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Metal and Mineral Review of the Pacific Coast.

From the San Francisco *Commercial Herald*.

CONTINUED FROM PAGE 66.

Gunpowder.

Imports.	1873.	1874.
Eastern, kegs.....	38,181	57,370
" cases....	2,192	2,747
California, kegs..	100,507	115,722
" cases.	1,811	1,187

Exports.	1873.	1874.
Kegs.....	7,827	7,682
Cases	296	461
Specified on the way.		
December 31st.	1873.	1874.
Packages	17,773	10,001

This traffic is rapidly growing and expanding upon the Pacific slope, particularly that in blasting. Large quantities of giant powder continue to be used upon this coast. The Laflin & Rand Powder Company have, in all, at the East, ten powder mills, making annually some 700,000 kegs of A and B powder. We continue to receive large supplies from the East by rail and *via* Cape Horn, including large invoices of Dupont's and Hazard's. The California Powder Company makes no report to us this year, nor in fact do any of the other establishments. Competition is evidently very sharp, and all are unwilling to show their hand. As an approximation to what is doing, we report what they gave us a year ago, as follows: The California Powder Mills, located at Santa Cruz, manufactured during 1873 109,410 kegs blasting, etc., equivalent to 2,735,250 lb. The Giant Powder Company report as manufactured during 1873 600,000 lb. The Comstock mines consumed about from 80,000 to 100,00 lb. in 1873. Increase in 1873 over 1872 about 30 per cent. The aggregate consumption for 1874 is doubtless 25 per cent. greater than ever before, and 1875 will no doubt show even a greater increase than last year.

Borax.—When the product of our coast was first offered on this market and abroad, there was little acquaintance with the wants of the world. Little was known as to how cheaply foreign borax could be furnished, or what amount of competition the American article would have to meet. But in the belief that the then values would be sustained and afford large and immediate returns, many entered the business of its manufacture, and marketed their product through as many different channels. A great deal of the early offerings were ill prepared, which did much to discredit the American product. This, aided by the reports of inexhaustible supplies of the crude material, the competition among manufacturers here, and the strong opposition abroad, resulted in such a decline of prices as have enabled but few to continue the business Of late, there has been a great change in the popular idea as to supplies. Much of our so-called borax-bearing deposits has proved to consist of common salt, magnesia, and other equally worthless substances, or to contain such a percentage of impurities as not to repay the outlay necessary for production and transportation. We hear frequently of fresh discoveries, but the only really valuable lands, now known, are in few hands; and while the deposits have proved to be much less than formerly supposed, they are yet sufficient in quantity and richness to maintain the important position that, through judicious management, has been gained in all the large markets of the world for American borax. The production and marketing are now more thoroughly centralized, and as none but the richer fields can be profitably worked, the supplies are more limited, and meet a ready sale in the execution of foreign and Eastern orders; and so long as the principal manufacturers work in harmony, there is a fair prospect of fair returns being realized on the capital invested. The early demand was for the refined, in cases, and our refiners can now turn out goods equal to any made elsewhere. Latterly the call has been for the concentrated, or semi-refined, in sacks, just as it comes from the hand of the concentrators. These goods can be afforded at 1½c. to 2c. per lb. cheaper than the refined, and for general purposes are equally valuable, being stronger and richer in boracic acid. The total product of this coast is now about 2000 tons per annum. The present values are, for concentrated, in sacks, 8@8½c.; for refined, in cases, 9½@10c. per lb., according to quantity. At the Columbus refinery, in this city, the business has been slack for the past few months, the quantity of the concentrated article refined during the preceding portion of the year having been at the rate of 30 tons per month, making a total product of refined borax equal to about 325 tons, all of which, after supplying the home demand—not large—has been shipped to Eastern markets.

The Pacific Company, whose works are situated at the marsh in Esmeralda, County, State of Nevada, have concentrated during the year about 400 tons. They have abandoned the practice of refining, as the article is found to possess from 5 to 10 per cent. more boracic acid and about 15 per cent. less water when left simply in its concentrated state, and therefore just so much more valuable for every purpose for which it is used. The only objection to leaving it in this state is that the amount of boracic acid it then contains is less uniform than when refined, nor does it present such a clear and attractive appearance. But as this does not go to the question of economy, the large consumer will soon come to see the advantage of buying a better article at a lower price and act accordingly. It will probably not be long, therefore, until the practice of refining this substance will pass into general disuse. At Teal's Marsh, lying a few miles north-west of the Pacific Company's works, the amount of borax turned out during the year has been about the same as at the latter. At Rhodes' Marsh, in the same vicinity, at Sand Springs, in the Slate Range country, Inyo County, and at the several other localities where small works were erected, under the excitement that prevailed a few years since in regard to this salt, little or nothing has been done during the year, nor is it likely that operations at these points will soon be revived. Borax is now employed chiefly in the manufacture of pottery, steel and glass, or in the cleansing of wool, bleaching, etc. It is also known to be useful in various other arts, and it may reasonably be expected that the present low prices will lead to its larger employment in many of these, and perhaps, also, in altogether new directions. Wood immersed in a solution of this salt is rendered proof against fire and early decay, a fact that may possibly lead to its being utilized largely in this line of business. The ship *Matterhorn*, for Liverpool, has cleared with 1123 cases concentrated; also the *Richard Wright*, with 69 bbls. same.

Exports by sea for—

	1873			1874		
	Cs.	Pkgs.	Value.	Cs.	Pkgs.	Value.
New York.....	9,257	560	$237,437	3 517	2,012	$101,546
England.....	8,534	141	167,691	8,632	2,031	146,126
China.....	102	..	2,138	225	45	3,892
Japan.....	133	..	2,710	160	72	3,231
Mexico	7	..	111	27	..	898
Germany	250	..	5,000	1,944	1,034	40,229
Belgium.....	..	.	....	60	..	720
British Columbia.....	8	..	198	6	..	76
Peru.....	..	..	....	10	5	235
Society Islands.....	..	..	....	1	.	15
Australia.....	200	..	4,400	42		504
Central America.....	1	..	11	..		..
Totals.....	18,492	701	$419,096	14,624		$297,472

Overland shipments during 1873, 647,934 lb. gross. In the eleven months of 1874, 1,461,202 lb. gross were sent.

Nova Scotia Mining.

THIRD PAPER.—CAPE BRETON COAL FIELD.

BY "SAFETY LAMP."

THE last coal district of Nova Scotia to be spoken of is that of Cape Breton, which, while it is the largest existing field, is but a remnant of one that must, in bygone ages, have stretched away towards Newfoundland, and rolling over the highlands of Cape Breton, filled the greater part of the present Gulf of St. Lawrence. Outliers of this great field remain at points along the northern shore of Nova Scotia at River John, Caribou, Merigomish and Tracadie, on the western shore of Cape Breton at Port Hood, Broad Cove, and Chimney Corner, and also in St. George's Bay, Newfoundland. Part of the ancient field appears to be buried under the waters of the Bras d'Or lakes, and to be disconnected by the upheaval of the eastern section of the island from the main existing field found dipping seaward at points on the Atlantic coast.

This principal, or Cape Breton, coal field proper, extends some thirty-five miles from Mire Bay to Cape Dolphin, and will be more particularly described hereafter, first referring to the outlying patches, which are at present of little importance. The attempts made to work these outlying patches satisfactorily, proved abortive, and the small collieries opened on them now lie abandoned. The seams are of fair thickness, and good quality; but the outcrops are near the sea, under which they rapidly dip. The trouble in working them has not been from this cause, since sufficient cover is soon attained, but from the want of shipping accomodations, and until substantial artificial harbors have been con-

structed, or railways to safe ports built, by an expenditure of capital that the present condition of trade does not warrant, profitable working of these outlying patches cannot be effected.

The chief coal field of Cape Breton has this natural advantage over those of Nova Scotia, that it is little troubled with faults, and the measures lying more horizontal afford great facilities for cheap mining. There are, however, some four chief synclinal folds, with probably an equal number of parallel faults, one of which only has yet been proved.

The undulations of the coast have shown most of the beds found in the sections, and the area of the available coals has already been approximately mapped out.

Professor LESLEY, of Philadelphia, was the first to get a clear idea of this field as a whole, and show the relative horizon and extent of the principal seams, though the painstaking labors of Mr. BROWN, who was for many years the manager at the Sydney mines, gave a complete section with minute details of the measures to the westward of Sydney harbor, and enabled the general character of the whole field to be more readily determined.

The details of the structure of the field have not yet been worked out, nor has the continuity of the seams been established, but the diversities of character presented in the several sections are not greater than those known to take place in seams of coal and their containing measures extending over many miles of country. The work has, however, been begun by the Geological Survey, under the direction of Mr. SELWYN, and the results will, doubtless, in time be published in the Reports of Progress issued by the Survey.

The following section, representing the Glace Bay district, may be taken as the key to the whole field, though the seams found in the extreme east and west limits differ considerably in thickness and quality:

	Feet.	Feet.	in.
Measures	240		
Hub seam		9	0
Measures	520		
Harbor seam		5	0
Measures	243		
Coal		3	0
Measures	54		
Black Pit seam		4	6
Measures	104		
Phelan seam		8	3
Measures	135		
Emery seam		5	0
Measures	90		
Coal		2	8
Measures	400		
Lorway seam		4	1
Measures	620		
Coal		2	0
Measures	250		
Coal		2	0
Measures	1100		
Kilkenny seam		2	6
Measures	650		
Le Cras seam		2	2
Total	4406	50	2

The thickness of the measures in the lower portion of the above section has not yet been accurately ascertained, but it cannot be much different from that stated. The general strike of the seams is parallel to that of the shore, while the dip is seaward, usually at an angle of 4 to 6 deg., but on the upheaval of two of the folds, which are nearly at right angles with the shore, and where the strike is deflected, the angle of dip is increased to 40 deg.

One of these folds forms the interesting basin of Cow Bay, where the measures unfaulted give to the upper seams the form of a narrow trough. Unfortunately, the cover over the upper and best seam, the Blockhouse, is light and will not permit of the workings extending under the sea in the immediate neighborhood of the shore, though half a mile seaward it will probably be found to have increased sufficiently to warrant the continuation of operations under the water. The mining law of the Province requires that at least 180 feet of solid measures shall intervene between the workings and the superjacent water. The area of the seam in question is only 150 acres under the land, and already large demands have been made on its resources. Of the other seams in this section but one, the McAulay, lying 500 feet below, is worked. This is being mined at the Gowrie colliery, and finds a ready sale for steam purposes.

The Blockhouse is most valued as a gas coal, and is largely used by the Manhattan Company of New York. Like the other coals of the field, it finds a sale in the Provinces as a house coal, though that of Sydney, the "old mines," is generally preferred for that service. Other coals from the International, Lingan, Glace Bay and Caledonia, find a general use, though most of them are more suited for gas than other purposes, and rank among the caking coals. These collieries being chiefly dependent on the United States for a demand for gas coals, the large stocks laid in last year, and the general depressed condition of business during this, have caused the trade of this season to be quite slack, and the sales to be not much more than half of those of last. The prices realized have also been reduced, and coal is now offered at the old rate of $1 75. Sydney still maintains its price of $3, f. o. b., while other collieries nominally quote $2 to $2 25.

In the majority of instances the coal is won by vertical shafts. A pit of moderate depth enables a larger quantity, with lighter machinery, to be got from rise workings, than can be won in these slight pitching seams from a slope opening an equal area.

The expense of sinking shafts is largely influenced by the quantity of water to be contended with. Where it is not in excess of three hundred gallons an hour, the expense does not exceed $30 a foot, but where it is in excess of this quantity, a proportionate increase is incurred; and when exceptionally heavy, as at the Lloyd's Cove Winning at the Sydney mines, where 650 gallons a minute had to be taken out, until the cast iron tubbing was completed and dammed the whole of that great inflow back, then the cost rises to $200 a foot. Now, at this winning, since the water has been tubbed back, the sinking has been continued under contract at the rate of $20 a foot, no pumping at all being required. A full account of this undertaking, published in the Annual Report of the Department of Mines, 1873, was copied into the Journal of May 2nd, 1874, and no further reference to it need be made than to show the permanent character of the plant erected by instancing the dimensions of the hoisting engine, which has two 36-inch cylinders directly driving a rope roll 18 feet in diameter.

The system of working pursued is that of board and pillar. The bords being driven 16 to 18 feet wide, and the pillars left from 12 to 30 feet wide, according to the depth of the cover. Levels and headways are driven to forewin the coal, and self-acting inclines run the full tubs from the upper to the main levels below. The ventilation is in every case effected by a furnace, and is, on the whole, fairly attended to, though there is still room for much improvement. The cost of mining is lower than at Pictou. The coal being softer and more essily wrought, the contract prices for cutting range from 30 to 45 cents per cubic yard. Skilled labor commands about the same rates as those stated in the first paper relating to the Cumberland field, while surface labor is paid only $1 to $1 10 per day. The following average on a business of 60,000 tons shows that a profit is obtainable after allowing for wear and tear on the plant and perishable erections:

Cutting and raising	$0.736
Surface labor	.100
Materials	.125
New Works	.136
Salaries and sundries	.095
Filling from bank	.070
Loading and shipping	.044
Royalty	.100
Average cost	$1.406 per ton

on board at the port of shipment.

One of the items in this abstract, "filling from bank," marks one of the troubles incident to coal mining in this country. Usually vessels become scarce in December, and almost altogether cease to call by the middle of January. Few, if any, shipments are made during the following three months, so that to give employment to the workmen coal is extracted during this period and banked in quantities of ten, twenty, or even forty thousand tons. This, then, is lifted during the height of the shipping season, and occasions the extra expense above noted. This system of stocking large quantities of coal has another and more serious objection. The long exposure to the alternations of humidity and temperature injuriously affects the quality of these bituminous coals, reduces the yield of gas and diminishes the size of the lump coal.

The Cape Breton Company, Limited, are now building a railway to Louisburg, which will put some of the collieries in communication with that port, and enable, it is expected, shipments to be made continually during the whole year, and so do away with the objectionable present method of banking. The success of this undertaking is by many considered most problematical, and they argue that the freezing of the harbors is not the great and only difficulty to be overcome, and that vessels will be as reluctant hereafter as they have been hitherto, to venture on this coast in winter, and expose themselves to tempestuous seas with frozen rigging and ice-laden hulls.

The substitution of steamers in place of sailing vessels for colliers will, when it does take place, in part remove this objection. Whether Louisburg will be found as convenient a port for coaling steamers bound up the Gulf of St. Lawrence to Quebec and Montreal, or outward bound to Europe, as Sydney has lately been found to be, remains to be proved.

