

ENGINEERING and MINING JOURNAL.

VOL. XXIX., No. 3. (WITH SUPPLEMENT.)

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 SUBSCRIPTION PRICE, including postage, for the United States and Canada, \$4 per annum; \$2.25 for six months; all other countries, including postage, \$5.00 = 20s. = 25 francs = 20 marks. All payments must be made in advance.
 REMITTANCES should always be made by Post-Office Orders or Bank Drafts on New York, made payable to THE SCIENTIFIC PUBLISHING COMPANY.
 THE SCIENTIFIC PUBLISHING CO., PUBLISHERS,
 27 Park Place, New York.

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The *Traveler's Official Railway Guide for the United States and Canada* has removed its publication office from No. 233 South Fifth street, Philadelphia, to No. 46 Bond street, New York City. The January, 1880, number contains a new General Railway Map of the United States and the Dominion of Canada, compiled from information obtained from official sources.

We call attention to the advertisement, in another column, of the new mining agency of MESSRS. HALL & SMITH, at Denver, Colo. These gentlemen have the advantage of a long residence in that State, and present recommendations from eminent citizens. The announcement that their agency "neither buys, bonds, sells, nor handles mining or other property," is calculated to inspire confidence in the impartiality of its reports.

MR. CHARLES M. ROLKER, Mining Engineer, has been appointed General Superintendent of the mines of the Stormont Silver Mining Company, and entered upon his duties at Silver Reef, Utah, on the first of the month. All recent reports confirm those previously made, with regard to the great value of this property, which, under the able administration the company has secured, will soon rank among the very best and most profitable mines in this market.

The Spring Valley Hydraulic Gold Mining Company has been organized upon a somewhat new basis. The capital stock is placed at \$200,000, in shares of \$1 each, and it is offered to the public at \$10 per share, or 900 per cent premium. The object, no doubt, is to reduce taxation and the liability of stockholders, under the New York law, while it can in no way affect the value of the property.

The Spring Valley Hydraulic Gold Company has passed the examinations of the United States Mining Investment Company, to which we referred last week, and the stock is offered to the public at \$10 per share, or at the rate of \$2,000,000. The indorsement of the formidable list of bank presidents and other capitalists who form the Board of Directors of the United States Mining Investment Company carries, as it should, great weight with the public; but the dividends, of which the first has been declared, will go still farther in popularizing this enterprise.

We hope to be able shortly to give such a full description of the property as will make our readers familiar with its value and its claims to their attention.

ON another page will be found an extremely well-written letter upon the subject of "the fuel of the future"—water-gas—which will well repay perusal. Mr. DWIGHT is probably the best-informed expert upon this question that we have, having devoted a great amount of study to the subject during several years past; moreover, he is a gentleman so thoroughly reliable and honorable that, though personally interested in the success of water-gas, we accept his statements with implicit confidence.

The success of water-gas for illuminating purposes is already fully established in this country, notwithstanding the intense opposition made by the gas-rings to its introduction. In Baltimore, Md., Toronto, Ont., Lancaster, Pa., Scranton, Wilkes-Barre, Indianapolis, Elyria, and in some fifteen or twenty other places, enriched water-gas is now supplying the light, at a far less cost than illuminating-gas made under the old system, and of a better quality. The results found by Prof. MOORE with the Strong water-gas, and those made by Prof. WURTZ, have been fully confirmed by the experiments recently made in Sweden, and the predictions made by the ENGINEERING AND MINING JOURNAL have been, thus far, fully verified. There can be no question now of the practical success of water-gas as an economical fuel; the interested assertions of Mr. EUGENE VANDERPOOL, of the Newark Gas-Light Company, and of Prof. MORTON in the interest of the Gas-Light Association, to the contrary, notwithstanding.

We shall next week publish a full and sharp review of Mr. VANDERPOOL'S "waste of energy," and ventilate the subject for the benefit of all consumers of gas, whether for illuminating or fuel purposes.

THE DROWN TESTIMONIAL.

This pleasant episode in the history of the Institute of Mining Engineers is now gracefully recalled to the memory of the contributors to the Testimonial Fund by the appearance and private distribution, to that select circle, of a beautiful memorial volume, containing the proceedings, speeches, list of contributors, etc., and adorned with a splendid photographic portrait of Dr. DROWN. The title-page of the volume announces that it is published by the Committee; but we think we commit no violation of confidence in saying, what, indeed, justice to all parties seems to require, that the Committee would have hesitated, perhaps refused, to devote to this purpose any portion of the money subscribed explicitly for presentation to Dr. DROWN. It was, in fact, the Secretary himself who insisted upon having such a memento and acknowledgment prepared and distributed, and the Committee's part was confined to consenting, upon the condition that Dr. DROWN would permit them to include his portrait in the volume. But for his modesty, and his preference that the publication should proceed from the Committee, it would have been in name, as it is in fact, a reciprocal testimonial from Dr. DROWN to his friends. We are sure he could have sent them nothing more acceptable than the excellent likeness which forms the frontispiece. It need scarcely be added that, Dr. DROWN having determined the style and Mr. SHERMAN, the Institute printer, having executed the details of the publication, the book is faultless in taste and in mechanical particulars.

MINING LEGISLATION.

The way in which members of Congress are plunging into mining speculations is a bad omen for the cause of legislation on that subject. We do not refer to such men as Senator JONES or Senator CHAFFEE, whose business was connected with mining before they were elected. Nor do we undertake to say that members of Congress may not, like other citizens, engage in any legitimate business. But it was certainly unfortunate in the times of the notorious Crédit Mobilier that so many Congressmen became interested in Pacific Railway and Crédit Mobilier stocks, just as they were called to deal with these interests in their legislative capacity. And it will be unfortunate again, if the pending reconstruction of the mining law shall be undertaken by a Congress, large numbers of the members of which are participants in mining speculations.

We notice that a bill was reported last week from the Committee on Mines and Mining in the House of Representatives, and pressed to a passage with an extraordinary amount of zeal, amounting to passion. According to one account, it was intended to enable parties at a distance from the mining districts to locate claims through agents. According to another account, it contained also a provision for vertical boundaries. We have not seen the text of the bill; and we shall reserve comment upon it until we have examined it in detail. What we wish to say at present, however, is equally true and timely whether the bill be, in itself, good or bad. The hasty passage of any bill at all, just at this time, is a mistake, or worse.

Congress has remitted the whole subject to the Public Land Commission, which has been industriously collecting, throughout the mining districts, the information absolutely essential to wise measures of reform; and this Commission, after months of such preliminary work, is now busy with its final report, and is declared to be on the point of presenting to Congress its well-considered recommendations. The sudden action of the

House of Representatives, in amending the present law, looks like an attempt to forestall the thorough discussion of the subject which will follow the report of the Commission; and the natural suspicion in such a case is, that the step is taken to favor some special interest, locality, or scheme. There has been too much partial and special legislation already with regard to the mineral lands of the United States. What is now wanted is a comprehensive and permanent system. But this is not the way to get it.

NEW PUBLICATIONS.

TRANSACTIONS OF THE AMERICAN INSTITUTE OF MINING ENGINEERS. Vol. VII. Easton, Pa.

This volume contains the proceedings and papers of the Chattanooga meeting, May, 1878, the Lake George and Lake Champlain meeting, October, 1878, and the Baltimore meeting, February, 1879. It is certainly not inferior in interest and value to any of its predecessors. As we have often had occasion to say, the true index and basis of the prosperity of the Institute must be sought in its volumes of Transactions. No matter how much pleasure and profit may be derived from attendance upon the meetings, it still remains true that not more than 10 or 15 per cent of the members and associates are present at any one meeting, and those who do attend embrace, to a considerable extent, the same persons every time; so that it is safe to say that the majority of members and associates have scarcely attended any meeting since the Institute was founded. To this large class, the printed papers and discussions constitute the only return for the support given to the Institute. The honor of belonging to it, and the pleasurable consciousness of contributing thereby to a useful organization, would scarcely suffice to justify the annual payment of dues, if the annual volume did not amply demonstrate the professional importance and success of the enterprise.

The Institute need not fear the comparison of its transactions with those of any other technical society in the world. For the combination of timeliness and practical value with scientific method, we believe these volumes to be unsurpassed. It would be difficult to point out in the present instance the papers of noteworthy interest without enumerating the whole table of contents; but nobody will feel slighted if we mention as perhaps the most striking and useful contribution which this volume contains, the paper of Dr. DUDLEY on the Chemical Composition and Physical Properties of Steel Rails, together with the discussions thereof held at successive meetings. The most important of these discussions was perhaps the one which took place at the Pittsburg meeting in May last, and which is not included in Volume VII. It has, however, with all the rest, been published in a separate pamphlet, and has attracted, both in this country and abroad, a wide-spread interest.

We may mention also, as extremely important, the papers of Mr. HOLLEY on the United States Board Testing Machine, and the Pernot Furnace; and the wonderfully elaborate catalogue of Official Reports on Geological Surveys of the United States and Territories, and of British North America, contributed by Prof. PRIME.

Typographically, the volume, like all others of the series, reflects credit upon the printer of the Institute. It goes without saying that, after the intelligent and careful editing of Prof. DROWN, it is free from the inaccuracies which too often mar publications of the kind. Two "errata," conspicuously announced in the book itself, rather serve to emphasize than to diminish its general perfection.

REVIEW OF THE METAL MARKET FOR 1879.

We had hoped for full statistics of the various metals before writing up the history of one of the most eventful years the metal market has ever passed through. We are compelled, however, to proceed with such as we have been able to obtain.

The same causes which brought about an enormous demand for and increased the prices of iron and coal have influenced metals; and, as we have discussed these questions in our reviews of the iron and coal trades, we shall omit them here.

The enormous demand and large advance in prices surprised even the most sanguine. Comparisons were made with the statistics of previous

prosperous years, failing to realize the immense growth and development of this country since 1873. The greatest factor, however, in increasing the demand, has been the cheapness of all metals, which has greatly enlarged their uses.

Prices have advanced largely in every case, and during the latter part of the year, each metal experienced a very active business. The most notable "boom" was in tin plates. The cause of this was, that nearly all of the business was done in the East, and most of it brought to public notice. Although some of our domestic productions were in very active request, yet they were largely intercepted for consumption in the West, and the transactions were not made public here; consequently, the public only learns of the demand that really existed by an examination of the statistics of the trade at the close of the year.

Copper.—The year opened with a small business at 16c., and an estimated stock of 7,000,000 lbs. About the middle of the month, from 4,000,000 to 5,000,000 lbs. were sold at 15½c. for delivery up to May. After this, there was but a small business, and the price declined to 15c. The Wallaroo sale took place in England on the 28th of this month, and the average price obtained was £64 17s., showing a marked decline from the previous sale. February was a very quiet month, and the price of copper was steady at 15½c. March was also a quiet month; but, as the producing companies controlled the situation, prices were slightly advanced, the range being 15½@16c. April, so far as the public knew at the time, was a very quiet month; yet prices were still very firm at 15¼@16c. The outbreak of the war between Chili and Peru was a sustaining influence, to a small extent. The Wallaroo sale, which took place in England this month, was so discouraging that a portion of the copper offered for sale was withdrawn and afterward sold at private sale. The prices received at public auction were £62 for Burra Burra and £62 10s. for Wallaroo, a decline of over £2 from the previous sale.

Early in May, it became known that from 4000 to 5000 tons had been quietly sold for export at 14½@14c., and less. This accounted for the apparently anomalous strength of prices in April. About the middle of the month, it was announced that about 5,000,000 lbs. had been sold to manufacturers at 16c., after which the market was quiet but firm at 16½@16¼c. June was a very quiet month, although prices were well maintained at 16½@16¾. As is usual for July, it was a very quiet month, with prices at 16@16¼c. The early part of August continued quiet, with strong prices; but during the latter part of the month, it was announced that 10,000,000 lbs. had been sold to manufacturers at 16c., and the mining companies were firm at 16½c., although there were small sales at 16¼c. In September, the greater activity among manufacturers began to attract attention, and it became the general belief that a period of prosperity and large consumption was assured, and purchases were very liberally made with the result of advancing the price to 19c. Early in October, a very active market had developed and the consumption was quite large. Prices advanced rapidly both here and in Europe, and at the close 21½c. was asked in this market. November opened with only a moderate business and an inclination to weakness in prices; but before the middle of the month, sales of between 3,000,000 and 4,000,000 lbs. were announced at prices running up to 21½c. on spot, and 22½c. for 1880 delivery. Later on, about 1,500,000 lbs. were reported at 21¼c. on spot and 22½c. for December and January delivery, and 21¼@22c. was asked; but at the close the market was quiet and lower; sales having been made down to 21½c. During this month, the outside public entered largely into speculation in this article. December was quiet and at times weak, although closing at 21¾@21½c. The exports were 13,731,212 lbs., and the imports 2,442,146 lbs., leaving an excess of exports over imports of 11,289,066 lbs.

Messrs. FRENCH & SMITH say of the London market:

"During the greater part of the year, this market remained very inanimate, values of Chili bars fluctuating between £54 and £56; but since September, a large speculative business has been done, and, in sympathy with other metals, prices have advanced to £66 for Chili bars. The Chili-Bolivian war seems to have had but little effect on production, which continues ample, and stocks in this country and elsewhere are in excess of present requirements. Demand appears to be increasing, and stocks in manufacturers' hands are bare, so that surplus stocks may soon be worked off, and a further advance in values established."

The stocks of copper in England and France, and Chili bars, chartered

PRICES OF METALS DURING 1879.

	Copper, per lb.	Straits tin, per lb.	TIN PLATES, PER BOX.				Lead, per lb.	Spelter, per lb.	Zinc, per lb.
			Charcoal.		Coke.				
			Tins.	Ternes.	Tins.	Ternes.			
January 1st.....	16c.	14¼@14¼c.	\$5.75 @ \$6.00	\$5.25 @ \$5.37½	\$5.00 @ \$5.12½	\$4.70 @ ...	4c.	4½@4½c.	6¼c.
January 31st.....	15c.	14¼@15c.	6.12½@ 6.37½	5.50 @ ...	5.37½@ ...	5.12½@ ...	4½c.	4½c.	6¼@6¼c.
February 28th.....	15½c.	15¼@15¼c.	6.25 @ 6.50	5.75 @ 6.00	5.50 @ ...	5.25 @ ...	4½c.	4½@4½c.	6¼c.
March 28th.....	16c.	15¼@15¼c.	6.12½@ 6.25	5.75 @ ...	5.30 @ 5.37½	5.00 @ ...	3-35@3-36c.	4½@4½c.	6¼@6¼c.
April 25th.....	16c.	14¾c.	6.12½@ 6.37½	5.75 @ ...	5.25 @ ...	5.12½@ ...	2-95@3c.	4½@4½c.	6¼c.
May 31st.....	16½@16½c.	14¾c.	5.75 @ 6.37½	5.50 @ 5.62½	5.12½@ ...	5.00 @ ...	3½c.	4½@4½c.	6¼c.
June 27th.....	16½@16½c.	15¾c.	5.75 @ 6.37½	5.50 @ 5.62½	5.00 @ ...	5.00 @ ...	3½c.	4½@4½c.	6 @ 6½c.
July 25th.....	16½@16½c.	14½@14¾c.	5.75 @ 6.25	5.50 @ ...	4.95 @ 5.00	4.95 @ \$5.00	4-10c.	4½c.	6½c.
August 29th.....	16¾@16¾c.	16 @ 16¼c.	5.75 @ 6.37½	5.37½@ ...	5.25 @ 5.37½	5.00 @ ...	4-10@4½c.	5¼@6c.	7¼c.
September 27th.....	18c.	17¼c.	5.87½@ 6.02½	5.75 @ ...	5.50 @ ...	5.37½@ ...	4c.	5¼@6c.	7½@7½c.
October 31st.....	21¼c.	24 @ 24¼c.	7.62½@ 8.00	6.75 @ ...	7.37½@ 7.50	6.37½@ 6.50	5c.	6¼@6¼c.	8¼c.
November 28th.....	21¾@21¾c.	22 @ 22¼c.	7.62½@ 8.00	6.75 @ 6.87½	7.00 @ 7.12½	6.25 @ ...	5¼@5½c.	6¼@6¼c.	8 @ 8¼c.
December 26th.....	21¾@21¾c.	20¼@20¼c.	8.25 @ 8.75	7.25 @ 7.50	7.25 @ 7.50	6.50 @ 6.75	5¼c.	6½@6¼c.	8c.

and afloat, January 1st, 1879, were 50,669 tons. Of this amount, 12,884 tons were Chili bars, chartered and afloat. The imports during the year were 64,456 tons, and the deliveries 59,986 tons. The actual stocks in England and France, December 31st, were 42,255 tons, and Chili bars, chartered and afloat, 15,060 tons, making the total actual and advised stocks 57,315 tons, or an increase of 6646 tons during the year. The deliveries in 1878 were 53,727 tons, and in 1877, 58,245, and the imports 59,969 and 63,041 tons, respectively. The price of Chili bars, January 1st, was £58, and December 31st, £66.

Mr. E. P. WHITE, metal broker, No. 55 Fulton street, furnishes us with the following statistics of the copper trade of the United States for 1879 :

1879.	lbs.
Jan. 1.—Estimated stock of copper.....	10,000,000
Production of the Lake Superior mines from November 30th, 1878, to November 30th, 1879.....	39,000,000
Produce of smelting-works, Baltimore, etc.....	9,000,000
Total quantity available in 1879.....	58,000,000
Exported during 1879.....	13,500,000
Since returned from Europe.....	2,500,000
	11,000,000
Consumption during the year 1879.....	36,000,000
	47,000,000
1880.	
Jan. 1.—Leaving stock.....	11,000,000

Lead.—The year opened with a gloomy outlook for this metal, and the worst expectations were realized, although the lowest prices were of but short duration. The outlook was favorable to a much larger output, from both Leadville and Utah, than was secured; and it was not until the year had somewhat advanced that it was clearly indicated that the estimates made at the beginning of the year were too high. The opening price was 4c., nominal, and but little demand. The reported sales for the month of January aggregated about 2000 tons, advancing to 4½c., with 4¾c. asked; and the Eureka Consolidated Company, which held all in the market but about 1000 tons, asking 5c. In February, only a few hundred tons were reported as sold, and the price continued at 4½@4¾c. During the latter part of the month, 70 tons of Richmond sold at 4½c. March opened with buyers withholding purchases as much as they were able; and before the middle of the month, 200 tons sold at 4c., after which sales of 150 tons were made at 3½c.; 340 at 3·10c.; and 200 tons at 3·20c. The market then recovered nominally to 3½c., and then followed a sale of 60 tons of Richmond at 3¼c., and some Newark at 3·35c., closing at 3·35@3·37½c. At this time, the European market began to improve a little. April opened with a small business at 3½c., while London quoted £15. During the second week, however, 1500 to 2000 tons, sold at 3@3·05c., after which, the market was quiet and weak, and sales were made at 2½@2·95c. Early in May, 300 tons sold down to 2·95@2·85c., and 2¾c. was the best bid. The stocks at this time were estimated at 10,000 tons. During the second week of this month, sales of 300 tons at 3c. were reported, and these were followed the next week by sales of 5000 tons for May, June, and July delivery, mostly at 3c., and the price was advanced to 3½c., at which there was but a small business during the remainder of the month. June opened with sales of 2000 to 2500 tons at 3½@3½c. The shipments began to be smaller; and the prospects of a smaller production from Leadville than had been expected were encouraging. During the remainder of the month, sales of about 1200 tons at 3¼@3·80c. were reported, while a sale at St. Louis at a price equal to 4·11c. here was announced. During the first half of July, sales of about 1500 tons were reported at 3·95@4·10c. After this, there was, under a pressure of outside lots, a small business done at 4·05@4·07½c. During the first half of August, 200 tons sold at 4·05c. and 2500 tons at 4c. After this, 400 tons sold at 4½@4·05c., closing at 4·10@4½c. September opened quiet and weak. During the first half of the month, sales of 550 tons at 4@3¾c. were reported, after which, 1000 tons sold at 3¾@4c. Early in October, 3000 tons of corroding and common sold at 4·10@4·35c. for the former and 4@4¼c. for the latter, and the largest holders withdrew from the market. This was followed by a very active consumptive demand, and 3000 tons were sold at 4½@5c., and the supply was said not to exceed 1000 tons. By the middle of the month, 500 tons more had been sold, reaching 5½c. for common and 5¾c. for refined, although there was some common obtainable at 5¼c. after the higher figure had been reached, and by the end of the month the price had declined to 5c. During the first week of October, 1000 tons sold at 5c., and 200 tons at 5¼@5½c. Later, 200 tons sold at 5¾c., while, before the close of the month, 500 to 600 tons sold at 5½c. December opened strong but quiet at 5¾c. Early this month, London advanced to £18@£19, and 200@300 tons sold at 5·60c., and, later, 650 tons at 5·60@5½c., closing the year at 5¾c., or an improvement of 1¼c. from the opening of the year.

Messrs. FRENCH & SMITH, of London, say of the European market :

“In January, 1879, we reported the price of lead as being lower than at any time since 1848; nevertheless, a further fall of about £1 per ton took place, the lowest quotation being £12 17s. 6d. for soft Spanish. As at this price it was evident few mines could pay their expenses, a reaction was certain to take place; but it was not until August last that prices decidedly commenced to advance. To-day we quote soft Spanish £19@£19 5s., with still a tendency upward. It is re-

ported in Spain that in the time of low prices many mines, in order to pay expenses, worked at the richer ores in sight; these being now nearly exhausted, the poorer ores only remain, and a year or more will be required to bring them round again. We quote to-day: English pig, £19 5s.@£19 12s. 6d.; Spanish soft, £19@£19 5s.; silver-lead, £19 5s. for ordinary, £19 10s. for rich.

