cache, g. s	S. D..	1,250,000	250,000	5	6,250	July..	1893	.00⅛
86	Orphan Bell, g	Colo..	1,000,000	1,000,000	1				
87	Overman Silver, g. s.	Nev..	1,152,000	115,200	100	4,200,080	May..	1897	.10
88	Peer, s	Ariz..	10,000,000	100,000	100	215,000	July..	1894	.05
89	Peerless, s..	Nev..	10,000,000	100,000	100	410,000	July..	1894	.05
90	Pine Hill, g	Cal ..	1,000,000	100,000	10	30,000	July..	1897	.05
91	Potosi, g. s	Nev..	11,200,000	112,000	100	2,044,000	April.	1897	.20
92	Princess, g	Colo..	1,000,000	1,000,000	1				
93	Puritan, g, s	Colo..	1,500,000	150,000	10	*			
94	¶Quicksilver, pref., q.	Cal ..	4,300,000	43,000	100	*			
95	¶ " com., q.	Cal ..	5,700,000	57,000	100	*			
96	Quincy, c	Colo..	3,000,000	300,000	10				
97	Red Mountain, s	Colo..	300,000	60,000	5	22,500	Mar..	1891	.12½
98	Reward, g	Cal...	64,000	64,000	1	57,280	June.	1897	.02
99	St. Mary, c	Mich.	1,000,000	40,000	25	4,000	July..	1895	.05
100	Savage, g. s	Nev..	11,200,000	112,000	100	1,073,800	May..	1897	.20
101	Seg. Belcher & M., g.s.	Nev..	10,000,000	100,000	100	345,000	May..	1897	.05
102	Sevier, g. s	Utah.	1,250,000	250,000	5	50,000	April	1897	.04
103	Silver Age, g. s. l	Colo..	2,000,000	200,000	10	*			
104	Silver Hill, s	Nev..	10,800,000	108,000	100	1,992,600	July.	1894	.05
105	¶Silver King, s	Ariz..	10,000,000	100,000	100	279,858	June.	1897	.25
106	Silver Queen, c	Ariz..	5,000,000	200,000	25	*			
107	Silver State, g	Colo..	700,000	700,000	1	*			
108	Siskiyou Con., s	Cal ..	2,000,000	200,000	10	44,000	June	1896	.01
109	Specimen, g	Colo..	1,200,000	1,200,000	1				
110	¶Temonj, g	Colo..	1,000,000	1,000,000	1				
111	Tombstone, g. s. l	Ariz..	12,500,000	500,000	25	*			
112	Tornado Con., g. s	Nev..	100,000	100,000	1	*			
113	Union Con., g. s	Nev..	10,000,000	100,000	100	2,565,000	May..	1897	20
114	Utah Cons., s	Nev..	10,000,000	100,000	100	420,722	Feb.	1897	.05
115	Victory, g. s	S. D..	1,250,000	250,000	5	2,625	Nov.	1896	.001⅛
116	Virginia M. Cons., g.	Colo..	1,000,000	1,000,000	1				
117	Waterloo, g	Cal...	2,000,000	200,000	10	30,000	Aug..	1893	.15
118	West Granite Mt., s..	Mont.	500,000	100,000	5				
119	¶Whale, g. s. l	Colo..	500,000	500,000	1	*			
120	Work, g	Colo..	1,250,000	1,250,000	1				
121	World, g	Colo..	1,500,000	1,500,000	1	*			

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. † The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
‡ Previous to the consolidation in August, 1884, the California had paid $31,320,000 in dividends and the Cons. Virginia $42,390,000. ‖ Dividends paid since consolidation.
§ Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897. ¶ Dividends have not been paid in several years.
NOTE.—This table is corrected up to July 1. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

RARE ELEMENTS, CHEMICALS AND MINERALS—CURRENT PRICES.

NOTE.—This table is revised up to June 8th. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable.

CHEMICALS AND MINERALS.