Within the last three years the inter-provincial trade has sprung up to be important. There is yet ample room for a large increase, for as the forests become further removed from the large cities of Canada, the consumption of cord-wood must decrease, and that of coal increase. There is also the large importation of English coal to be driven from the market. The output this year will probably be far behind that of last, 520,000 tons, the product of twelve collieries; but this sudden depression of the trade can be only temporary, the ultimate prosperity of this country, with its great stores of mineral fuel, cannot be questioned. A few years, at the furthest, and the output will be largely increased, and the tonnage recorded in millions.

SAFETY-LAMP.

The Cape Breton Company's Louisburg Railway.

WE have several times called attention to the enterprise of the Cape Breton Company in connecting its valuable coal property with the magnificent port of Louisburg, C. B., by rail. This enterprise must have a very important bearing on the development of the Cape Breton coal trade, for it gives it an outlet through one of the finest harbors in the world, and one that is never ice-bound. The reasonable expectations of the Cape Breton Company, that through this most easterly convenient harbor of the Province, a large trade will be done with European steamers, which can make this a coaling station, will doubtless be re-

alized on the completion of the road, at least so far as the coal business is concerned. Whether Louisburg will become the point at which passengers will land, taking land carriage from there to here, and particularly, whether they will sail from there instead of from New York, Boston, or Portland, we think is more doubtful. The energy and enterprise shown by the Cape Breton Company are the essential and usual causes of success, and there is far too little of each displayed by our provincial cousins to allow this to pass without a word of commendation.

The following extract from the *Cape Breton Times* gives some interesting particulars of the new railway:

"About midway between Louisburg and the Cape Breton Company's collieries, the Mira River, or Canyon (a wide fissure through which the tide flows into a chain of lakes some 25 miles inland), crosses the line of railway, now nearly completed by the contractor, F. N. Gisborne, Esq., C. E., of London and Sydney, Cape Breton.

"A light, elegant, though exceedingly strong lattice girder iron bridge now spans this river, and on the 14th of January, a 36-ton Fairlee locomotive, with trucks, crossed it without producing any visible deflection or movement in the structure. This being the most important bridge in Cape Breton, and probably the only example in the Province of an iron structure supported upon wrought-iron cylindrical screw piles, the following particulars may prove of interest: Length of bridge over all, 336 ft.; length of spans (4) each, 72 ft.; length of drawbridge or lift, 30 ft.; length of center pier caps, 18 ft.; length of wrought-iron screw piles, 70 ft.; diameter of do. (shore piers), 2 in. each, 3 ft.; diameter of do. (center piers), 6 in. each, 2 ft. 4 in.; depth of water with seven-knot current, 22 ft.; depth of sand and gravel to rock bottom, 10 ft.; height of lattice girders above water, 48 ft. The shore abutments spring from the sides of the ravine 21 ft. below rail-level. They are substantial structures of cut free-stone, and reflect great credit upon the builders, Messrs. ARMSTRONG & ORMOND, of Cape Breton. The first pile was screwed down on the 20th of August last, and upon the 22nd of December, a period of four months only, the bridge was finished at a total outlay of $42,000.

"The Cape Breton Company were ably represented by their Resident Inspector of Works, ARTHUR H. LEBRETON, Esq., C. E., of London, whose constant presence and skill aided the perfect placement of the structure.

"Only last May was the first sod of the Louisburg Railway turned, and within a year, 21 miles of one of the most varied and difficult lines in the Dominion will be completed, including the crossing of Catalone Lake, 1600 ft. long, with 15 ft. of water and 15 and 20 ft. of soft mud—swamps which have to be piled 42 ft deep to support superstructures 25 ft. high, and the great coal-shipping pier at Louisburg, 600 ft. in length, 28 ft. above tide-water, and with 34 ft. of water alongside.

"We think Mr. GISBORNE may indeed feel proud of the vast amount of work accomplished in so short a time, and we shall congratulate our county, if to him and his able assistant engineers, ALBERT J. HILL and T. J. RITCHIE, our Eastern Extension Railroad and other public works of importance are intrusted. We also most heartily congratulate the Cape Breton Company upon the money's worth obtained for the £100,000 sterling expended upon the Louisburg Railway, pier and rolling stock—a sum considerably below the estimates of American engineers and London contractors who are less acquainted with the nature of our country and the management of our laboring population than is Mr. GISBORNE."

Leonardo Da Vinci as an Engineer.

IN London, LEONARDO DA VINCI is generally accepted as a great painter and sculptor, but of his other qualities little or nothing has been known. Dr. HERMAN GROTHE, of Berlin, recently published a brochure based upon the study of DA VINCI's MSS., which are deposited in the libraries of Italy, Paris, and London, showing that the man was really a universal genius; and if regard be had to the time in which he lived, he was one of, if not the most wonderful man which our planet ever produced. The brochure, which is illustrated with woodcuts copied from LEONARDO's sketches, and one lithographed facsimile of a machine with all its details and explanations in Italian, written from right to left—one of his peculiarities—formed the text of a lecture by Mr. A. HILDEBRANDT, C.E., delivered before the members of the Scientific and Mechanical Society, London, from which we gather the following.

LEONARDO DA VINCI lived from 1452 to 1519, was born in Florence, where he acquired a knowledge, among other things, of weaving, metal founding and metal work, such as goldsmithing, which were considered by his master to be necessary preliminaries to painting and sculpture, in which latter he made such rapid progress, that after having painted an angel in one of his master's pictures the latter put down his brush and pallet to take it up no more. We know what a high position DA VINCI afterwards occupied in the artistic world—that he stood on a level with MICHAEL ANGELO, his contemporary. It is not unnatural to assume, with our present day experience, that, to acquire such excellence, an absolute speciality must be made of the particular calling, but the contrary fact is one of the most striking features of the old master. To what a state of perfection he brought music may be inferred when we are told that he went victoriously from a competition for the place of first violinist to the Duke Ludwig Maria Sforza, who thereupon called him to Milan in 1484, not without wanting and finding in him the greatest painter and inventor in Italy. He there founded an academy of science, he painted world-famed pictures—such as the "Last Supper," which still exists (at least in copies)—he modelled the equestrian statue of the Duke's father (which, unfortunately, has been destroyed), he was the Duke's military engineer, and the part he took in architectural work cannot have been a small one, when it is due to his influence that the then prevailing style of late Gothic gave way to Roman and Greek. He wrote several works on painting, light and shade, and other tracts, and designed improved machines and implements, studied anatomy—which he considered indispensable to the painter—and experimented and studied nature generally, which resulted in his philosophical reasonings and tracts, exposing him at the same time as a free-thinker, to which honor he really aspired in reference to the then prevailing dogma of the Church relative to the form of the earth. He adapted, about this time, the Martesana canal for navigation, and constructed two others for irrigation purposes. Having left and returned to Milan several times after the removal of the Duke Ludwig Sforza, occupied in various capacities as retired philosopher, private painter and sculptor, painter to the King of France, as engineer-general of fortifications in Florence, Sienna and France, he designed in the last two years of his life the canal of Ramorantin, which was carried out after his death. He was buried in Amboise; Napoleon III., in 1863, caused a memorial to be erected to him, after his grave had been again discovered, and a monument was also erected to his memory in Milan.

As a philosopher, no doubt is entertained that all or most of the various discoveries recorded in his MSS. are his original ideas, as they entirely differ from the theories of ARISTOTLE, who lived long before him, and conform very closely with the notions accepted in modern times, which are almost invariably accredited to the period of GALILEO, who lived much later (from 1602). His knowledge of the laws in natural science is mostly evident from his application of the same to his every-day practice. He was an acute mathematician, and the invention of the signs + and — is assigned to him, as being one of the first to make use of them. He attempted to square the circle, but gave up the attempt, as it was "impossible to do it with absolute accuracy." He studied and wrote much of perspective, and laid down rules, which hold good at the present day. He was well acquainted with the laws of the lever, and made familiar use of them; this applies also to the inclined plane, and his pulley blocks were in continual use. He had also a very clear notion of the weight of bodies and of the law of gravitation. His laws of motion do him credit, and the *perpetuum mobile* is studied and condemned in no doubtful terms. He studied the strength of materials, and seems to have been conversant with the laws of friction. In hydraulics he was particularly at home, as may be inferred from his practical works of canal construction; his water-wheels and turbines are admirable, and the laws upon which the hydraulic press is based were perfectly clear to him. He also investigated the waves of fluids and sound, he bored artesian wells and constructed pumps. How well he understood the laws of combustion will be understood when we are told that he was the first to make use of lamp chimneys, and several sketches of candle flames prove that he had hold of the right principle. He occupied himself, also, with diving and attempts at flying, and devised apparatus for these purposes. It is, further, more than probable that LEONARDO was the inventor of the camera obscura; and his knowledge of astronomy deserves not less attention, especially with regard to the sun, the moon, and the earth, and his ideas, although not as definitely expressed as in modern times, are not at variance with what is now known. Nor was botany neglected by him; he also made the first attempt to cut figures in wood, i.e. wood engraving.

It is not presumed to credit him with the invention of all the various machines of which sketches are found in his MSS., but to say that he made himself acquainted with the same to such an extent as the records show, is almost more than the first engineers of the present day can be expected to attain; to say nothing of the fact that he did design some of them and improve others, and his studies of the various mechanisms are of the most interesting kind, and embrace almost all devices known at the present day. That he was well acquainted with the properties of iron is certain, for in his MSS. is preserved a drawing which is, in all probability, an original design to stretch it, in fact, a rolling mill, to make the segmental sectioned bars from which he made his cannons. He was undoubtedly an eminent metallurgist of his time. Among his other machines are a boring machine for wooden pipes, such as were, and are still, used for waterworks; an attempt to construct a planing machine, a file-cutting machine (beyond which, says the author, we have not yet got much); a saw for stone and wood, and a very perfect spindle arrangement for spinning machines to make ropes, not differing materially from those in use at present, cloth-shearing machines, looms, hammers, draw benches, lifting apparatus and cranes, chains, dynamometers, and many others. Primitive though many of them be, some compare favorable with those in use at the present day.

Hallidie & Co.'s Wire Rope Works.—The Wire Rope works of A. S. HALLIDIE & Co. have been entirely remodelled during the past year, at an outlay of $50,000. New and ingenious machinery and labor-saving apparatus have been put in, and the capacity of the works trebled. Some of the Ropes made at these works are of immense size. The Steel Rope used on the Clay-street Hill Railroad, 7,000 feet in length, 3-inches circumference, was made in one piece, and also a Steel Rope for one of the Virginia mines, 2,400 feet long, 6½ inches circumference. There are 30 men employed in the establishment, and about 30,000 lb. of Refined Steel and other Ropes are turned out for mining purposes per month. Galvanized Wire Rope, for ship rigging, is an important part of this industry. The Rope's made here are in very much favor with the riggers, and are sold at half the cost of Hemp Rope. Within the past three years these works have turned out some Submarine Telegraph Cables, from one to six miles in length. This, also, promises to be a growing branch of industry. The business extends to Mexico, Japan, British Columbia, and as far east as Colorado.

THE ENGINEERING AND MINING JOURNAL.

NEW YORK, SATURDAY, FEBRUARY 6, 1875.

ROSSITER W. RAYMOND, Ph. D.,
RICHARD P. ROTHWELL, C. E., M. E., } Editors.

The Engineering and Mining Journal is devoted to Mining, Metallurgy and Engineering. Communications on these subjects will always be welcome.

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THE SCIENTIFIC PUBLISHING COMPANY.

WILLIAM VENTZ, Secretary,

P. O. BOX 4404. 27 Park Place, New York.

CONTENTS FOR THIS WEEK.

Meeting of the Institute of Mining Engineers.

THE next meeting of the American Institute of Mining Engineers will be held at New Haven, Conn., beginning on Tuesday evening, February 23rd, in the hall of the Sheffield Scientific School. Communications concerning the meeting may be addressed to Prof. W. P. BLAKE, Chairman of the Local Committee.

The Production of Anthracite.—(Correction).

A CLERICAL error, not noticed in time, in our article on the Production of Anthracite, (E. & M. J. of Jan. 23,) made the results differ by 132,100 tons. The statement which was given in detail, making the total 26,667,386 tons, and the Lehigh Region 4,712,280 tons, is the correct one.

The Musconetcong Tunnel.

IN mentioning in the Journal of Jan. 9th the creditable engineering work done in driving this tunnel, we ommitted to do justice to the division engineer, Mr. JOHN L. WILSON, who laid out the line of the tunnel under the direction of Mr. BRODHEAD, the principal assistant engineer of the mine. The work reflected great credit on all engaged in it, and it is but just to Mr. WILSON to state the important part he performed.

Iron Ores at the Centennial.

OUR readers will recollect that about two years ago a movement was inaugurated by Mr. J. BLODGETT BRITTON, of Philadelphia, and warmly supported by the leading chemists, ironmasters and mining engineers of the country, for the purpose of securing at the Centennial Exhibition, in 1876, a thorough representation of the ores, fuel and products of the iron works of the United States. The first point aimed at was the Centennial Commission itself, which was at that time planning liberal things, in the anticipation of a Congressional appropriation. But that body very properly decided that its functions did not include the work of organization and collection, which ought to fall for each national industry upon those engaged in that industry. All that the Centennial Commission could do would be to arrange and support a suitable exhibition of the products furnished to it. And so, in an unlucky moment, the matter was handed over to that highly respectable concern, the American Iron and Steel Association.

Those cynical persons who remembered the course of the American Iron and Steel Association, with regard to a report on the manufactures it professed to represent, at the time of the Vienna Exposition—how much talk and how little real interest was then developed on its part—how the leading spirits of the Association ventured at last to hope that if a thousand dollars could be got in the way of a salary out of the Government appropriation, another thousand might somehow be raised—how, when the governmental thousand was not forthcoming, the said leading spirits, confronted with the dread specter of Two Thousand Dollars, fainted dead away—those cynical persons, we say, who recalled this little episode, wagged their wicked heads, and muttered that nothing could ever come of it. *Ex nihilo*—they began to say; but before they could add *nihil fit* (as if a dead language was the only one that could do justice to the subject) behold! something did come of it—to wit: a CIRCULAR!

If there is anything in which the Association is truly great, it is the manufacture and distribution of documents. The energy displayed in the issue of this particular one was worthy of all admiration. It named a Scientific Board for advice and co-operation. It delicately insinuated that the gentlemen so named could not be paid (which was no disappointment to anybody), but that their travelling expenses to Philadelphia would be (which was a very agreeable disappointment to everybody). We have been quietly contemplating it with pride and satisfaction for a year; and we were just about saying to ourselves that it was time to expect another, when we began to hear those wicked tongues again, talking this time, not Latin, but indignant Saxon.