“The imports and exports for the whole year were, by the Board of Trade Returns :

	1879.	1878.	1877.
Imports.....	(For December estimated.) Tons 102,000	100,233	94,412
Exports.....	“ 38,650	34,444	42,465”

The shipments of pig-lead, from Great Britain to the East, during 1879, were as follows, compared with the two preceding years :

To	Tons.	Tons.	Tons.
	1877.	1878.	1879.
Madras.....	19	227	261
Calcutta.....	229	764	542
Bombay.....	202	280	686
China.....	14,709	9,913	5,342
Japan.....	1,780	869	351
Singapore and Penang.....	500	216	351
	17,419	12,269	7,543

It will be observed that these shipments show a falling off of about 10,000 tons during two years, and that the loss has been in China and Japan, the markets which have been entered by American lead shipped from San Francisco. As the probabilities are, that we shall require, in 1880, all of the lead we produce, we are not likely to interfere with these markets this year; but our production will eventually be so large that we shall probably be compelled to reënter them at a later date.

The statistics for the United States, from good authorities, are as follows :

	Tons.	Tons.
Stock, January 1st, 1879.....	8,000	
Production, 1879.....	84,000	
Stock December 31st, 1879.....		92,000
Consumption, 1879.....		90,000
“ 1878.....		70,000
Increase of consumption in 1879 over 1878.....		20,000
Production in 1879.....		84,000
“ 1878.....		81,000
Increase in 1879.....		3,000

Tin.—The year opened with an estimated stock, in New York and Boston, of 700 tons, and Straits quoted at 14¼@14½c. Early in this month, 25 tons, January shipment, sold at 13¾c., and there was a moderate business on spot, at steady prices, during nearly all of the remainder of the month, although the foreign prices steadily declined. During the last week of the month, 50 tons sold at 14c.; although afterward 25 tons sold at 14¼@14½c. February showed a much better business, and improving prices both here and abroad, London advancing about £5. The sales reported aggregated 700 to 800 tons. To arrive, as high as 14¾c. was paid for January shipments, and on spot 15c. The supplies at the Straits were reported as small. The business in March still continued to improve, and prices advanced rapidly, both here and abroad. The sales reported aggregated 1350 tons, selling up to 14¾c. for February, and 15c. for January delivery, and 15¾c. for spot. Under the influence of a false report as to the shipments from the Straits for the first half of the month, the quotation was temporarily 16c. April was quiet, with irregular prices, and during the latter portion of the month 25 tons sold at less than 14½c. In May, there was a good jobbing demand, although prices were very much demoralized, largely as the result of efforts on the part of the Dutch Trading Company to secure a foot-hold in this market. During the latter part of the month, 200 tons of Straits and Billiton sold at 14@14¼c. for the former, and 14¼@14½c. for the latter. Early in June, there were sales of about 600 tons, and prices, both here and abroad, advanced. During the first half of July, there was a good jobbing demand, and 75 tons were reported at 15½@15¾c. Foreign prices were lower. After that, the market became active for a brief time, and foreign prices advanced, but afterward they declined, as did our local prices. Early in August, there was a good jobbing demand; but, owing to a strong demand from China, both Singapore and Penang were cleared of stocks, and foreign prices advanced simultaneously with a large business and higher prices here. The reported sales aggregated about 1100 tons, reaching 15¾c. for spot and 16c. for August shipment. At the same time, it was stated that a powerful combination had been formed between some London speculators and the English smelters. During the early part of September, the London price advanced £4@£5, and an active business took place here, the sales reported amounting to 400 tons of Straits, at 16¾@17½c. on spot, and 16¾@17½ for July, August, and September shipments. In addition to this, there were sales of 1500 piculs Billiton, at prices not mentioned. Later, there was some quietness and a decline in prices, after which there was a partial recovery, and sales of 200 tons August and September shipments on private terms.

October was the most remarkable month of the year, both as to business and advances in prices. During the first week, 100 tons sold, to arrive, at 18¼@18¾c., 100 tons on spot at 17¼@19c., 50 tons of Australian on private terms, and 60 tons on spot at 18¼c. During the second week, Straits in London advanced to £32 10s., or £6 10s. in a week, while Penang quoted \$30, and Singapore \$28.50@£29. In Straits, about

the English market was bare—were sold, and 17@18c. was quoted for Hallett's and Cookson's. Early in December, 50 casks of Hallett's sold at 16@16½c., and 25 casks of Johnson & Mathy's at 15¼@15½c. The market here became stronger, and at the close was: Hallett's, 16½c.; Johnson & Mathy's, 16c.; and Cookson's, 19@20c., showing an improvement for the year of 4½@7¼c.

Messrs. FRENCH & SMITH, of London, say:

"Antimony advanced from £47 per ton to present quotation—£64@£75; at this price, the market is very bare of metal."

THE STORMONT MINES, SILVER REEF, UTAH.

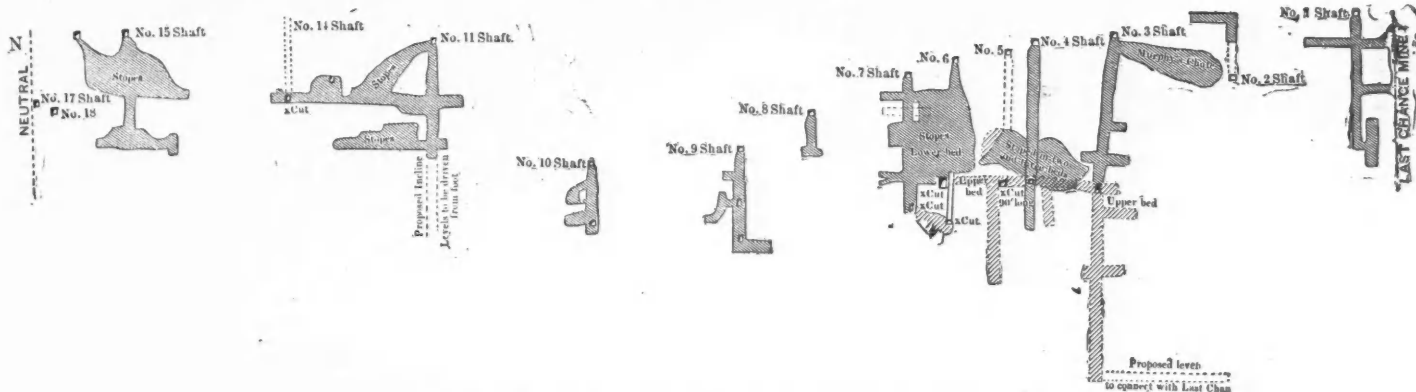
WITH SUPPLEMENT.

In our last issue, we gave a brief description of the curious and important silver-bearing sandstone beds of Silver Reef. As we have seen, the silver impregnates, in variable quantities, not less than three or four beds of sandstone or shale separated by barren beds of similar material. While traces of the metal can be found in almost all parts of these strata, the "pay" is confined to more narrow and irregular limits, either in the form of chimneys, which run down sometimes directly with, and sometimes diagonally across, the general ore-bearing bed, or in irregularly-shaped portions of the same, where, more than elsewhere, the conditions favored the precipitation and retention of the silver.

The accompanying illustrations show the relative positions of the two reefs with their several beds of silver-bearing sandstones and shales, the first being a profile section of the reefs at the Last Chance mine, and the second a section in greater detail of the workings in one bed of the "Last Chance," situated on the Buckeye Reef. At this point, the silver-bearing portion of the bed obtains a very great thickness, as much as 12 to 20 feet being worked in some parts of the mine, and the average thickness worked being probably 6 feet. Though the engraving shows but a single bed as worked, there are several strata upon this property that are known

their net mill returns to the owner of the property. Milling charges were formerly based upon the Nevada standard, and ranged from \$15@25 a ton; consequently, tributers worked ores of only high grade, and, as these are contained in comparatively small seams through the sandstone and shale beds, their workings were never extensive or imposing, and were usually filled up behind them with such low-grade ore as it became necessary to take out in following the rich streaks. It is now found, under intelligent management, that a vast amount of ore carrying from \$10 to \$25 per ton yet remains in the old workings, nothing less than \$35 ore having been shipped by tributers. It is also found that the spaces between the different shafts contain, in most cases, good milling ore, so that the bed which was, to the tributers, practically exhausted, is to the company still a bonanza.

Since these mines were purchased by the Stormont Company, systematic exploration has been commenced, and connection has been made, upon the level of the main shaft of the Last Chance mine with the Buckeye workings. Levels have also been driven from the new shafts of the Last Chance, and we believe are now across the line in the Buckeye ground. All these developments have been carried on in ore of good quality; and, in fact, the lower workings are said to be richer than those exposed at the time of our examination in June last. These workings are confined, thus far, to one bed; but, on the northern end of the property, a lower bed of great thickness and extremely rich ore has been worked for some months past, and unquestionably extends under the Buckeye claim. The cost of development in these mines is very small, the sandstone and shales being very easily mined, and there being no water to interfere with the work and no heavy timbering required. There is, probably, no other silver-bearing deposit on the West coast which can be worked with so great facility and so small an expense as these properties of the Stormont Silver Mining Company. The exact cost for the different classes of work and for milling



SKETCH SHOWING THE UNDERGROUND WORKINGS OF THE BUCKEYE MINE.

Projected on the Plane of the Ore-Bed.

to carry silver in paying quantities, one being met with above that worked and others below it on the adjoining Buckeye claim, which is also owned by the Stormont Co. No less than four beds have been opened, and though not all equally rich at the same point, each is workable at some point opened. No thorough exploration has been made of these underlying beds, the seam first found outcropping on the claim being the only one developed to any extent. Under the enlightened management which this company has secured, we can confidently look for developments which will greatly increase the value of these interesting, though hitherto almost unknown, deposits. The Last Chance property alone is but 300 feet in width; but it adjoins the Buckeye property, which has a length of 1367 feet, thus giving a run of nearly a third of a mile at this point upon the ore-bearing beds. We shall, next week, give an illustration of the workings of the Last Chance mine, from which about one hundred and fifty thousand dollars have been produced. The accompanying map of the underground workings of the Buckeye mine shows the great number of openings that have been made, and the small amount of mining that has been done on that property; though they produced nearly half a million dollars' worth of silver, chiefly from a single bed. These two claims, then, would in themselves represent a magnificent property; fully six hundred thousand dollars have already been taken from them, in mere preliminary mining operations, yet with a very large profit to the miners. We shall, this week, confine our attention to these properties, and, in our next number, take up some of the other mines belonging to the Stormont Company.

THE BUCKEYE AND LAST CHANCE MINES.

The Buckeye property is one of the oldest mines in the Silver Reef District. The claim has been worked till recently by tributers, who have sunk shafts at their own expense, and paid a royalty of 25 per cent of

these ores will be given in another article. At present, it is sufficient to say that, with wages at \$4 a day, levels are being driven at \$5 and \$6 a foot, shafts and inclines can be put down at \$8 a foot, and the stoping of the ore should not cost more than two or two and a half dollars per ton. The entire cost of mining in these sandstone beds can be safely put within \$5 a ton; indeed, it has cost, in some of the mines, rather less than \$4.50, though heretofore the work has been carried on on a very small scale and in a somewhat primitive manner.

In a report, dated November 25th, 1879, made by Mr. L. N. COALBATH, who had just examined the Stormont Company's properties at Silver Reef, we find the following reference to the Last Chance and Buckeye mines:

"The Last Chance shaft is 112 feet deep, where a level runs to the south line, also to the north into the Buckeye ground. Two winzes have been sunk from this level north of the shaft, 40 and 25 feet in length respectively. This level opens up a fine vein of ore its entire length to the north, the face now being 30 feet in the Buckeye ground—all the way in ore. The size of the vein can only be determined by cross-cutting. The upper level is also being extended into the Buckeye ground, and discloses the same large vein now being worked in the Last Chance. There have been over four thousand tons of ore taken from the mine since July 1st, but the extended levels have shown up, during that time, an additional amount much larger than that which has been extracted.

"The Buckeye mine is opened by shafts and inclines—some twenty in number—along its surface. Some of them are only a few feet deep, but one has been found in all. The principal openings on this mine are three shafts—one about 500 feet north of the south-end line, called the South Whip-shaft; one about 400 feet farther north, called the Whim-shaft; and another 75 feet south of the north-end line, called the North Whip-shaft.

"All the work being done on this mine is through these openings. The South Whip-shaft is 100 feet deep, from which a drift has been run south 200 feet; and an incline 113 feet upon the vein has been sunk near the end of the south drift. A level is also running north from the shaft, and ore is being stoped over 15 feet wide—all of it going to the mill.

"In the south drift, the ground has been cross-cut, showing several strata of ore varying from one to four feet thick. * * *

"The Whim-shaft is 102 feet deep vertical, with an incline upon the vein of 54 feet. Work has been extended at this point, since July 1st, in second level, 108

feet south and 20 feet north. The incline has been sunk 48 feet north, a level run north 125 feet, and an uprise to second north drift 48 feet—all on vein, and in good ore.

"The North Whip-shaft is 110 feet deep on the dip of the vein to the east, at which point the vein curves, and an incline has been sunk 52 feet upon its dip to the west. A level at the bottom of the 100-foot shaft is now run to the south 125 feet and to the north 40 feet.

"A level at the bottom of the incline to the west has been run north 75 feet to the Kinner ground, and south from the incline 49 feet. These levels are all on the vein.

"Where the connection was made with the Kinner mine, ore was being stoped by the latter company, and sent to the Leeds mill—the ore averaging \$35. In the south drift 110-foot level, the ore is all first-class. * * *

"The Kinner made connection with the lower level through an uprise 22 feet from what seems to be another vein. From this, they have mined large quantities of ore. * * *

"I am convinced of the permanency of the ore-vein to the deep, based upon these facts. The California mine, to the south of Last Chance, is now down 160 feet upon the vein below the water-level, and the Kinner is 70 feet below the water-line, at a point 266 feet north of the Buckeye. In both these mines, the vein is better below the water than anywhere above.

"I have estimated the reserves in the Last Chance and Buckeye mines at thirty thousand tons of \$25 ore.

"The Buckeye ores are now sampling from \$22 to \$60, the larger amount going above \$35. This estimate may seem large, but it is certainly within my figures, after allowing very liberally for waste and barren ground."

BOOKS RECEIVED.

Publishers sending Books should invariably mention the Price.

United States Commission of Fish and Fisheries. Part V. Report of the Commissioner for 1877. A. Inquiry into the Decrease of Food-Fishes. B. The Propagation of Food-fishes in the Waters of the United States. Washington: Government Printing Office. 1879. Svo, 981 pages, 31 Plates, and 8 Illustrations.

Graphics for Engineers, Architects, and Builders: A Manual for Designers, and a Text-Book for Scientific Schools. Trusses and Arches Analyzed and Discussed by Graphical Methods. By Charles E. Greene, A.M., Professor of Civil Engineering, University of Michigan. In Three Parts. . . . Part III.—Arches. Eight Folding Plates. New York: John Wiley & Sons. 1879. Svo, 190 pages. (No Index.) Price, \$2.50.

A Treatise on Fuel, Scientific and Practical. By Robert Galloway, M.R.I.A., F.C.S. . . . With Illustrations. London: Trübner & Co. 1880. Svo, 136 pages. (No Index.)

Railways of New South Wales. Report by the Commissioner for Railways for the Year 1878. Presented to Parliament by Command. Sydney: Thomas Richards, Government Printer. 1879. Folio, 137 pages and 13 Colored Diagrams. (No Index.) From Charles A. Goodchap, Commissioner for Railways.

THE FUEL OF THE FUTURE—AN APPALLING WASTE AND A SIMPLE REMEDY.

Written for the Engineering and Mining Journal, by George S. Dwight.

Fuel is a prime necessary to all classes of humanity, whether savage or refined, and in its aggregate annual consumption represents a greater quantity in weight than any other single article of man's use. When it is remembered that this use, from the nature of the case, is an absolute destruction of material, involving a constant reduction of supplies having known limits, it becomes a most startling fact that in no other department is the waste so appalling and the useful result derived so small. In other words, of the heating power really contained in the material, by far the smaller proportion is utilized, while the greater is lost.

And it is a humiliating fact that, in this extravagance, the men of civilization are not much behind their Esquimaux brethren, their greater comfort derived from the hearth being rather the result of the larger expenditure of better fuel, with more favorable surroundings, than because of its more economical use. This enormous wastage, though imperfectly understood even by most men of science, is scarcely thought of by the great mass of people to whom it is, nevertheless, a matter of the utmost consequence—a matter in which are connected together cost, convenience, comfort, labor, and health. To illustrate the first question, of cost, that being the argument which most readily appeals to our busy race, a few striking facts may be stated regarding the fuel use of the city of London; for it is quite fair to judge of the art of combustion by its practice in one of the most refined centers of civilization.

There are (8,000,000) eight millions of tons of coal, independent of other fuel materials, annually consumed in that great metropolis. The mining of this immense mass of mineral involves a loss in dust or slack, of one fourth as much more, say (2,000,000) two millions of tons, which, not having heretofore been considered commercially valuable, is accumulated in mountainous heaps at the mines. The handling of this latter, however, constitutes an item of cost which must be added to the price of that sent to market; for, in this century, the hand of labor, like that of Midas, changes values by its mere touch.

The transport to market of such a vast weight occasions an aggregate of toil, wear, tear, and loss, which further swells the cost before delivery to the consumer; but, for present purposes, it will suffice to consider the waste from the time it is in his possession. We shall find that this first cost, excessive though it be, is yet to be wonderfully augmented by secondary expenses; for after it has been deposited in the cellar, it must all be re-handled, re-mined, as it were, and carried up stairs and to the grate.

This outlay is not one of money simply, but of labor, and as, strictly considered, physical exertion is equivalent to an expenditure of heat, we may well speculate upon the units employed in moving (50,000,000) fifty millions of pounds of coal, and (10,000,000) ten millions of pounds of ashes, each day in the year, exclusive of collateral exertions incident to the maintenance of fires, and of the energy of those moral heat-units wasted over refractory and exasperating grates and stoves. And yet this is but the beginning of loss; for by the most liberal allowance, after all these expenditures are made, only about (10) ten per cent of the heating power of the material is obtained.

To realize the thermal value of (800,000) eight hundred thousand tons, (8,000,000) eight millions are burned!

Not to enter upon a tedious analysis of the causes of this tremendous loss, it may be simply explained by the statement that it results from the

imperfect combustion inevitable to the burning of a mineral form of carbon in atmospheric air.

A large amount of heat is expended in converting the coal to gases; for it is only these latter, and not the coal itself, as such, that burns; and in this process of conversion and the subsequent combustion, the composition of the air is very unfavorable to a good result. Exactly the chemical mixture for sustaining life, it is but poorly adapted to combustion, because its oxygen, the only combustible element in it, constitutes but one fifth of its volume, while the nitrogen representing four fifths, is not only useless in combustion, but retards it and absorbs a large proportion of the heat of the fire. If precisely the right theoretical minimum of air, (11'61) eleven and sixty-one one hundredth pounds, is used in the burning of one pound of good clean coal, the temperature of the fire is 4889° Fahr. If (24) twenty-four pounds of air are admitted to the furnace, the temperature will be reduced to about 2450°. And yet, despite this serious deprecative effect of an excess of air, Dr. C. W. Siemens states that even in metallurgical operations, under skillful superintendence, the quantity of air used is (300) three hundred cubic feet, equal to (24) twenty-four pounds to each one pound of coal; and to illustrate the vastness of such a volume in many cases, instances his own establishment at Gateshead, where, he says, are "seven furnaces, each of which uses about one ton of fuel per day, in all seven tons; therefore 7x24 = 168 tons of air required. Again, a pound of coal requires about (300) three hundred cubic feet of air. If we imagine the 168 tons of air made into a long stream of one square foot in area, the total length will be (21,881) twenty-one thousand three hundred and eighty-one miles." Of this vast stream, (16,891) sixteen thousand eight hundred and ninety-one miles are useless nitrogen passing into the furnace cold and out of it hot!

If the excessive use of air is unavoidable, even in the most perfect furnaces, under scientific supervision, and occasions so extensive a loss, it may be inferred how great a waste of heat from this single cause must occur in domestic grates and chimneys imperfectly constructed and under the ignorant management of servants. On the other hand, if too little air is used, a partial conversion ensues, and a large proportion of the most valuable combustible gases drift out of the fire-place unconsumed. Thus, between the two difficulties, it happens that, from the chimneys of our homes, far more heat is going to waste than is utilized within the dwellings. If we consider that, by moderate estimate (400,000) four hundred thousand tons of smoke, soot, and dust, and (120,000) one hundred and twenty thousand tons of sulphur, annually thus pass into the atmosphere of London, we can not be surprised that its skies are darkened and its air heavy. It is probable that an analysis upon one of its days of black fog would show the air to represent in fair proportion the elements requisite to the production of the best combustible gases, namely, carbon, oxygen, and hydrogen. But for the limitless energies of providence and the corrective operations of nature, man would soon poison the atmosphere on which he is dependent.

It must be admitted, on the above facts, that the art of combustion, instead of having attained the refined development of any other art, is the most conspicuous reproach upon the civilization of the age. The management of crude fuels is no more successful than the attempt would be to individually manufacture, in our homes, our garments and food from the raw materials of nature. Strictly, it involves more serious difficulties than those processes, and the day is at hand when it will be wondered that a refined and progressive society could have so long tolerated such a rude method.

But how may the reformation of so glaring an evil be effected, and both the primary and secondary loss, already explained, be reduced?

Within a few years, a system has been steadily developed, by which coal may be converted to the gaseous condition, in an atmosphere of steam, instead of air, by which the bad influence of the nitrogen is avoided, because the water, unlike the air, is composed entirely of combustible gases—oxygen and hydrogen. As explained before, a large amount of heat is necessary for the gasification of the coal, and this expenditure can not be entirely avoided, because a high temperature must be maintained in the furnace for the preparation of the steam; but by a scientific and economical application of the heat, it is largely reduced by the new system. The product is a gaseous mixture of purely combustible character, in place of the largely non-combustible gas generated by the ordinary use of coal. The economic fact about the new gas is, that it represents a much larger available heating power than can possibly be obtained from the coal, by any other known process.