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

	Cust. Meas.	Price.
Abrasives—		
Carborundum, grains, f.o.b. Niagara Falls	lb.	$0.15@$0 16
Corundum	"	.07
Emery, Turkish flour	"	.03@.03¼
Grains	"	.04¼@.05½
Naxos flour	"	.03@.03¼
Grains	"	.04¼@.05½
Chester flour	"	.02@.03
Grains	"	.04@.05
Peekskill flour	"	.01¼
Grains	"	.02¼
Pumice Stone, pure ground and bolted	"	.02
Lump	"	.05@.12
Rottenstone, ground	"	.03@.03½
Lump, according to quality	"	05½@.12
Acids—		
Acetic, pure (30%)	"	.02¾
Chem. pure	"	.15@.20
Benzoic, English, ex-gum	oz.	.07
German, ex-Toluol	lb.	.50@.55
Boracic Am. refined cryst	"	.08
Powdered	"	.08½
Carbolic, cryst. in bottles	"	.24@.26
In drums	"	.18@.19½
Chromic, com'l	"	.25
C. p. cryst. (retail)	"	.80
Hydrochloric, c. p. (in carboys)	"	.10@.12
Hydrofluoric XX	"	.05
X	"	.15
Best	"	.25
Phosphoric, English, st. p	"	.24
Sulphuric, c. p. (in cbys.)	"	.10@.12
Tartaric, cryst	"	.28@.28½
Powder	"	.28½@.29
Alcohol—94%	gal.	2.29@2.35
Refined wood, 95%	"	.65
" " 97%	"	.70
" " purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65@1.75
Ground	"	1.75@1.85
Porous	"	1.50@2.00
Chrome, com'l	"	3.00@4.00
Aluminum—		
Chloride, pure cryst. (retail)	lb.	1.00
Oxide, hydrated	"	.15
Sulphate, com'l	"	.01¼@.01¾
Pure cryst. (retail)	"	1.00
Ammonia—		
Aqua (in carboys), 16°	"	.03¼
18°	"	.04@.05
20°	"	.05¼@.05¾
36°	"	.06¼@.06¾
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate	"	.07½@.09
Chloride, granulated	"	.05@.07
Chem. pure	"	.10¼
Muriate, white gran. dry (99%)	"	.05¾@.06¾
Gray	"	.04⅝
Nitrate, white, pure (99%)	"	.09
Sulpho-cyanide	"	.25
Chem. pure	"	.35
Antimony—		
Metallic, Japan, powder st. p	"	.06½
Oxide	"	.12@.13
Sulphide, powdered	"	.06
Pentasulphide	"	.20
Argols—Red ordinary	"	.02½
(80%@80%)	"	.05¼@.15
Arsenic—White, powder	"	.04⅞@.05¼
Red, Saxony	"	.07½
Silesian	"	.07¼
Asbestos—Fibrous	"	.04@.20
Cloth-board	"	.03¼
Yellow fiberized	sh. ton	11.00@20.00
White "	"	15.00@25.00
Pipe covering, ordinary	lb.	.20
Asphaltum—		
Trinidad, refined	lg. ton	31.50@36.50
Bermuda, refined	"	40.00
Egyptian, refined	lb.	.05@.07
Barium—		
Carbonate, American	lg. ton	26.00@30.00
Com'l (90@92%)	lb.	.02
Pure (98%)	"	.02½
Foreign	sh. ton	25.00
Chloride, com'l	"	34.00
Chem. pure cryst	lb.	.05
Nitrate	"	.05½@.05¾
Nitrite, com'l	"	.05⅞
Oxide	"	.18
Sulphate, com'l (pulp)	"	.01@.02¼
Barytes—Crude	lg. ton	7.75@10.00
American, floated	"	22.00@23.00
Foreign, floated	sh. ton	15.00@18.00
Bauxite—Ga., At mine	"	2.00@3.50
Benzole—90%	gal.	1.00@1.10
C. p. water white	"	1.25
Bismuth—Nitrate, cryst.	oz.	.15
Oxide, hydrated	lb.	2.65
Bone Ash	"	.03
Borax—American, refined, carload	"	.05¼
Bromine—Com'l at wks.	"	.43
Cadmium—		
Metallic sticks (Ger)	kg.	8.14
Sheets (Ger)	"	7.57
Powder (Ger)	"	8.09
Calcium—		
Acetate, brown	100 lbs.	75@.80
Gray	"	1.25@1.30
Bromide (retail)	lb.	.70
Carbonate, ppt	"	.10
Chem pure	"	.75
Hyposulphite	100 lbs.	1.02½@1.07½
Oxide	lb.	.05
Phosphate, ppt	"	.20
Sulphite	"	.07¼
Cement—		
Portland, Am. at works 400 lbs	bbl.	$1.65
German, 400 lbs	"	1.25@2.20
English, 400 lbs	"	1.28@2.25
Natural hydr., "Rosendale," 300 lbs	"	.75@.80
Chalk—Com'l, lump	sh. ton	2.00@2.25
Ppt., English	lb.	.04@.05½
China Clay—		
Lowest grade	sh. ton	11.00
Medium grade	"	12.00@13.50
Best grad	"	17.00
Chrome Ore—		
(50% chrome) ex ship	lg. ton	25 00
Oxide	lb.	.25@.55
Cobalt—		
Black peroxide (retail)	"	2.00
Carbonate (retail)	"	2.55
Chloride (retail)	"	2.00
Nitrate (retail)	"	2 20
Oxide	100 lbs.	1.60@2.00
Copperas	"	.42½@.52½
Copper—		
Acetate, com'l	lb.	.16@.20
C. p. cryst. (retail)	"	.50
Carbonate, pure ppt	"	.20@.22
Chloride	"	.25
Nitrate, solution (40° B.)	"	.06@.10
Cryst. (retail)	"	.50
Oxide, black	"	.15@.19
Red	"	.16@.20
Sulphate, com'l	"	.04@.06
Chem. pure	"	.10
Explosives—		
Judson R.R. powder, by carload	"	.10
"Rackarock"	"	.25
Dynamite, (40% nitro-glycerine)	"	.20
(50% nitro-glycerine)	"	.24
(60% nitro-glycerine)	"	.28
(75% nitro-glycerine)	"	.36
Glycerine, for nitro (32 2-10° Be.)	"	.11
Nitro Benzole	"	.14@.15
Feldspar—By carload	sh. ton	8.50@11.00
Flint—(See Silica).		
Fluorspar—By carload	"	6.50@11.50
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.70@.75
Gilsonite—Ordinary	sh. ton	35.00
Select	"	60.00
Gold—		
Chloride, pure cryst. (retail)	oz.	11.75
Oxide	"	27.50
Gypsum—Am., ground	100 lbs.	.45@.50
English	"	.75@.80
French	"	.70@.75
Iodine—Crude	lb.	2.55
Resublimed	"	3.00
Iron—Muriate	"	02½
Nitrate, com'l	"	.01@.01½
Pure	"	.03½@.04½
Oxide	"	.01¼@.09
Kaolin—(See China Clay).		
Kryolith	"	.08½
Lead—		
Acetate, brown cryst.	"	.05@.05¼
White, cryst	"	.07@.07¼
Nitrate, com'l	"	.05½@.06
Chem. pure (retail)	"	.35
Lime—		
Building, about 250 lbs.	bbl.	.85@1.00
Slacked and quick	"	.75@1.50
Magnesite—		
Lump	lg. ton	7.00@10.00
Calcined	sh. ton	25.00
Powdered	lg. ton	30.00
Calcined	sh. ton	40.00
Magnesium—		
Metallic, ingots and cubes (Ger)	kg.	6.66@6.90
Powdered (Ger.)	"	7.14
Ribbon or wire (Ger.)	"	9.76
Carbonate	lb.	.11
Chloride, com'l	"	.05
Pure (retail)	"	.25
Manganese—		
Crude, powdered, 70@75%	"	.01¼@.01½
75@85%	"	.01½@.02½
85@90%	"	.02½@.03¼
90@95%	"	.03¼@.05½
Metallic, com'l (93%) (Ger.)	kg.	1.90
Pure	"	3.81
Carbonate, chem. pure	lb.	.20
Oxide, gran'l (90%	"	.03@.03½
Powdered	"	.02@.03½
Peroxide, pure (90%)	"	.02½
Sulphate, powdered	"	.25
Pure cryst	"	.60
Marble Dust, 400 lbs	bbl.	1.10@1.25
Flour	sh. ton	5.50
Mercury—Bichloride	lb.	.57@.59
Bisulphate	"	.59