The story is, that the American Iron and Steel Association has done nothing, and alleges the want of funds as an excuse; that the matter is to come up for decision at the annual meeting, Feb. 11, and that the present determination is to ask for ores and analyses to be sent to Philadelphia, by anybody who has public spirit or speculative interest enough to pay the expenses. The opinion or advice of the Scientific Board appointed with such a flourish is not to be required. The imprudent promise of the circular that the Association would pay the travelling expenses of that board, when it should be called together, amounts to a prohibition of any meeting. For, you see, since that hasty pledge was given, Mr. SCOTT, in obedience to the new Pennsylvania Constitution, has shut down on free passes! So the whole thing is to be declared dead and buried quickly lest it should stir in its coffin. After the funeral is over, we venture to predict something like a voice from the tomb.

Just now, however, our business is with the professed mourners. Their position is a difficult one. If they show too much grief, people will ask what they did to keep life in the infant that was put to nurse with them. Did the gentlemanly and industrious Secretary of the Association ever address as much as a postal card (price one cent) to anybody anywhere, asking for co-operation in the matter? Did he ever make use of the powerful influence of the *Bulletin* to call attention to it, after the troublesome zeal of inquirers had been quieted by that soothing circular? Did the Association, or any committee, or any officer of it, ever indulge the thought that a responsibility had been incurred—the serious responsibility of standing in the way, at least?

On the other hand, there must be some grief manifested at the funeral, or still worse things will be said. It will be said the promise to take hold of this subject was made without the intention of keeping it, merely to prevent it from falling into the hands of persons who might turn out to be really in earnest. It will be said that a collection of iron ores *from Pennsylvania* is in progress, and well advanced, and that the Pennsylvania citizens who run the "American" Iron and Steel Association are better satisfied with that than they would be with a truly national display. It will be said that the scientific gentlemen invited to co-operate in smothering the latter scheme have been duped and snubbed. It may even be said that the Secretary considers this result a triumph of management, and a very clever application of the principles of lobbying in a new department.

Whatever the Association may do, it seems clear that unless by some startling evidence of good faith and energy it can recover the confidence of the public, now unquestionably forfeited, its duty is to confess failure, and take its hands entirely off from the plan it has done nothing to help and much to hinder. By an inconvenient law of nature, heavy and lifeless bodies can make trouble, when they cannot accomplish anything useful. We ask, therefore, no small favor of the American Iron and Steel Association when we beg that it will overcome its inertia sufficiently to get out of the way. Even the innocent joke of another circular, "requesting" other people to do the work, ought not to be perpetrated. Under the circumstances, it would be, not funny, but insulting.

Facing the Music—The Nation and The Emma.

IT was TOODLES, who, in the candor of intoxication, gave the popular definition of honesty, "An honest man is a man—that don't care a dam." A good many people besides TOODLES act on this theory, though they do not get drunk enough to confess. Boldness in criticism and accusation is pretty sure, for a time at least, to pass for outspoken honesty. But fearlessness may be carried too far. There is one thing of which really honest people ought to be afraid—namely, of doing injustice. And nowhere is this principle more frequently ignored or defied than in the conduct of the public press. The respectable authors of books do profess still to take some pains in ascertaining facts; the respectable editors of newspapers have apparently lost all sense of responsibility in this particular.

The text for these reflections is furnished by the course of the New York *Nation*, a weekly journal, conducted with a courage, frankness and ability which early secured for it the reputation of incorruptible integrity. From the outset, it was always attacking somebody; and it seemed to choose for severe reproof the members of the political party which, on the whole, it favored. Its slashing

criticisms of books and men were delivered with a tone of high impartiality and absolute knowledge which amounted to authority.

But for some years the reputation of the *Nation* has been fading. The paper which declared CHARLES BABBAGE to have been the author of "one of the Bridgewater Treatises," could not retain the respect of scholars, except so far as it borrowed a claim to that respect from its contributors. Some of its comments on legal questions have been equally vulnerable. But the instance which calls for this article is one to which we have already alluded, namely, the *Nation's* course with regard to the Emma mine.

The *Nation* does not profess any special knowledge of mining matters. If it did, the profession would be vain and delusive. In its comments on the Emma case, it departed from its usual *rôle* of silent ignorance, in order to attack Gen. SCHENCK, Senator STEWART, TRENOR PARK, Prof. SILLIMAN and others as parties to an intentional swindle; and this purpose it has pursued without the slightest endeavor to ascertain the real facts, or to distinguish between sanguine over-estimates and deliberate falsehoods, between disappointment and deceit.

We are not going to restate at length our opinion of the Emma case. It is well known to our readers that we did not think the mine warranted the price at which it was sold. The title to it, under United States patent, was obtained by very sharp practice, amounting to trickery; the subsequent legal complications were not creditable to either party; and finally, the splendid body of ore which the mine at one time exhibited, proved, as many mining engineers expected, and as others did not expect, to be limited in dimensions and not part of a continuous deep-lying deposit. Whether there were indications at the time the mine was sold, that it was about to "give out," we do not care to discuss. The significance of such indications is dependent upon the nature of the deposit. Signs that would be very discouraging in a mere irregular mass-deposit amount to little in a fissure-vein, the variations of which are less frequently of the nature of final change. Under this head, therefore, the question is largely one of opinion; and since the opinion to which we inclined is now proved to be correct, we are the less disposed to asperse the motives of those who held a different one.

But the *Nation*, in its high determination to be the unsparing scourge of somebody, and in the belief that the failure of the Emma mine would justify any amount of "fearless" remarks about it, "went for" the enterprise in a long and satirical article, adopting as authority the pamphlet of a stock-operator in London, which professed to give an *exposé* of its history. In that article, the *Nation* plumply charged that the mine had been "salted" previous to its examination for the purchasers; that this operation, which consisted in plastering the walls with silver ore, had been performed by Mr. SILAS WILLIAMS, the mining captain, who was selected for this dishonorable work on account of his being known as the best man to prepare a mine in this way. We have a slight personal acquaintance with Mr. WILLIAMS, and we know him by reputation still better. Nothing that we ever saw or heard of him afforded the slightest basis for such a story. Moreover, we personally visited the mine a short time before it was sold, going to it without previous notice, and examining it without any personal interest or any connection with either of the parties claiming it. From personal knowledge, therefore, we are convinced of the preposterous nature of this plastering story, which the *Nation* was so ready to believe and so "fearless" to repeat.

The article referred to called forth a reply from Mr. PARK, which the *Nation* refused to publish, and a libel suit from Mr. WILLIAMS, which the *Nation*, of course, "fearlessly"—met? Oh no; not by any means. It interposed a demurrer to the complaint, in support of which it argued, through its counsel, that since Mr. WILLIAMS was represented as a subordinate, plastering the mine under the direction of his employers, *the charge was not libellous*, because it is *per se*, not wrong for a subordinate to obey orders! Of course, in this view, the allusion to Mr. WILLIAM'S skill at that sort of business was a mere compliment to his professional ability, and, combined with the implied endorsement of his faithfulness in obeying orders, constituted a certificate professional and moral of which he ought to be proud, instead of making such an absurd fuss. This argument was undoubtedly ingenious, but it was not "fearless;" and the Court did not consider it legally valid. Chief Justice DALY, in a written opinion, holds that "such a statement is injurious to the reputation of the plaintiff, and, assuming it to be untrue, the necessary effect of it is defamatory. The *Nation* will have to face the music.

The recent verdict obtained in London by Mr. RUBERY, against Mr. SAMPSON, late financial editor of the London *Times*, for libellous accusations connected with the famous Diamond swindle, to which RUBERY was, as appears, an innocent party, is another instance, enforcing the wholesome principle that indiscriminate and reckless accusations are not safe, even when it is clear that somebody is a villain. The tactics of the old-fashioned schoolmaster, who used to flog the whole school, in order to find out, or because he could not find out, which boy put pepper on the stove, are not permitted to newspaper editors. The *Nation* was right in condemning the impropriety of Gen. SCHENCK'S participation in the Emma scheme. It is right in condemning the system of inflated prices which English promoters insist upon adopting, when they undertake to put American mining property upon the London market. It is right in denouncing whatever it considers a swindle. But its way of following up special objects of its hostility is tiresome; its way of blackening the character of individuals without proof is wicked; and its way of trying to evade responsibility afterwards is pusillanimous and ridiculous. Even the definition of TOODLES no longer covers such a case.

Underground Haulage.

Under the head of Mining Economy we publish, in another column, a very interesting communication from Mr. FULTON, the Engineer of the Huntington and Broad Top Railroad. In our remarks on the Broad Top Coal Mining, to which he refers, there occurred, as he states, a clerical error in giving the number of mules and horses—the fact, however, remains, that there is a great need of economy in the item of haulage in that district. Mr. FULTON strongly advocates the use of mine locomotives, and where the conditions of ventilation will permit, they certainly effect an important economy, though they are by no means free from inconvenience; they require a special and strong ventilation for the gangway, make the air damp and warm, conditions very favorable for the decay of timber, and for decomposing certain kinds of rock roofs. These inconveniences might be avoided by the use of compressed air, and some of them by the hot water locomotive, which we understand is running successfully in New Orleans.

We have a large number of mine locomotives in use in the anthracite mines, especially in the Wyoming Valley, and they are generally doing their work satisfactorily. Yet in many cases, we think, a fixed engine and endless chain or wire rope haulage will be found more satisfactory than the locomotive. The reports we have from England and from some of our own mines near Pittsburgh, Pa., that are using underground chain or rope haulage, are so satisfactory in the cost of the work, that they merit the serious and immediate attention of our mine managers.

The whole question of the cost of underground transportation is one of the greatest possible interest, for it is one of the largest items in the cost of coal, and one of those where our present wastefulness is most apparent. Moreover, a large proportion of the accidents in our mines is closely connected with the present system, and a change to mechanical haulage would undoubtedly greatly reduce the number of killed and injured, which make so frightful an item in the "cost of coal." In the Wyoming Valley, during the year 1873, there were, in all, 100 persons killed and 260 injured about the mines; of this number, no less than 28 were killed and 51 injured by mine cars and several killed and injured by mules.

There can be no doubt but that the introduction of mechanical haulage would greatly lessen this fearful loss of life. Therefore, on the score of humanity, as well as on that of economy, this subject should receive the attention of our mine managers.

CORRESPONDENCE.

Mining Economy.

TO THE EDITOR: SIR—An editorial in the ENGINEERING AND MINING JOURNAL, of 16th ult., opens with a very vivid delineation of the "Wastefulness of Coal Mining" in the Anthracite and Cumberland Coal Fields. The Anthracite men are charged with wasting half the coal in pillars and breaking, whilst the Cumberland operators, who have no breaking to do, are reported as leaving more than half the coal in the mines.

The annual tabulated statement of the Broad Top Coal Trade is made the text for a pointed lecture on Mining Economy. It is not designed to controvert the main portion of the Broad Top criticism, but to correct some of its statements, so as to give this important lesson all the aid of accurate statistics.

It is hardly an average year to analyze the economy of coal production in this field. Coal mines, like blast furnaces, have sometimes to be operated at diminished profits, or even losses. The output of the Region was reduced 40,000 tons by the blowing out of one furnace.

The capital invested is made up of miners' houses, coal shutes, railroad sidings, iron rails in mines, &c. The rent of houses ordinarily pays 10 per cent. on one fourth of this invested capital. The iron rails in mines should pay in the economy of "haul" a fair return on their cost. There are eleven operators in Broad Top, using a very small number of employees in conducting their business.

The ratio of 1 mule or horse to 666 tons of output is evidently a clerical error, for this rate would only give 2 1-5 tons per day, in place of the average of 4,000 to 5,000 tons to each horse or mule per year.

The Broad Top, in common with other Regions, has some of its mines managed with skill and economy, whilst others exhibit the absence of any intelligent plan of mining and show decided "wastefulness." It has also the usual ratio of "outcrop miners," the Arabs of the trade, moving about from place to place; "exhausting" a mine by robbing and "burrowing," thence moving to other fields to repeat similar operations. These bear the same relation to the regular systematic miner who follows up his mine, working during a lifetime, that the roving frontiersmen bear to the permanent farmers who follow them.

The "panic" has been a most effective teacher, or rather it has put some of the operators in a more teachable frame of mind, leading them to examine the "items" in the cost of their coal production.

Some twelve months ago, the writer desired to analyze the items of cost in producing coal at the several collieries of the Region, and had blank forms printed for this purpose; but when he called on the operators for the necessary data, *only two responded!*

The following ratios, exhibiting the percentage of cost of the several items of mining and delivering coal in railroad cars may prove interesting. They exhibit the results of work in a mine well managed—shipping 31,000 tons per year. (A.)

I also submit, for comparison, the ratios in the cost of a mine in the Alleghany

Field, having a seam of coal of similar thickness, and the other conditions nearly equal, (B)—shipping 77,000 tons of coal:

	A.	B.
Dead work, gangways, prop timber and incidentals	11	5
Cutting coal	60	58
Mine cars, track repairs, &c	6	5
Outside labor, weighing coal, &c	5	2
Mules and mule drivers	13	28
Superintendence	5	2
	100	100

Mine A is driving its gangways and is up to its full ratio of "dead work." Mine B is not driving gangways, and its ratio of "dead work" is below an average. The superintendence in A is double that of B, indicating the economy in this item in the proportionally large output of the latter mine.

But the great difference is in the items of "mules and mule drivers;" mine B, with its large shipment, indicating more than double the cost of mine A, with its moderate output. The "haul" in mine A is 3 700 feet and in mine B 5,000 feet.

But the distance to be hauled in mine B is 15 per cent. greater than in A. Equaling the rates for the distances hauled in each mine, there is still a large difference, as the adjusted percentage for haul would give 13 and 21.4 respectively. This then represents the *difference in economy in hauling coal out of a mine!*

But is the percentage (13) of the cost of producing coal in mine A a safe standard? It is not. It is too high. Just here this question is struck at the root, because *mule power in gangway hauling is not economical. Mine locomotives should be made to take their places at once.*

In mine A six mules are required; four of them could be superseded by a locomotive costing $3,500, and working in a gangway 5½ feet high.

The economy would be as follows:—

4 mules and drivers at $2 25 per day	$9 00
1 mine locomotive with engineer and fireman	4 25
	$4 75
Deduct for increased investment in locomotive over 4 mules	75
Leaving a net daily gain of	$4 00

per day, or $1,200 per year.

The economy of mine A over mine B in the application of mule power alone is 8.4 per cent., which in cash would give an excess of cost or "*wastefulness*," *of* $6,729 80 *per year.*

Doubtless this wastefulness of mule-power in gangways increases in an increasing ratio as the haul is lengthened.