Of course, the gas can not contain as much heat-energy as the coal from which it was derived possessed theoretically, because, as has been shown, the very act of conversion from the solid to the gaseous state, necessarily involves the expenditure of a portion of its heat; but that there is a very wide difference between theoretic and practical values, has, it is hoped, been somewhat demonstrated by the foregoing statements. It is simply claimed for the Strong system that, after sustaining this loss, which, in varying degrees, is inevitable to all methods of combustion, it has a larger calorific value left, and in a more perfect form for thorough utilization, than is obtainable by any other method at present known to science; and this claim both experiment and practice, on a large scale, most fully substantiate. Take a technical illustration of this: If one pound of the best coal is burned under the most perfect conditions attainable in the laboratory, it develops heat sufficient to raise the temperature of (13,000) thirteen thousand pounds of water (1°) one degree Fahr. Hence, its calorific power is said to be equal to (13,000) thirteen thousand units of heat. But this valuation is the highest theoretical one, and nothing approaching it can be realized in practical operations. As already stated, one tenth of this would be a liberal estimate for the proportion utilized in general domestic uses. That would be (1300) thirteen hundred units.

If the one pound of coal is converted by the Strong system, the resulting gas possesses a theoretic heating power, by the same standard of determination, of (9049) nine thousand and forty-nine units. The difference of (3951) three thousand nine hundred and fifty-one units has been expended in the gasification of the coal. This loss, amounting to about one third of the whole, is the one already explained as inseparable from conversion, and, though it seems a heavy item, practically ends the waste, because the gas thus obtained can now be burnt so completely and economically that further loss in its combustion need not exceed (10) ten per cent.

Allowing for this loss, we shall still have as the heating power *actually* realized in practice (8141) eight thousand one hundred and forty-one heat-units, as against (1300) thirteen hundred units, when the crude coal was used. In the one case, but (10) ten per cent and in the other (62) sixty-two per cent of the maximum calorific power of the fuel is obtained. Let us now take a very simple practical confirmation of this statement. During recent investigations of the new system, committees of scientific and practical gentlemen have visited the works, and on repeated occasions substantial dinners, comprising meat, oysters, vegetables, bread, pastry, and coffee, for a party of six, have been cooked by the consumption of (30) thirty cubic feet of gas. To produce that volume of gas required (1½) one and one fifth pounds of coal. Would it be possible to prepare such a meal with such a weight of crude fuel? Would any London cook undertake it with less than ten times the coal?

The new system makes another important reduction in first cost by utilizing various forms of fuel at present considered inferior, and which are therefore cheap; as, for instance, the dust-coal, which, as mentioned, has hitherto accumulated in vast waste-heaps at the mines, and which, by Mr. Strong's method, is shown to be, in some respects, superior to the lump, now exclusively sent to market, partly because its more easy conversion still further reduces that item of cost.

Recent operations in America and Europe prove that all grades of fuel are not only available, from pure anthracite to common peat, but yield the same quality of gas in all cases. Guided by the experience of all industrial arts, which shows that systematic manufacture on a large scale, conducted by intelligent workmen, with ample facilities, tends both to the improvement of the product and the reduction of its cost, it is proposed that the fuel shall be converted to gas at suitable central works, instead of as now, in each man's house, and delivered to the consumer by means of pipes, as is now done with illuminating-gas. This wholesale manufacture will not only, in connection with the other items of saving mentioned, greatly reduce the first cost, but will work a wonderful change in the secondary cost, now so excessive; because, in a gaseous form, the fuel becomes capable of self-transportation and requires no more the expensive touch of human hands, except for its mere control.

Instead, now, of the repeated handling of (10,000,000) ten millions of tons of dirty material in the shape of coal and ashes, the labor is at once reduced to the turning of a valve to regulate supply. The combustion of the gas is so perfect that its flame, resembling that of alcohol in cleanliness, though possessing three times its intensity, leaves no soot or smoke upon the pot to justify the kettle in calling it black, thereby relieving the cook from much untidy work. What the real comfort and convenience of gas combustion in domestic use is, can only be fully appreciated by those who have tried it, and such are unwilling to return to the old plan. So great is it, that the skillful cooks of Paris find the use, even of the comparatively costly illuminating-gas so advantageous that the company there reports the sale for 1878, for purposes *other* than illumination, of (1,800,000,000) eighteen hundred millions of cubic feet! All the food for the hospitals is thus prepared; and many other cities the world over are taking the hint, and increasing their consumption of gas for such purposes; although, for general fuel uses, the present illuminating-gas is too costly.

Not so, however, with the water-gas by Mr. Strong's system. It is not, like the other, dependent upon a special quality of coal, but may be derived from any fuels, and generated from these upon strictly scientific and economical principles. It is able everywhere to compete successfully with the crude material from which it is obtained.

There are also collateral advantages, scarcely less important than cost. It would remove from our houses the pernicious method of burning coal, with its excessive labor, uncleanness, and risks, not the least of which latter is a sanitary one resulting from the diffusion into our domestic atmosphere of baleful gases representing at once both waste and danger. If these are powerful enough to exert a corrosive influence on silver ware, paintings, and books, what damage may they not inflict on the delicate tissues of the human body?

Should London adopt the "fuel of the future," as it is already called, it would, besides securing other immeasurable benefits, improve the health and happiness of its inhabitants by admitting into their streets and dwellings more of the sunshine and the blue sky; for the smoke and sulphur would be relics of a semi-barbarous past. Although, for illustration, only domestic uses have been instanced in this article, because these represent at once the largest and most wasteful employment of fuels, the gas here described is equally available and economical for metallurgical and all other industrial arts.

It is also specially adapted to the generation of power by means of modern gas-engines. It is definitely settled, by extended practice, that motors of this description, besides having the advantage of safety, as compared with steam, are positively cheaper in money cost, even at the high prices now charged for illuminating-gas. Such engines are already in use in Paris to the extent of over five thousand horse-power. If, then, a cheap and efficient gas like that produced by the Strong process were distributed to every man's dwelling and workshop, how wonderfully would the minor industries of the race, which in the aggregate represent the great bulk of its work, be at once stimulated and simplified! At a selling price of 50 cents per thousand feet (a price at which it would pay a large profit to the producer), one horse-power would cost the artisan 2 cents per hour. Here would seem to be a promise to the mechanic and small manufacturer of that relief against the overwhelming advantage now possessed by capital and costly machinery, to which an eminent philosopher of Germany (Prof. Reuleaux) has recently claimed they are entitled, and must have, to prevent the increase of commercial oppression and socialistic antagonisms.

The water-gas is also admirably adapted to purposes of illumination, by intermixture with light-giving hydrocarbons, which may be accomplished in several ways and by the employment of a great variety of materials, at an important saving, as compared with the old method. The superiority of the light so produced has been amply demonstrated in the United States, where the system is in extensive and successful operation in many important towns and cities. Its general adoption is already foreshadowed. Works are now building in that country for the distribution of both the non-luminous and the illuminating gases, so that do-

mestic heat, light, and power may be sent out to the citizens. The erection of such works marks an era in this important art of civilization. The purposes of this article being more especially to treat of gas as a *fuel*, the departments of power and light are briefly mentioned as collaterals; and yet that these are only interchangeable phases of one subject, to which they are inseparably related, may be strikingly illustrated by mentioning, in conclusion, that the nightly lighting of London involves the expenditure of heat energy equivalent to (2,112,292) two million one hundred and twelve thousand two hundred and ninety-two horse-power!

It is hardly utopian to claim that, in comparison with the gigantic labor, loss, and disadvantage generally in the present use of crude fuel, the remedy is simple and easy, and to predict that the intelligence of the age will ere long demand its prompt and universal application.

STOCKHOLM, Dec. 15, 1879.

CALEDONIA MINE, B. H.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: There is a black sheep in every flock, and among Black Hills a black sheep might naturally be expected. Is the Caledonia, B. H., a black sheep among mines? It is under California management, has a mill, many hundred tons of ore in sight (so stated), and yet lays its assessments with a clock-like regularity that almost vies in frequency with the most active Comstock water reservoirs. The Dakota mines, as a rule, are so honestly managed that this constant draft on Caledonia stockholders, with no official statement of the uses to which so much money is put, seems to demand some explanation. Can you throw any light on the subject for the benefit of one

Jan. 15.

[Will any of our readers who know the "bottom facts" in this case please communicate with us?—ED. E. AND M. J.]

MAINE MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

Throughout the Blue Hill Mining District, great activity is manifest, with no small amount of excitement. The Darling Silver mine, and the Twin Lead Copper, are two new properties, concerning which there is not much to say, except that they are making good progress with the work of development.

The Douglass Company erected a large shaft-house in the fall, and since then has built a new blacksmith-shop and an office, and also a small shaft-house over shaft No. 2. This property looks better to-day than ever.

The Atlantic Mine, under the superintendence of Mr. Lee Prohon (who is also superintendent of the Darling), shows very great improvement. A good shaft-house has been put up, shaft well timbered, ventilating-flue put in, and steam hoisting machinery and an Ingersoll drill will soon be in operation. The superintendent deserves great credit for the improvement he has made during the short time he has been in charge.

The Bisbee Company is making good progress in sinking its shaft. At the Blue Hill, the underground work has been interfered with by the work of erecting shaft-houses. This work is now in a fair way to be sufficiently completed to allow the new machinery to be put in in a few days. The shaft-house over shaft No. 1 is 30'x70', and is nearly done. This building will contain the double engine for hoisting from both shafts. The foundation for the engine is now ready, and the engine will soon be in operation. The shaft-house over No. 2 (30'x40') was raised January 8th. The diamond drill for this mine arrived some days ago, and the other machinery, including air-compressor, pumps, and two Burleigh drills, will soon be in operation.

In the eastern part of the county, things are reported to be looking finely; but I am not able to give particulars. DIRIGO, SURRY, ME., Jan. 12.

COAL IN ALASKA.

Written for the Engineering and Mining Journal by Alfred E. Wolf, M.E.

Very lately, I came across a memorandum in my diary, kept during a six months' cruise to Alaska, which may possibly be of interest to some of your readers. I incidentally learned a few facts relating to the coal mines of that country which led me to visit one in the vicinity. The only localities where coal has been discovered are at Cook's Inlet and at Coal Harbor, the latter belonging to the group of Choumagin Islands. In Russian times, considerable capital—about \$1,000,000—was invested in the first-mentioned mines, but "sunk," owing to the immense, uncontrollable influx of water. These mines have not been worked since. The coal (bituminous) was not adapted for steaming purposes, and a trial made in a United States steamer, in 1867, proved this definitely. For domestic purposes, as a stove coal, there can be no better kind; it burns freely, to a pure white ash, contains no dirt, and is perfectly clean to handle. The mine at Coal Harbor that I visited contains the same class of coal. The mining here, however, has also not proved successful, owing to the inaccessibility of the mine, the small stratum of coal compared with that of the clay between which it lies, the amount of water in the mine, the lack of skilled labor and high wages required, and the distance from the coal market. At Coal Harbor there is a wharf, a lighter, a blacksmith and carpenter shop, a few wooden houses, all put up under the direction of the only present resident, who now unites within himself the capacities of superintendent, manager, miner, blacksmith, and carpenter. I inspected the tunnel or shaft in the side of the mountain, and became convinced that I would not like to own much or any stock in that mine. Petrified wood is here found in abundance on the beach.

Although, in my opinion, the mineral prospects of Alaska are not very brilliant, it certainly seems unadvisable, judging by the facts above recorded, to put much faith in the utility of its coal deposits. That a great portion of Alaska is evidently of volcanic origin is a fact not usually brought to the attention of the public, but one well deserving to be known.

MARYLAND MINING NOTES.

EDITOR ENGINEERING AND MINING JOURNAL :

SIR : There seems to be a stir in mining matters in Maryland. The iron ore property, some five miles from New Windsor, which has been idle some seven or eight years, has been purchased by the Wrightsville Iron Company, of Pennsylvania, and a force of men put to work. Some 600 tons of ore have been taken out. They are working an open cut, and are some 60 feet down ; have a fine vein of hematite ore (it is cold-short), and it can be mined at a low rate. Distance from the railroad, five miles.

The gold mines in Montgomery County are now erecting new machinery, and are placing a new 10-stamp mill upon their property ; prospects seem to be good, and they are confident of success.

A number of hematite and magnetic-iron ore mines have been opened in the vicinity of Mount Airy, on the Baltimore & Ohio Railroad. One of them, operated by U. Richmond, Esq., seems to be the best. They have magnetic ore ; have a number of shafts down, and have been in operation some six months or so ; and have made arrangements to ship to Pittsburg, Pa.

The new iron mine at New London, worked by Maxwell & Carbis, has a good prospect, and has quite an ore-bank. It is getting hematite, to be shipped to Ashland, Md. It made a very favorable lease, having the first 500 tons free, and only paying royalty on what follows. It has four miles of hauling to Monrovia, on the Baltimore & Ohio Railroad.

Some new mines are daily springing up. Shall see about Cumberland silver mines. The zinc mines, noticed in the JOURNAL recently, are still working, and have just contracted for timber for the shaft and buildings.

J. C. K.

LAKE CHROME AND MINERAL COMPANY.—The mines of this company, which are located at Bare Hills, Baltimore County, Md., on the line of the Northern Central RR., have recently been equipped with new steam-pumps and other machinery, dressing-houses, etc., and are now in full working order and producing a considerable quantity of ore, which assays 60 per cent of chromic acid. The mines are looking well ; two large veins are being worked, besides a large deposit of sand ore. These ores are well known, and are referred to in the works of eminent chemists. R.

THE SCOTCH PIG-IRON TRADE.

DEAR SIR: The extraordinary change which has taken place in the condition and prospects of the iron trade since the month of August renders a review of the past year's business specially interesting.

The market opened in January with a very depressed tone, and, until the middle of February, the price fluctuated between 43s. and 42s. 3d.

During March and April, there was an increased demand for Germany, in anticipation of the imposition of an import duty ; this, and a serious interruption of work in the Durham coal-field, caused some animation, and prices ranged between 42s. 6d. and 44s. 6d.

In May and June, an exceedingly gloomy feeling prevailed, and the price gradually declined, until, on the 8th of July, it touched 40s., from which point there was little immediate reaction, the quotation at the close of that month being 40s. 6d.

In the beginning of August, attention was attracted to the improvement of trade in America, by orders for old rails and various other descriptions of iron coming to this and the English markets, which gave an impetus to business, and raised the value of warrants to 44s. 3d. by the end of that month.

During September, the demand developed with unprecedented rapidity ; heavy purchases were made ; shipping returns showed a large increase ; speculation, so long dormant, was aroused ; and prices were pushed up without a check, until the excitement culminated on October 6th, when 68s. was paid for warrants.

From this point of inflation, a reaction was inevitable, and it was sharp and severe. Speculators threw large quantities on the market, and within three weeks the price receded to 52s. 6d.

These violent fluctuations obscured, for a time, the steady improvement which had been taking place in the trade ; but the strength of the demand for every kind of iron forced itself into notice, prices rapidly advanced in every department, and warrants reached 60s. by the end of November, and 66s. on the 26th inst.

This week, we have had a brisk market, warrants have been freely dealt in from 65s. 9d. to 67s. 6d., and the closing price for the year is 67s. Makers' iron may be quoted, No. 1 Special Brands, 72s. 6d. @ 77s. 6d. ; No. 1 Ordinary Brands, 68s. ; No. 3, 65s. The Middlesbrough market is also stronger. Connal & Co.'s warrants, f. o. b. Tees, quoted 54s. 6d. ; Nos. 3 and 4 Makers' Iron, 53s., for prompt delivery, and 55s. 6d. for the first six months of next year.

The production for the year, 932,000 tons, from an average of 88 furnaces, against 902,000 tons from 90 furnaces in 1878, shows a satisfactory increase in the average productive power per furnace.

The consumption of Scotch iron in foundries and malleable-iron works has slightly increased ; but, on the other hand, somewhat less English

iron has been used. The manufactured iron trade is now in a very active state.

The shipments show a decided improvement on the returns of 1878. Germany was our best customer in the early part of the year, and American demand, which began in autumn, still continues in great force. As there is little or no stock of pig-iron anywhere except in Scotland, it is not unreasonable to look for great activity in this department during next year.

The stock in Scotland has undergone considerable change during the year. Ordinary brands have accumulated to some extent, but the foreign demand has reduced the stock of the higher-priced qualities, and a large transference has taken place from makers' yards into Messrs. Connal & Co.'s stores. The quantities now are 416,000 tons in store, and 329,000 in makers' hands, showing an increase of 66,000 tons in the year.

The ship-building on the Clyde seems to have entered on another period of prosperity. The amount of tonnage launched during the year is greater than might have been expected, and there is now a very satisfactory quantity of work on hand.

The competition of Middlesbrough Iron was severely felt during the first half of the year ; but, on the improvement manifesting itself, the Scotch market took the lead, and the comparative prices now ruling in the two markets show a greater difference than we have been accustomed to for some years, or than seems warranted by the intrinsic value of the iron.

The prospect for next year is certainly of a very encouraging character, and if the laboring classes agree to give a good day's work for a fair wage, it should be a very satisfactory one to all connected with the Scotch iron trade.

Referring you to the subjoined table, and wishing you the compliments of the season, we are, Yours faithfully, WILLIAM COLVIN & Co. GLASGOW, Dec. 31, 1879.

SAN JUAN (COLO.) MINING NOTES.

Special Correspondence of the Engineering and Mining Journal.

The holiday festivities are concluded, and our district has returned to its wonted condition of activity. The outlook for the present year for the whole San Juan country is so encouraging that we are confident the readers of the ENGINEERING AND MINING JOURNAL will be interested in looking over the prominent features of this important mining field. The year just closed has been one of much progress, notwithstanding the fact that the greater accessibility of Leadville and Silver Cliff, and the ease with which their ores are reduced, has naturally tended to attract Eastern capital thither, even to the extent of retarding somewhat the development of our richest properties.

During the latter part of the year, a number of mines changed hands at good prices, the advance being led off by Governor Tabor, Jerome B. Chaffee, and other wealthy capitalists, and now, wherever possible, workings are being pushed right in the face of winter. As one can see at a glance, the plan is to do all the dead-work in tunneling, drifting, and sinking during the present and the three following months, so that summer will find many mines in a self-sustaining and even dividend-paying condition.

With a number of San Juan mining companies paying dividends, investors will be encouraged to come in and aid us to build up our community to the position of strength and importance that its mineral wealth justly entitles it to.

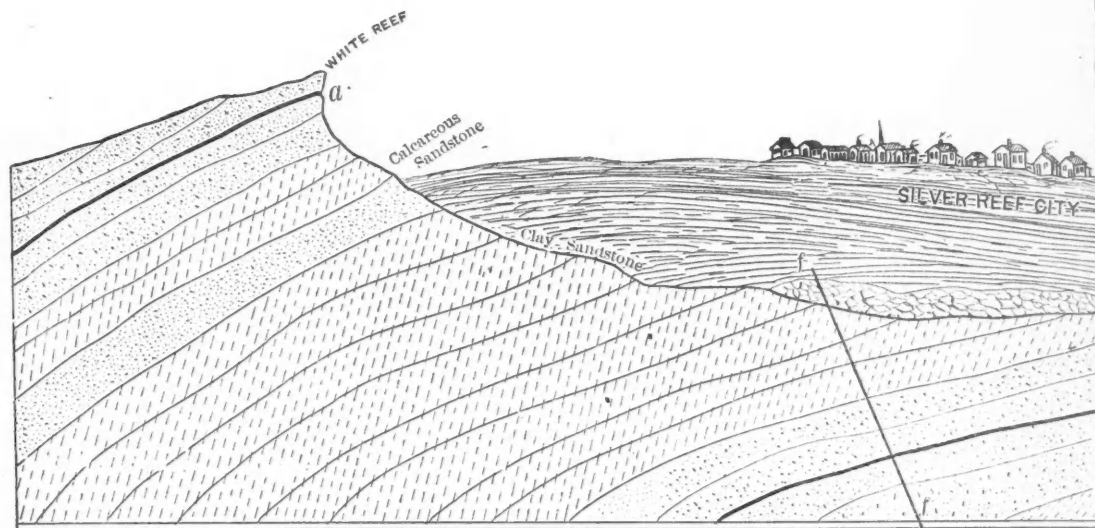
A great deal of credit is due to the Crooke Brothers, who own and operate the largest smelting works in the district. They have been forced, through years of costly experiments, to test the adaptability of various processes to the treatment of our ores.

As a rule, the mineral veins near the surface carry galena, low in silver but rich in lead. As we sink upon them, gray copper appears and strengthens in quality and quantity as developments progress. Other minerals also come in, such as antimonial, brittle, ruby, and native silver, besides sulphurets. The smelting of galena ores is a very simple matter, and requires a very inexpensive plant.