Pernitrate (retail)	"	1.75
Mica—Ground	"	.03@.04½
Sheets, according to size and quality.		
Mineral Wool—Ord	sh. ton	30.00
Slag	"	19.50
Nickel—		
Oxide, black, No. 1	lb.	.65@.75
No. 2	"	.48@.50
Green	"	.55@.60
Oils, Mineral—Black, reduced 29 gr. 25@30°	gal.	.07@.07½
Black, reduced 29 gr. 15 cold test	"	.07½@.08
Black, reduced 29 gr. zero	"	.10½@.11½
Black, reduced 29 gr. summer	"	.06@.06¼
Smith's Ferry, 33@34 gr.	"	.07½@.8¾
WestVirginia, nat'l 29 gr	"	.24½@.25
Stock, dark steam ref.	"	.07½@.12½
Dark filtered	"	.10½@.15½
Light "	"	.12½@.14½
Extra cold test	"	.25½@.24½
Naphtha, crude	bbl.	5.50
Deodorized	"	6.00
Petroleum, refined,	bbl.	
cargoes	"	$6 15
Cases, cargoes	"	6.60
Bulk, N. Y	"	3.65
Paraffin, high viscosity	gal.	.20@.26
Red No. 1	"	.11@.11½
No. 2	"	.10½
23½@24 gravity	"	.12@.13
28@32 gravity	"	.08¾@.09¾
25 "	"	.11@.12
Ozokerite	lb.	.05½@.09
Paints—Blanc Fixe	"	.02¼@.02¾
Benzoin, Sumatra	"	35@.40
Marbled	"	.27@.28
Chrome, green, com'l	"	.05@.06
Green, extra	"	.12@.13
Chem. pure	"	.16@.17
Yellow, common	"	.04
Com'l	"	.08
Chem. pure	"	.16½@.12½
Green, Paris, in bulk	"	.11@.12
Lamp black—Com'l	"	.03@.05
Refined	"	.05@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.30
Litharge, American	"	.05¼@.06
English flake	"	.06¾@.07
Ocher, Rochelle	"	1.10@1.20
American	sh. ton	8.00@17.00
Golden	lb.	.02½@.04
Dutch washed	"	.02¼@.04
French "	"	.01@.01¼
Orange mineral, Amer.	"	.06¼@.06¾
English	"	.06½@.07¼
French	"	.08½@.08¾
German	"	.06¼@.06¾
Red lead, American	"	.04½@.04¾
Foreign	"	.05⅝@.06½
Shellac, No. 2, Orange	"	.16@.18
T. N	"	.15@.16
A. C. Garnet	"	.17@.19
Bleached	"	.17½@.18
S. S. & S. O. S	"	.21@.22
Triangle G	"	.22½
V. S. O	"	.23@.24
Diamond I	"	.26
D. C	"	.27@.28
Sienna, American raw	"	.00¼@.01
Burnt and powder	"	.01¼@.01½
Italian, raw	"	.01¼@.03½
Burnt and powder	"	.02½@.03¼
Ultramarine	"	.03@.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver	"	.52@.55
Chinese	"	.70@.75
English, imported	"	.60@.65
Artificial	"	.10@.20
White lead, Am., dry	"	.04¼@.05
In oil	"	.05¼@.06
Foreign, dry	"	.04¾@.07½
In oil	"	.04½@.05
Zinc white, Amer., dry	"	.03¾@.05
In oil	"	.08¼@.09½
Antwerp, red seal	"	.05⅞
Green seal	"	.06¾
Paris, red seal	"	.06¾
Green seal	"	.08⅜
V. M., red seal in poppy oil	"	.08¼@.08⅝
Green seal in poppy oil	"	.09½@.10
Palladium—		
Metallic, in sheets, in Germany	grm.	.77
Black (Moor)	"	.71
Pearl Ash	lb.	.05@.05½
Pitch—Coal tar	gal.	.08
Platinum—Bichlori'e dry	oz.	8.00@9.00
Plumbago—American, pulverized, f.o.b., Providence, R. I	sh. ton	25.00@30.00
German, lump	lb.	.01@.01½
Pulverized	"	.01¼@.01¾
Ceylon, crude	"	.01¼@.04½
Pulverized	"	.02@.05
Potash Alum—		
Caustic, pure white	"	.10
(76@78%)	"	.05@.06
(90%)	"	.06@.07
Potassium—		
Metallic, in Germany	kg.	18.56
Acetate (retail)	lb.	.30
Bicarbonate cryst	"	.08@.8¼
Bichromate	"	.10@.10¼
Bromide, gran	"	.41½
Carbonate	"	.04¾@.05½
Chloride, pure (retail)	"	.25
Chromate (retail)	"	.47
Cyanide (98@100%)	"	.26@.28
Ferricyanide, red, com'l	"	.36@.38
Chem. pure	"	1.25
Ferrocyanide, yellow, com'l	"	.14
Chem. pure	"	.75
Hyposulphite	"	1.02½@1.07½
Iodide, bulk	"	2.35@2.40
In bottles	"	2 45@2.65
Nitrate, double refined	"	.05
Chem. pure cryst	"	.05@.07
Oxalate, neutral (retail)	"	.20
Permanganate, pure cr.	"	.19@.20
Chem. pure (retail)	"	.34
Sulphide, com'l	"	.16
Chem. pure	"	1.00
Tartrate (soluble tartar) (retail)	"	.53
Pyrites—		
Roughs, at seaboard, American, iron	unit	.09@.12
Smalls	"	.08@.10
Spanish, cupreous	"	.10@.11
Non-cupreous	"	.10@.13
Iron, smalls	"	.10@.12
Quartz—(See Silica).		
Salt—		
Domestic, gr. 200 lbs	sack	.55
Lump	sh. ton	12.00
Liverpool, gr. 200 lbs.	sack	.75
Fine	"	1.35
Lump	sh. ton	15.00
Turk's Island, 200 lbs	sack	.25
Saltpeter—Crude	lb.	.03@.03¼
Silica—Precipitated	sh. ton	$12.00
Ground quartz, carload	"	8.50
Lump quartz	"	3.00@4.00
Silver—Chloride (retail)	oz.	.90
Cyanide (retail)	"	1.00
Nitrate	"	.41@.42½
Oxide	"	1.10
Sulphide (retail)	"	1.00
Sodium—		
Metallic, in Germany	kg.	1.19
Acetate	lb.	.03¼@.06
Chem. pure, fused (retail)	"	.30
Bichromate	"	.08½@.08¾
Bisulphite, com'l dry	"	.22
Acid solut (30° Be.)	"	.03
Bromide	"	.47@.48
Carbonate, pure (retail)	"	.10
Chlorate, cryst	"	.10½
Cyanide, pure (retail)	oz.	.55
Hyposulphite	lb.	1.50@1.85
Molybdate, pure (retail)	oz.	.50
Nitrite	lb.	.07½@.10
Oxalate (retail)	"	.45
Phosphate, gran. pure	"	.03@.03½
Cryst. c. p. (retail)	"	.30
Dry, c. p. (retail)	"	.50
Salicylate	"	.35
Silicate, p. cryst. (retail)	"	1.10
Com'l, lumps	"	.01@.04
Sulphate, pure	"	.10
Sulphite, cryst	"	.04@.06
Granulated (retail)	"	.16
Tartrate, c. p. cryst	"	1.00
Tungstate, com'l (retail)	"	.35
Pure	"	.50
Vanadate, in Germany	100 grms.	2.38
Strontium—		
Carbonate, precipitate	lb.	.12
Nitrate	"	.07@.07½
Oxalate	"	.38
Sulphur—Flour	100 lbs.	1.65@1.75
Roll	"	1.60
Sublimed	"	1.90
Pure, precipitated	lb.	.12
Talc—American	100 lbs.	.40@.60
French	"	.90@1.50
Italian	sh. ton	20.00@35.00
Tellurium—		
Metallic, c. p. in sticks, in Germany	100 grms.	14.28
Powder	"	9.52
Tin—		
Chloride, pure cryst. (retail)	lb.	.22
Fused cryst. (retail)	"	.50
Crystals	"	.09¼@.09½
Muriate	"	.05@.07
Oxide	"	.21@.25
Protoxide	oz.	.25
Tripoli—Powder	lb.	.04
Uranium—Oxide	"	2.10
Wolfram Ore—50%	lg. ton	80.00
60%	"	90.00
70%	"	100.00
75%	"	105.00
Zinc—		
Chloride	"	.05½@.08
Dust, indigo auxiliary	"	.07
Sulphate, cryst	"	.02@.02¼
Sulphide, com'l	"	.02½@.06
Zirconium—		
Oxide (retail)	oz.	.85
Oxide, hydr. (retail)	"	.66