By the application of mine locomotives in colliery B, taking the place of 20 mules, the following reduction in cost can be made:

20 mules and drivers at $2 25 per day	$45 00
1 mine locomotive " 4 25 " "	4 25
	$40 75
Interest on $4,000, 10 per cent., cost of preparing gangway, ventilation, etc	1 33
Net saving per day	$39 42

or $11,826 per year!

In whatever aspect this reform is viewed it possesses decided advantages. In a time of "strike," the locomotives have not to be fed or cared for. They do the work with a promptness that must tell in all departments of the working of a mine.

In the use of locomotives in mines all that is necessary is space in the gangways; 5½ feet high will answer, but 6 feet in clear above rail is better.

The locomotive must have a separate ventilation, cutting the ventilation of the gangway in which it works from the "working" districts of the mine.

It is most remarkable that in the face of facts exhibiting the wide difference of economy in the haul in mines in favor of mining locomotives so few are yet used.

The ENGINEERING AND MINING JOURNAL can do no more effective service to operators and coal miners than by calling their attention to this *item* of present *wastefulness*. The sooner they are led to dispense with the "mule brigades" about their mines, using in all gangways mine locomotives, the earlier they will be enabled to attain true economy in this important department of their expenditures.

If the wastefulness in mule power was a constant factor in mine expenses, then it might not be so alarming, but it increases with a destructive ratio, like the widening circle of the early charcoal furnace operations, diminishing profits as it increases, until the end is reached.

The present time is opportune for the presentation of this important interest, and the rigid economy in the use of appliances in the production of coal is manifestly demanded, so as to harmonize the cost of this prime industrial power with the reduction in the cost of production of all other industries. Besides, the effort is not to reduce the miners' wages to starvation prices, but to economise in the *management of mines*, especially in the use of locomotives in the long gangway hauls in place of mule power—this should be nearly as self-evident as is the difference between wagons and railroad trains.

JOHN FULTON, M.E.

Saxton, Pa., Jan. 26, 1875.

The Longest Blast Yet.

WE learn from the German papers that the Number-4 blast-furnace of the Hörder Mining and Smelting Company was blown out in May last, after having been in blast continuously for 18 years and 10 months. This is the longest run we have yet heard of in a blast-furnace.

NEW PUBLICATIONS.

Catechism of the Locomotive. By M. W. FORNEY. Published by the *Railroad Gazette*, 73 Broadway, N.Y., 1875. 12mo., pp. XVI., 609. Price $2 50.

It is seldom that we have the pleasure of reading a technical work, which seems so generally deserving of commendation as the one in question. In writing a book there are two requisites to success—first, that the author should have a thorough understanding of his subject, and, second, that he should have the faculty of imparting his information to others. The *Catechism of the Locomotive* is intended principally for those who have not enjoyed the benefits of thorough technical instruction, for engine drivers, railroad engineers, and all who wish to learn something about a locomotive. Only those who have addressed themselves to such an audience can appreciate the difficulties. Descriptions and definitions must be precise, and at the same time simple—and all calculations and demonstrations must be made either by graphical methods, or by the aid of the ordinary rules of arithmetic. Mr. FORNEY has succeeded admirably in complying with these conditions, and has produced a work that must take high rank in the list of publications relative to the locomotive. We may briefly notice some of its principal features. The general description of the locomotive is unusually full and rendered very plain by the aid of liberal references to a complete drawing and to many sketches of details. These detail sketches are in general reduced from working drawings. Indeed, we believe that almost all the sketches have been made expressly for this work, so that we are not greeted with a view of the time honored engravings of engines and boilers that have been made to do service for so many different writers on the steam engine. The new departure in the present instance is very commendable, and adds greatly to the value of the book.

In the chapter treating of the construction of the boiler, a careful summary of the most reliable data is presented, making a treatise of great value to designing and manufacturing engineers; and the graphical representations of valve and link motions will doubtless be of equal value and interest. We find, also, remarks on the expansion of steam, use of the indicator, action of injectors, safety-valves, proportions of locomotives, construction of trucks and wheels, balancing reciprocating parts, friction, combustion, performance of locomotives, cost of operating, continuous brakes, accidents to locomotives, and general management, with a number of kindred topics. There are illustrated descriptions of the different kinds of locomotives made by prominent builders in this country; and the appendix contains tables relating to the properties of steam and fuel and the resistance of trains. Much of the information in this work has been drawn from the generally unwritten literature of the profession—the experience of successful builders and railroad men. Taken as a whole, we regard the *Catechism of the Locomotive* as one of the most useful treatises on the subject that has been published, and we hope that it will receive, as it deserves, a wide circulation.

Notes.

New Compass.—A new compass has been invented in France by M. DUCHEMIN, the magnetic force of which resides, not in a bar or needle, as in the ordinary instrument, but in a flat steel ring, magnetized, with its poles at two opposite extremities of the same diameter. This ring, supported upon an aluminium traverse, pivoted on agate at its center, has attached to it the ordinary compass card, and acts promptly and efficiently. The inventor claims for it the following advantages:—(1) A magnetic power, double that of a needle whose length is that of the diameter of the ring; (2) two neutral points instead of one, as in the needle; whence it happens that none of the magnetism escapes, and that strong sparks like those from the Holtz machine do not derange the poles; (3) a better and more prompt performance of the compass, the card seeming to float, as it were, in a liquid; (4) a large increase in the sensitiveness of the instrument; (5) the ability to regulate the magnetic intensity of the ring, and thus to compensate for local causes. This is effected by means of a second magnetized steel ring, smaller than, and inside of, the first, the position of which—and therefore its neutralizing action—may be easily adjusted. Under the direction of the Minister of the Marine, a trial trip with the new compass was made on the steamboat *Fiton* with very satisfactory results. M. DUCHEMIN now proposes, as an improvement, the use of a set of such rings, forming a spherical or spheroidal system of still greater magnetic power.

Progress in China.—Recent mails from China have brought intelligence of far greater interest and significance than the settlement of the Formosan difficulty. Under the pressure of a political necessity for rapid communication, the Government sanctioned steps being taken for the erection of a telegraphic line between the capital of Tokien and Amoy, on the coast opposite Formosa. And under an equal imperious demand for coal to feed the war steamers and transports, Li-Hung-Chang, the Viceroy of Pechihli, has obtained the Imperial sanction to work the coal mines near a place called Rung Ching, in the south-west of that province, with foreign machinery. Already the order has been dispatched to England for the purchase of the necessary plant and the engagement of engineers and skilled miners.

The Channel Tunnel.—The Préfect of the Pas-de-Calais has issued an *arrêté* empowering M. MICHEL CHEVALIER, his colleagues and agents, to take possession of any lands in the commune of Ferques and three adjoining communes, which they may require for carrying out works in connection with the projected Channel tunnel. The *arrêté* further provides that any claims for indemnity which cannot be amicably settled between the owners of property and the company's agents shall be referred to the Conseil de Préfecture for arbitration.

Tunnel at Constantinople.—The Metropolitan Tunnel railway between Pera and Galata will commence running in a few days. The authorities have decided on giving greater space to the neighborhood of the Pera station by removing a further portion of the old unused Turkish cemetery of the Téké, which still encumbers the locality, and eventually the whole of it will probably be levelled and converted into a convenient and attractive public square.

COAL TRADE REVIEW.

Import Duty on Coal.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. to the bushel, 75c., gold.

All *slack*, or *culm*, such as will pass through a half-inch screen, per ton of 28 bushels, 80 lb. per bushel, 40c., gold.

Not otherwise provided for, per ton, 40c. gold.

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

NEW YORK, Feb. 5, 1875.

Comparative Statement of the Production of Anthracite Coal for the week ending Jan. 30:

	1875,		1874,	
	Week.	Year.*	Week.	Year.*
Wyoming Region.				
D. and H. Canal Co	54,338	191,507	35,721	132,652
D. L. and W. RR. Co	39,067	157,353	42,499	177,514
Penn. Coal Co	22,643	97,378	21,501	85,009
L. V. RR. Co	22,452	83,043	18,720	74,398
P. and N. Y. RR. Co	..	..	1,301	1,482
C. Rit. of N. J	4,948	11,419	7,348	25,463
Penn. Canal	..	..	..	..
Lack. and B. RR	2,800	24,931	6,934	21,031
L. and W. B. C. Co., sales at mines.	..	..	..	..
	146,248	565,631	134,024	517,549
Lehigh Region.				
L. V. RR. Co	4,113	7,509	57,905	228,235
C. RR. of N. J	..	..	17,212	52,997
D. H. and W. B. RR	213	989	..	7,471
	4,326	8,498	75,117	288,703
Schuylkill Region				
P. and R. R. RR. Co	13,441	50,903	50,666	149,286
Shamokin and Lykens Val.	5,820	28,352	10,036	35,150
	19,261	79,255	60,702	184,436
Sullivan Region.				
Sul. and Erie RR. Co	336	1,092	902	2,481
Total	170,171	654,476	270,745	993,169
Increase	..	..	..	..
Decrease	100,574	338,693	..	..

* Year beginning January 1st.

Production of Bituminous Coal, 1874.

Tons of 2000 lb.	Prev'ly reported.	Dec.	12 mos.
Blossburgh Region	775,119	21,269	796,388
Barclay Region	319,715	17,357	337,072
McIntyre Coal Co	132,788	6 135	138,928
Broad-Top Region	208,600	16,693	225,293
Cumberland Region	2,308,617	102,278	2,410,895
Clearfield Region	643 725	59,445	703,170
Alleghany Region	192,815	15,279	208,094
Pittsburgh Region.			
West Penn. RR	183,288	10,720	194,008
Southwest Penn. RR	7,321	559	7,880
Gas Coal, Penn. RR	831,817	79,189	911,006
Pittsburgh Coal, Penn. RR	411,006	8,220	419,226
Saw Mill Run RR	79,536	8,096	87,632
Cleveland and Pittsburgh RR	273,205	18,516	291,721
Pittsburgh, Cincinnati and St. Louis RR	553,902	50,536	604,258
Erie and Pittsburgh RR	260,972	9,476	270,448
Pittsburgh, Fort Wayne and Chicago RR	182,410	12,263	194,673
Castle Shannon RR	114,771	21,457	136,228
A. Y. & P. R.R.	907	..	..
Pittsburgh and Connellsville RR	334,933	..	..
Monongahela Nav. Co	2,503,503	..	2,503,505
Keeling & Co	166,615	..	..
Wettengal & Gormley	13,339	..	..
J. W. Carlin & Co	3,817	..	..
St. Louis Region.			
St. L. A. & T. H. R. R. Belleville Branch	166,531	20,429	186,960
B. & S. I. R.R.	97,230	12,499	109,727
Illinois and St. Louis	170,792	22,288	193,260
Indiana North and South RR	5,851	..	..
Evansville & Crawfordsville RR	17,103	2,492	19,595
Ohio & Mississippi RR	209,976	..	..
Sewanee Region.			
Tenn. Coal & R.R. Co	72,596	8,902	81,948
Kanawha Region.			
Chesapeake and Ohio RR	116 912	23,305	140,217
Warrior Region, Ala.			
South and North Alabama RR	22,424	3,359	25,783
Cahaba Region, Ala.			
South and North Alabama RR	5,367	1,830	7,197
S. R. & D. R.R.	13.339	1,065	13,339
Chicago B. & Q. R.R	346,579	34,665	381,244
B. & M. R.; R.R.	78,176	8,044	86,220
Union Pacific R.R. Co.'s mines	131,327	..	..
" " " other mines	81,174	..	..
Summit County R.R.	17,412	..	..
Keokuk & Des Moines R. R.	9.543	..	..
Denver & Rio Grande	18,874	2,936	21,810
Cairo & St. Louis	56,220	..	56,220
	12,140,149		

The following table does not give the entire production of our bituminous mines, but it is by far the fullest report published.

The Production of Bituminous Coal for the week ending Jan. 30, was as follows:

Tons of 2000 lb., except where otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	18,847	78,196
Barclay Region, Pa.		
Barclay R.R. tons of 2240 lb	6,380	25,540
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R	2,278	11,007
Clearfield, Region, Pa		
Snow Shoe	1,822	5,612
Tyrone and Clearfield	13,869	42,989
Allegheny Region, Pa.		
Pennsylvania R.R.	3,929	13,971
Pittsburgh Region, Pa.		
West Penn. R.R	3,076	14,523
Southwest Penn. R.R	183	394
Penn. and Westmoreland gas coal, Pa. RR.	15,464	57,194
Pennsylvania R.R.	4,884	20,326
Kanawha Region, W. Va. to Dec. 12.		
Chesapeake and Ohio R.R	....	6,327

The Production of Coke for the week ending Jan. 28

Tons of 2000 lb.

	Week. Tons.	Year. Tons.
Tyrone and Clearfield	41	106
Alleghany Region	....	....
West Penn. R.R.	915	4.562
Southwest Penn. R.R	8,677	33.457
Gas Coal, Penn. R.R.	990	3,100
Pittsburgh Coal, Penn. R.R.	1,548	6,120

Receipts at Port Richmond, none; shipments, 4,000 tons; and balance on hand 120,500 tons.

Returns from Greenwich, Philadelphia.

	Bituminous	Gas Coals.
Receipts	1,722	....
Shipments	1,773	....
On hand	2,358	....

The exports of coal from Baltimore this year amount to 4,627 tons, as compared with 10,886 tons in 1874. The exports for the week amounted to 360 tons.

	week.	year 1875.	year 1874.
The receipts of coal at Coal Port (Trenton)	..	..	..
" " " South Amboy	2.532	13,167	54,201
Shipments at Coal Port (Trenton)	..	..	..
" South Amboy	3,410	20,079	37,640

MARKETS.		Cumberland. Round.	Cumberland. Slack.	Pictou. Round.	Pictou. Slack.	Cape Breton. Round.	Cape Breton. Slack.	Other Counties. Round.	Other Counties. Slack.	Total. Round.	Total. Slack.	Grand Total.
Nova Scotia.	Land sales.	2,296	742	29,457	13,145	6,183	9,823	....	....	37,936	23,710	61,646
	Sea borne.	901	40	55,354	9,041	80,124	5,384	2,439	36	138,818	14,501	153,319
	Total	3,197	782	84,811	22,186	86,307	15,207	2,439	36	176,754	38,211	214,965
Quebec		34,128	8,335	114,119	2,669	45,129	333	619	....	159,867	11,197	171,064
New Brunswick		....	....	7,216	2,681	26,300	191	....	....	67,644	2,402	70,046
Newfoundland		....	....	1,946	84	52,597	144	1,003	12	78,841	240	79,081
Prince Edward Island		8,335	....	11,985	23,182	6,144	160	....	....	55,456	23,342	78,798
United States		....	....	....	....	65,528	8,671	....	....	18,606	14,054	32,660
West Indies		....	....	55,526	5,383	26,482	....	477	....	124,281	....	124,281
Prince Edward Island		3,167	....	21,362	....	688	....	....	....	47,844	....	47,844
South America		....	....	4,389	....	3,175	....	....	....	5,077	....	5,077
Europe		....	....	977	....	....	....	....	....	4,152	....	4,152
Total		40,492	9,107	302,341	55,585	312,310	24,706	4,538	48	659,681	89,446	749,127
Total. 1873		23,944	2,401	281,641	52,343	504,281	15,908	488	100	810,353	70,753	881,106
Total. 1872		13,372	881	340,142	48,375	360,036	20,237	2,879	191	716,329	69,584	785,914

We are indebted for the following to HENRY S. POOLE, Esq., Government Inspector of Mines for Nova Scotia.