The roasting and reduction of the sulphurets and other refractory ores is, however, more complicated, and requires, besides, more expensive work and expert labor. The Crooke Brothers have discovered all this, and met and overcome the obstacles that lay in the way of their success. They now include in their operations crushing, sampling, concentrating, roasting, smelting, and refining ; so, no matter what variety of ore is brought to them, they can utilize it, and pay cash upon the average assays of the sample. In order to insure a definite supply for the running of their works, they have thought best to secure the control of a number of the best mines in this neighborhood. Of these, probably the most noted are the Ute and the Ule, about three miles from this place, up Hensen Creek. The Ute is some distance up the mountain slope, while the Ule is down in the cañon, the most extensive openings being directly alongside of the creek. The former has been drifted upon from the side-hill at numerous points and with the most

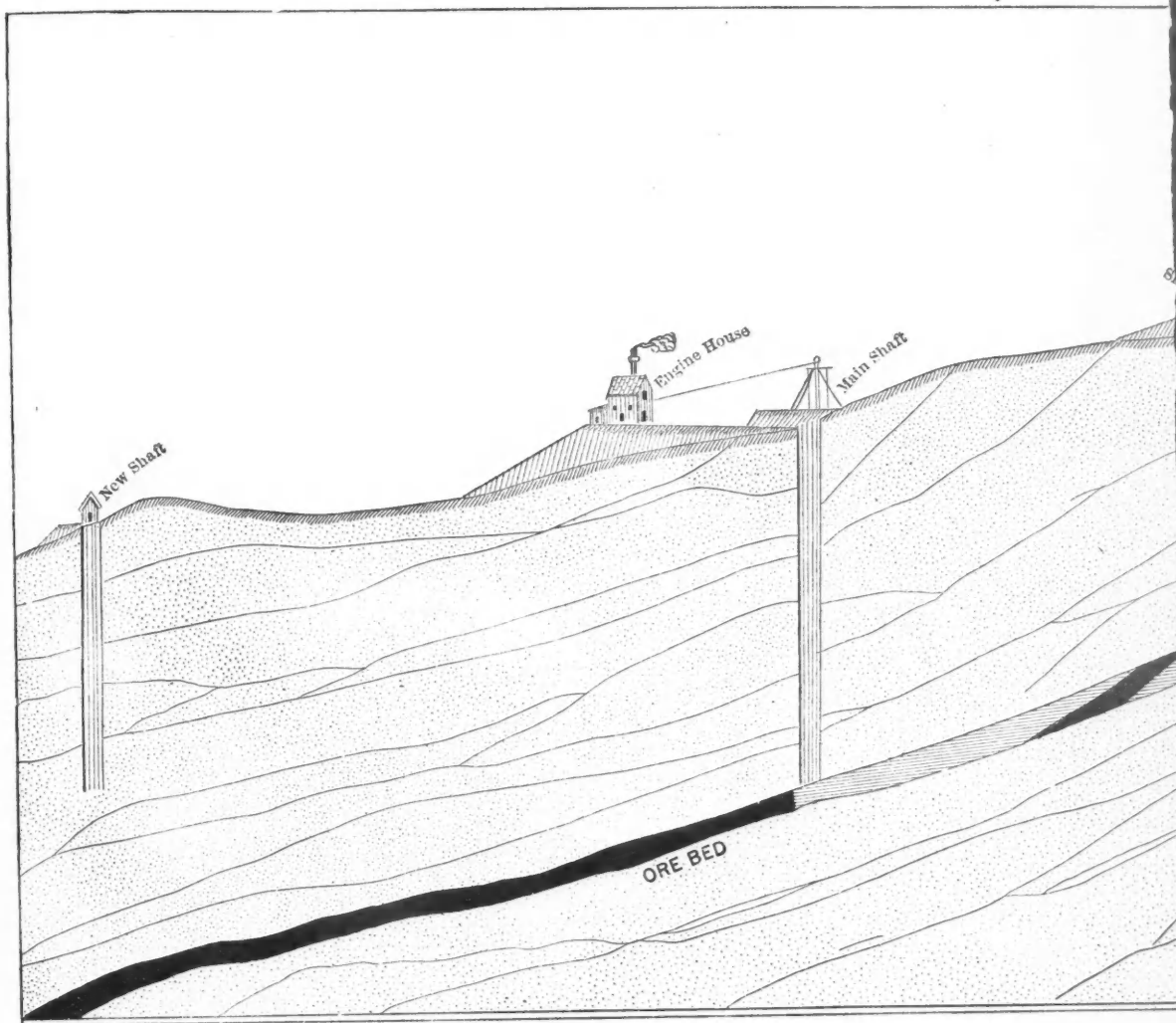
COMPARATIVE STATEMENT.

	1869.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.
Annual production.....	1,150,000	1,206,000	1,160,000	1,090,000	993,000	806,000	1,050,000	1,103,000	982,000	902,000	932,000
Foreign shipments.....	388,639	388,842	512,479	616,933	398,850	296,803	368,453	303,572	274,409	233,908	340,385
Coastwise.....	240,450	230,984	303,494	224,605	214,061	166,104	174,056	166,190	170,654	161,620	200,138
Total shipments for the year.....	629,089	619,826	815,973	841,628	612,911	462,907	542,509	469,942	445,063	395,528	540,523
Consumption in Scotland.....	447,000	506,000	465,000	470,000	373,000	317,000	363,000	370,000	335,000	294,000	302,000
Stock, December 31st.....	620,000	665,000	490,000	194,000	120,000	96,000	170,000	363,000	505,000	679,000	745,000
Average No. of furnaces in blast.....	124	130	127	127	119	96	117	116	103	90	88
Furnaces in blast, December 31st.....	130	126	126	115	122	121	113	116	86	91	100
Average price for the year.....	53s. 3d.	54s. 4d.	59s.	102s.	117s. 3d.	87s. 6d.	65s. 9d.	58s. 6d.	54s. 4d.	48s. 5d.	47s.
Price, December 31st.....	57s. 9d.	51s. 3d.	73s.	121s.	107s. 6d.	76s.	64s. 6d.	58s.	51s. 6d.	43s. 6d.	67s.
Bank rate of discount, December 31st.....	3 p. c.	2½ p. c.	3 p. c.	5 p. c.	4½ p. c.	6 p. c.	3 p. c.	2 p. c.	4 p. c.	5 p. c.	3 p. c.
Make of malleable iron.....	206,960	199,353	200,000	220,000	180,312	180,000	196,000	230,000	218,000	195,000	222,000
Average price of bars for the year.....	£7	£7 10s.	£8	£12 5s.	£13 10s.	£10 15s.	£8 15s.	£7 15s.	£7	£6 10s.	£6 3s.
Imports of English pig-iron.....	90,000	110,000	100,000	85,000	125,000	200,000	220,000	285,000	353,000	325,000	315,000



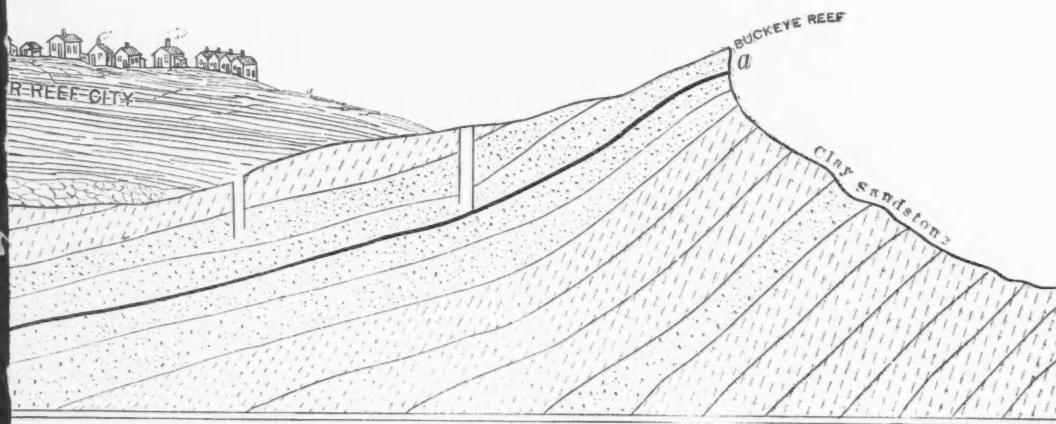
PROFILE SECTION ACROSS

Scale 200 feet to 1



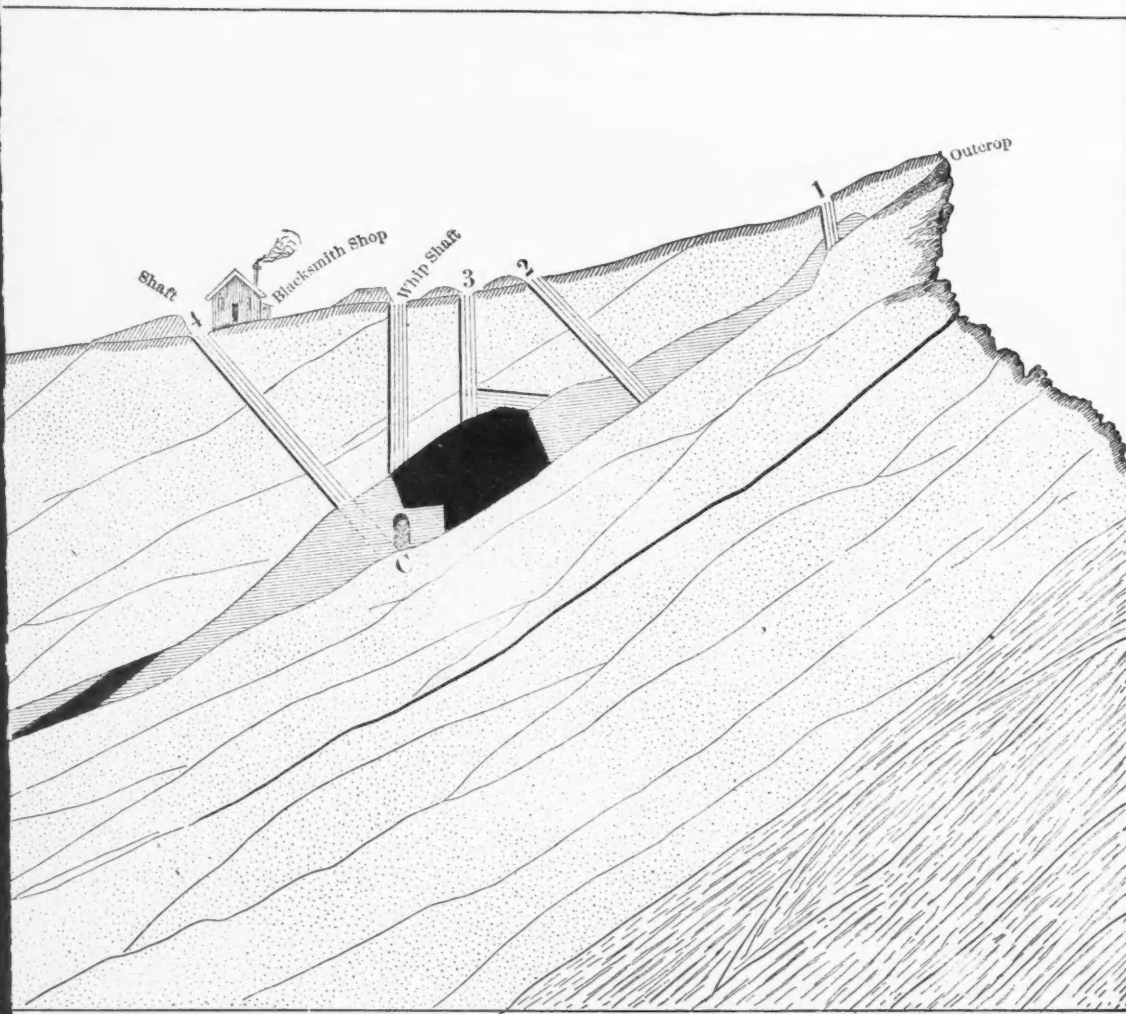
VERTICAL CROSS SECTION OF

Scale 50 feet to 1



CROSS SECTION ACROSS "LAST CHANCE" MINE.

Scale 200 feet to 1 inch.



CROSS SECTION OF "LAST CHANCE" MINE.

Scale 50 feet to 1 inch.

of its constituents vary in every specimen. The lead varies from 35 to 65 per cent. One analysis gave:

Oxide of lead.....	44.80
Oxide of zinc.....	4.80
Oxides of bismuth and copper.....	1.52
Oxide of iron.....	Trace
Alumina.....	10.00
Arsenic and antimony (oxides).....	3.03
Sulphuric anhydride.....	28.81
Insoluble siliceous matter.....	9.00
Total.....	101.96
Another gave:	
Oxide of lead.....	68.35
Sulphide of lead.....	2.25
Oxide of zinc.....	1.80
Lime.....	2.63
Alumina.....	5.40
Sulphuric anhydride.....	16.84
Insoluble siliceous residue.....	2.25
Total.....	99.52

Lead fume, besides silver, invariably contains a little gold, usually from $\frac{1}{2}$ to 1 per cent of the quantity of silver.

We have also found, on several occasions, small quantities of platinum and iridium in the fume, even in that taken from the part of the fumes most remote from the furnaces. I can not believe that the platinum and iridium were carried there in fine dust from the furnace; for, in some instances, the furnace was smelting rich slags only, which had come from another furnace where matters containing those rare metals were being smelted. I am well aware of the extreme minuteness of the particles of iridium after it has been alloyed with lead and then separated; but, in view of the fact that platinum and iridium, especially the latter, have a particularly strong tendency to unite with sulphur compounds of lead, I incline to the belief that those metals appear in the fume as a true sublimate. We have made many experiments to ascertain what tends most to promote the settling of fume in long flues. We first examined the interior of a flue which extends for several hundred yards in a tortuous course underground. This flue, besides having many abrupt turns and angles, had partial stoppings of sheet-iron placed at intervals of about 15 or 20 yards. These extended to a height of about 15 inches above the floor, and contracted the area to about four fifths at those parts. We found that at the various turns and angles, and indeed wherever an eddy of the current occurs, the fume lay thickest; in some places, heaped up like drifted snow.

The greatest deposition of lead fume takes place, as one would expect, near the furnace. By following the course of the flue from the furnace to the chimney, we find that the fume lies thickest in the first 100 or 150 yards, and generally beyond that distance it begins to diminish rapidly in quantity, until, at about 400 or 500 yards, it is only $\frac{1}{8}$ as deep as in the first 100 yards. The relative distances are not alike in every case, but vary slightly according to the kind of furnace employed, the temperature of the smoke, and its velocity in the flue. The subsidence of the fume appears to be promoted by whatever causes the isolated particles of which it consists when it leaves the furnace to unite into flaky masses; therefore, the more friction, buffeting, and violent agitation it suffers, the more readily it settles. Cooling the smoke through a considerable range of temperature also promotes the subsidence of the fume. This is undoubtedly due to the particles being brought nearer together by the consequent contraction of the gases. I have found that the specific gravity of lead fume from a blast-furnace is about 5.5; and, assuming that a cubic foot of smoke contains 4 grs. of fume, which it often does, and that the size of the particles is the $\frac{1}{352}$ th part of an inch in diameter, we may find, by a simple calculation, the number of particles contained in a cubic foot, and their distances apart from each other. Thus:

$$\frac{1 \text{ cubic foot of water weighs } 437,500 \text{ grs.}}{1 \text{ cubic foot of fume } 437,500 \times 5.5 = 2,406,250.}$$

And as 1 cubic foot of smoke contains 4 grs. fume, the aggregate space occupied by the 4 grains will be $\frac{4-2,406,250}{352}$ th part of a cubic foot, or $\frac{1-348}{1,000,000}$ th part of a cubic inch; but the cubical contents of a sphere $\frac{1-20,000}{1,000,000}$ th part of an inch diameter is $\frac{1-15,278,840,000}{1,000,000}$ th of a cubic inch; therefore, dividing $\frac{1-348}{1,000,000}$ th by that fraction, we get 43,904,712, the number of particles in a cubic foot; and if we extract the cube root of this number, it will be the denominator of a fraction, which, having 1 for its numerator, will express the distances in parts of a foot which the particles are apart, or—

$$\sqrt[3]{\frac{1}{43,904,712}} = \frac{1}{352} \text{ part of a foot,}$$

or about $\frac{1-30}{1,000}$ th part of an inch. Hence, we learn that those minute particles are about 660 times their own diameter apart; and, for the sake of giving a better idea of the comparative remoteness of those fume particles from each other in ordinary lead smoke, if we suppose them to be magnified to the size of the earth, then their distances apart would be 22 times greater than the distance between the earth and the moon.

We invariably find the fume is most abundant wherever the gases have suffered the greatest friction and fall in temperature. That this fact causes the fume to settle, is also proved by the increased escape into the air for some time after the flues have been swept out. This I have proved by a great many assays of the smoke, and it is also apparent, at the top of the chimney, to the eye.

The following experiment proves the extreme difficulty of arresting lead fumes at high temperatures: We sifted ground slags first through a sieve having 15 meshes to a lineal inch, and the portion which passed through was put upon a second sieve, having 30 meshes to the inch, to remove the dust and finer grains. We then made a filter-bed with this about 1 inch thick, and aspirated a portion of the flue gases through this, taken at two points in the flue, one near the furnaces and another a considerable distance from them. The temperature at the first place was about 750° Fahr.; and, although the smoke was drawn only at a slow rate, the fume passed in considerable quantity, and it continued to escape after a coating of fume about $\frac{1-16}{1,000}$ th of an inch thick had formed at the surface of the filter. In the trial at the distant station, where the temperature was only 300° Fahr., a little fume passed for the first fifteen minutes, and after that the filtration became almost perfect, and the gases then passed only very slowly. This slow passage of gases through a dry porous filter constitutes the prime difficulty of fume-condensing on that principle.

(TO BE CONTINUED.)

PROGRESS IN SCIENCE AND THE ARTS.

General Science.

The Lick Observatory.—A recent decision of the courts places at the disposal of the trustees of the Lick estate the sum of \$700,000, for carrying out the donor's plans for the foundation of a splendidly-equipped observatory. The trustees, it is said, have not yet decided on the kind of telescope to adopt, whether reflector or refractor; but, as the trust deed directs that the instrument constructed for the observatory shall be the most powerful in the world, it must, if a reflector, exceed the giant speculum of Lord Rosse's telescope, which is 6 feet in diameter, with a focal length of 54 feet; and, if a refractor, the glass must exceed 30 inches in clear aperture, since a glass of the last-named dimensions is now making for the observatory of Pulkowa.

Concerning Celluloid.—The correspondent of the *Saturday Evening Post*, who not long ago called attention to a popular error that prevailed respecting this substance (the said error being that celluloid contained gun-cotton for one of its constituents), is called on to explain the recent disastrous explosion attended with loss of life that occurred during the past week. His explanation of the constitution of this article, to the effect that it was composed of tissue-paper and camphor subjected "to a chemical process," was as lucid as any one had a right to expect of a correspondent who occasionally dipped into science; and his positive assertion that celluloid contained no gun-cotton is substantiated to the fullest extent by the testimony of one of the manufacturers who was interviewed since this latest explosion, and who is reported to have asserted that no gun-cotton was employed in any part of the manufacture, and that the only materials used in its production were tissue-paper treated with a mixture of nitric and sulphuric acid and camphor!

The Tay Bridge Disaster.—The builders of the Tay bridge have sent to the *Herald* a cable dispatch, which, among other things, states that "the velocity of the wind, as registered at Dundee on the night of the disaster, was 42, an amount quite sufficient to upset the train; and the guard-rails on the windward side could not prevent the upper part of the carriages from striking the girders. This might cause the damage by destroying the unity of the leeward girder, and another violent gust would bring about complete ruin." These suggestions appear to be somewhat premature, in view of the fact that it has yet to be ascertained whether the bridge was intact at the time the train reached it. Upon this point the entire question of the cause of this lamentable disaster hinges.

The *Iron Age*, discussing the question, holds that the accident demonstrates the necessity of properly guarding and policing long bridges, and of stopping railway travel across them at such times when the wind is of such a velocity as to become dangerous.

Long-Distance Telephoning.—The utility of the Bell telephone for distances up to 100 miles was lately demonstrated by an interesting trial of this apparatus between Dayton, O., and Indianapolis, Ind., over the wires of the American Union Company. The trial in question was completely successful, according to report, conversation between the telephone exchange rooms of the two cities having been maintained throughout an entire day. The distance between these two cities is 108 miles.

The Transmission of Motive Power by Electricity.—At the Shaw's Water Chemical Works, Greenock, a practical experiment of this kind is now in progress, which is of special interest. Two of Siemens's dynamo-electric machines are used for the purpose, a water-fall behind the works furnishing the power. One of the Siemens machines is placed near a turbine-wheel driven by the fall, and the other in the engineer's shop, about 150 yards off, the two being connected by metallic conductors. The operation is about as follows: The water-fall drives the turbine, this in turn drives the first electric engine from a shaft and belting, and the electricity generated is conveyed by the metallic conductors aforesaid to the second engine in the shop, where it is converted into mechanical energy, which is distributed, by the usual mechanical devices, to the places where it is required. In this case, the machine drives a circular saw, a turning-lathe, and a vertical boring-machine. The trials above named are said to be, for the present, purely experimental. They have a special interest, however, as being among the first, if not the first, attempts to actually test the practicability of transmitting motive power by electricity.

Chemistry and Technology.

Lamp-Black from Natural Gas.—Following the example of the pioneers in this branch of manufacture, the owners of a gas-well at Murfreesville, Pa., which produces 60,000 cubic feet of gas per hour, propose to erect the necessary machinery for the production of lamp-black therefrom. The special apparatus required will consist of an immense amount of piping, a large number of peculiarly constructed burners, and a scraping apparatus for removing the carbon at intervals as it accumulates. The manufacture of lamp-black from this source has for some years been successfully practiced at Gambier, Ohio, and elsewhere, and the product has acquired a high reputation.

A New Antiseptic.—The technical journals have of late extensively copied the announcement of the discovery of a new antiseptic affirmed to possess remarkable merits, especially when applied to the duty of preserving articles of food. The compound in question is described as a double borate of potassium and sodium. It is said not to give a bad taste to food, and that butter, meat, etc., can be preserved by its use for a considerable time.

We fail to see in the above-named substance any merits as an antiseptic that are not also possessed by common borax, which has been frequently recommended for the preservation of articles of food, and which, while it is conceded to be an admirable preservative, has been very generally condemned by the medical profession, from the fact that the continued use of food preserved by its aid speedily leads to the production of serious disorders of the digestion. As the boracic acid contained in both of these compounds is, doubtless, the active antiseptic agent, it is likewise reasonable to infer that its physiological action in both cases will be identical.