THE RARE ELEMENTS.

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

	Cust. Meas.	Price.
Argon—Spectrum (N.Y.)	tube.	$5.00
Barium—Amalgam	grm.	1.19
Electrol	"	5 71
Beryllium—Powder	"	6.42
Crystals	"	9.52
Boron—Amorphous, pure	"	.62
Crystals, pure	"	1.79
Calcium—Electrol	"	4.28
Cerium—Fused	"	2.02
Chromium—Fused	100 grms.	5.95
Com'l pure powder	kg.	1.90
Chem. pure cryst	grm.	.24
Cobalt—(98@99%)	kg.	5.47@5.71
Pure	"	30.94
Didymium—Powder	grm.	4.28
Erblum	"	3.57
Gallium	grain	6.15
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	6.42
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Helium—Spectrum (N.Y.)	tube.	6.00
Indium	grm.	4.05
Iridium—Powder	"	1.25
Fused	"	1.31
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Lithium	"	2.38
Molybdenum—Com'l (95%)	kg.	2.86
Fused, electrol	100 grms.	15.47
Niobium—Chem. pure	grm.	3.81
Osmium	"	.83
Rhodium	"	3.57
Rubidium—Pure	"	4.76
Ruthenium	"	1.49
Selenium—Com'l powder	kg.	30.94
Sublimed powder	"	40.46
Sticks	"	33.32
Silicon—Amorphous	"	23.80
Crystals, pure	100 grms.	13.09
Strontium—Electrol	grm.	6.19
Tantalum—Pure	"	4.28
Thallium	kg.	29.75
Thorium	grm	7.85
Titanium	"	.71
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Wolfram—Com'l (95@98%)	kg.	.95
Fused	100 grms.	15.47
Powder, pure	kg.	4.76
Yttrium	grm.	3.33
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71

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Fraser & Chalmers.
Lambert Hoisting Engine Co.
Ldgerwood Mfg. Co.
Philadelphia Eng. Works, Ltd.
Risdon Iron Works.
Stilwell-Bierce & Smith-Vaile Co
Tod, William & Co.
Union Iron Works.
Union Gas Engine Co.
Webster, Camp & Lane Mach. Co.
(See Machinery.

Excavators
Bucyrus Steam Shovel & Dredge Co
Marion Steam Shovel Co.
Vulcan Iron Works.

Fire-Brick and Clay
Chur, Walter.
Denver Fire Clay Co.
Garden City Sand Co.
Standard Fire Brick Co.

Fluorspar.
Fuerst Bros. & Co.

Furnaces
Billin, Chas. E. & Co.
Brown, Horace F.
Denver Fire Clay Co.
Hoskins, Wm.
Moore, S. L., & Son Co.
Pollock, W. B. & Co.
(See Machinery.)

Fuses.
Ingersoll-Sergeant Drill Co
Macbeth & Co.

Gas Engines.
Hercules Gas Engine Works
Union Gas Engine Co.

Gas Works
Pollock, Wm., B. & Co. | Wood, R. D.

Gauges, Recording, Etc.
Bristol Co.

Gearing
Besly, Chas. H., & Co.
Chester Steel Cast. Co.
Denver Eng. Wks. Co.
Fraser & Chalmers.
(See Machinery.)