NOVA SCOTIA COAL TRADE FOR 1874.

The continued cold weather is improving business in the domestic sizes of anthracite coal, and our reports show that stocks will be very much reduced before the opening of navigation. Other sizes are, however, very quiet.

The members of the Combination were in session Tuesday, Wednesday and Thursday of this week, and adjourned to meet next Wednesday, without having fully settled upon their programme for the coming season. It is stated that these meetings were far from being harmonious, and some well-informed persons intimate the possibility of a failure to agree on the essential points of the programme. We are aware that those interested fully appreciate the advantages of combination to themselves, and there is no doubt but that some arrangement will be arrived at eventually. If a programme is arranged, it will be of such a nature that trade will not be so much disturbed as last year; and if any of the members disregard or evade the spirit of the compact, they will probably be brought to account very promptly.

The Delaware, Lackawanna and Western Railroad Company have not, thus far, cancelled their contract to carry coal for Messrs. MEEKER & DEAN, and this firm claim that they will be in the market this year as heretofore. It is supposed that this firm not only sold their own coal, but some of the Delaware, Lackawanna and Western Railroad Company's at prices considerably under circular rates. It is quite certain that the Combination cannot exist, should such action be allowed this year.

Freights are quite nominal and without change. There is nothing of importance doing in bituminous coal.

The strikes show no new features. It is thought the Lehigh and Wilkes-Barre Coal Company's men at Plymouth will resume work. This company's men, at other of their Wyoming collieries, where the company is not prepared to start work, are using their influence to keep the Plymouth men on strike, but it is thought that it will not avail much longer. From our statistics it will be observed that from January 1st to the 30th, the production of coal was about two thirds of what it was during the corresponding period of 1874.

We publish in another column a notice of the dissolution of the firm of BIRD, PERKINS & JOB, wholesale coal merchants of this city and Boston, Mr. BIRD, the senior partner, retiring, owing to a failure of his health. We announce at the same time a continuation of the business under the style of PERKINS, JOB & Co., by Messrs. PERKINS and JOB of the late firm.

The noticeable feature in the transactions of the week is the contract for about 100,000 tons of gas coal, for the New York and Brooklyn Gas Companies, at $6 75 per ton, 2240 lb., delivered during the present year. This early sale was effected through the prompt action of Mr. KING, the Vice-President of the Baltimore and Ohio Railroad, who, foreseeing the sharp competition that would arise for this trade, reduced his freight to such a rate that the coal companies were enabled to secure the above contract some thirty days in advance of the usual time of making these contracts. The greater part of the coal to be delivered on the contract will be supplied by the Waverly Coal and Coke Company from their mines on the Youghiogheny. This Company has had the entire contract of the Pittsburgh Gas Company the past year, and has now secured a foothold on the Eastern markets that must be of great value to them. The sale here advertised will be largely added to within the coming fortnight, when the New England contracts are fixed.

Wholesale Prices of Anthracite Coal for Jan f.o.b. at the Tide Water Shipping Ports per ton of 2240 lb.

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
Wyoming Coals.						
†Lackawanna and Scranton at Elizabethport & Hoboken	5 55	5 65	5 75	5 90	6 40	5 35
*Pittston at Weehawken	4 75	4 75	4 85	4 95	5 35	4 50
*Wilkesbarre at Port Johnston	5 55	5 65	5 75	5 90	6 40	5 35
Plymouth, R. A	....	....	5 75	5 90	6 50	5 35
Susque. Coal Co.at Amboy W.A.	5 55	5 65	5 75	5 90	6 50	5 35
Kingston at Hoboken	5 55	5 65	5 75	5 90	6 40	5 35
***Lehigh Coals.**						
Old Company at Port Johnston	6 50	....	6 45	6 45	6 60	5 65
Old Company's Room Run "	6 00	....	6 00	6 00	6 35	5 35
Sugar Loaf at "	6 00	....	6 45	6 45	6 60	5 65
Lehigh Coal Exchange "	6 35	....	6 30	6 30	6 45	5 50
Honey Brook at Elizabethport	6 35	....	6 30	6 30	6 45	5 50
Spring Mt. C. Co. at Hoboken	6 35	....	6 30	6 30	6 45	5 50
Beaver Meadow at South Amboy	6 35	....	6 30	6 30	6 45	5 50
Schuylkill Coals.*						
Schuylkill white ash	5 55	5 65	5 75	5 90	6 40	5 35
Schuylkill red ash	....	....	5 75	5 90	6 50	5 35
Shamokin white and red ash	....	....	....	5 90	6 40	5 35
N. Franklin	....	....	....	....	....	....
Lorberry	....	....	....	....	....	....
Lykens Valley	....	....	....	....	....	....

* Small or Pea coal is quoted by these Companies at $1 35 per ton less than Chestnut.

† f.o. b. in New York Harbor.

* This is the rate for Schuylkill coal deliverable on board vessels at North 9th street, Williamsburgh.

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Port Johnston to New York	40c.
" " South Amboy to New York	45c.
" " Rondout to New York by boat or barges of the D. & H. Canal Co. " delivered"	50 c.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn, at Greenwich, Philadelphia	$6 25	$7 65
" " at S. Amboy	7 00	..
Red Bank Cannel Pa., at Phil	8 50	8 50
" " at S. Amboy	8 00	....
" Orrel, "	7 00	7 65
" " at Philadelphia	6 25	....

Youghiogheny, Waverly Co, at Baltimore	6 00	7 65
Despard, West Va., "	5 60	7 40
Murphy Run, W. Va. at Baltimore	5 60	7 40
Fairmount, W. Va "	5 60	7 40
Newburgh Orrel, Md. "	5 50	7 40
Cannelton Cannel, W. Va., at Richmond.	11 00	12 80
" Splint, " "	5 25	7 50
Peytona Cannel, " "	....	12 50
Sterling " Ohio	....	12 00
Straitsville, " At Sandusky, O	3 65	11 50

Foreign Gas Coals.

	Sterling.	Am. cur'cy.
Newcastle, at Newcastle-on-Tyne	12/@13/6	7 00@ 8 00
Liverpool House Orrel, at Liverpool	29/	13 00
Ince Hall Cannel "	52/	18 00
" Gas Cannel "	40/	15 00
Scotch Gas Cannel, at Glasgow, nominal.	28/	9 50
	Gold.	
Block House, at Cow Bay, N.S.	2 25	6 50
Caledonia, at Port Caledonia	1 87½	5 70
Glace Bay, at Glace Bay	2 00	5 50
Lingan, at Lingan Bay	2 25	6 50
Sydney, International and Reserve mines, at Sydney	2 25	5 75
Pictou, Albion and Vale mines, at Pictou	2 50	6 50

Steam and House Coals.

Broad Top, at the mine, $1 25; at Port Richmond, Phil	4 75@5 00	6 00@6 25
Cumberland, at Georgetown and Alexandria, Va.	4 30@4 40	5 75@6 00
Cumberland at Baltimore	4 60@4 75	6 25@6 50
Clearfield, "Derby," "Kitanning" and "Sterling," at the mines, $1 25; at Greenwich, Phil	4 75@5 00	5 50
James River, carbonite, at Richmond, Va	6 75	9 00
" bituminous, "	4 00	6 25

Retail Prices in New York.

Anthracite.

Per 2000 lb.	Grate and Egg.	Stove.	Chestnut.
Pittston coal, in yard	$6 00	$6 20	$5 40
Lackawanna Coal, del'd	7 60	7 85	7 10
*Wilkes-Barre, delivered	7 60	7 85	7 10
Lehigh & Locust Mountain, del'd	8 00	8 00	7 50
Schuylkill Red Ash del'd	8 25		

The cost of delivering Pittston coal ranges from 40 cents to $1 per ton, according to distance from the yard.

* Twenty-five cents less than the above rates are charged to manufacturers.

Bituminous.

Liverpool House Orrel, delivered, per ton of 2000 lb	$23 00
Liverpool House Cannel " " "	25 00
American Cannel " " "	16 00
American Orrel " " "	16 00
Straitsville Cannel " " "	16 00
Carbondle " " "	12 00
Cumberland " " "	9 00

Coal Trade of Philadelphia.

PHILADELPHIA, Feb. 4, 1875.

The meeting of the companies in New York not having taken place last week, the programme for the coming season is not yet known, and in the absence of work at the mines or any excitement, is looked for anxiously. Coal continues to come from the Shamokin region, and the wants of consumers for all sizes above chestnut are met; but of chestnut and pea sizes there is a scarcity, which is more and more felt. Of course, as long as the demand is pretty much confined to these two sizes, there is no inducement to start more collieries. Some furnaces have gone out of blast, but those still in blast either depend on a stock on hand or on lump and steamboat sizes at Port Richmond, of which there are about 30,000 tons, which are reloaded into cars and taken up the road.

Your description of the manner in which the purchasers of the yards of the Delaware and Hudson Coal Company are made to issue new circulars putting up the rates again, and in which the Delaware, Lackawanna and Western was made to cancel a contract, afforded a good deal of amusement here, and it shows how the President of the Reading Coal and Iron Company can, like the clerk of the weather, blow hot and cold. In this city, the rates at retail have been put down by that Company one month ago, after the dealers had been induced to buy and fill their yards with coal which costs them more before they unload it than the Company sells the same at. This was made an occasion for getting the newspapers of this city to show how anxious the Company was to accommodate the public with cheap fuel. No one could resist that course but the dealers who are not united, or the operators who lack the proper spirit; but in New York it had to be done on the sly, and when some companies came out boldly with a decline, a terrible fuss was made by the great public benefactor, and they were compelled to go up again.

Bituminous Coal, Wholesale

Penn. and Westmoreland (Gas), f.o.b., Greenwich	6 25
Broad Top, (according to destination) f.o.b., Port Richmond	4 75@5 00
Clearfield f.o.b. at Greenwich, according to destination	4 75@5 00

Bituminous, Retail.

760 in yard, per 2240 lb., cartage added.

Anthracite, Retail.

Egg, per 2240 lb., $6 20; Stove, $6 25; Chestnut, $5 10; delivery costs, 75 cents extra.

Baltimore, Md. Feb. 2, 1875.

Reported by our Special Correspondent.

WHOLESALE PRICES PER 2240 lb.

ANTHRACITE.

	By cargoes.	In cars.
Wilkes-Barre, "Lee," or "Diamond,"		
Lump, steamboat	$5 15	$5 60
Broken	5 50	5 75
Egg	5 87	6 15
Stove	6 07	6 35
Pittston and Plymouth.		
Lump and steamboat	....	5 50
Broken	....	5 70
Egg	....	6 05
Stove	....	6 25
"Boston," freeburning white ash	....	5 50
Egg	5 87	5 70
Stove	6 07	6 05
Shamokin, (red or white ash)	....	6 25
Egg	5 82	6 05
Stove	5 92	6 15
Lykens Valley, red ash, egg and stove	6 02	6 55

From wharf or yard, wholesale, 50@75c. additional.

By retail, all kinds and sizes, per 2,240 lb, $7@8 25.

BITUMINOUS.

George's Creek and Cumberland f. o. b. at Locust Point for cargoes	4 60	4 75
West Va. Gas Coal f. o. b. at Locust Point	5 50	....
Kanawha Cannel, coarse	13 00	....
Tyrone	7 25	....
Ritchie Mineral of West Virginia	1 00	....

Boston. Feb. 2, 1875.

Reported by our special correspondent.

CARGO PRICES TO TRADE.

Lingan coal	$ 5 75	Westmoreland, and Penn.	7 75
Caledonia	5 00	Waverly Co. Youghiogh'y	7 75
Pictou	6 15	Cannelton Cannel	13 50
Block House	5 60	Cumberland	5 70@ 6 10
Red Bank Cannel	10 00	Anthracite,	6 50@ 7 25
Glace Bay	5 00	" Retail	7 50@ 8 00
Sydney	7 00		

Buffalo, N. Y. Feb. 2, 1875.

Per ton of 2000 lb.

	Slack.	Nut & Slack.	Nut.	Lump
Connelsville coke				6 50
Sterling cannel				6 00
Red Bank				5 75
Youghiogheny coal for gas				5 50
Briar Hill coal		3 25		5 00
Fairmount "		3 25	3 75	4 25
Catfish "		3 25	3 75	4 25
Stoneboro "	2 75		3 75	

Briar Hill coal, and Stirling and Red Bank cannels retail, at $7 50; all other coals $1 per ton above wholesale prices.

Anthracite f. o. b. vessel.

Grate	6 70	Stove	7 15
Egg	6 70	Chestnut	6 65

Retail prices delivered and screened, $1 per ton additional

Chicago, Ill. Feb. 1, 1875.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants

No change in prices of Anthracite coal.

Retail prices per ton of 2000 lb. delivered to buyer.

Lehigh Lump	$10 75	BITUMINOUS.	
Lehigh prepared and car load lots	10 25	Briar Hill and Erie	7 50@ ....
Lackawanna, Wilkes-Barre and Pittston,*		Walnut Hill (W. Va.)	6 50@ ....
Grate, egg, and chestnut	9 50	Midway (West Va.)	6 50@ ....
Stove or range	10 00	Cannel	8 00@ 9 00
		Blossburg	8 00
		Indiana Block	6 00
		Hocking "Brooks"	6 00
		Wilmington and Illinois	5 00

*75 cents off these prices for car load lots to country dealers and manufacturers.

From the Chicago *Railway Review.*

The receipts of coal in this city during 1874 were as follows:

BY LAKE.	Tons.
Anthracite	495,688
Bituminous	261,790
Total	757,478
Receipts in 1873	737.944
Increase	19.534

At the reopening of shipping in 1874 there were 100,000 tons in the yards.