Chemical Items.—Liebermann has communicated to the German

Chemical Society the observation that *volatile liquids*, like carbon disulphide, chloroform, ether, etc., may be volatilized quite rapidly at ordinary temperatures, by placing the dish containing the liquid in an exciting apparatus over a basin containing paraffine—crude paraffine of low melting-point answers best. This substance will absorb three times its weight of carbon disulphide, and twice its weight of ether. Experiment proved that paraffine absorbed its own weight of

Carbon disulphide, in from	4 to 5 hours.
Ether, in from	8 to 9 "
Chloroform, in from	9 to 11 "

—Debrunner affirms that strictly *absolute alcohol* will not dissolve potassium permanganate. He proposes this substance, therefore, as a test for *minute quantities of water in alcohol*. A crystal of permanganate dropped into a test-tube containing a few cubic centimeters of the alcohol to be tested will give no coloration with absolutely anhydrous alcohol; but if it contains water, or if a single drop of water be added, a partial solution of the crystal, and the well-known coloration, at once ensue.—The hypo-iodite of sodium, or potassium, is recommended as a new and exceedingly *delicate test for magnesium*, even in the presence of calcium, barium, and strontium. The reagent is prepared by dissolving iodine in a two per cent solution of caustic soda or potassa, until the liquid assumes a rich golden-yellow color. This reagent, added to solutions containing as little as $\frac{1}{750}$ of one per cent of magnesia, is said to produce a brown-red precipitate more or less copious, and in still more dilute solutions of magnesia, a reddish coloration. Both precipitate and coloration disappear after a time.—In close relation to the preceding item, we may present the statement that sodium tungstate is an even more *delicate test for calcium* than oxalic acid. The tungstate must be added in very small quantities at a time, as calcium tungstate is soluble in an excess of sodium tungstate.—The *bleaching properties* possessed by old oil of turpentine, and which have hitherto been supposed to be due to the presence of ozone, are now affirmed by Boettger to be due to hydrogen peroxide. All the properties possessed by such old spirits can be given to freshly distilled turpentine by the addition to it, drop by drop, of potassium permanganate in aqueous solution.—Duncan recommends Chinese (or Japanese) oil of peppermint, which has of late become a considerable article of commerce, as *an antiseptic equal to thymol*. This substance contains so much stearepten (menthol) as to form a solid mass at ordinary temperatures.

A New Procedure for manufacturing ammonium chloride (sal-ammoniac), based upon the well-known ammonia-soda process of Solvay, has been suggested by Gerlach, and appears to have considerable merit. He proposes that the Solvay process be operated primarily to produce sal-ammoniac, and that the sodium carbonate obtained be regarded as of secondary importance. His plan is to take the ammoniacal liquors of the gas-works, and from other sources, distill off the ammonia, mingle the concentrated distillate with strong solution of brine, inject carbonic acid gas into the mixture under pressure, remove the precipitated sodium carbonate, and separate the remaining ammonium chloride by crystallization.

This, of course, introduces an essential modification of Solvay's procedure, since there are no waste or by-products to be disposed of, and the regeneration of the ammonia is dispensed with. A similar procedure is also suggested for the production of other ammonium salts. Our authority for the above is Prof. J. W. Mallet, to whose papers, reviewing the more important recent changes in industrial chemistry, published in the *American Chemical Journal*, we refer our readers for additional details.

The Chlorine Question.—Our readers will recall the brief notice, published lately in this department, of Meyer's results respecting the abnormal variation of the vapor density of chlorine at high temperatures, and the peculiar inferences which they originated. Meyer's results, however, have not passed entirely unchallenged, as Seelheim, in a paper presented to the German Chemical Society, has described an experiment made by him, in which he shows that the metal platinum is slowly converted into vapor when heated in a current of chlorine gas. This fact, he considers, entirely vitiates Meyer's results. Meyer, it will be remembered, employed in his experiments platinumous chloride (Pt₂Cl₄), and assumed that, at the elevated temperature employed by him, all the chlorine of this compound was liberated, while the platinum was left behind.

Replying to this criticism, Meyer asserts that in his experiments he found the platinum left behind, after the liberation of the chlorine, was in the form of a solid mass, the weight of which corresponded almost exactly with what the theoretical composition of the salt demanded; and that, therefore, his experimental results are not vitiated in the least. He also affirms that the amount of platinum actually vaporized when it is heated in a rapid current of chlorine is so exceedingly small that it could not possibly exert an appreciable influence on his results. Besides, he urges the apparently unanswerable argument that iodine in the solid form gives results analogous to those obtained with chlorine. For the accuracy of this abstract we refer to the *American Chemical Journal*.

A QUARRY of red marble has been discovered in Tunis, and is about to be worked. Hitherto, this kind of marble has been exclusively exported from Italy.

A DIAMOND drill is to be obtained for the purpose of thoroughly prospecting both the coal measures and auriferous fields in the colony of Queensland.

THE IRON INTERESTS OF OHIO.—The State Commissioner of Labor Statistics has completed his report of the iron interests of Ohio. The total number of furnaces reported in blast for 1878 was 53, employing 5153 workmen. For 1879 the number is 63 furnaces.

Iron ore in the Ottawa District is being taken to Ohio to be smelted, the fifty cents per ton duty on coal being fatal to smelting in Canada.

Iron smelting works, and 20 or 30 dwellings for the hands to be employed, are proposed to be erected at Drummondville, Quebec, in April next.

THE ADVANCE IN IRON STOCKS.—The Wheeling (W. Va.) *Intelligencer* of December 25th says:

"The iron stocks of Wheeling and vicinity, of whatever description, are about all at par now, including those that could hardly be sold at 50

cents on the dollar six months ago. It seems strange that the iron stocks that people are now ready to buy at par and over should, so many of them, have gone a begging for purchasers a few months ago at far less than par."

Pennsylvania capitalists have just purchased 5000 acres of land of Gen. Echols and others, at Rockfish Gap, Va., and are about erecting a furnace.

GOVERNMENT PROSECUTION OF COLLIERY OFFICIALS.—On Wednesday, John Roebuck, underviewer at the Barrow Hematite Colliery, Worsborough, was sent to prison for a month by the Barnsley magistrates for neglecting to fence properly the opening to a shaft in the Thorncliffe seam, the consequence of such negligence being the death of the miner Fisher, who fell down the shaft. Charles Beevers, the certified manager of the mine, was fined £5 and costs, with an intimation from the bench that, if it had not been for the fact that he had only held his certificate for a few days before the accident, he would also have been sent to prison. In the case of Mr. Roebuck, notice of appeal was given. The prosecution was directed by the Home Secretary.—*Iron, London, Dec. 12, 1879.*

INJURY TO VEGETATION FROM ACID VAPORS.—R. Hasenclever is of the opinion that "in German towns, which depend on the concourse of travelers, in watering places," etc., permission for the erection of industrial establishments is justly refused. According to a private communication received by Mr. Hasenclever, from Mr. Fletcher, the weekly quantity of noxious gases discharged into the atmosphere of St. Helen's is as follows: Gaseous products of fuel, 800 tons SO₂; from copper-works, 30 tons SO₂; from glass-works, 180 tons SO₂; from chemical works, 25 tons HCl. In the neighborhood of Ludwigshafen, the plum-trees are the only kind of vegetation apparently injured by the acid fumes. Commenting on the above, the *Chemical News* advocates a severe restriction, in certain districts, on the pollution both of the atmosphere and of the rivers; but would allow, in other districts, a considerable latitude.

GENERAL MINING NEWS.

ARIZONA.

THE CAVE CREEK DISTRICT.—The San Francisco *Stock Report* says: "This new district is coming into prominence. It is about thirty miles east of Phoenix, in Maricopa County, in the Bradshaw range of mountains, and 30 miles south of the Tip Top mine. The formation is in slate, which forms the mother lode of California. The principal mines are the Golden Star, California, and Rackensack. The two latter have been known as the Rowe mines, located on Gold Hill, and have been worked for the past three years in a rude way, and the richest ores crushed in a Mexican arrastra. Some \$50,000 in gold have been taken out at intervals in this way. Some very rich ore has been found, in small quantities, from which several thousand dollars per ton were extracted, while the average of the lodes will produce from \$30 to \$40. These Rowe mines have only been opened a few feet in depth. The strength of the lodes, the well-formed wall and uniform high grade of ore, give the strongest indications of rich and large deposits of ore at greater depth. The Golden Star ledge has an immense body of ore already uncovered. This mine was visited by an expert, the past year, who estimated that there were upward of 50,000 tons of \$30 ore in sight. The owners erected a 10-stamp mill at the mine, and are about to add 10 more stamps, and will commence active work this winter. The company has consolidated with the mines of the Gold Hill (California and Rackensack), and organized under the name of Gold Hill Consolidated Mining Company. Some Philadelphia parties are largely interested in the company."

PLENTY OF WATER FOR 1880.

The Prescott *Miner* of January 2d says: "Our news from various sections is to the effect that the creeks, dry branches, and in fact the whole face of the country, are carrying great quantities of water, which is a guarantee that 1880 will be one of plenty to the farmer, stockman, and hardy miner. For five years there has been, all over the territory, one continued drought, causing a depression in all kinds of business. Miners and millmen have been unable to work to advantage. There is no way to calculate the great benefits that will follow from the general soaking our country has lately received."

CALIFORNIA.

THE BODIE DISTRICT.—We condense from the *Standard* as follows: "With the exception of the suspension of work on a few partially-prospected claims, heretofore run at the individual expense of the locators, great activity is still manifest all along the line in Bodie. All the leading mines, and many which have not yet attracted much attention from the outside world, have on hand ample supplies, even for a severe and protracted winter, and hence the present heavy storm creates no alarm. The new 30-stamp mill of the Noonday Company is nearly ready for the reception of ore, of which a large supply awaits its completion. The old Standard mill started up on Thursday evening last. The new Bulwer-Standard mill will soon be ready for crushing, and these, with the Spaulding, Miner's, Bodie and Syndicate, will soon be thundering away with 124 stamps—an addition of seventy stamps to the former crushing capacity of the district. All the well-opened mines are looking well and showing constantly-increasing quantities of good ore; while many of those which have not yet required mills are opening ore-bodies that bid fair to be practically inexhaustible. Altogether, the prospects of Bodie were never brighter, and these prospects can not be materially changed, even by a severe and protracted winter, which some predict, but with which Bodie has not been afflicted for four years."

SPRING VALLEY HYDRAULIC GOLD COMPANY.—The following telegram from Mr. Charles Waldeyer, dated Cherokee, January 8th, and addressed to Edward B. Dorsey, President United States Mining Investment Co., has just been received: "Partial clean-up of 60 x 100 feet bottom gravel yielded \$10,000 coarse gold." "This is less than one seventh of an acre, which, at \$10,000 (\$70,000) in coarse gold, caught in the head sluice—probably 50 per cent more will be caught in the lower sluices and undercurrents—this will make the yield over \$100,000 per acre by actual work. In the 100 acres previously worked by the Spring Valley Company, this has not been touched, owing to the tunnel being too high. All can be worked through the new tunnel. Of course, it also remains untouched in the 160 to 200 acres (Mr. Smith's estimate) remaining. If all will yield like this, the above estimate will be increased from \$26,000,000 to \$30,000,000 gross. The working expenses will be comparatively light, owing to the perfection of the plant and appliances belonging to the mine."

IDAHO.

The *Avalanche* of December 27th says: "The OWYHEE MINE has been sold to Boston capitalists, terms not made public. Work was begun on this mine about eight months ago, and from the surface it has been a regular shipper of bullion, the owners realizing upward of one hundred and twenty thousand dollars for six months' product at a depth of 80 feet. Its location is one of the best in the territory, being only a few rods from the Footman mine, which produced millions, in six weeks' time having shipped twelve hundred and fifty thousand dollars."

"Messrs. M. McGregor and S. M. Denniston have leased the Ellmore mill, and will in a few days start up the establishment on Florida Hill rock."

The Yankee Fork *Herald* thus concludes a long article on the mining prospects of that section of the territory: "With the inexhaustible mineral treasures of our mountains and every natural advantage with which a country could be blessed, this portion of our rich territory promises a glorious future not enjoyed by any other mining locality on the coast."

"The roads have been opened to the Florida Mountain mines, and teams are now employed in hauling rock. There are about one hundred tons of quartz on the hill awaiting shipment, and, unless severe storms occur again, communication between the mines and mills will be kept up for a considerable portion of the winter."

"Superintendent Hyde, of the Virtue mine, near Baker City, recently let a contract to some parties to sink a shaft an additional one hundred feet. When completed, the depth will be nearly three hundred feet. The Virtue mine is good property, and is under excellent management."

NEW MEXICO.

A correspondent, writing from Santa Fé to the Denver (Colo.) *Tribune*, under date of December 20th, says:

"Our mining districts are being developed very rapidly, and new and important discoveries are made almost daily."

"At the Cerrillos District, twenty miles from Santa Fé, some very fine strikes have been made lately, a smelter is in course of erection, work is being actively prosecuted, and the camp looks well."

"If any person doubts the riches of New Mexico, he has only to go and see what is being done at Silver City, Georgetown, Hillsboro', Pinos Altos, Santa Rita, Shakespeare, and in the Mogollon mountains. Every day brings new discoveries, some of them really astounding. A few weeks ago, two miners went into what is known as Steen's Peak range, bounding the San Simon Valley in Grand County on the east, and found four leads of carbonates identical in every particular with those of Leadville."

"The leads are from forty to two hundred feet in width, and yield ore from the roots of the grass, assaying into the hundreds. They cross a mountain 2500 feet in height, and cut it at right angles, so that it is no exaggeration to say the mountain is full of the precious metal, offering millions of tons to view. These great veins are now being cross-cut, so as to be convenient for the inspection of the curious. A district has been organized under the name San Simon."

"Great discoveries are being made in the Sierra Ladrome, with great leads in view. The district is named after the discoverer—Hanson. In richness, the ore rivals that in San Simon, while it is equally inexhaustible. These mines are half a day's ride from the town of Belen, in Valencia County, on the Rio Grande. There, too, are carbonates, though mixed with sulphurets. The two districts refute the assertion that there are no carbonates in New Mexico. If there were no pasture lands, and no valleys like the Pecos, the Rio Grande, the Gila, the Chama, and the Rio Puerco, the gold, silver, and copper she has to offer will make her a great State, and that quickly."

NEVADA.

THE SPRUCEMONT DISTRICT.—A correspondent of the Salt Lake *Tribune*, writing from this district, under date of January 8th, says:

"This camp is situated 35 miles south of Wells, a station 250 miles west of Ogden, on the Central Pacific Railroad. There is an abundance of timber on the mountain for mining and building purposes."

"Near the town of Sprucemont are located several good prospects and mines. The Iriquois is now being worked, and producing ore that will assay from \$200 to \$400 per ton."

"The Milo has about 100 tons of good ore on the dump, and shows good bodies of ore in the mine."

"The Evening Star has about 50 tons of ore on the dump that will assay 50 per cent lead, and \$60 in silver to the ton."

"The Carrie and Eureka have about 100 tons of good ore on the dump."

"Two and a half miles northeast of Sprucemont, and near the summit of the mountain, are located the Juniper, Keystone, Killey, Badger, Eva, Havana, and Monarch. The Juniper is developed by tunnel, incline, and shaft to a depth of 150 feet, showing a large body of good grade ore, and is evidently a valuable mine; the owners have secured a patent."

"The Killey is developed by cuts, tunnel, and shaft to a depth of 150 feet. It shows a large body of low-grade ore, and I believe would make a valuable mine if properly managed and developed."

"Passing on east from the Killey, half a mile, we come to a group of mines—the Black Forest, Bristol, Cave, and London."

"The Black Forest is developed by three tunnels, which are connected by inclines run down on the vein, to a depth of 340 feet, the work showing large bodies of free-smelting ore at different points from within twenty feet of the surface to the lowest level. Experienced miners estimate the amount of ore developed in this mine at about 10,000 tons. I think the ore will average 40 per cent lead, and at least 40 ounces in silver per ton; there are also about 600 tons of good ore on the dump. No drifting or stoping has been done in the mine for the

purpose of taking out ore. The prospect for future development is considered, by good judges, exceedingly flattering; and I believe that the quantity and quality of ore developed in the mine is sufficient to guarantee a long and remunerative business. The other mines mentioned in this group have not been developed to much extent, but are good prospects and adjoin the Black Forest, making a very desirable tract of mineral land, about 1500 feet in length, by 2000 feet in width."

UTAH.

THE IMPERIAL MINING AND SMELTING COMPANY.—We are indebted to the Salt Lake *Tribune* of January 4th for the following:

"The properties of the Imperial Mining, Milling, and Smelting Company embrace four mining locations on the southerly side of Kesler's Peak, in Big Cottonwood Mining District, Salt Lake County, Utah, to wit: The Golconda, Imperial, Mono No. 2, and Evening Star."

"The surface ground of these mining claims are each 1500 feet in length by 600 feet in width, and being continuous locations on the same vein, make an aggregate in length of 6000 feet of mining ground."

"These mines are situated in the heart of a great mineral belt, in the Wahsatch range of mountains, about twenty miles from Salt Lake City, and about eleven miles from Sandy Station on the Utah Southern Railroad, which latter-named place is the chief mineral sampling and reduction depot of the territory."

"The course of the vein through these properties, like that of the principal veins of the district, is southwesterly and northeasterly. The dip is northerly, inclined a little to the east, at an angle of about 75°."

"The mineral-bearing vein which traverses the extent of these four locations, as aforesaid, in its general course eastward and from these mines, will strike the Queen Bess, Little Fred, Boston, Plutus, Mercury, and Bunker Hill, in the vicinity of Silver Springs; and in its general course would pass through the valuable mines located on Scott Hill, and the Empire and Ontario property, in Parley's Park, only a few miles distant."

"General developments upon nearly all of the foregoing properties, demonstrate a great and rich belt of mineral-bearing veins traversing the Wahsatch Range, in the same direction."

THE SANDY AND UTAH SAMPLING WORKS.—The Salt Lake *Tribune* of January 7th says of these works: "The Sandy Sampling works are situated at Sandy station, about half-way between the railroad depot and the Mingo furnaces, and have been in constant operation for the past three or four years. They have a capacity for sampling fifty tons of ore per day, which would involve the handling of from 250 to 500 tons daily. There have been sampled at these works during the past year about 6,000,000 pounds of ores of various grades, coming mainly from the two great mining centers of Bingham and Cottonwood."

"The Utah Ore Sampling Works have removed to their present admirable location near the Utah Central & Southern Railroad depots. This step was rendered necessary owing to their greatly increased business, the old mill being entirely inadequate to properly handle the ores of its customers. The new mill is very conveniently located to all the railroads centering in the city and is connected with them by both broad and narrow gauge switches. The building sits on a solid stone foundation and is capable of sustaining the immense weight of ore sometimes stored in the building. Large quantities of ore are received at these works from Nevada and Idaho."

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

For Furnishing Labor and Material for Repairs of the North and East Buildings inside Fort Columbus, at Governor's Island; Alex. J. Perry, Dep. Q. M. Gen., U. S. A., Governor's Island.....	Jan. 19, 1880
Sewers; Board of City Commissioners, Cincinnati, Ohio.....	" 20, "
Bridge Builders and Contractors; E. W. Jarvis, City Bridge Engineer, Winnipeg, Manitoba.....	" 21, "
500 New Gas-Lanterns; D. L. Northup, Secretary Department of City Works, Municipal Department, Brooklyn, N. Y.....	" 21, "
Ice Harbor; Furnishing Stone for construction of a Lock in the Muskingum River; amount of stone 13,200 cubic yards; Wm. E. Merrill, U. S. E. office, 82 W. Third street, Cincinnati, O.....	" 23, "
For the Construction of a Timber Trestle-Bridge over the Huron River; Henry C. Waldron, Sec., Ann Arbor, Mich.....	" 24, "
Dredging—100,000 cubic yards, from the Channel through Maumee Bay; John M. Wilson, U. S. E. Office, Cleveland, O.....	" 27, "
7000 lineal feet of Cast-Iron Water-pipes; D. Pottinger, Chief Superintendent Railway Office, Moncton, N. B.....	" 31, "
Railroad Cars, for the Nicaragua Government; A. J. Cothel, Consul General of Nicaragua, 62 W. Thirty-sixth street, New York City.....	" 31, "
Alterations and Additions to State House; C. E. Kemble and A. Peebles, Joint Architects, Charlestown, Kanawha Co., W. Va.....	March 1, "
Tenders for Construction of a Railway in the Island of Ceylon, 4½ miles; tenders sealed and indorsed, "Tender for Nany-o-ya RR.;" Penrose G. Julian, Crown Agent for the Colonies, Downing street, London, Eng.....	" 3 "

FINANCIAL.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Jan. 16.

The week under review shows a very large business, but the fluctuations of prices are without noticeable feature. The subscriptions to new mining enterprises are very large, and the interest in this important industry increases each day.

The Comstock shares show a good business, but do not gain in favor with the public as rapidly as our local stocks. California has ranged between \$4.35 and \$4.50, with sales of 1207 shares. Consolidated Virginia has been much more active, the sales amounting to 5195 shares at \$4.45@4.80. Sierra Nevada continues to command attention here, the sales for the week amounting to 570 shares, at \$21½@23½; Alpha records, 40 shares, at \$11¼; of Julia, 20 shares sold at \$2.35. The sales of Leviathan only amount to 800 shares, at 30@35c.; of Mexican, 20 shares sold at \$20. During yesterday and to-day a business of 180 shares in Union Consolidated, at 47½@49, was reported.

Imperial has been quite active, the sales amounting to 9700 shares, at 75@88c.

The Bodie stocks have been very active and strong. The sales of Bodie amount to 1207 shares at 8¾@9½. Standard has been very active and strong, the sales amounting to 7102 shares at \$29@34. This

company has increased its mill capacity, and expects to increase its dividends. Bechtel shows a large business, the sales amounting to 3410 shares at \$1.80@2, with assessment unpaid, and \$2.15@1.90 with assessment paid. Belvidere only records 200 shares at \$1.25. Bulwer has been quite active and strong. The sales aggregate 5020 shares at 9¼@12½. This company has just completed a joint mill with the Standard Company, and should soon be on dividend-paying basis. Consolidated Pacific has been quiet, the sales amounting to 495 shares at \$4.75@5. Goodshaw has been quite active, with sales of 3400 shares at 47@41c. May Belle shows a very large business at 25@37c; the sales amount to 7550 shares. North Standard, according to the published returns, shows a business of 2000 shares at \$1.90@2.