Grease, Graphite, Etc.
Besly, Chas. H., & Co.
Dixon, Jos., Cruc. Co.
Fuerst Bros. & Co.

Heavy Machinery.
Denver Eng. Works Co.
Fraser & Chalmers.

Hose, Rubber, Etc.
New York Belting & Packing Co. Ltd.

Hydraulic Rams.
Power Specialty Co.

Injectors.
Jenkins Bros.
Lunkenheimer Co.

Insulated Wires and Cables
Okonite Co., Ltd.

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

Iron Ore.
Spanish-American Iron Co.

Lead Burners.
Vollmer & Beaton.

Lead Linings for Chlorination Tubs.
Raymond Lead Co.

Link Belting. (See Belting.

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

Lubricators.
Detroit Lubricator Co.
Lunkenheimer Co.

Machinery, Dealers in Mining, Milling and Other Machinery
Allis, Edw, P., & Co.
American Diamond Rock Drill Co.
Bacon, E. C.
Besly, Chas. H., & Co.
Billin, Chas. E. & Co.
Blake, T. A.
Bradley Pulverizer Co.
Bullock, M. C., Mfg. Co.
Caldwell, H. W., & Co.
Colorado Iron Works.
Cuninghame & Co.
Denver Eng. Wks. Co
Fairbanks, Morse & Co.
Fraser & Chalmers.
Gates Iron Works.
Gillette-Herzog Mfg Co
Hammond, Mfg. Co.
Hendrie & Bolthoff Mfg. Co.
Ingersoll-Sergeant Drill Co.
Jeffrey Mfg. Co.
Jessop, W., & Sons, Ltd.
King & Andrews Co.
Lambert Hoisting Engine Co.
Ledgerwood Mfg. Co.
Krupp, F.
McCully, R.
McKiernan Drill Co.
Mecklenburg Ir. Wks.
Mine & Smelter Supply Co.
Moore, Sam. L., & Son.
Montgomery, J. H. Mach. Co.
Nelsonville Foundry & Machine Co.
New York Diamond Drill Co.
Norwalk Iron Wks. Co.
Philadelphia Eng. Wks., Ltd.
Pollock, Wm. B., & Co.
Rand Drill Co.
Raymond Bros Impact Pulv. Co.
Roberts Mfg. Co.
Risdon Iron Works.
Semi-Steel Co.
Stedman Fdy. & M. Co.
Snow Steam Pump Co
Stearns-Roger Mfg. Co.
Sullivan Mach'y Co.
Surman & Co.
Tod, Wm., & Co.
Union Gas Engine Co.
Union Iron Works.
Vollmer & Beaton.
Vulcan Iron Works.
Walb'rn-Swens'n Co.
Webster, Camp & Lane Mach. Co.
Westinghouse Elec. Mfg. Co.
Williams Mfg. Co.

Manganese Steel.
Taylor Iron & Steel Co.

Metal Dealers
American Dev. & Mg. Co.
American Metal Co.
Am. Zinc-Lead Co.
Baker & Co.
Bath, Henry & Son.
Besly, Chas. H., & Co
Bridgeport Copper Co.
Elliott's Metal Co., Ltd.
Eureka Co.
James & Shakspeare
Johnson, Matthey & Co.
Lambert's Wharf. Co.
Lewisohn Bros.
Mathison Sm'lting Co.
Matthiessen & Hegeler Zinc Co.
Montana Ore Purchasing Co.
Orford Copper Co.
Pass, C., & Son, Ltd.
Phelps, Dodge & Co.
Picher Lead Co.
Raymond Lead Co.
Spanish-American Iron Co.
Tod, William, & Co.
Vivian, Y'nger & Bond.

Metallurgical Works and Ore Purchasers' Processes
American Dev. & Mg. Co.
American Metal Co.
Am. Zinc Lead Co.
Baker & Co
Balbach Sm. & Ref. Co.
Baltimore Copper Wks.
Bridgeport Copper Co.
Canadian Copper Co.
Con. Kas. City S. & R. Co.
Denver Eng. Wks. Co.
Elliott's Metal Co., Ltd.
Fraser & Chalmers.
Goldsmith Bros.
Matthiessen & Hegeler Zinc Co.
Leuoux & Co.
Montana Ore Purchasing Co.
Orford Copper Co.
Pennsyl. Salt Mfg. Co.
Ricketts & Banks.
Russell Process Co.
Walburn-Swenson Co.

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

Mine, Mill and Smelters' Supplies.
Cuninghame & Co.
Denver Eng. Wks. Co.
Gates Iron works.
Parkhurst & Wilkinson.
Roessler & Hasslacher Chemical Co.
(See Machinery.)

Mining and Land Companies.
American Dev. & Mg. Co.
Atlantic Mg. Co.
Arizona Copper Co.
Copper Queen Con. Mg. Co.
Detroit Copper Mg. Co.
Eureka Co.
Isabella Gold Mg. Co.
Pike's Peak Mining Tunnel Railway.
Rio Tinto Copper Co
Smuggler-Union Mg. Co.

Nickel.
Canadian Copper Co.
Orford Copper Co.

Ore Cars.
Parkhurst & Wilkinson.

Ore Roasters
Brown, Horace F.
Cummer, F. D., & Sons Co.
Dunbar R., & Son.

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

Packing and Pipe Coverings.
Brandt, Randolph.
Jenkins Bros.
Robertson, J. L., & Son
New York Belting & Packing Co., Ltd.
Power Specialty Co.
Wyckoff & Son, A.

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

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Phosphor-Bronze.
Phosphor-Bronze Smelting Co.

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

Pipes
Billin, Chas. E. & Co.
Fairbanks, Morse & Co
Penna. Salt Mfg. Co.
Power Specialty Co.
Wyckoff, A., & Sons.

Platinum.
Baker & Co.
Johnson, Matthey & Co
Plumbago (See Graphite.)