BY RAIL.	
Chicago & Alton	279,037
Chicago, Danville & Vincennes	185,000
Pittsburgh, Chicago & St. Louis	133,233
Pittsburgh & Fort Wayne	65,217
Illinois Central	50,006
Chicago, Burlington & Quincy	27,649
Chicago, Rock Island & Pacific	26,769
Baltimore & Ohio (from Nov. 16 only)	3,679
Total	764 590
Receipts in 1873	840,943
Decrease	82,353

In the above figures the coals brought by the roads for their own use is not included. The receipts by canal have amounted to considerable, and would swell the total considerably above the totals of 1,522,068 tons, and probably above the total receipts of 1873.

From these figures it will be seen that coal is a very important article of freight to many of our roads. The further development of Western mines should be an object of interest to railway companies. The amount of coal necessary for domestic and manufacturing purposes must steadily increase, and those roads which are favorably located for coal will have a steadily increasing traffic, subject to little fluctuation.

The principal supply of soft coal used in this city comes from the Wilmington coal field. Most of it is mined by three companies—the Wilmington & Vermilion, Wilmington Star and Wilmington Coal & Manufacturing Companies. The first of these companies is running three shafts, with a capacity of 600 tons a day each. Production is somewhat curtailed at present. The Star Company has two shafts on the line of the C. & A. RR., and one on the Chicago & Illinois River RR., with a total capacity of 1000 tons a day. They employ 325 men, and shipped about 60,000 tons in 1874, notwithstanding a long strike.

The Wilmington Coal & Manufacturing Company own 1000 acres of land in the coal field, and run two shafts, with a producing capacity of over 500 tons daily. The opening of the Chicago & Illinois River RR., which pierces the heart of this celebrated coal field, will bring the product of many new mines into the market. The Wilmington coal is excellent for steam and domestic purposes, and is constantly gaining ground.

Cleveland, O. Feb. 2, 1875.

Reported by our Special Correspondent.

Continue to quote prices same as last. Business very dull. We are looking for a change in prices towards opening of navigation.

Per ton of 2000 lb. on cars.

Youghiogheny, l'p	$4 40	Columbiana	$3 00
Youghiogheny, nut	3 40	Strip Vein	3 20
Briar Hill, according to quality	$3 85 to 4 00	Mountain Blossburg (blacksmith)	5 50
Massillon	3 65	American Cannel Coal Co.s	
Hocking Valley	3 25	Cannel	4 50
Straitsville	3 25		
Anthracite, Lackawanna on cars, Egg			$6 85
" " " "		Stove	7 50
" " " "		Chestnut	7 00
Youghiopheny Coke, " "		here	5 25
Connellsville " " "			5 50

50 to 75 cents per ton additional for delivery at retail.

Cincinnati, O. Feb. 2, 1875.

There has been no change in prices here, and business continues dull. Please quote as before.

Per ton of 2000 lb.

	Bush.	Ton.
Youghiogheny, or Pittsburgh, afloat	10 c.	—
Pomeroy coal	7@8 c.	—
Cannel coal	18 c.	—
Semi Cannel	11 c.	—
The following are retail prices delivered:		
Youghiogheny	12@14 c.	—
Pomeroy	10 c.	—
Cannel	24 c.	—
Kanawha Semi Cannel	12 c.	—
Anthracite		$9 50
Foundry coke	10 c.	—
Soft coke	8 c.	—

Detroit, Mich. Feb. 2, 1875.

Specially reported by Messrs. ROBINSON & KEYS, dealers in all kinds of coal.

There is a good demand for stock, and prices are held firm, as last quoted. The stock of anthracite was very much reduced during January, necessitating the running in of supplies by rail. Should the cold weather continue for the next thirty days the stock in this market will be pretty well sold out.

Per ton of 2000 lb.

Lehigh Lump, per ton	$10 50	Blossburg	8 50
Lehigh " prep. sizes	10 00	Briar Hill	7 50
Wilkes-Barre, Grate and Egg	9 00	Willow Bank	7 00
Wilkes-Barre, Stove and Nut	9 50	Erie	7 50
		Massil'on	7 00

Erie, Pa. Feb. 2, 1875.

Reported by our Special Correspondent.

Wholesale, per ton of 2,000 lb.

Bituminous f.o.b.

Briar Hill lump	$4 00
Beaver lump	$4 00

Indianapolis, Ind. Feb. 1, 1875.

Specially reported by Messrs. H. MCCOY & Co.

Per ton of 2000 lb.

BITUMINOUS.

Wholesale on board cars in city.

Block coal	$2 50@$2 75	Indiana cannel	6 75
Best "	2 40@ 2 50	Hocking Valley	4 25
Block Nut, per car	18 00	Youghiogheny	5 00
Highland " "	18 00	Blossburg (smithing)	6 50
Block slack, per car load.	....	Piedmont "	7 75
Peytona, cannel per ton	8 75	Gas coke, ... per bushel.	80

ANTHRACITE (Lackawanna).

Grate	$8 70	Chestnut	8 60
Egg	8 70	Stove	8 85

Retail, per bushel of 70 lb.

Block	16c.	Peytona Cannel	32c.
Highland	14	Indiana "	26
Highland Nut, dom. use	9	Youghiogheny	24
Block " "	9	Blossburg	26
Slack, steam, "	8	Piedmont	30
Block & Highl'd Mt. steam—			

ANTHRACITE.

	per ton.		per ton.
Grate	$11 00	Stove	$11 00
Egg	11 00	Chestnut	11 00

Louisville, Ky. Feb. 2, 1875.

Specially reported by Messrs. BYRNE & SPEED.

During the cold weather our retail demand was good, but is rather dull now. Our retail prices are as follows:

Pittsburgh, per load of 1900 lb	$3 00
Pine Hill	2 75
Buckeye Cannel	5 00
Peytona Cannel	5 50
Nut and Slack	2 50
Pine Hill nut	2 25
Kentucky lump, per load	
" nut, "	
" Slack "	
City-made Coke, per bushel	10c
Pittsburgh, wholesale, per bush.	
Kentucky on cars at wholesale, per bush.	
Anthracite, per ton	$10 to $10 50

Milwaukee, Wis. Feb. 1, 1875.

Specially reported by Messrs. R. P. ELMORE & Co.

The market for coal and prices remain unchanged.

Retail prices per ton of 2000 lb.

Lehigh Lump	$10 00	Briar Hill, select	$8 50
Lehigh Prepared	10 50	Blossburg	8 00
Lackawanna	9 50	Pittsburgh	7 50

New Orleans, La. Feb. 1, 1875.

Stock on hand this day, 107 boats and 20 barges. Arrived during January, 20 boats and 19 barges. Consumed during January, 17 boats and 7 barges.

Pittsburgh coal, retail, per bbl	75c
" wholesale	35c.
" to steamboats, per box	60c.
" to manufacturers, per bbl	65c.
" shipments per hhd	$7 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	
Spadra (Arkansas) coal, retail, per bbl	75c.
Mt. Carbon, wholesale, per bbl	45c.
" " retail per bbl	65c.
Virginia Cannel, per bbl	90c.
Scotch Cannel, per bbl	1 25

San Francisco.

From the *Commercial Herald* of January 21, 1875.

"The market continues to be liberally supplied with all descriptions of both foreign and domestic. Prices remain substantially as for some time past. We quote Coos Bay at $10; Wellington, $11; Australian, by the cargo, $10@$10 25; Bellingham Bay, $8 50; Mt. Diablo sells at $8 25 for coarse and $6 25 for screenings. The *Lookout*, from Wellington, B. C., brings 1,280 tons."

IRON MARKET REVIEW.

New York.

Feb. 5, 1875.

American Pig.—During the latter part of last week the Allentown Iron Company sold 8000 tons No. 1 Foundry at $25 75, prompt cash, at the works. The Thomas Iron Company report sales of 6000 tons forge, at a price equal to $25 delivered at Hoboken, and 1000 tons No. 1 foundry at $28, both for delivery through the season. Beyond the above sales, there appears to have been nothing doing worthy of note. The same hand-to-mouth policy that has been pursued for a year by consumers, is still in vogue, and it is quite evident that they expect lower prices as the season advances, although there are no stocks of good iron, and some of the furnaces are sold ahead to a considerable extent. The coal strike continues without change. The quantity produced in January was about two-thirds of what was produced in the corresponding time of last year, so that it does not look as though the furnaces are likely to suffer for want of fuel. We quote No. 1 foundry at $27@$28; No. 2 foundry, $25@$26; Forge, $23@$27.

Scotch Pig.—This article is in very light demand, with but a very small stock, and but little reported as on the way. We note sales of 150 tons of Eglinton at $33@$33 50, and 100 tons of Coltness at $35. The market is a little influenced by the fluctuations in gold. We quote: Coltness, $38@$39; Glengarnock, $36@$37; Eglinton, $33@$34. The imports for January, at this port, were 1260 tons, as compared with 4190 tons in 1874.

Rails.—From Messrs. BIGELOW & JOHNSTON'S circular, dated January 31st., we see that there were no imports of either iron, steel or old rails. They quote iron rails at $49@$53 at the works, and say: "For steel there has been considerable inquiry. Makers are rapidly filling up for the first of the year, and an advance of $3@$5 per ton over previous quotations is now asked;" they quote at $75@$78 at the works.

The following are some of the bids made to the Cincinnati and Southern Railroad Company for 25,000 tons of iron rails and 22,000 tons of Bessemer steel rails, which were opened on the 1st inst.:

For iron rails—Marietta Coal and Iron Company, $48@$56 per ton; Cleveland Rolling Mill Company, $52 75@$60; I. G. Hyle & Brother, Cincinnati Rolling Mill Company, $54@$60; North Chicago Rolling Mill Company, $54 75; Milwaukie Iron Company, $55 75; Iron Company of Chattanooga, $56; Cambria Iron Company, Johnstown, Penn., $48 50; Springfield Iron Company, Springfield Ill., $56 75@$57 95; J. Bragdon & Company, New Albany, Ind., $55; Wick, Ridgeway & Co., Youngstown, Ohio, $59; Columbus Rolling Mill Company, Columbus, Ohio, $61@$62 60; Cleveland Iron Company, $57@$60; Waterman & Beaver, Philadelphia, $58.

Bids for the steel rails were as follows: T. W. Yardley, agent, Cincinnati, $80; Cleveland Rolling Mill Company, $76 75; A. B. Meeker & Co., Chicago, $77; Cambria Iron Company, $72@$74; Edgar Thompson Steel Company, Pittsburgh, $82; W. Bailey Long & Co., New York, $81 80; Naylor & Co., New York, $79. Engineers are examining the bids and will report in a few days.

Old Rails.—Messrs. BIGELOW & JOHNSTON say: "Business is of the most limited character, with no prospect of improvement at present. The stock here is light, but there is enough in various parts of the country to satisfy the demand," and quote T or Flange at $26@$27.

Scrap Iron.—There has been no further movement in this article, which may be quoted at $33@$35, the latter being the usual asking price, but there appear to be none willing to pay it.

Boston.

Jan. 30, 1875.

From the *Commercial Bulletin*.

There was a ripple of excitement in the iron market on Wednesday by the announcement that the representatives of the rolling mills and foundries of New England were in session at the office of NAYLOR & Co., and were certain to unanimously vote a reduction of wages twenty per cent. and of production one-third.

The result of this meeting, which was a pre-arranged gathering of the leading furnace and mill owners, was an informal decision that wages should be reduced, but as the interests represented were too varied for any concerted action, the amount and way of reductions were not broached. There seems to be no doubt that wages will be cut down to meet those which have been established at the West, and to give mills here an opportunity to compete with Western iron. Particularly is this the case with common refined bar iron, which cannot be produced by our New England mills for less than $65, which is ten dollars per ton more than similar qualities of Ohio and Pennsylvania iron are selling for in the market. The movement may engender a strike, which, so far as the manufacturers are concerned, is not to be deplored if it will last for a couple of months at least.

Pig still continues to quote in the primary markets stiff at the late improvement, selling at Hoboken at $26@27 for No. 1, $24@25 for No. 2, and $22 50@23 for gray forge. In this market there is no honest change. Buyers have no outlet for their productions at an increased value, and in fact are not actually in want of stock, hence round lots of one or two hundred tons are selling at the old rates, $27 for extra No. 1 and $24 50 for extra No. 2. On small lots of 5 or 10 tons $30 is the value for No. 1, and $26 for No. 2. Scotch Pig is quoting nominally at $37@38.

Chicago.

Feb. 2, 1875.

Specially reported by Messrs. ROGERS & Co., dealers in Scotch and American pig iron.

There appears to be a growing impression that the price of pig iron has touched bottom. There is an improved demand for L. S. charcoal pig, and a large business has been done with the steel works during the past two weeks. The foundrymen are buying now in larger quantities, feeling safe in stocking up some at present prices for future use. Our quotations remain firm and unchanged.

Quotations are as follows:

No. 1 Coltness	$46 00@ ....
No. 1 Gartsherrie	45 00@ ....
No. 1 Summerlee	44 00@ ....
No. 1 Glengarnock	42 00@ ....
No. 1 Eglinton	40 00@ ....
Warner's "American Scotch"	41 00@ ....
Massilon No. 1 Foundry	37 00@ ....
No. 1 Grand Tower Mo. ores (Bituminous)	33 00@ ....
No. 2, " " "	30 00@ ....
No. 1 Mill	28 00@ ....
Union "A" 1 (Anthracite)	32 00@ ....
Union "B" 1 (Anthracite)	30 00@ ....
No. 1 Lake Superior (charcoal)	32 00@ ....
No. 2 Lake Superior "	30 00@ ....
No. 3 Lake Superior "	33 00@ ....
No. 4 Lake Superior "	35 00@ ....
Bessemer Steel Rails	85 00@90 00
New Iron Rails	55 00@ ..
Old Rails	28 00@30 00

Cincinnati.

Feb. 2, 1875.

Specially reported by Messrs. TRABER & AUBERY, commission merchants for the sale of pig iron, blooms, ore, etc.

Pig iron continues in active demand, with a decided tendency to a higher range of prices. We revise our quotations as follows:

CHARCOAL.		
Hanging Rock, No. 1, Foundry	$27 00@28 00	—4 mos
" No. 2, "	26 00@27 00	—4 mos
Mill	25 00@26 00	—4 mos
Tennessee No 1, Foundry	26 00@27 00	—4 mos
Tennessee. No. 2 "	25 00@26 00	—4 mos
" Mill	24 00@25 00	—4 mos
Missouri, No. 1, Foundry	30 00@32 00	—4 mos
STONE COAL.		
Ohio No. 1, Foundry	27 00@28 00	—4 mos
" No. 2, "	25 00@26 00	—4 mos
Ohio Mill	24 00@25 00	—4 mos
Missouri, No. 1, Foundry	28 00@30 00	—4 mos
" No. 2, "	26 00@27 00	—4 mos
" Mill	25 00@26 00	—4 mos
CAR-WHEEL.		
Hanging Rock, C. B	45 00@52 00	—4 mos
Tennessee "	40 00@45 00	—4 mos
Missouri "	40 00@45 00	—4 mos
Alabama "	40 00@45 00	—4 mos
BLOOMS.		
Charcoal	75 00@ 90 00	—cash
SCRAP IRON.		
Cast	75@ 1 00	—cash
Wrought	1 25@ 1 50	—cash

Cleveland.