Tioga was very active and strong, advancing from \$2.65 to \$3.30, with sales of 3595 shares.

The Tuscarora stocks show but a moderate business, without feature. The sales of Belle Isle aggregate 2490 shares at \$1.80@1.65. Grand Prize records sales of 200 shares at \$1.50. Independence sold from \$1 up to \$1.35, but afterward declined to 75c. upon the announcement of an assessment of 30c. per share. The sales amount to 3840 shares. The sales of Martin White aggregate 1100 shares at \$1.25@1.40. Navajo records 2000 shares at 45@41c. Tuscarora declined from 32 to 27c., with sales of 3300 shares.

The miscellaneous San Francisco stocks have had a moderate business. Eureka records sales of 770 shares at \$17¼@16½. The sales of Caledonia (B. H.) have amounted to 910 shares at \$3.25@3.60. Tip Top has been quite active, advancing to \$3.75, afterward declining to \$2.80, followed by a slight reaction. The sales amount to 2914 shares.

Plumas has been very quiet, the sales amounting to but 200 shares at \$2.70@2.50. To-day 100 shares of Atlantic Copper Company sold at \$19.

Mariposa Common shows dealings of 640 shares at \$2.75@4. The Quicksilver stocks have been quite active, Preferred advanced from \$63½ to \$68½, with sales of 5750 shares, and Common from 21 to 24¼, with sales of 8900 shares. Rappahannock records only 12,700 shares at 37@40c. Shamrock has been very quiet, the sales amounting to 500 shares at \$1.30@1.15. South Hite has been quite active, the sales amounting to 21,200 at \$3@3.40. Sutro has had a moderate business at 4@3¼, with sales of 12,125 shares.

The dealings in the fancies have been as follows: American Flag, 3800 shares at 55@50c.; Buckeye, 30,850 at 57@50c.; Dahlonga, 11,900 at 21@18c.; Gold Placer, 14,000 at 31@28c.; Granville, 5600 at 43@45c.; Lacrosse, 44,600 at 59@49c.; Lucerne, 10,200 at 18@21c.

In the dealings at the New York Stock Exchange

will be found the Deadwood Mining Company, which passed the Committee on Mining Securities during the week.

The official statement of this company is as follows: Incorporated under the laws of California, October 4th, 1878.
 Capital 100,000 shares, par \$100.....\$10,000,000
 Property located in Whitewood Mining District, Lawrence County, Dakota Territory.
 Consisting of the North Segregated 1000 feet of the Golden Terra Lode and the North Segregated 500 feet of the Ophir Lode.
 Improvements—New 60-stamp mill fully equipped, office, boarding-houses, etc.
 Receipts from March 1st, 1879, to November 1st, 1879.....\$303,452.01
 Balance due for new mill March 1st, 1879.....\$40,663.04
 Expended in development, running expenses, construction, etc., from March 1st, 1879, to November 1st, 1879.....86,668.64

Balance November 1st, 1879.....181,120.33
 Average monthly bullion product.....\$37,817.73
 Average monthly expenses.....10,236.32
 Average monthly profit.....\$27,581.41
 No debts, liens, or encumbrances.
 Estimated cost of new 60-stamp mill.....\$60,000.00

The stock of this company was put on the market by the well-known firm of Lounsbery & Haggin, who were the promoters of Ontario, Homestake, and Excelsior. The dealings in Deadwood yesterday were 1750 shares at \$25, at the close to-day \$25 was bid. Caribou has ranged between \$5 and \$5½, with sales of 2060 shares. The superintendent says they are producing 1000 ounces of silver per day. Central Arizona has been very active, but shows a large decline from last week, owing, it is said, to the breaking of a pool in the stock. The sales amount to 35,835 shares at \$18½@19. Climax shows a large business, although totally neglected during two days. The sales amount to 4815 shares at \$3½@3¼. The extremes of Excelsior have been \$25½ and \$25, with sales of 570 shares. Findlay has been quiet at 66@64c., with sales of 3000 shares. Great Eastern has been very active and stronger. The sales amount to 70,250 shares at 40@50c. Green Mountain has been quite active, with a slight inclination to strength. The sales amount to 20,860 shares at \$2.10@2.30. Homestake only records 100 shares \$38. The severe weather in the Black Hills is interfering with surface mining. The incline and vertical shafts of this mine are, however, in operation. The mill is reported as running well, and the mine as looking well at all points. Hukill shows a remarkable activity and speculation. The dealings amount to 44,750 shares, selling up to \$5½ on Monday and back to \$4.15 to-day. La Plata has been quiet, the sales amounting to but 500 shares at \$5@5¼. Leadville has had a fair business at weakening prices. The sales amount to 7957 shares at \$4.30@3.75. Little Pittsburg has had a moderate business at \$30¼@29½, the sales aggregating 2788 shares. The general manager of this company, in his report of the operations of the company for the year ended December 31st, 1879—covering only eight months' actual operation—gives the following figures:

Ore receipts.....\$1,346,606
 Total expenses and charges.....\$396,370
 Dividends paid.....850,000
 Real estate purchased.....26,000
 Surplus.....\$164,236

To the surplus should be added about \$40,000 due for ore delivered and unsettled for during the year. There were 23,187 tons of ore produced, from which a bullion product of \$1,800,000 is estimated.

Moose has been active, the sales amounting to 10,085 shares at \$3.05@2.75. New York & Colorado only records 100 shares at \$2.30. The sales of Ontario amount to but 150 shares at \$39¼. The superintendent of this mine for the week ending January 7th, says: "Sixth level, east drift, is in 500 feet, and west drift 408 feet. Both drifts producing good ore. The mill was shut down to repair broken shaft of batteries, from 3 P.M., December 31st, to 7½ A.M., January 5th; since, she has run well.

"We cleaned out the furnace flues; therefore, in working up the flue-dust, the result has not been so good as if working on regular ore. Product \$22,052.42."

The Spring Valley Hydraulic Gold Mining Company has been organized under the laws of this State, with a capital of \$200,000, divided into shares of the par value of \$1 each. The stock is offered to the public at \$10 per share, and the property will be turned over to the company in consideration of the whole

capital stock fully paid. Of course, this capitalization is far below the value of the property; but in making this departure from the usual custom of capitalizing properties at far above the actual value, the stockholders are practically relieved of personal liability, which is not the case with most of the stocks in this market. As we have previously argued, the market price of a share of stock will be regulated by the returns it makes to its stockholders in the way of dividends. It might add to the safety of mining investments if all of our companies were to reduce their capitalization to a low nominal basis. At all events, the example of this company is well worthy of the attention of those who may hereafter form new corporations.

The property of this company is situated near Oroville, Butte County, Cal., and comprises over 1200 acres of gold-bearing gravel, 100 miles of ditches, 400 acres of reservoirs, and 3300 acres of dump ground for tailings. The property is reported on by R. H. Stretch, M.E., who estimates that the ground contains \$68,000,000 gold; that about 100 acres worked have produced \$5,236,061.40, or about \$55,000 per acre. In the last six years, a profit of \$1,380,394.21 has been made. After the completion of a tunnel, now driving, and which it will take less than one year to complete, he estimates that the production can be increased to \$600,000 and \$800,000 per annum. The company is now on a dividend-paying basis. The stock will be sold by the United States Mining Investment Company, 61 Broadway.

The following is one of the traps laid for the public. It appears as an advertisement in one of the daily papers:

"Owing to recent developments, the stock of the Sonora Consolidated Mining Company, of Bodie District, will be advanced to \$2 per share on and after February 1st, 1880."

The public is left to infer that recent developments make the stock of this company worth \$2 per share, but that those who call earlier can secure it at less cost. If the stock be really worth \$1, or any considerable fraction of it, we have been grossly misinformed by our correspondents. The company has never furnished any disinterested expert testimony, nor, indeed, any evidence, that we have seen, which indicates the "mine" to be any thing more than the merest "prospect," with no shadow of a claim to such a valuation as \$200,000, or even a small part of that.

A special meeting of the stockholders of the Dahlonega Gold Mining Company will be held on Tuesday, February 17th.

The annual meeting of the Standard Consolidated Mining Company will take place in San Francisco on February 2d.

The annual meeting of the Findley Gold Mining Company will take place on the 22d inst.

The Caribou Consolidated Mining Co. has declared a dividend of 1 per cent on its capital stock, being the first since the destruction of the company's hoisting-works by fire. The dividend will be paid January 25th, and the transfer-books will close on the 20th.

The Quincy (copper) Mining Co. has declared a dividend of \$3 per share, payable February 10th.

The Green Mountain Mining Co. has declared a regular dividend of 5c. per share, and an extra one of 2½c. per share. The dividends are payable on the 26th, and the books close on the 20th inst.

The Homestake Mining Company has declared its usual dividend (for December), payable at Wells, Fargo & Co.'s, 65 Broadway, on the 26th. Transfers close on the 20th.

REVIEW OF THE SAN FRANCISCO MARKET.

The Comstocks generally show an improvement; slight, to be sure, yet sufficiently marked to indicate a slowly-growing confidence. In the "outside" stocks, the showing is still better, and it is not improbable that the tables may yet be turned, and these control the San Francisco market in the not distant future. The single fact, according to rumor, that the men who made their money from Comstock bonanzas are investing the same in mines away from the Comstock, strengthens our opinion. The Gold Hill News says that ere long the greater part of the work on the Comstock will be done by nine shafts. These will be the Scorpion, Union, C. & C., Osbiston, Combination, Ward, Yellow Jacket, Forman, and Alta.

Belcher has come into considerable prominence this week, gradually advancing, up to yesterday, to \$10½, as against \$6¼ for the week previous. The opening quotation shows a slight reaction from this figure,

SAN FRANCISCO MINING STOCK QUOTATIONS.
 Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS.						Open- ing. Jan. 16.
	Jan. 9.	Jan. 10.	Jan. 12.	Jan. 13.	Jan. 14.	Jan. 15.	
Alpha.....	10¼	10¼	11¼	10¼	11	.....	11
Alta.....	4¼	4¼	4¾	4¾	4¼	4¼	4¼
Argenta.....	1½	1½	1½	1½	1½	1½	1½
Bechtel.....	1½	1½	1½	1½	1½	1½	1½
Belcher.....	7¼	7¼	8¼	9¼	9¼	10½	9½
Belle Isle.....	1½	1½	1½	1½	1½	1½	1½
Belvidere.....	¾	¾	1	1	1	27-32	.....
Benton.....	.....	.....	.....	.....	.....	.....	.....
Best & Belk.....	13¼	13¼	12¾	13	13	13¼	13¼
Black Hawk.....	13-16	13-16	27-32	¾	¾	13-16	13-16
Bodie.....	9	9	8¾	9	9	8¼	.....
Booker.....	.....	.....	.....	.....	.....	.....	.....
Boston Con.....	1¼	1¼	1¾	1¾	1¾	1¾	1.85
Bullion.....	4¼	4¼	4¾	4¾	4¾	4¾	5¾
Bulwer.....	10	10	13	10	10½	10½	.....
Caledonia.....	1¾	1¾	1¾	1¾	1¾	1¾	.....
Cal. B. H.....	.....	.....	.....	.....	.....	.....	.....
California.....	4¼	4¼	4¾	4¾	4¾	4¾	4¾
Chollar.....	.....	.....	.....	.....	.....	.....	.....
Confidence.....	.....	.....	.....	.....	.....	.....	.....
Con. Imp.....	.....	.....	.....	.....	.....	.....	.....
Con. Pacific.....	5	5	4¾	4¾	4¾	5	5
Con. Va.....	4¼	4¼	4¾	4¾	4¾	4¾	4¾
Crown P'nt.....	3¾	3¾	4	4	4	5½	5¾
Dudley.....	.....	.....	.....	.....	.....	.....	.....
Endowment.....	.....	.....	.....	.....	.....	.....	.....
Eureka Con.....	17	17	18	16½	17	17	.....
Exchequer.....	3¼	3¼	3¾	3¾	3¾	3¾	3¾
Goodshaw.....	13-32	13-32	13-32	7-16	13-32	13-32	.....
Gould & Cur.....	5¾	5¾	5¾	5¾	5¾	6½	6½
Grand Prize.....	1¼	1¼	1¾	1¾	1¾	1¾	.....
Hale & Nor.....	8½	8½	8½	8½	8½	8½	8½
Hamburg.....	.....	.....	.....	.....	.....	.....	.....
Homestake.....	.....	.....	.....	.....	.....	.....	.....
Hussey.....	.....	.....	.....	.....	.....	.....	.....
Indep'dnce.....	.....	.....	.....	.....	.....	.....	.....
Jackson.....	.....	.....	.....	.....	.....	.....	.....
Julia Con.....	2¾	2¾	2¾	.....	.....	3¼	2¾
Justice.....	2½	2½	2½	2½	2½	2½	2½
Kentuck.....	.....	.....	.....	.....	.....	.....	.....
Kossuth.....	.....	.....	.....	.....	.....	.....	.....
Lady Wash.....	11-16	11-16	21-32	11-16	21-32	.....	.....
Leeds.....	.....	.....	.....	.....	.....	.....	.....
Leopard.....	.....	.....	.....	.....	.....	.....	.....
Leviathan.....	5-16	5-16	11-32	11-32	13-32	13-32	.....
Mammoth.....	2¾	.....	.....	.....	.....	.....	.....
Manhattan.....	2	2	2	1¾	.....	.....	.....
Maybelle.....	3-16	3-16	¼	5-16	5-16	5-16	.....
Mar. White.....	.....	.....	.....	.....	.....	.....	.....
McClinton.....	¼	¼	½	19-32	15-16	19-32	.....
Meadow Val.....	.....	.....	.....	.....	.....	.....	.....
Mexican.....	20¾	20¾	19¾	20	19¾	19¾	19¾
Mono.....	5¾	5¾	6	.....	.....	.....	.....
Navajo.....	13-32	13-32	13-32	13-32	13-32	13-32	.....
North Belle.....	9¼	9¼	10¾	10¾	10¾	9	.....
N. Belle Va.....	.....	.....	.....	.....	.....	.....	.....
N. Bonanza.....	21-32	21-32	11-16	21-32	19-32	.....	.....
N. Standard.....	.....	.....	.....	.....	.....	.....	.....
Ophir.....	19¾	19¾	19¾	20¼	20¾	19¾	19¼
Orig. K's's'e.....	.....	.....	.....	.....	.....	.....	.....
Overman.....	8¾	8¾	8¼	8¾	9 1-6	8¾	.....
P. Sheridan.....	.....	.....	.....	.....	.....	.....	.....
Potosi.....	4	4	4¼	4¾	4 1-6	5	5
Ray & Ely.....	1	1	1	1	1	.....	.....
R. de Monte.....	1¾	1¾	1¾	1¾	1¾	1¾	.....
Richer.....	.....	.....	.....	.....	.....	.....	.....
Savage.....	7	7	6¾	7	7½	7¾	7¾
Scorpion.....	.....	.....	.....	.....	.....	.....	.....
Seg. Belcher.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nev.....	22	22	20¼	22	21¾	21¾	21¾
Silver Hill.....	¾	¾	3-32	¾	27-32	27-32	27-32
Silver King.....	.....	.....	.....	.....	.....	.....	.....
So. Bulwer.....	27-32	27-32	29-32	1	1	1	.....
Standard.....	.....	.....	.....	.....	.....	.....	.....
Summit.....	.....	.....	.....	.....	.....	.....	.....
Syndicate.....	1½	1½	1¾	1¾	1¾	2	.....
Tioga.....	2½	2½	2½	2¾	3¾	3¾	.....
Tip Top.....	4	4	3¾	2¾	3¼	3¼	3¼
Trojan.....	.....	.....	.....	.....	.....	.....	.....
Tuscarora.....	.....	.....	.....	.....	.....	.....	.....
Union Con.....	50	50	47¾	40¾	40¾	40¾	48¾
Utah.....	.....	.....	.....	.....	.....	.....	.....
Wales.....	3	3	3½	3½	3½	3½	.....
Ward.....	.....	.....	.....	.....	.....	.....	.....
Washoe Con.....	.....	.....	.....	.....	.....	.....	.....
Yel. Jacket.....	11¾	11¾	11¼	11½	11	10¾	10¾

yet, with the exception of yesterday's figure, this is the best quotation of the week. This advance is undoubtedly influenced by the good appearance of the cross-cuts run on the lower levels, on the 2760 level particularly. The outlook is said to be very promising, and it is thought that the formation will be better as greater depth is attained.

Eureka Consolidated has been steady during the week, closing yesterday at \$17. No change is reported in the workings of this mine. The usual progress is noted. Bullion has advanced somewhat, closing yesterday at \$5½, which is the best price noted for some time past. It is said that the double incline winze, which has been run below the 2150 level, is improving as depth is attained. Mono shows quite an advance, opening to-day at \$7 against \$5½ a week ago.

Union Consolidated opens at 48¾, which still is not the best price of the week, yet is considerable of an advance from our last. Sierra Nevada opens at the best price of the week, namely, \$23¾. The north drift on the 2300 level of this mine in its face shows a very fine body of ore. Ophir opens at \$19¾, somewhat of a decline from the quotations of last week. This company is extracting the usual quantity of milling ore, and at the present rate will be able to continue the dollar dividends.

COAL STOCKS.

NAME OF COMPANY.	Capital Stock.	SHARES.		Last Dividend.	Rate per Ann.	Quotations of New York stocks are based on the equivalent of \$100. Philadelphia prices are quoted, so much per share.												SALES.
		No.	Par Val.			Jan. 10.		Jan. 12.		Jan. 13.		Jan. 14.		Jan. 15.		Jan. 16.		
						H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Am. Coal Co.	1,500,000	60,000	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atl. Coal Co.	20,000,000	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buck Mt. Coal	150,000	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ches. & O. RR	15,000,000	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Consol. Coal	10,250,000	100	Jan. 77	2 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	34,258
Cumb. C. & I.	500,000	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
Del. & H. C.	20,000,000	200,000	100	Aug. 76	4	9	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2	790	
D. L. & W. RR	20,900,000	50	July 76	2 1/2	5	88	86 1/2	87	85 1/2	85 1/2	85 1/2	85 1/2	85 1/2	85 1/2	85 1/2	85 1/2	5,248	
Lehigh C. & N.	10,148,536	208,971	50	Nov. 76	1 1/2	5 1/2	38 1/2	38	37 1/2	38	37 1/2	38	37 1/2	38	37 1/2	38	111,031	
Leh. Vly R. R.	27,228,855	540,858	50	Jan. 79	1	4	53	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,862
Maryld. Coal	4,400,000	44,000	100	Jan. 76	1 1/2	25	24 1/2	25 1/2	24 1/2	25 1/2	24 1/2	25 1/2	24 1/2	25 1/2	24 1/2	25 1/2	854	
Morris & Esx	15,000,000	300,000	50	July 79	3 1/2	7	105	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	104 1/2	125	
New Cen. C.	5,000,000	50,000	100	Jan. 79	2	32 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	31 1/2	3,700	
N. J. C. & R.	20,600,000	206,000	100	Apr. 76	2 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	8 1/2	9,750	
Penn. Coal...	5,000,000	100,000	50	Oct. 79	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	44,514
Penn. R. R.	68,870,200	1,337,404	50	Nov. 79	2 1/2	10	51 1/2	51	50 1/2	51	50 1/2	51	50 1/2	51	50 1/2	51	25,090	
Ph. & E. R.	34,278,175	685,553	50	Jan. 76	2 1/2	10	71 1/2	70 1/2	69 1/2	70	69 1/2	70	69 1/2	70	69 1/2	70	52,458	
S. Clara Mfg	1,500,000	30,000	50	Dec. 79	3 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spring Mt. C.	1,500,000	30,000	50	Dec. 79	3 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Spruce H. C.	1,500,000	30,000	50	Dec. 79	3 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Of the sales of this stock, 34,258 shares were sold at the Philadelphia Stock Exchange, and 18,200 at the New York Stock Exchange.
Total Sales... 294,875.

BOSTON MINING STOCKS.

NAME OF COMPANY.	State.	Jan. 9.		Jan. 10.		Jan. 12.		Jan. 13.		Jan. 14.		Jan. 15.		SALES.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
		Shares.												
Allouez, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	500
Atlantic, c.	Mich.	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,110
Blue Hill, c.	Mich.	8 1/2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	159
Calumet & Hecla, c.	Mich.	23 1/2	.....	23 1/2	.....	23 1/2	.....	23 1/2	.....	23 1/2	.....	23 1/2	.....	558
Central, c.	Mich.	39	.....	40	.....	40	.....	40 1/2	.....	40 1/2	.....	40	.....	475
Copper Falls, c.	Mich.	.....	.....	.....	.....	6 1/2	.....	6 1/2	.....	6 1/2	.....	.....	.....	100
Copper Harbor, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
Dana, c.	Mich.	.....	.....	.....	.....	85	.....	85	.....	85	.....	.....	.....	795
Douglas, c.	Mich.	.....	.....	.....	.....	.....	.....	5 1/2	.....	5 1/2	.....	.....	.....	4,215
Duncan, s.	Ont.	4 1/2	.....	4 1/2	.....	4 1/2	.....	4 1/2	.....	4 1/2	.....	4 1/2	.....	1,000
Eagle River, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Franklin, c.	Mich.	31	.....	32	.....	31	.....	34 1/2	.....	35	.....	34	.....	700
Hanover, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Humboldt, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Hungarian, c.	Ont.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
International, s.	Ont.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Manhattan, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Mesnard, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Mesnard, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Minnesota, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
National, c.	Mich.	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Orford, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Osceola, c.	Mich.	.....	.....	30 1/2	.....	37	.....	37	.....	36 1/2	.....	37	.....	550
Pewabic, c.	Mich.	43 1/2	.....	45	.....	44	.....	45	.....	46	.....	45 1/2	.....	795
Phoenix, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Pontiac, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	640
Ridge, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockland, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Islet, s.	Mich.	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,540
Star, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	970
Sullivan, s.	Mich.	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	150
Superior, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	650
Sutro Tunnel	Nev.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Winthrop, c.	Mich.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

c. Copper. s. Silver.