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

Publications.
American Fertilizer.
Australian Mg. Stand.
British Columbia Mining Record.
Ir'n & C. Trade Review
McNeill's Code
Mining Investor.
Mining Journal.
Scientific Pub. Co.
Denver Republican.
El Minero Mexicano.
Indian Engineering.
So. African Mg. Jour.
Zeitschrift fur Praktische Geologie

Pumps
Billin, Chas E. & Co.
Cameron, A. S., Steam Pump Works.
Clayton Air Com. Wks.
Denver Eng. Wks. Co.
Fairbanks, Morse & Co.
Fraser & Chalmers.
Jeanesville Iron Wks
Snow Steam Pump Co
Stilwell-Bierce & Smith-Vaile Co.
Worthington, H. R.

Pyrites:
Fuerst Bros. & Co.

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

Quicksilver.
Eureka Co.

Railroads.
Atchison, Topeka & Santa Fe Ry.
Chicago & N. West. R. R.
C. B. & Quincy R. R.
C., C. C. & St. L.
Denver & Rio Grande R. R.
Denver, Leadville & Gunnison Ry
Florence & Cripple Creek R. R.
Illinois Central R. R.
Midland R. R. of Kentucky.
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Railroad Supplies and Equipment.
Hunt, C. W., Co.
Porter, H. K., & Co.
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(See Machinery.

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Eddy Valve Co.
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Fairbanks, Morse & Co.

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Gates Iron Works.
Harrington & King Perforating Co.
Link Belt Machinery Co.
Ludlow-Saylor Wire Co.
Tyler, W. S., Wire Works Co.
(See Machinery

Second Hand Machinery.
McArthur Bros.
Robertson, J. L. & Son
Robinson & Orr.

Shoes and Dies
Chester Steel Cast. Co
Carome Steel Works.
Crescent Steel Co.
Denver Eng. Wks. Co.
Fraser & Chalmers
Gates Iron Works.
Semi-Steel Co.

Shovels (Steam).
Bucyrus Co.
Marion Steam Shovel Co.

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

Sprocket Wheels.
Detroit Sprocket Chain Co.

Steel Rails, Castings, Rolls, Drill Steel
Bethlehem Iron Co.
Chester Steel Cast. Co.
Chrome Steel Works.
Crescent Steel Co.
Jessop Wm. & Son Ltd.
King & Andrews Co.
Moore, S. L., & Sons Co
Pollock, Wm. B. & Co.
Robinson & Orr.
Semi-Steel Co.
Taylor Iron & Steel Co
(See Metal Dealers.

Sulphur Apparatus.
White, Edward F.

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Billin, Chas. E. & Co.
Denver Eng. Wks. Co.
Fairbanks, Morse & Co.
Gates Iron Works.
Williams Mfg. Co.

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American Impulse Wheel Co
Leffel, Jas., & Co.
Pelton Water Wheel Co.
Stilwell-Bierce & Smith Vaile Co

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Eddy Valve Co
Fairbanks Morse, & Co
Jenkins Bros
Lunkenheimer Co
Powell, Wm., Co.

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

Voltmeters.
Weston Electrical Instrument Co.

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

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

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

Wharfage.
Lambert's Wharfage Co.

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Chester Steel Cast. Co.
Taylor Iron & Steel Co.

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Aitchison, R., Perf. Metal Co.
Harrington & King Perforating Co.
Tyler, W. S., Wire Works Co.

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Fairbanks, Morse & Co.

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Besly, Chas. H., & Co.
Broderick & Bascom Rope Co.
California Wire Wks.
Cooper Hewitt & Co.
Hunt, C. W., Co
Phelps, Dodge & Co.
Roebling, J. A., Sons & Co.
Ropeway Syndicate L'td
Trenton Iron Co.

Wire Rope Tramway.
Brown Hoist. & Conv. Machine Co.
California Wire Wks.
Colorado Iron Works.
Denver Eng. Wks. Co
Fraser & Chalmers.
Hunt, C. W., Co.
Roebling, J. A., Son & Co.
Ropeway Syndicate Steel.
Roberts Mfg. Co.
Vulcan Iron Works

POSITIONS VACANT

Free Advertising.

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

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

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

1532 WANTED—A GOOD SMELTER AND Refiner who knows how to handle tin and lead drosses and other refuse metal, making of Brazine Spelter and Babbits; competent, practical men only need apply. Address SMELTER, ENGINEERING AND MINING JOURNAL. June 12.

1533 WANTED—COMPETENT MAN FOR position in neighborhood of New York, experienced in running a steam electric plant. Address ELECTRIC, ENGINEERING AND MINING JOURNAL. June 12.

1534 WANTED — AN EXPERIENCED Placer Mining Foreman; one who is capable of taking full charge of a placer mine and is able to put in such improvements as will be required: building dams for holding water in reservoir, digging ditches, and putting in pipe and giant. Must also be familiar with under-currents. Must come with best recommendations as to ability and honesty. State experience and salary expected. Mines are located in Oregon. Address PLACER FOREMAN, ENGINEERING AND MINING JOURNAL.

1535 WANTED—MILL SUPERINTENDent for Peru; must fully understand the amalgamation of silver ores by the latest processes. House rent and table board furnished free. State experience, salary desired and references. Address PERU, ENGINEERING AND MINING JOURNAL.

1536 WANTED — AN ASSAYER AND Chemist for the City of Mexico; preferably one having had experience in Western smelter practice. Salary $150 Mexican currency per month. Address, stating age, experience and references, PUENTE, ENGINEERING AND MINING JOURNAL.

1537 THERE IS AN OPENING ON THE staff of the ENGINEERING AND MINING JOURNAL as Mining News Editor. The duties call for an experienced newspaper man, with experience in mining and familiarity with the mining districts of the West. Address, stating full particulars, experience, salary expected, etc., EDITOR ENGINEERING AND MINING JOURNAL.

1538 WANTED — MINING ENGINEER for State of Durango, Mexico. Must be competent to assume full charge of mining operations, erect plant, conduct development and prospect work, assays, etc. Must speak Spanish and be thoroughly reliable. Address, with full particulars as to experience, ability and salary desired, DURANGO, ENGINEERING AND MINING JOURNAL.

SITUATIONS WANTED.