Feb. 2, 1875.

Specially reported by Messrs. C. E. BINGHAM & Co., dealers in pig iron and iron ore

No. 1, Bituminous "	28 00@ ...
No. 2, " "	26 00@....
No. 1, " Gray Forge	25 00@....
No. 1, Lake Superior Charcoal	34 00@....
No. 2, " "	32 00@....
No. 3, " "	34 50@....
No. 4, " "	35 00@....
Nos. 5 and 6 "	36 00@....
No. 1, Massillon	32 00@....
B—1, "	30 00@....
No. 2, "	28 00@ ...
American Scotch, No. 1, Cherry Valley	34 00@....
" " No. 2	31 00@....

Louisville.

Feb. 2, 1875.

Specially reported by Messrs. GEORGE H. HULL & Co.

A better feeling prevails but prices are unchanged.

The usual time, 4 months, is allowed on the quotations below.

HOT BLAST—CHARCOAL.	
No. 1 foundry, from Hanging Rock ores	$26 00@28 00
No. 2 " " "	24 00@25 00
No. 1, forge, " "	23 00@24 00
No. 1, foundry, " Tennessee "	25 00@26 00
No. 2 " " "	24 00@25 00
No. 1, forge, " "	23 00@24 00
No. 1, foundry, " Alabama "	25 00@28 00
No. 1 " " Iron Mountain "	28 00@30 00
HOT BLAST—STONECOAL.	
No. 1, foundry, from Missouri ores	28 00@30 00
No. 2, " " "	27 00@28 00
No. 1, forge " "	26 00@27 00
COLD BLAST—CHARCOAL.	
Wheel from Hanging Rock ores	40 00@50 00
" " Tennessee "	35 00@38 00
" " Alabama "	38 00@40 00
" " Georgia "	38 00@40 00
" " Missouri "	38 00@40 00
" " Kentucky "	30 00@40 00

Mahoning Valley.

From the Youngstown *Tribune* of Jan. 27.

There is a much better feeling among the manufacturers of pig iron in this valley, and from the tone of our exchanges we think the better feeling extends throughout the country generally. Various causes are given: in the East, the contemplated lockout of the anthracite coal miners, and consequent scarcity of fuel, is having a favorable effect; the anticipated aid to the Texas and Pacific road has imparted much firmness in all quarters. The large demand for Bessemer steel, and consequent absorption of Bessemer pig iron, is a propitious symptom. The gradual wearing out of the railroads is evidence that the day is not far distant when the demand for railroad iron will set in.

The curtailment of production has been very large, and it is apparent on all hands that the accumulated stores of pig iron are being gradually but surely wiped out.

This valley is largely dependent upon Pittsburgh for a market, and the boilers' strike is the one local cause that prevents an immediate advance. Many mills in Wheeling are purchasing largely of pig iron, and inquiries are numerous from various sections. Some recent heavy sales of metal have been made to go to Cincinnati and intermediate points on the Atlantic & Great Western Railway. A certain pipe works in Cleveland is in the market for five thousand tons of metal. All these things go to show that bottom has been reached, and that consumers are ready to buy. But few furnaces in the Mahoning and Shenango valleys are in blast, and stocks of metal are gradually decreasing. We are advised of sales that have been made within the past ten days aggregating over 20,000 tons. One lot of Bessemer pig of 3000 tons was sold at $26 per ton sharp cash, on car, at furnace, to go to Johnstown. Another lot of mill iron, some 2000 tons, was sold at $21 cash, at furnace, for the Wheeling market. For local consumption several thousand tons have changed hands at $22 per ton, four months, at furnace, and this seems to be about the price good iron has settled down to in this market.

Of 27 stacks built, 9 are in blast and 18 out of blast. The stock of metal in the Mahoning Valley does not exceed 13,000 tons.

San Francisco.

From the *Commercial Herald*, Jan. 21, 1875.

"The market is well supplied with Tin Plate, Bar, Sheet and Bundle Iron, as well as of other imports. Trade at present is very slack, but prospects ahead are good for 1875. The introduction of American Steel of all grades into this market has been the feature of this line of trade during the past year. The supply of English has been large, and the competition lively. Nevertheless, the American manufactured article has come forward and made a name and trade for itself. American manufacturers can and will supply this market, as the future will tell. Larger and more complete stocks will arrive at an early date, and a further decline in prices may be confidently looked for. Importers of English Steel protest against the present low prices; but home manufacturers are disposed to be satisfied, and will shortly reduce prices. The agency of the Pittsburgh Steel Works has a large supply on hand. The *Colima*, for Panama, carried, en route for New York, 6,620 pigs Selby's Lead. The German bark *Josefa*, 160 days from Ardrossan, brings 300 tons Scotch pig iron."

METALS.

NEW YORK, February 5, 1875.

Gold Coin.—During the week past gold has ranged from 112¾ to $113¼, and closed yesterday at $113¼.

Bullion.—Fine silver bar is quoted at $1.25⅛@$1.26⅛; gold, per ounce, and fine gold bar at par ($20.67 gold per ounce,) to 1-16 per cent. discount. There has been comparatively nothing doing in bullion since Jan. 1st.

Copper.—We note sales of about 400,000 lb., since the date of our last, at 21½@21¾c., of which 100,000 lb. were sold at a sterling price for export. The advance in the price of gold made the price in sterling equivalent to the asking price in currency. There is but little copper offering at the prevailing prices, and but few enquiries.

Tin.—There is nothing doing in a large way. Between the fluctuations in the price of gold, the Tariff Bill and the small requirements of consumers, this article is as quiet as need be. The London market remains at £92 for Straits, and £98 for L. and F. This market shows a decline, the following being the nominal quotations, which could undoubtedly be shaded on actual transactions: Straits, 22c.; L. and F., 21⅛c.; Refined, 21¾c.; Banca, 25@26c. I. C. charcoal plates are quoted at $10@$10 25; charcoal ternes, $9; coke tins, $7 87½@$8; coke ternes, $7 25—prices all gold.

Messrs. WHITE & HASKELL furnish us with the following statistics: The imports of tin in 1874 into the whole country were: Straits, 2400 tons; L. and F., 1472 tons; Refined, 640 tons; and Banca, 100 tons, making a total of 4612 tons, as compared with 4495 in 1873, 5238 in 1872, 5066 in 1871, 3929 in 1870,

3510 in 1869, and 4018 tons in 1868. The stock in the hands of importers and speculators Jan. 1st, 1875, was 600 tons, as compared with 617 tons Jan. 1st, 1874. The consumption in 1874 was 4629 tons, as compared with 4313 in 1873, 5044 in 1872, 5076 in 1871, 4118 in 1870, 3460 in 1869, and 3937 tons in 1868. The lowest price in 1874 was 21¾c.; the highest, 28c.; and the average, 23¾c., or the lowest figures for at least seven years.

Lead.—The stock offered in this market is about 3450 tons Selby, 2300 tons of Government, 1700 tons of Western. We note sales of about 150 tons of Western at $5 95 gold, and on Thursday, 70 tons at a price in currency equal to $5 90 gold. We also note the sale of 40 tons of Foreign at $6 87½, at which price more can be had. It can be bought, to arrive, at $6 80. The Government sold 70 tons of its lead at $6 25. There is a report that 150 tons of refined was sold, but we were unable to procure the particulars or authenticate the rumor.

Spelter and Zinc.—There have been sales of about 100 tons at 6¾c. currency, and 75 tons at $6 20. The better brands of Western are held at 6¾c., but there are still some inferior brands in the market that could, undoubtedly, be purchased at a very low figure. There is nothing doing in Foreign, which we continue to quote at 7½c., gold, for Common Silesian, and 7¾c. best. Sheet zinc is quiet at 9@9½c. gold.

The *Shipping List* gives the following imports into this port for the month of January, as compared with the corresponding month of last year:

	1875.	1874.
Spelter, plates	3,353	....
Foreign lead, pigs	7,316	....
Domestic	4,900	12,216
Tin, pigs	....	13,687
Tin plates, boxes	....	102,929
		29,523
		5,369
		67,689

Antimony—Is quiet at 12½@12¾c. gold.

Quicksilver.—The The London market has declined to £23 10/; San Francisco, $1 50; and this city, $1 55@$1 60.

FINANCIAL.

New York Stocks.

February 3, 1875.

The New York Stock Market has been generally steady during the past week, with a tendency to lower prices; the market to-day closed firm.

MESSRS. MORTON, BLISS & Co., and L. VON HOFFMANN & Co., have taken $2,000,000 of the D. & H. Canal Co. 7 per cent. currency bonds, due in 1894, at 101, and interest.

MESSRS. WINSLOW, LANIER & COMPANY are offering to investors the First Mortgage 7 per cent. Consolidated bonds of the Morris and Essex R. R. Company, guaranteed by special indorsement of the Delaware, Lackawanna and Western R. R. Co.

Among the recent auction sales of stocks, bonds, &c., we note the following:

10 shares Cumberland C. & I Co., at 35.

20 shares Cent. R. R. N. J., at 107½.

$1,000 P. & R. R. R. 7 per cent. conv. bds, 1873, to 93@105½.

71 1st mtg. gold bonds, of the Peach Mountain Coal Co., of Schuylkil County, Pa., due July 1st, 1879, interest 7 per cent., payable semi-annually, whole issue $100,000 (hypothecated), $300 each, at $4.

276 shares Pennsylvania Coal Co., at 245.

240 shares Spring Mountain Coal Co., at 65½.

178 shares of the Philadelphia & Reading Railroad, $50 shares 111¼@112.

140 shares Del. Lack. & Western R. R., $50 each, from 107⅞ to 108.

The following are the quotations:

	Highest.	Lowest.	Closing
Pennsylvania Coal Co.	—	—	245
Consolidation Coal Co.	43	42½	42½
Spring Mt. Coal Co.	—	—	64
American Coal Co.	50	—	52
Maryland Coal Co.	—	—	17
Cumberland Coal and Iron Co.	—	—	48
N. Y. & Nova Scotia Iron Co.	—	—	116
Del., Lack. & West. R.R. Co.	109	108¼	108⅞
New Jersey Central R. R. Co.	108	107½	107¾
Delaware and Hudson Canal Co.	111½	110½	110⅝
Quicksilver Mining Co. pref'd.	—	—	40
" " Common	—	—	33
Mariposa Land & Mining Co	6	5½	5⅝

Sales for the week, ending the 3d inst., inclusive, were as follows:

	Shares.	Price.
Del., Lack. and W. RR	3,366 at from	108¼ to 109
Del. and Hudson Canal	2,004 "	110½ " 111½
New Jersey Central RR	689 "	107½ " 108
Quicksilver Mining Co.	200 "	33 " ....
Consolidation Coal Co.	250 "	42½ " 43
Mariposa Land & Mining Co.	1,700 "	4¾ " 6
Maryland Coal Co.	250 "	17 " ....
St. Louis & Iron Mountain R. R.	100 "	23 " ....
Spring Mountain Coal Co	100 "	64 " ....
Quicksilver Mining Co., pref'd.	500 "	40 " ....

Total Sales.....9,159 shares.

The following are the sales of bonds for the same period:

	Amount.	Price.
Del., Lack. & W. RR convertible,	$15,000 at from	108¼ to 109½
N. J. Central RR. 1st consolidated mortgage bonds	47,000 "	103⅝ " 104
N. J. Cent. RR. conv'tible bonds,	9,000 "	106¾ " 106⅞
St. Louis & Iron Mount'n 1st Mtg bonds, due in 1897	5,000 "	96½ " 97

Philadelphia Stocks.

Feb. 2, 1875.

The Philadelphia Stock Market has been firm during the week, with an advancing tendency. The transactions have been fully equal to the average. We note a slight improvement in quotations of the various bonds, with increased sales.

The Necopec Coal Company announces a quarterly dividend of 3 per cent. payable on demand.

The Lehigh Valley Railroad Company will pay during the month the semi-annual dividend of 5 per cent. on the preferred stock of the Morris Canal Company.

On the 1st inst. semi-annual interest matured on the bonds of the first mortgage convertible 6s of the Catawissa Railroad, on the new Catawissa 7s, and on the second mortgage 7s of the Huntingdon and Broad Top Railroad, and quarterly interest on the Lehigh Navigation railroad 6s. The Delaware Division Canal will pay a dividend some time during the month.

Quotations are as follows:

	Highest.	Lowest.	Closing.
Reading R. R. Co.	56½	55⅝	56¼
Lehigh Valley R. R. Co.	62¼	62	62¼
Little Schuylkill R. R.	48	47	48
Catawissa R.R.	23½	20¾	22⅛
" " Preferred	14	43½	44
Huntingdon and B. T. R.R.	—	—	7½
" " " " Preferred.	15¾	15	15¼
Minehill R.R.	55⅜	55⅜	52½
Lehigh Coal and Navigation Canal	52	50½	51⅛
Morris Canal	—	—	50
" Preferred	—	—	124
Pennsylvania Canal	—	—	70
Schuylkill Navigation Canal	—	—	7½
" " Preferred	14½	14¼	14¼
Susquehanna Canal	—	—	6
Westmoreland Coal Co.	91¼	—	91
Buck Mountain Coal Co.	—	—	40
Cambria Iron Co.	16½	15½	15¾

The following are the aggregate sales of stocks for the week ending Feb. 2d:

	Shares.	Price.
Reading Railroad	2,517 at from	55⅝ to 56½
Lehigh Valley RR. Co.	435 "	62 " 62¼
Little Schuylkill RR.	24 "	47 " 48
Catawissa RR.	5,850 "	20¾ " 23½
" " preferred	36 "	43½ " 44
" " new preferred	300 "	136½ " 36⅝
Huntington and B. T. RR., p'f'd	531 "	15 " 15⅛
Minehill RR.	147 "	52½ " 55⅜
Lehigh Coal and Navigation Canal	36,145 "	50½ " 52
Schuylkill Navigation Canal	.... "	.....
" " p'f'd	435 "	14¾ " 14½
*Morris Canal, preferred	25 "	124

Total sales.....46,445 shares.

* Ex Dividend.