The Commercial Herald of the 8th inst., says of the market :
"A slight advance has taken place in mining shares during the past week, resulting in bringing considerable stock to the front ; however, spirit is lacking to take hold as was formerly the case, all of which is not surprising in the absence of developments in the mines mostly operated on the boards. Speaking in a general way, the prospects for the current year are certainly very fair for a large output of bullion ; for so many new localities are likely to be in a productive condition that they will more than make up for the loss on the Comstock ; but we hope that even that famous lode will again make a good showing in the not very distant future."
The Dividend and Assessment Record of the Eureka District Mines.—The Sentinel says the mines of the Eureka District, since their incorporation, have levied assessments and paid dividends as follows :
Mines. Assessments. Dividends.
Albion, \$85,000
Eureka Con. \$4,225,000
Fourth of July 20,000
Hamburg 305,000
Jackson 177,500
K K 450,000
Phoenix 440,000
Richmond 2,312,500
Total \$1,577,500
Excess of dividends 5,010,000
Copper and Silver Stocks.
Reported by C. H. Smith, Commission Stock Broker, No. 15 Congress street, Room 3.
Boston, Jan. 15, 1880.
The market for copper stocks the past week has been very active, and prices show a marked advance in all the leading productive mines, especially in Franklin, Pewabic, and Quincy, and higher prices for these stocks are confidently predicted.
Calumet & Hecla has been very steady, ruling at 23 1/2@23 3/4, and fractions selling at 23 1/2@30.
Copper Falls dull at 6 1/2, at which about 500 shares sold.
Central advanced from 38 1/2 to 40 1/2, closing at 40.
Franklin opened at 31 on the 10th, and advanced on large sales to-day to 37, closing this afternoon at 36 bid. Sales aggregate over 4000 shares.
Osceola advanced from 30 1/2 to 38, with but little stock offered. This stock is firmly held, and only small lots find their way on the market.
One sale of 100 shares Phoenix at 6.
Quincy, in the early dealings, was dull at 28 1/2@29, but

of the report of a forthcoming dividend, strong buyers appeared, and to-day sales were made at 33 1/2, followed this afternoon by a slight reaction. The stock closed at 32 bid ; over 3000 shares were sold. It is reported that the gains of the company during the year are estimated at \$130,000, which sum, added to the cash surplus on hand at the beginning of the year, gives the company about \$600,000 assets, exclusive of the mining property. The company is entirely free from debt. It is expected that the company will pay a dividend of \$2@3 per share the ensuing month.
Pewabic has been very strong and advancing throughout the week, opening with small sales at 43 1/2 (which was the lowest quotation), and advancing to 49 1/2 to-day ; closing at 49 bid. Only 1200 shares changed hands, holders believing in much higher figures.
National, steady at 5@5 1/2.
Ridge, steady at 7 1/2@7 3/4.
Blue Hill 8 1/2@8 1/2, with sale of small lot at 9 ; closing, 8 bid.
Douglas, 5 1/2@5 3/4.
Atlantic advanced from 15 to 18 1/2.
Mesnard, 3@3 1/4.
Minnesota, 3 1/2@3 3/4.
Star, 1 1/2@2.
Dana, 3 1/2@3 3/4.
Washington, 3/4@1.
Winthrop, 3/4@1.
Humboldt, 1@1 1/2.
Pontiac, 1 1/2 asked.
Superior, 1 asked.
SILVER STOCKS.
Sullivan Silver declined from \$13 1/2 to \$11, closing at \$10 1/2 bid.
Duncan Silver steady at 4 1/2@4 1/4.
Silver Islet sold quite freely at \$20, in the early dealings, but shows considerable strength to-day at 21 1/2 bid, 22 asked.
International, sales at 60 cents.
Copper Products.—The Houghton Gazette gives the products of the chief producing mines in that district for the month of December : Calumet & Hecla, 1661 tons 880 pounds ; Osceola, 171 tons 500 pounds ; Franklin, 169 tons 375 pounds ; Quincy, 157 tons 915 pounds ; Atlantic, 142 tons 1650 pounds ; Allouez, 75 tons 190 pounds.
The yield for the year closing December 31st is as follows : Calumet & Hecla, 16,320 tons 975 pounds ; Osceola, 1884 tons 800 pounds ; Franklin, 1723 tons 475 pounds ; Quincy, 1667 tons 1115 pounds ; Atlantic, 1628 tons 1085 pounds ; Allouez, 950 tons 1150 pounds.
Coal Stocks.
NEW YORK, Friday Evening, Jan. 16.
The business in the shares of the coal carriers dur-

ing the past week has almost been a repetition of that reported a week ago. The most prominent feature in the list is the activity and advance in the stock of the Chesapeake & Ohio Railroad, 34,258 shares having changed hands at from 19 1/2@23 1/2, as the extreme prices, and closing to-day at 21@22 1/2 bid and asked, against 19 1/2 a week ago. The very favorable statement just issued by this company fully accounts for this advance. Delaware & Lackawanna shows dealings aggregating 111,000 shares, closing at quite a decline from last week's prices.
New Jersey Central stock is well maintained, 44,514 shares changing hands. Reading shows a slight decline, 52,458 shares comprising the transactions.

Gas Stocks.

New York, Friday Evening, Jan. 16.
The New York gas stocks show great improvement, but the Brooklyn gas market continues heavy and dull. Rumors are current that the New York gas companies are negotiating for a settlement of the gas war. In Brooklyn, the Fulton Municipal continues its preparations to supply gas, and, in all probability, all the old companies will reduce the price of gas to \$2 per thousand before February 1st. The Brooklyn authorities are advertising for bids for five hundred gas lanterns.
The following list of companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 24 Broad street, New York.

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	Rate per ann.	DIVIDENDS.		QUOTATIONS.	
				Am. of last.	Date of last.	Bid.	As'd.
Mutual, N. Y.	5,000,000	\$100	6	1 1/2	July, '79	40	50
" Bonds.	900,000	1,000	8	3 1/2	Aug., '79	100	104
N. York "	4,000,000	.....	8	4	May, '79	75	85
Metrop. "	2,500,000	100	10	3 1/2	Aug., '79	110	115
" Certs.	1,000,000	.....	7	5	Aug., '79	95	100
Harlem "	1,850,000	50	6	3	Feb., '78	40	45
Manhat. "	4,000,000	50	15	5	June, '79	140	150
Brooklyn, Bkln.	2,000,000	50	15	5	May, '79	11	121
Nassau "	1,000,000	25	3	3	July, '79	50	60
" Certs.	700,000	1,000	7	3 1/2	Nov., '79	85	95
People's "	1,000,000	10	3	3 1/2	Nov., '79	30	33
" Certs.	250,000	1,000	7	3 1/2	July, '79	75	85
" Bonds.	375,000	.....	7	3 1/2	Nov., '79	90	95
Metrop. "	1,000,000	100	7	3 1/2	Jan., '80	55	60
Wmsb'g "	1,000,000	50	8	2	July, '79	65	75
" Certs.	1,000,000	.....	7	3 1/2	July, '79	90	100

GENERAL MINING STOCKS. Dividend Paying Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val), ASSESSMENTS (Total levied to date, Date and amount per share of last), DIVIDENDS (Total paid to date, Last Dividend), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Jan. 10, Jan. 12, Jan. 13, Jan. 14, Jan. 15, Jan. 16), SALES.

Non-Dividend Mines.

Table with columns: NAME AND LOCATION OF COMPANY, Feet on Vein, Capital Stock, SHARES (No., Par Val), ASSESSMENTS (Total levied to date, Date and amount per share of last), DIVIDENDS (Total paid to date, Last Dividend), HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE (Jan. 10, Jan. 12, Jan. 13, Jan. 14, Jan. 15, Jan. 16), SALES.

Total Assessments levied to date.....\$59,811,760 Total Dividends paid to date..... g. Gold. s. Silver. L. Lead. c. Cop. per. * Non-Assessable. † Assessment paid. Total Shares sold during the week.....

Jan. 3.....	Ophir.....	Nev	\$27,784.21
" 3-4.....	Union Con.....	Nev	71,608.54
Dec. 29-Jan. 1.....	Paradise.....	Nev	10,018.00
" 27-29.....	Bartel Mine (Austiu).....	Nev	2,648.54
" 28.....	Passing Eureka.....	Nev	22,340.37
Jan. 3.....	Alice, Butte.....	Mont	7,000.00

The Output of the Summit Valley (Montana) Mines for 1879.—The Butte Miner of the 6th instant summarizes the product of the mines of Butte, Montana, during the past year as under:

NAME OF MINE OR MILL.	Tons wkd.	Per cent. savd.	Gross bullion yield.
Alice.....	6,000	87	390,308.64
Dexter.....	5,600	65@80	241,530.60
Silver Bow.....	6,500	75	288,129.50
Davis.....	4,000	75	150,000.00
Clipper.....	2,400	78	119,030.76
Thornton.....	1,200	75	50,000.00
Burlington.....	2,000	80	70,000.00
Centennial.....	1,600	75	32,628.27
Smelter.....	1,500	90	100,000.00
Total.....	30,800		1,450,627.77

This gives the total bullion yield of the camp as \$1,450,627.77, besides which large quantities of high-grade copper and silver ore were shipped to the Eastern States and Colorado for reduction. It is impossible to arrive at any definite idea of the amount of money yielded from this source.

The East Bobtail mine, Colorado, produced \$1207 during the month of December.

Shipment from Central City, Colo.—The Register-Call of January 7th says: "The largest weekly bullion shipment made from any bank in this city for years, was that of the First National Bank this afternoon, which shipped 1622 ounces of beautiful mill gold, comprising 640 ounces from the Consolidated Briggs mine, 681 ounces from the old reliable Gunnell, 255 East Bobtail, 104 from the California, and the balance in mixed lots. The valuation of the gold is \$27,000."

Bullion Shipments from Prescott, Arizona, During 1879.—The Prescott Miner publishes the following: "The following exhibit shows the actual shipment of bullion from Prescott to date, by Wells, Fargo & Co., and the estimated shipments by other channels. This statement does not include the shipments of the two largest bullion-producing mines of the county—the Tip Top and Tiger—which, if included, would swell our total bullion shipment to considerably over half a million dollars per year, which is a fair showing for a county which is almost in a wholly undeveloped condition, both as regards its mines and the erection of mills:

1879.	Gold bullion.	Silver bullion.
January.....	350.00	45,290.52
February.....	1,300.00	8,634.47
March.....	3,425.00	23,088.00
April.....	3,555.00	15,874.76
May.....	5,050.00	1,809.44
June.....	5,001.15	13,587.55
July.....	3,629.75	14,087.40
August.....	1,139.38	17,708.15
September.....	4,006.30	3,713.05
October.....	1,550.00	19,205.82
November.....	3,030.00	12,705.47
December—approximated.....	4,009.00	14,000.00

Actual shipment.....	\$36,036.48	\$190,114.64
Estimated from other sources.....	30,000.00	22,500.00
Total.....	\$66,036.48	\$212,614.64

Shipments from the Globe District, Arizona.—We take the following from the Silver Belt of the 3d inst:

"Shipments of silver bullion for December fall below previous months, which is accounted for by the stoppage of the Isabella mill for the want of salt. They are as follows:

Millner & Watson.....	\$3,874.63
E. F. Kellner.....	4,835.66
Faton & Bailey.....	9,789.65
McMillen M. and M. Co.....	8,468.82
Total.....	\$26,965.76

"This does not include shipments of native silver and valuable ore. The Isabella mill has now a supply of salt, and will commence running on Monday."

The Bullion and Coin in European Treasuries.—The following statement is published, as showing the stocks of coin and bullion in the great banks of Europe and the United States on the first of the new year as follows:

Bank of France.....	\$383,205,000
" England.....	138,658,000
" Germany.....	137,010,000
" Holland.....	64,300,000
" Belgium.....	21,095,000
" Russia.....	106,210,000

Together in Europe.....	\$849,828,000
United States Treasury and New York banks.....	262,214,000
Total.....	\$1,112,042,000

The bullion shipments from the Black Hills mines during the past year are stated at \$4,000,000.

The Salt Lake Tribune gives the following recapitulation of the mineral production of Utah:

2,301,276 lbs refined lead at 4½¢ per pound.....	\$103,557.42
26,441,359 lbs. unrefined lead at \$45 per ton.....	594,930.57
00,835,047 oz. silver at \$1.10 per oz.....	4,218,551.70
09,932 cz. gold at \$19 per oz.....	302,708.00
Total.....	\$5,219,747.69

The above includes the product of ores received from Idaho, Montana, and Nevada, aggregating 126,000 pounds lead, 102,800 ounces silver, and 200 ounces gold, or a total value of the silver of \$113,080, for the gold of \$3800, and for the lead of \$5670—a total of \$122,550, which, deducted, leaves for Utah \$5,097,197.69. It is estimated that Utah will produce at least \$10,000,000 during the present year.

The bullion shipments from the Silver Reef (Utah) District, through Wells, Fargo & Co.'s Express, for the month of December, 1879, aggregated \$74,375.41.

The Chrysolite Mining Co. is now shipping, on an average, 190 tons of ore per day. The average price paid per ton

for the week ending January 10th was \$82, which is an increase of \$6 from the previous prices. There appears no diminution in the quantity of ore in this mine. The main shaft is now down 130 ft. Little Chief is shipping 35 tons of ore per day. Climax is shipping 30 tons of ore per day.

The Stormont Mining Company, of Silver Reef, Utah, cleaned up \$48,073.29 for 26 days in December. The superintendent's telegraphs, under date of the 15th, say that the January shipments will amount to \$50,000.

The new silver mill at Galena, in the Black Hills, is turning out from \$20,000 to \$25,000 per month. Two other large mills are now being erected at this place.

The Arizona of the 3d instant says that the Signal mill is now running on tailings, taking out \$500 per day. On the 3d instant, the California Union Consolidated, Ophir Consolidated, Virginia Mining Companies made shipments, aggregating \$203,989.38.

The Richmond Consolidating Mine, of Eureka, Nevada, made shipments during the past year as follows:

Month.	Value.
January.....	\$98,105.96
February.....	124,080.92
March.....	150,755.46
April.....	129,883.80
May.....	156,389.11
June.....	138,011.70
July.....	157,402.15
August.....	108,760.19
September.....	122,390.83
October.....	125,713.83
November.....	152,354.19
December.....	99,904.88
Total.....	\$1,561,353.02
Average monthly shipments.....	130,112.75

The following is a statement showing the amount of bullion which passed Eureka, Nevada, during the year 1879:

Month.	Value.	Month.	Value.
January.....	\$76,210.22	July.....	\$90,777.30
February.....	68,930.65	August.....	89,943.14
March.....	113,986.00	September.....	108,166.40
April.....	145,565.31	October.....	113,250.49
May.....	123,974.15	November.....	69,648.84
June.....	68,864.72	December.....	61,957.70
Total.....	\$1,131,274.82	Total.....	94,272.90

The Inter-Ocean's correspondent, under date of Salt Lake City, Utah, December 29th, says: "The shipments of refined lead and bullion for the week ending December 27th, are as follows:

Bullion to Pittsburg.....	Cars.
7 Bullion to Omaha.....	7
7 Bullion to Chicago.....	5
Lead to New York.....	10
Total.....	29
Bullion, lbs.....	297,291
Lead, lbs.....	218,510
Total.....	515,801

The Treasury Department purchased on the 15th inst., \$420,000 ounces of silver for the San Francisco, New Orleans, and Philadelphia mints.

Exports of Gold and Silver.	
Week ending January 10th.....	\$67,040
Corresponding week last year.....	542,951
Since January 1st.....	67,040
Corresponding period 1879.....	542,951

Gold Interest paid out by the Treasury.	
Week ending January 10th.....	\$2,452,431
Corresponding week last year.....	2,990,838
Since January 1st this year.....	4,762,527
Corresponding period last year.....	5,787,642

METALS.

NEW YORK, Friday Evening, Jan. 16.

The looked-for "boom" has reached the metal market, although it has not entered into every article.

Copper.—The sales of this article are said to amount to from 3,000,000 to 5,000,000 lbs. for spot and forward delivery, selling up to 23¼ cents at the close for spot, while 23½ cents is asked for March delivery. The market for this article is in a very excited condition, being at the mercy of the companies and the speculators.

London advices of January 6th say:

"At the Swansea Ticketing this day, 2033 tons of ore, averaging 10 per cent produce, sold at an average price of 13s. per unit.

"The running contract of the Cape Company with the Swansea smelters having now terminated, the former has announced a sale of 620 tons of ore by tender on the 14th inst.

"Chili bars are still in active demand, the sales of the day amounting to about 800 tons; cash metal realizing £66½, a good portion whereof without brokerage, or for immediate payment and no allowance of interest, while, for parcels with extended prompts, buyers paid £67½@£68, according to time of delivery. Some favorite marks were also reported at £67, and best brands at £67½, cash. The market closed steady at £69½ for G. O. Bs., cash, and rather buyers therewith, with a few parcels offering at said figure, but without brokerage, and mostly short fixed prompts.

"Wallaroo quoted at £75@£76; Burra, £74@£75; English firmer, Tough Cake, £70@£72; Best Select Ingot, £71@£73; India Sheets, £74½@£75½; other Sheets, £75½@£77; Yellow Metal Sheets, 6¼@6½d. per lb."

Since then, £76 has been quoted for best selected, and £71 for Chili bars.

Tin.—This article also shows great excitement and a large business, the reported sales amounting to 1200 to 1500 tons. At the close, 23¼@24c. is asked for Straits, 23c. for L. & F., and 23½@24c. for refined. Straits in London is £95; Penang, \$30; and Singapore, \$30.25, with no stocks at the latter places.

Tin Plates.—There has been a large business in

these; and prices, both here and abroad, are higher. We quote Charcoal Tins, ½ cross, B. V. grade, at \$9.87½, and Allaway, \$9.62½; Ternes, Allaway, \$8.87½@89; Coke Tins, B. V. grade, \$8.37@8.50; and Roofing, \$8@8.12½.

Messrs. Robert Crooks & Co., of Liverpool, under date of January 1st, 1880, say:

"Tin and Terne Plates have, like the preceding article, been greatly agitated by the rapid advance in material. The moment manufacturers showed their appreciation of the situation by stiffening their prices, buyers rushed in, put up quotations, and are still buying, although on the month the advance all round is from 7s. to 4s. per box. Deliveries now, for earlier than March, are difficult to obtain for any thing that is not in stock, and outlook altogether is very strong."

Lead.—There has been but a small business; 50 tons sold at 6c., and since then the price has gone to 6¼@6½c.

Spelter and Zinc.—These are quiet but firm; the former at 6¼@6½c., and the latter at 8@8½c.

Antimony.—There is a good business doing, and this article is scarce, both here and abroad. Hallett's is quoted at 18@18½c., and Cookson's at 20c.

Quicksilver.—The San Francisco Commercial Herald of January 8th says:

"The general market is in a quiescent state, yet we look for a change for the better at no distant day; price, 40c. nominal. The Newbern for Mexico carried 235 flasks. Since placing the above in type, London cables announce a marked rise, say from £6 10s. to £7 5s. per bottle. It is now said that buyers here offer 40c., which holders refuse to accept. In fact, at this writing, some holders even ask 50c."

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Jan. 16.

American Pig.—We note sales of a few hundred tons of No. 1 foundry at \$40 per ton. There is very little iron to be had for immediate delivery, and the furnace companies are so well supplied with orders that they are not anxious to contract at present prices. We quote No. 1 Foundry at \$40; No. 2 Foundry, \$35 @ \$36; and Forge at \$33@35.

Scotch Pig.—The arrivals have been large, but the iron was mostly sold previous to arrival. There is a good demand. We note sales of 400 tons of Gleggarnock at \$33; 200 tons of Coltness, 300 tons Summerlee, on private terms; and 1000 tons of Eglinton on private terms, to arrive next month, and 3000 tons of the same brand in Philadelphia, on private terms. Prices in Glasgow have advanced; the latest by cable are: Eglinton, 82s. 6d.; Coltness and Summerlee, 90s. We quote here as follows: Coltness, \$36; Eglinton, \$33; Gleggarnock, \$34; Gartsherrie, \$34; and Summerlee, \$35.

Rails.—In domestic steel rails, there is no business, owing to the fact that there are none for sale for reasonable delivery. We quote at \$80. A re-sale of 5000 tons of German steel rails at £9 is reported, although £10 is now asked by the works. All the steel mills in the world are supplied with orders for the first half of this year. English iron rails are quoted at £8 15s. @ £9 per ton. About 6000 tons of domestic iron rails, part for immediate delivery, are reported at about \$62.50 at Eastern mills. For delivery in March, \$65 is asked. Some light rails sold at Western mills at \$70. It is clearly indicated that at reasonable prices the demand for railway material in 1880 would greatly exceed the ability to supply it.

Messrs. John H. Austin & Co., of London, under date of January 1st, say: "Markets very strong, Makers' books well filled, and in many cases much higher prices are demanded than even our maximum quotations. We quote iron at £7 5s. @ £7 10s., and steel at £7 15s. @ £8 15s."

Old Rails.—A sale of 2000 tons on private terms, 2000 tons at \$42.50, and 2000 tons at \$43, are reported. At the close, \$42.50@43.50 is asked for Ts, and \$44 for D. H., with small stocks throughout the world.

Wrought Scrap.—The sales amount to between 5000 and 10,000 tons, selling up to \$40 for good No. 1, at which price the market closed, with a good demand.

We publish the following letters received from our regular correspondents:

BALTIMORE, Jan. 12.	
"We have an active iron market, with prices advancing, and quote to-day as follows:	
Balt. Char.....	\$34 00@55.00 M. & White...\$33.00@34.00
Va.....	55 00@ 56.00 C.I.C.B. Blooms 85.00@ 90.00
Anth.No.1.....	36 00@ 37.00 " " Billets 87.00@ 90.00
" 2.....	35.00@ 36.00 Ref'd Blooms 73.00@ 76.00
" 3.....	34.00@ 36.00

"R. C. HOFFMAN & Co."