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

A MAN, 27 YEARS OLD, WITH TECHnical education, previously assistant chemist at a large smelter and now with a consulting engineer, desires a position in the fall with a milling, smelting or refining company. Good references. Address C. D., ENGINEERING AND MINING JOURNAL. No. 18,040, Aug. 14.

ELECTRICIAN, WHO HAS HAD GOOD practice with electric mining and electric haulage machinery, first-class repair man on electric machinery, with practical and theoretical education, wants to change his position. Good steam engineer and mechanic; industrious workingman. Best references from present employers. Address J. M. S., ENGINEERING AND MINING JOURNAL. No. 18,051, July 31.

A MINING ENGINEER OF EXPERIENCE is open to an engagement as superintendent and general manager; in the prime of life. Full references given as to former record; also refers to present employers. Can organize and manage men, and is thoroughly posted in designing and operating machinery and in all construction. Address Box 862, ENGINEERING AND MINING JOURNAL. No. 18,044, July 24.

A MINING ENGINEER OF NINE YEARS' experience will be open for engagement after August 1st as Manager, Assistant Manager, Superintendent or any responsible position; 30 years of age; a thorough assayer, surveyor and bookkeeper; best of references from former and present employers. Address WESTERN, ENGINEERING AND MINING JOURNAL. No. 18,043, July 24.

POSITION WANTED BY MINING ENGIneer and metallurgist; also good chemist; 20 years' experience; good references; will go to any country. Address ENGINEER, ENGINEERING AND MINING JOURNAL. No, 18,052, Aug. 7.

A MINING ENGINEER 26 YEARS OF AGE, now under engagement with well-known mining company, desires change; has been continuously employed for past five years in every capacity; thorough assayer and chemist. Address MINING, ENGINEERING AND MINING JOURNAL. No. 18,030, Aug. 14.

A PRACTICAL MINING MAN DESIRES engagement as manager; 20 years' experience in Central and South America. Able to open out and develop new properties, design, construct and run mills, etc., and manage any class of labor; speaks Spanish; city references. Address O. Y., ENGINEERING AND MINING JOURNAL. No. 18,053, July 31.

SUPERINTENDENT.—POSITION AS MINE Superintendent wanted by an experienced man now under engagement with well-known mining company; first-class mechanic; understands all details of mining from the sinking of shafts to the development of same. Specialties: reduction of costs and increase in production of output. Address PRACTICAL, ENGINEERING AND MINING JOURNAL. No. 18,042, Aug. 7.

POSITION WANTED BY AMERICAN MINing Engineer, age 27, one year's practical experience mining in Mexico. Certificate from Freiberg Mining Academy and from the Royal Saxon Works. Is familiar with copper smelting, lead smelting and desilverizing, and is well posted in metallurgical chemistry. Speaks English, German and Spanish; has high references. Address D. A., ENGINEERING AND MINING JOURNAL. No. 18,046, July 24.

CONTRACTS OPEN.

TREASURY DEPARTMENT, Office Supervising Architect, Washington, D. C., July 8, 1897.—Sealed proposals will be received at this office until 2 o'clock p. m. on the 10th day of August, 1897, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except heating apparatus, vault doors and tower clock), of the U. S. Post Office, etc., building at Paterson, N. J., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Paterson, N. J. 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, and 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. CHAS. E. KEMPER, Acting Supervising Architect. Orig.

CEMENT, BROKEN STONE, ETC.—United States Engineer Office, 166 Granby Street, Norfolk, Va. Sealed proposals for furnishing and delivering cement, broken stone and yellow pine lumber at Fort Monroe, Va., will be received here until 12 o'clock July 30, 1897, and then publicly opened. Information furnished on application.

GENERAL EXCAVATING, PILING, FOUNDation, etc.—Treasury Department, Washington, D. C.—Sealed proposals will be received at this office until 2 o'clock p. m., Wednesday, the 28th day of July, 1897, and opened immediately thereafter, for all the labor and materials required for general, excavating, piling, foundations, etc., for the U. S. Post Office, Court House, etc., at Chicago, Ill., in accordance with drawings and specifications, copies of which may be on application at this office or at the office of Henry Ives Cobb, Architect, 100 Washington street, Chicago, Ill. In requesting plans, etc., bidders must state what similar work they have performed. 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, and to waive any defect or 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 bidder. Proposals must be made upon blanks furnished by this office, and enclosed in a sealed envelope marked "Proposals for Foundations, etc., for Chicago Building," from (give name and address of bidder), to be addressed to HENRY IVES COBB, Architect U. S. Government Building at Chicago, Ill., Treasury Department, Washington, D. C.

DREDGING, BREAKWATER EXCAVATION. —U. S. Engineer Office, 537 Congress street, Portland, Me.—Sealed proposals for dredging, building breakwater and boulder excavation at Bagaduce River, Carver's Harbor, Union, Kennebec, Sasanoa and Saco Rivers, Me., and Little Harbor, N. H., will be received here until 12 m., July 21st, 1897, and then publicly opened. Information furnished on application. R. L. HOXIE, Maj., Engrs.

ELECTRIC LIGHTS.—Sealed proposals will be received at the office of the City Treasurer until 12 m., July 20th, 1897, for lighting the city of Norfolk, Va. Proposals to be for a term of three (3) years from September 1st, 1897, for not less than 250 arc lights of from 1,200 to 2,000 candle power, and not less than 265 incandescent lights of 16 candle power.

BRIDGE.—Sealed proposals will be received by City Commissioner, Baltimore, Md., until noon of Monday, July 26th, 1897, for the construction of Wilken's Avenue bridge and approaches, in accordance with plans and specifications to be seen at this office. Approved bond in one-half the amount of the contract will be required, and each proposal must be accompanied by a certified check on a Baltimore bank for $500.00 to secure the execution of bond and contract, within one week afterward. The right is reserved to reject any or all proposals.

GUN EMPLACEMENT.—U. S. Engineer Office, Burke Building, Seattle, Wash.—Sealed proposals for constructing gun emplacements on Admiralty Head, Washington, will be received here until 2. p. m., July 31, 1897, and then publicly opened. Information furnished on application. HARRY TAYLOR, Capt. Engrs.