Sales of the various bonds for the period under review have been as follows:

	Amount.	Price.
Reading RR. 6s, 43-80	$8,500 at	102½ to ....
Catawissa RR., new 7s	500 "	106 " ....
H. and B. T. RR., consolidated bonds	9,000 "	54 " 55
Lehigh convt. gold loan	63,500 "	107½ " ....
Pa. and N. Y. Canal 7s	3,000 "	105 " ....
Schuyl. Nav. 6s, '95	1,000 "	80 " ....
L. V. RR. 6s, coup	6,500 "	102½ " ....
H. and B. T. 1st mort 7s	4,000 "	107 " ....
R. C. and I. Co. irregular mort. bonds, Hill Tract	17,000 "	66 " 67
Lehigh Nav. 6s, 1887	2,200 "	95 " ....
Reading RR. debenture bonds	.... "	.. " ....
" " R. G. M. 7s, coupons	.... "	.. " ....
" " new convertible 7s	65,000 "	105 " 106
Reading C. and I. Co. mortgage bonds, " " " " "	.... "	.. " ....
Hartman and Myer Tract	5,000 "	89 " ....
Reading C. and I. Co. mort. bonds, Tamaqua Tract	4,000 "	88 " 88½
Reading C. and I. Co. mort. bonds, St. Clair Tract	7,000 "	87½ " 88½
Lehigh Valley RR. 6s, registered	3,000 "	103½ " 103⅝
" " " 7s	9,000 "	108⅛ " 108¼
Lehigh Coal & Nav. Co. 6s, gold loan	5,000 "	79⅞ " 100⅜
" " " " 6s, RR. loan	6,600 "	99⅛ " 99¾
" " " " 6s, 1884	.... "	.. " ....
Schuylkill Nav. 6s, '82	3,250 "	80 " 82
" " 7 per cent. boat loan	800 "	93 " ....

Gold and Silver Stocks.

SAN FRANCISCO, Feb. 3, 1875.

The San Francisco Stock Market still continues its remarkable downward movement. The San Francisco papers give us a foreshadowing of the flood that is to come, and present a very gloomy picture of the combinations, pools, and cliques, and anxious investors who desire to realize. Consolidated Virginia shows a decline of $150 per share, as compared with our last. The California Mining Co., on the 2nd inst., increased their shares to five for one; this new stock is quoted at $53 per share which is equivalent to a decline of $95 compared with our quotation of the 27th inst. The Gould & Curry Mining Co. have doubled the number of their shares; this stock also exhibits a decline. Savage and Yellow Jacket are the only exceptions to the general downward tendency of the list, the report placing them respectively $15 and $10 in advance of our last quotations.

Gould & Curry	17	Overman	60
Savage	10c	Raymond & Ely	27
Chollar Potosi	62	Eureka G. V.	8
Ophir	150	Best & Belcher	42
Hale and Norcross	42	Kentuck	15
Crown Point	30	Meadow Valley	7
Yellow Jacket	78	Alpha	17
Belcher	40	Sierra Nevada	13
Imperial	10	Union Consolidated	8
Consolidated Virginia	365	Mexican	29
California	53	Caledonia	18

Copper Stocks.

BOSTON, Feb. 4, 1875.

The transactions in Copper Stocks during the past week have been very limited. Quotations are somewhat lower. The sales during the 3d inst. were as follows: 110 shares of Calumet and Hecla at 140; 100 shares of Allouez at 7; 50 shares of the Central Mining Co. at 23; 50 shares of the Franklin Mining Co. at 6¾, and 10 shares of the Copper Falls Mining Co. at $10 per share. A semi-annual dividend of $4 per share has been declared by the Central Mining Co., payable Feb. 10. The Ridge Mining Co. has also declared a dividend of $1 per share, payable Feb. 8th. Both of the above are payable at New York.

Allouez	7	Pewabic	—
*Calumet and Hecla Co.	129½	Phœnix	12
Copper Falls	9¾	*Quincy	36
*Central	—	*Ridge	6
Franklin	—	Rockland	1

*Ex-dividend.

We take from the *Commercial Bulletin* the following list of quarterly dividends, payable in February:

Payable	Names of Co.'s.	Capital.	Div.	Amount.
Feb. 15,	Calumet & Hecla Min. Co.	80,000 shares	$5	$400 000
" 1,	Gliberton Coal Co.	500,000	" 5p.c.	25,000
" 5,	Moingona Coal Co.	500,000	" 3 "	15,000
" 15,	Quincy Min. Co.	20,000	" $8	160,000

American Institute of Mining Engineers.

OFFICIAL BULLETIN.

Announcements to Members and Associates.

I. The ENGINEERING AND MINING JOURNAL, which is the Organ of the Institute, and contains its proceedings, transactions and notices of meetings, will be sent to each Member and Associate on the payment of his annual dues. Back numbers cannot, as a rule, be sent.

II. Dues (ten dollars per annum) are payable on election and at the annual (May) meeting. Members and associates elected at the February meeting pay ten dollars only to May of the following year. Remittances should be made, as far as possible, by P. O. Order, payable to the Secretary.

III. The February meeting of the Institute will be held in New Haven, Conn., on the 23d inst. The first session will be held in the Sheffield Scientific School, at 8 o'clock, P. M.

IV. Blank proposals for membership can be had on application to the Secretary.

V. The first volume of Transactions of the Institute will be sent by the Secretary to any address, on the receipt of five dollars.

VI. Members are earnestly requested to inform the Secretary promptly of any change of address.

THOMAS M. DROWN, Secretary, Lafayette College, Easton, Pa.

THE PENN MUTUAL
LIFE INSURANCE COMPANY
OF PHILADELPHIA,

OFFICE NO. 921 CHESTNUT STREET.

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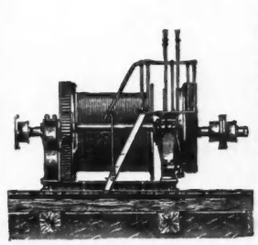

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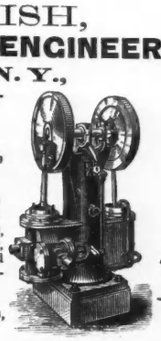

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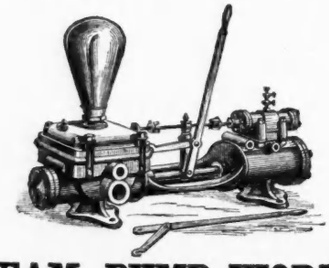

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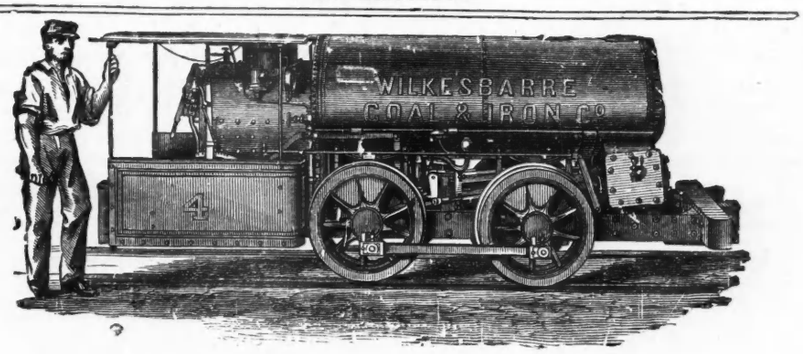

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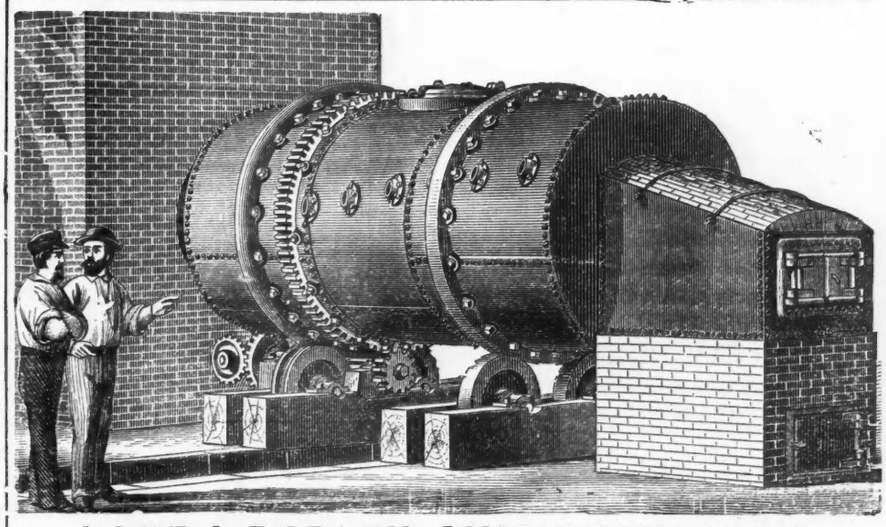

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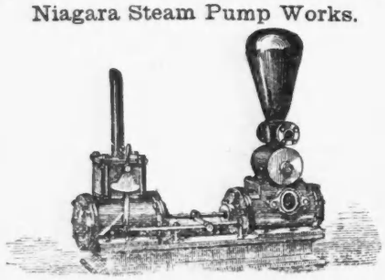

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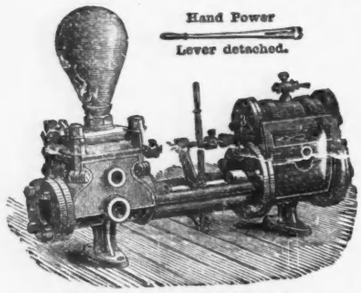

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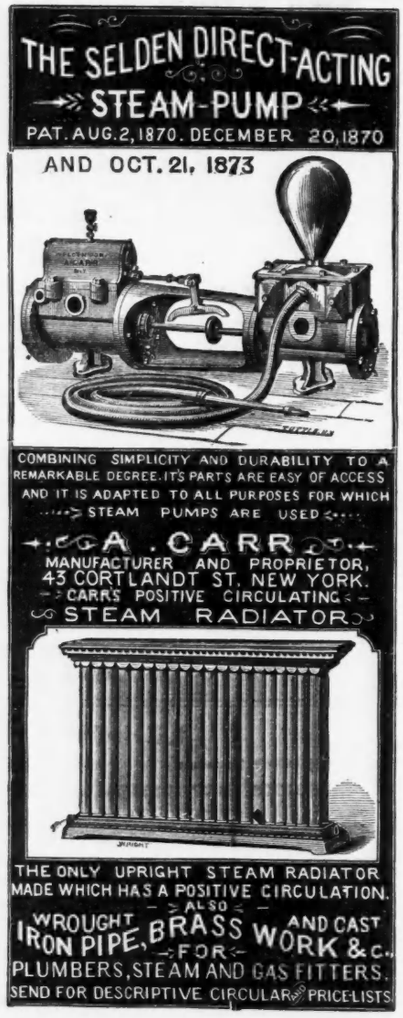

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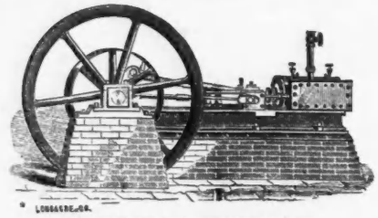

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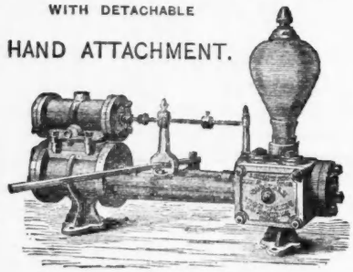

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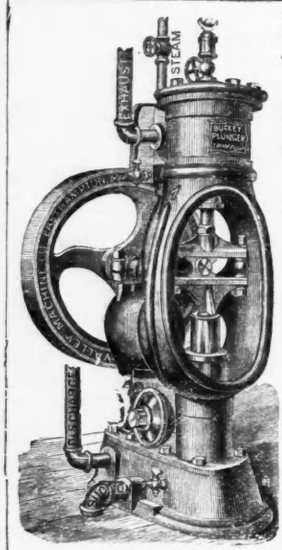

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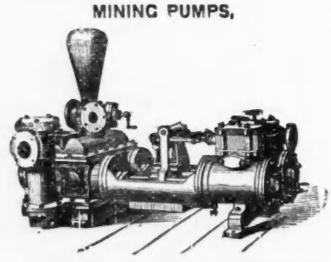

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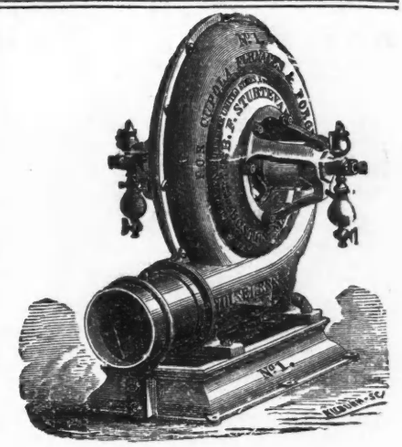

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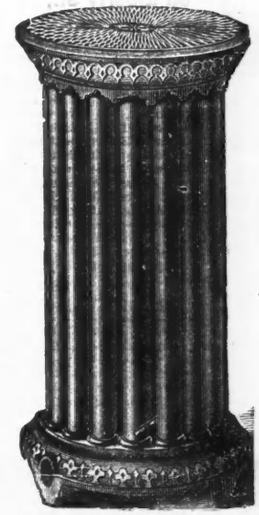
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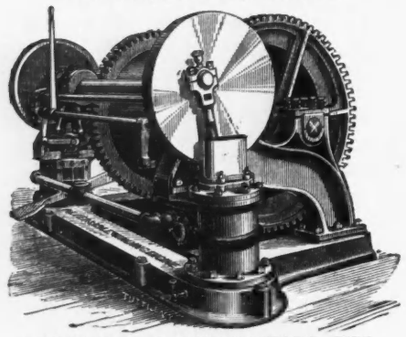

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☞ Look at following extract, Ingersoll Co.'s letter of excuses, ENGINEERING AND MINING JOURNAL, June 6, and compare with their advertisement: "I had *two* drills at the mine from the commencement, one beginning work on the 4th of April, the other on the 7th of the same month, and both drills working until the 1st of May." Signed, C. N. ELLIOTT, Superintendent Ingersoll Rock Drill Co.
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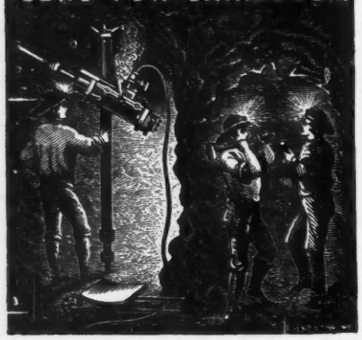

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