"Market very unsettled; quotations are reliable for this day only. The inquiries are most urgent for old rails, car-wheels, and charcoal pig-iron."
 Richmond, Va., Jan. 12.
 Scotch pig-iron.....\$34.00@38.00
 Amer. Scotch Pig-Iron.....41.00@44.00
 Anthracite " " No. 1.....38.00@41.00
 " " " No. 2.....37.00@40.00
 " " " No. 3.....36.00@39.00
 " " " Mottled.....32.00@34.00
 Va. Cold Blast Charcoal Pig-Iron, neutral.....48.00@51.00
 " Warm.....38.00@42.00
 Old Rails.....35.00@37.00
 Wrought Scrap No. 1.....33.00@34.00
 Cast Scrap No. 1.....29.00@30.00
 Richmond Refined Bar Iron.....0.03.60@.....
 Horse shoes (Tredegar).....4.50@.....
 Mule shoes.....5.50@.....
 Old Dominion nails (standard size).....4.50@.....

"ASA SNYDER,"
 "St. Louis, Jan. 10.

"The excited condition of the market renders it impossible to make quotations.
 "You will, therefore, continue quotations of last week, with the understanding that the advances thereon can be safely put at \$5 per ton.
 "Holders are very firm in their views, and there seems to be nothing in the way of a realization of still higher prices.

CHARCOAL HOT BLAST.

Missouri.....\$38.00@43.00
 Southern.....38.00@40.00
 Hanging Rock.....None offering.

COKE AND COAL.

Missouri.....None offering.
 Southern, No. 1.....36.00@38.00
 Ohio River, No. 1.....36.00@38.00
 Jackson County, No. 1.....35.00@37.00
 Hocking Valley, No. 1.....35.00@37.00
 Mill irons and No. 2, \$1 to \$2 less, and very light offerings.

COLD BLAST.

Missouri.....40.00@42.00
 Southern.....45.00@47.00
 Ohio.....50.00@.....

IRON ORE.

Iron Mountain.....None offering.
 Southwest.....\$7.50@8.00
 Ore for flux.....12.00@.....

OLD RAILS AND CAR WHEELS.

Rails.....@.....
 Wheels.....@.....

"CARD & HOFFER."

THE COAL TRADE REVIEW.

NEW YORK, Friday Evening, Jan. 16.

Anthracite.

The mild weather which has ruled has very much reduced the domestic consumption, and the demand from other sources has not been sufficient to equal the supply. The consequence has been that the market has been considerably demoralized, with indications of a greatly overstocked market and lower prices. The failure of consumers to take coal is to a certain extent limiting the output, owing to the crowded condition of the shipping ports, yet it is very evident that low prices must rule for a considerable time if the present production is continued. After the opening of navigation, there will probably be a large demand, but in the mean time the outlook is in favor of its being much less than the ability of the companies to supply.

Bituminous.

There has been but little inquiry for Cumberland, notwithstanding the favorable freight rates prevailing at shipping points. It may be recorded, as a matter of interest, that some few cargoes have been forwarded to tide-water via the Chesapeake & Ohio Canal this month, no shipments ever having been made before, with one exception, as late as January. There are signs of another strike among the miners of the Cumberland region, and consumers of this class of coal must expect to pay higher figures the coming season. Prices still rule at about \$3.25 f. o. b. Baltimore. In the Clearfield region, cars are more abundant, and prices are weakening with anthracite, and under a smaller number of orders.

New York.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lbs.	At the Shipping Ports.	Along-side at New York.
Westmoreland and Penn.	\$4.25	
At Greenw'ch, Philadelphia		\$5.50
At S. Amboy		5.50
Kanawha at Richmond	4.10	5.40
Murphy Run, West Va., at Baltimore	3.75	5.85
Fairmount, West Va., "	3.75	5.70
Newburg Orrel, Md., "	3.75	6.00
Cannelton & Peytona Cannel, West Va.		10.00
" Splint " at Richmond		7.00
" Gas Coal at Richmond		4.00
MANUFACTURING AND STEAM COALS.		
Cumberland at G'n & Alexandria	3.00	5.50
Cumberland, at Baltimore	3.25	5.50
Cl'r'd 'Eureka' and 'Franklin,'		
At mines	1.25	
At Baltimore	3.25	5.25
At Philadelphia	3.50	
At South Amboy	4.85	

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy
Newcastle at Newcastle-on-Tyne	7s.6d.	\$2 50@ \$3.50
Liv. House Orrel, at Liv.	25s.	13.00
Ince Hall Cannel "	35s.6d.	18.00
" Gas Cannel "	25s.6d.	10 00@ 10.50
Scotch Gas Cannel, at Glasgow, nominal	25s.	7.50
	Gold.	
Bl'k House, at Cow Bay, N.S. Caledonia, at Pt. Caledonia.	\$1.60	
Glacé Bay at Glacé Bay	1.50	\$4.25
Lingan, at Lingan Bay	1.50	4.00
Intern'l Mines, at Sydney	1.60	
Pictou, Vale Mines, at Pictou	2.00	4.70

Wholesale Prices of Anthracite Coal Delivery f. o. b. at Tide Water Shipping Ports, per ton of 2240 lbs.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.						
* Pittston at Newburg	3 20	3 10	3 10	3 10	3 50	3 50
Scranton at Hoboken	3 40	3 40	3 40	3 45	4 00	3 75
Lackawanna at Weehawk'n	3 15	3 15	3 15	3 20	3 75	3 60
Wilkes-Barre at Pt. Johnson	3 40	3 40	3 40	3 45	4 00	3 75
Plymouth R. A. at P. John.			3 40	3 55	4 15	3 85
LEHIGH COAL.						
Honey Brook at Port John.	4 00		3 60	3 60	4 00	3 75
Cross Creek at Port John	3 50	3 50	3 40	3 40	4 00	3 75
Up. L. & Conn. R'l'cat Eliz'pt	4 00		3 60	3 60	4 00	3 75
SCHUYLKILL COAL.						
Alongside at N. Y. Harbor.						
Hard White Ash	4 00	4 00	3 95	3 95	4 30	4 00
Free-Burning White Ash			3 70	3 75	4 30	4 00
Schuykill Red Ash			4 25	4 65	4 15	
Shamokin			4 75	4 75	4 15	
Lorberry			4 85	4 85	4 25	
Lykens Valley (Brookside).			5 75	5 75	5 75	4 75
At Elizabethport.						
Hard White Ash	4 25	4 25	3 95	3 95	4 25	3 75
Free-Burning White Ash			3 75	3 80	4 25	3 75
Schuykill Red Ash			4 35	4 75	3 85	
Shamokin			4 35	4 50	3 75	
Lorberry			4 75	4 75	4 00	
Lykens Valley (Brookside).			5 75	5 75	5 75	5 00
At Port Richmond, Philadelphia, for shipment to points beyond capes of the Delaware.						
Hard White Ash	3 65	3 65	3 35	3 35	3 75	3 25
Free-Burning White Ash			3 15	3 20	3 75	3 25
Schuykill Red Ash			3 75	4 00	3 25	
Shamokin			4 00	4 00	3 25	
Lorberry			4 00	4 00	3 35	
Lykens Valley (Brookside).			4 75	4 75	4 25	

* Fifty cents per ton additional for delivery at New York. On coal delivered f. o. b. at shipping wharf at Williamsburg, the current rate of harbor freight will be allowed from above prices.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending Jan. 10th, and years from January 1st:

TONS OF 2240 LBS.	1880.		1879.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co.	70,536	86,217	39,885	49,544
D. L. & W. RR. Co.	65,905	87,764	47,211	77,348
Penn. Coal Co.	11,277	16,082	11,144	19,239
L. V. RR. Co.	14,677	22,120	11,309	14,941
P. & N. Y. RR. Co.	596	684	17	172
C. RR. of N. J.	*30,111	30,111	4,550	4,550
	193,102	242,978	114,106	165,794
Lehigh Region.				
L. V. RR. Co.	37,673	54,781	22,820	35,420
C. RR. of N. J.	*23,335	23,335	19,176	19,176
D. H. & W. B. RR.				
	61,008	88,116	41,996	54,596
Schuykill Region.				
P. & R. RR. Co.	88,411	96,998	75,858	114,774
Shamokin & Lykens Val.	7,396	7,396	15,585	15,585
	95,807	104,394	91,443	130,359
Sullivan Region.				
Sul. & Erie RR. Co.	573	990	963	1,540
Total	351,290	436,978	248,508	352,289
Increase	102,782	84,689		
Decrease				

Total same time in 1875	365,550 tons.
" " " 1876	317,298 "
" " " 1877	419,117 "
" " " 1878	499,868 "
" " " 1879	352,289 "

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

* For the nine days ending Jan. 9th.

Belvidere Delaware Railroad Report for the week, and years ending Jan. 10th:

	Week.	Year. 1880.	Year. 1879.
Coal for shipment at Coal Port (Trenton)			
Coal for shipment at South Amboy	3,629	6,030	4,193
Coal for distribution	4,977	6,365	5,072
Coal for Company's use	1,660	2,408	1,754

The increase in shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads, amounts to 29,442 tons, as compared with the corresponding period in 1879.

The Production of Bituminous Coal for the week ending Jan. 10th was as follows:

Tons of 2000 lbs., unless otherwise designated.	Week.	Year.
Cumberland Region, Md.		
Tons of 2240 lb.	47,062	47,062
Barclay Region, Pa.		
Barclay RR., tons of 2,240 lbs.	9,659	13,297
Broad Top Region, Pa.		
Huntingdon & Broad Top RR.	4,127	5,314
*East Broad Top	1,190	63,069
Clearfield Region, Pa.		
*Snow Shoe	1,552	54,253
*Tyrone and Clearfield	41,862	1,561,476
Allegheny Region, Pa.		
*Pennsylvania RR.	5,982	202,720
Pittsburg Region, Pa.		
*West Penn. RR.	4,568	211,305
*Southwest Penn. RR.	930	42,133
*Penn. & Westmoreland gas coal, Pa. RR.	22,286	787,408
*Pennsylvania RR.	14,403	538,557
*For the week and year ending Dec. 31st.		

The Production of Coke for the week and year ending Dec. 31st:

Tons of 2000 lbs.	Week.	Year.
Penn. R. R. (Allegheny Region)		
West Penn. RR.	1,253	49,199
Southwest Penn. RR.	1,781	93,279
Penn. & Westmoreland Region, Pa. RR.	14,689	886,581
Pittsburg, Penn. RR.	2,522	93,801
Total	36,566	1,398,407

FREIGHTS.

Rates of Freight on Anthracite Coal on the Philadelphia & Reading Railroad and its Branches.

SCHUYLKILL COALS.	From * Pine Grove.	From * Tamaqua.	From * Schuylkill Haven.
Per ton of 2240 lbs.			
To Port Richmond, via P. & R. R. R., Main Line, for shipment	2.10	2.05	1.90
To Harrisburg, via Lebanon Valley Branch	1.37	1.98	1.83
To Allentown, via East Pennsylvania Branch	1.69	1.64	1.49
To Lancaster, and Points on Lancaster Branch, via R. & C. R. R.	1.80	1.75	1.60
To Dauphin, via Schuylkill and Susquehanna Branch	1.20	1.61	1.46
To Slatedale Junction, via Berks and Lehigh ranch	1.86	1.81	1.66
To Lebanon, via Lebanon and Tremont Branch	1.02		

From Tamaqua to Catawissa, McAuley, Mainville, Rupert and Danville, via Catawissa & Williamsport Branch Railroad.....\$1.00
 From Tamaqua to Williamsport, Hall's and Montoursville, via Catawissa & Williamsport Branch Railroad.....\$1.35

* For shipment via Main Road (except to Port Richmond and Elizabethport for shipment) one and one half cents per ton per mile, and two cents per ton additional to Schuylkill Haven, Pine Grove, or Tamaqua, as the case may be. Provided no charge shall be less than 15 cents, or greater than 45 cents per ton.

† Coal sent to points on the Catawissa and Williamsport branch will be charged one and one half cents per ton per mile, and two cents per ton additional to Tamaqua. No separate charge for freight and tolls for coal consigned to Port Richmond and Elizabethport for shipment will be made for the laterals; but there will be collected on all such coal upon the laterals, on account of the entire through charge to Port Richmond and Elizabethport: 25 cents at Schuylkill Haven, 10 cents at Tamaqua, and 5 cents at Pine Grove.

An additional charge of 25 cents per ton will be made on chestnut and pea coal to whatever points consigned. If the shipper signs a release of all demands arising from a deficiency of weight at the place of destination, and agrees to indemnify the company from all claims by reason thereof, such additional charge will not be made. Releases, properly prepared, will be furnished, and can be signed at the coal offices of the company, at St. Clair, Palo Alto, Schuylkill Haven, Mount Carbon, Pine Grove, and Tamaqua.

For consumption at local points in coal region, including Shamokin, Herndon, Schuylkill Haven, Pine Grove, and Tamaqua, three cents per ton per mile, and two cents per ton additional; and a charge for car service of fifteen cents per ton to individuals and five cents per ton to manufacturers, when in Philadelphia & Reading Railroad cars, provided no charge, including freight tolls and car service, shall be less than twenty-five cents per ton.

Coal sent westward via Northern Central Railway (in N. C. R. W. Co.'s cars), three cents per ton per mile, from collieries west of Locust Summit to Locust Gap, or Shamokin, provided no charge shall be less than five cents or more than fifteen cents per ton. If from collieries east of Locust Summit, ten cents per ton extra.

One mile extra will be added for coal passing through the East Mahanoy Tunnel. Fractions of distances and rates will always be stated in tenths.

No charge will be made for weighing or making returns of coal shipped, and the latter will be furnished free of charge upon application to the weighmaster; if these returns are to be sent by mail, envelopes properly stamped and addressed must be furnished to the weighmasters.

All coal will be charged the rates (both lateral and main line) current on the day it is weighed; it will also be way-billed on the same day.

NOTE.—For circulars relating to the above freights, see issue of January 10th.

DIVIDENDS.

OFFICE GREEN MOUNTAIN GOLD MINING COMPANY, OF CALIFORNIA, No. 54 BROAD STREET, NEW YORK, Jan. 12, 1880. DIVIDEND NO. 7. The Board of Trustees have this day declared the seventh monthly dividend of FIVE CENTS per share on the capital stock of this company for the month of December, and an extra dividend of TWO AND A HALF CENTS per share from the accumulated surplus of the company, both payable on the 26th inst. Transfer-books close on the 20th and reopen on the 28th of January. L. D. CORTRIGHT, Secretary.

OFFICE OF THE HOMESTEAK MINING CO., 31 BROAD STREET, NEW YORK, Jan. 12, 1880. DIVIDEND NO. 13. The regular monthly dividend of THIRTY CENTS PER SHARE has been declared for DECEMBER, payable at the office of the transfer-agents, WELLS, FARGO & CO., 65 BROADWAY, on the 26th inst. Transfer-books close on the 20th inst. H. B. PARSONS, Assistant Secretary.

HORN-SILVER MINING CO. OF UTAH, Office, 44 Wall st., New York. DIVIDEND NO. 2. The Board of Directors have declared a DIVIDEND of \$100,000 (ONE HUNDRED THOUSAND DOLLARS), being twenty-five cents per share (par value, \$25) on the capital stock of the company, payable at the office of the company on and after JANUARY 26th. Transfer-books will close JANUARY 21st and re-open JANUARY 27th. CHARLES G. FRANCKLYN, President.

OFFICE OF THE CARIBOU CONSOLIDATED MINING COMPANY, No. 31 BROAD STREET, NEW YORK, Jan. 15, 1880. DIVIDEND NO. 5. The Board of Directors of this company have this day declared a dividend of one per cent on its capital stock of \$1,000,000. The transfer-books will be closed at 3 P.M. on the 20th, and the dividend will be payable at the office of the company on and after the 25th inst. JOHN T. GRAHAM, Secretary and Treasurer.

ELKO CONSOLIDATED MINING AND SMELTING COMPANY, OF ELKO, NEVADA. OFFICE, 152 BROADWAY, Room 2, second floor. 100,000 shares, \$10 each, organized under laws State of New York; no incumbrances; vein 2300 feet in length; tested by 10 shafts and 5 tunnels; furnace, etc., complete. Ready for active operations. Stock can be purchased at office of the company at \$3 per share. WM. W. WAKEMAN, President. C. DIMON, Vice-President. GEO. H. EVERETT, Secretary and Treasurer.

MEETINGS.

OFFICE OF THE STANDARD CONSOLIDATED MINING COMPANY, SAN FRANCISCO, Jan. 14, 1880. FIRST ANNUAL MEETING. The first annual meeting of the stockholders of the above-named company, for the election of seven directors and the transaction of such other business as may be presented, will be held on Monday, February 2d, 1880 (first Monday in February), at one o'clock P.M., on that day, at the office of the company, Room No. 29, Nevada Block, No. 309 Montgomery street, San Francisco, Cal. Transfer-books will be closed on TUESDAY, January 20th, 1880, at three o'clock P.M., and will remain closed until after the annual meeting. WILLIAM WILLIS, Secretary.

PHILADELPHIA & READING RR. CO., General Office, 227 S. Fourth Street, PHILADELPHIA, January 13, 1880. At the Annual Meeting of the Stockholders, held on the 12th inst., the following gentlemen were unanimously elected to serve the ensuing year: President, FRANKLIN B. GOWEN. Managers: JOHN ASHHURST, HENRY LEWIS, I. V. WILLIAMSON. Treasurer, SAMUEL BRADFORD. Secretary, DAVID J. BROWN. DAVID J. BROWN, Secretary.

NOTICE.—A SPECIAL MEETING OF THE stockholders of the Dahlonega Gold Mining Company will be held at their office, 40 Broadway, on TUESDAY, the 17th day of February, at 12 M. Full report of condition of the mine will be exhibited, and any other business which may come before the meeting. A full attendance is requested. L. L. LOMBARD, President.

C. H. SMITH, STOCK BROKER, No. 15 Congress Street, Boston. Special attention given to buying and selling mining shares in Boston market. ORDERS RESPECTFULLY SOLICITED.

W. W. HANLY & CO., BANKERS AND BROKERS, 60 Broadway, New York. Buy and sell mining stocks on commission on New York Mining Stock Exchange, and offer superior facilities on San Francisco Exchanges through agency of the Bank of California.

FINANCIAL.

VAN DEVENTER & PATTON, Successors to LUDLOW PATTON & Co., Bankers and Brokers, NO. 6 WALL STREET, NEW YORK. C. H. VAN DEVENTER, WILLIAM LUDLOW PATTON. Stocks, Bonds, Gold and Government Securities Bought and Sold on Commission. Loans negotiated. Interest allowed on deposits. Dividends and Interest Warrants collected and remitted.

B. B. MINOR, J. M. HARPER, MINOR & HARPER, DEALERS AND BROKERS IN MINING SHARES AND MINING PROPERTIES. Special attention given to the Stocks of the BODIE AND BLACK HILLS DISTRICTS. Office, No. 43 Exchange Place, New York. Care Dickinson Bros., Bankers. Circulars sent on application, showing operation in Bodie and Black Hill Stocks.

PARKER HANDY, J. S. CRONISE, HANDY & CRONISE, BANKERS, AND DEALERS IN Bullion and Specie, 24 NASSAU ST., NEW YORK. Dealing exclusively in GOLD AND SILVER BULLION AND COINS of all kinds. We are prepared to guarantee satisfaction to those who may intrust their business to us. We will make special arrangements with BANKERS and others dealing in GOLD DUST or in GOLD OR SILVER RAITS, and will pay over to their correspondents here, as we may be directed, advances on Bullion when received or when the proceeds are ascertained. We refer to: American Exchange N. Bank, The Third National Bank, Winslow, Lanier & Co., Eugene Kelly & Co., Eugene S. Ballin & Co.

W. H. ASHTON, P. DOYLE, ASHTON & DOYLE, Dealers in Gold and Silver Mines and Valuable MINERAL PROPERTIES, solicit correspondence for sale or purchase. 161 Broadway, New York.

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Holisting Machinery: Beckett & McDowell, New York. v Copeland & Bacon, New York. xii Crane Brothers Man'g Co., Chicago, Ill. v Griffith & Wedge, Zanesville, O. xii Lidgerwood Mfg. Co. vi Meetings: All on page. viii Metal Brokers: White, Edward P., New York. iii Mining Agencies: Great Western Mining Agency, Denver, Colo. vi Mills, Samuel D., Kingston, Ontario. vi United States Mining Investment Co., New York. ix Mining Companies: Briggs Consolidated Mining Co. ix Horn-Silver Mining Co., New York. xii Elko Con. Min. and Smelting Co. viii Mayflower Con. G. & S. M. Co. i Plymouth Rock Mining Co., Boston, Mass. ix Spring Valley Hydraulic Gold Co., N. Y. ix United States Mining Investment Co., New York. i Mining, Milling, and Smelting Machinery: Beckett & McDowell, New York. v Blake's Stone Breaker, New Haven, Conn. vi Copeland & Bacon, New York. xii Crane Bros. Mfg. Co., Chicago, Ill. iii Forster-Firmin Gold and Silver Amalgamating Co., Norristown, Pa. iv Fraser, Chalmers & Co., Chicago, Ill. iv Gates & Scoville. ii Griffith & Wedge, Zanesville, O. iii Morey & Sperry, New York. v Photography: Rockwood, George G., New York. i Pumps: Cameron, A. S., New York. iii Clayton Steam Pump Works, Brooklyn, N. Y. i Crane Brothers Manufacturing Co., Chicago. iii Goulds M'f'g Co., Seneca Falls, N. Y. iii Knowles Steam Pump Works, New York. i Worthington, H. R., New York. iii Purchasing Agent: Ricketts, J. B. vi Railroads and Transportation: Pennsylvania RR. ii

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