COAL.—Sealed proposals will be received by the Clerk of the Board of Education of Sandusky, O., up to noon July 30, 1897, for furnishing coal for the city schools of Sandusky, as follows: 225 tons, more or less, of anthracite coal, egg, stove and grate sizes; 220 tons, more or less, of Jackson lump coal; 80 tons, more or less, of Virginia soft coal. All coal to be delivered before September 1st, 1897, except fifty tons at Tenth Ward school-house, to be delivered when needed. All coal to be stored in bins at the several school buildings where needed and to be subject to inspection. The Board reserves the right to reject any or all bids.

COAL.—Sealed proposals will be received at the office of the fire marshall, City Hall, Chicago, until 12 o'clock, noon, Wednesday, July 21st, for furnishing the city of Chicago for the use of the fire department hard and soft coal for the year ending July 31st, 1898, estimated requirements being as follows: 1,500 tons small egg anthracite coal; 1,500 tons large egg anthracite coal; 500 tons range anthracite coal; 2,000 tons bituminous coal; 500 tons Southern Illinois nut. Bidders will name the price of coal delivered in their yards, and also the price delivered at such points within the city as the fire marshall shall direct. 1,000 tons, more or less, of the large egg coal above specified for the use of fireboats will be required to be delivered on river docks in yards convenient to said boats. The bituminous coal must be the best quality of West Virginia splint, or coal equally as good. Only one price will be considered from each bidder on bituminous coal, and in case two or more grades or kinds of said coal are offered by the same bidder, the highest priced coal named will be taken as the proposal of said bidder. Proposals must be made on blanks obtained at this office, sealed, indorsed "Proposals for Coal," addressed to the secretary of the fire department, and accompanied by $500 in money or a certified check for that amount on some responsible bank doing business in the city of Chicago, drawn to the order of the fire marshal.

D. J. SWENIE, Fire Marshal.

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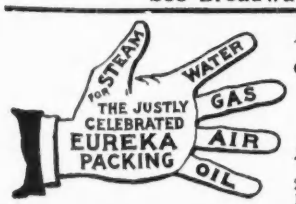

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MORTGAGE SALE.

Under and by virtue of thepowers contained in a certain mortgage made the 6th day of April, 1882, by the Canada Consolidated Gold Mining Company in favor of Robert Richardson, of the City of Belleville, as Trustee, which said mortgage will be produced at the time of sale, there will be offered for sale by PUBLIC AUCTION by C. J. Townsend & Co., at No. 22 King Street West, in the City of Toronto, Ont., on Saturday, the 18th day of September, 1897, at the hour of 12 o'clock noon, the following property (including the property formerly operated by the said company for gold mining purposes):

1. Lot No. 10 in the 8th Concession of the Township of Marmora, in the County of Hastings and Province of Ontario, Can., less five acres thereof, said to belong to W. J. Gatling.
2. The west half of Lot No. 10 in the 9th Concession of the said Township.
3. The east half of Lot No. 9 in the 8th Concession of the said Township.
4. A portion of the northeast quarter of Lot No. 8 in the 8th Concession of the said Township.

On the property are two shafts sunk for the purpose of mining gold-bearing arsenical ore, with drifts and extensions; a mill building formerly used for treating the ore; brick office building and commodious brick residence; a number of workman's cottages and other buildings and erections used in connection with the working of the mines.

For terms and conditions of sale apply to DEWART & RANEY, Solicitors for the present Trustee under the said mortgage, 26 King Street East, Toronto, Ontario.

Dated the 9th day of July, A. D. 1897.

DIVIDENDS.

HOMESTAKE MINING COMPANY,
MILLS BUILDING, 15 BROAD STREET,
NEW YORK, July 16, 1897.

DIVIDEND NO. 228.

The regular monthly dividend, TWENTY-FIVE (25) CENTS PER SHARE, has been declared for June, payable at the office of the company, San Francisco, or at the transfer agency in New York, on the 26th inst.

Transfer books close on the 20th inst.
LOUNSBERY & CO., Transfer Agents.

QUINCY MINING COMPANY.
NEW YORK, July 14, 1897.

DIVIDEND NO. 58.

A dividend of FOUR DOLLARS PER SHARE will be payable August 16th next, to registered holders 22d inst.

Transfer books will be closed 22d inst. and reopened August 2d.

WM. R. TODD, Treasurer.

ISABELLA GOLD MINING COMPANY.
COLORADO SPRINGS, COLO., June 10, 1897.
DIVIDEND NO. 11.

A dividend of ONE-HALF CENT PER SHARE ($11,250) has been declared, payable June 25th, 1897, to stockholders of record June 15th, 1897.

The stock transfer books will be closed June 15th, 1897, at 3 o'clock p. m., and will be reopened on the morning of June 26th, 1897.

PERCY HAGERMAN,
Vice-President and Treasurer.

CONTRACTS OPEN.

Continued from Page 20.

SAND, STONE AND CEMENT.—U. S. Engineer Office, Army Building, New York.—Sealed proposals in triplicate, for delivery of sand, stone and cement for concrete at Fort Hamilton, N. Y., will be received here until 12 m., July 17, 1897, and then publicly opened. Information furnished on application. WILLIAM LUDLOW, Lieut. Col., Engrs.

GUN EMPLACEMENTS, MINING CASEMENT.—U. S. Engineer Office, Munsey Building, New London, Conn.—Proposals for building gun emplacements and a mining casemate on Plum Island, N. Y., will be received until noon, July 28th, 1897, and then opened. For information apply to SMITH S. LEACH, Maj., Engrs.

DREDGING.—U. S. Engineer Office, 601 Eighteenth street, N. W., Washington, D. C.—Sealed proposals for dredging in Occoquan, Aquia, Nomini and Lower Machodoc creeks, Va., will be received here until 12 m., July 20, 1897, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lieut. Col., Engrs.

DREDGING.—U. S. Engineer Office, 601 Eighteenth street, N. W., Washington, D. C.—Sealed proposals for dredging in Mattaponi and Pamunkey rivers, Va., will be received here until 12 m., July 24th, 1897, and then publicly opened. Information furnished on application. CHAS. J. ALLEN, Lt. Col., Engrs.

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