THE ENGINEERING AND MINING JOURNAL.

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Rae's Patent Voltaic Amalgamators and Washers.

Patented 1867, 1868—Perfected in 1872.

THIS invention consists in the arrangement of a voltaic pile in the interior of an amalgamating cylinder, and it is claimed that when the cylinder is charged with pulverized ore, quicksilver and proper chemicals, and then revolved, the galvanic current excited in the pile materially promotes the amalgamating process. One or more voltaic cylinders are arranged in a receiving tank which connects with a dolly-tub in such a manner that the pulp discharged from the voltaic cylinders can be washed, and the floating particles of quicksilver contained therein can be saved. The dolly-tub or agitator discharges into the patent washers, consisting of conical copper vessels, one large and one small, each resting upon a bench, and one emptying into the other. Into each a water-pipe is inserted, the pipe ending in a globe of copper pierced with holes on the lower half of the sphere. Water under pressure is admitted and forced through the small holes, in lively sharp jets, striking the sides and bottom of the copper cone. All the pulp is thus further thinned, washed and made to overflow, leaving the small globules of mercury to collect by gravity at the bottom.

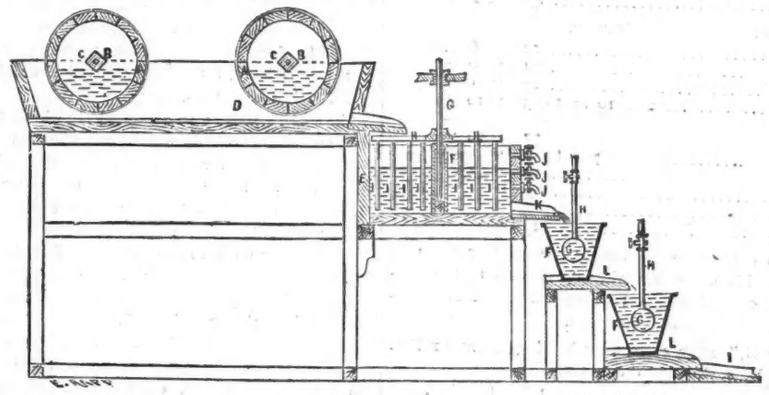

Figure 1.

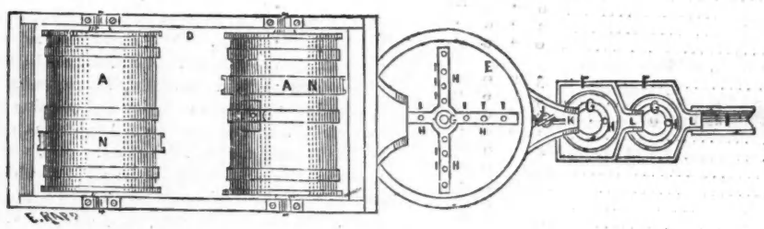

Figure 2.

RAE'S PATENT VOLTAIC AMALGAMATORS AND WASHERS.

By this method of treatment, it is claimed that Dr. RAE is able to keep his quicksilver from flouring to any injurious extent, and, moreover, to return it from its work, after each discharge, exceedingly sensitive, neither "tired" nor "sick," bright and "electrical." It is by flouring in ordinary amalgamation that mercury and gold are lost; and a languid appearance of the mercury, either during the work, or after the work is done, is held to be evidence that the proper conditions for amalgamation have not been maintained, and hence good results need not be expected. In this resides the mystery of close amalgamation. Dr. RAE claims that electricity, thus simply generated, accomplishes the desired effect, and hence recommends his process as one of great importance to those engaged in gold mining in the Southern States, and in our Western Territories. Full information may be obtained from Messrs. MOREY & SPERRY, No. 88 Liberty Street, New York City.

The Wilmington, Illinois, Coal Field.*

BY JASPER JOHNSON, M. E.

CONTINUED FROM PAGE 305.

THE Wilmington Coal Mining and Manufacturing Company, office at Diamond City, Grundy County, operates two shafts, one on the northeast corner of section 1, in Braceville township, the other on the southwest corner of section 31, Wilmington township, the coal being shipped from Braidwood station. Smaller operations are carried on at Braceville (two shafts), at Gardner (one shaft), at Jugtown, in Felix township, Grundy County, and in Essex township, Kankakee County, the coal being raised at the two last named places by whim shafts.

* A paper read before the American Institute of Mining Engineers at Hazleton, Pa., October, 1874.

The product of the Braidwood mines has rapidly gained favor in the markets, and is now shipped all over Northern Illinois, Iowa, Michigan and Wisconsin. The following table will give an idea of the growth of this interest in this locality:

	Tons.
Coal mined in 1866 (about)	10,000
" " 1867	90,000
" " 1868	150,000
" " 1869	265,000
" " 1870	285,000
" " 1871	309,000
" " 1872	460,000
" " 1873	465,400
" " 1874, to October 1st	240,000

A "strike" from June to September, during which time none of the mines produced any coal, accounts for the meagre out-put of this season. In 1873, the total production would have reached a half million tons if the money panic had not swept over the entire country, closing up the majority of the manufacturing establishments, and materially crippling the railroads.

All the shafts at Braidwood, except one, are operated by the system known as "long-wall advancing," extracting all the coal, except a sufficient pillar to support the bottom of the shafts. The exception is that owned by J. Q. A. KING, and is worked in "pannels," by "long-wall retreating." This method was adopted from the fact that the roof, instead of being composed of soft clay shales, as in all the other shafts, is a very hard, compact conglomerate, almost defying the action of powder, and consequently furnishes no material for building the "walls" or "gob-roads" peculiar to the ordinary long-wall system. The rooms are usually worked by three men, two miners and a pusher, producing daily, when work is full, from five to eight tons of merchantable coal per day, per room. Coal, at prices paid for mining for the past four years, delivered on board cars at the mines, cost from $1 85 to $2 25 per ton, varying according to the regularity of time worked during the month, the average selling price at the mines being about $2 60 by the car load. A first-class shaft in this district, developed to a capacity for producing one hundred tons of coal daily, including the most approved patterns of hoisting machinery, costs from fifteen to twenty-five thousand dollars, varying with the depth of material passed through. In addition to this outlay, railroad tracks and sidings, connecting the mines with the main line of the Chicago and Alton railroad, cost from five to fifteen thousand dollars, varying with the length of track and the cost of iron. Great inducements are held out to capitalists for the investment of money in this field, owing to the soft nature of the measures and the moderate depth of the coal, requiring but a comparatively short time in which to commence realizing on investments, the time required for sinking and timbering a shaft varying from one to three months, according to depth. Everything being favorable, a vigorous prosecution of operations will usually place the operator in a position to commence

paying expenses, if not showing a margin for profits, within six months from date of breaking ground. Coal lands, not occupied by *bona fide* operators, sell from one hundred to one hundred and forty dollars per acre. Some mines are operated under royalty leases, the operator paying fifteen cents per ton when mined and marketed. This field has been singularly free from disturbances arising from "strikes," owing to a system of written contracts between the operators and miners entered into annually, wherein all the important details relating to price and discipline are specifically provided for. In practice these contracts have worked well, and the district presents the spectacle of the most prosperous and intelligent body of miners to be found anywhere in the West.

Following are the vertical sections of a few openings, given to show the average depths and conditions of the strata :

EAST PART OF SEC. 30, T. 32 N., R. 9 E.—REED TOWNSHIP.

1. Drift	35	feet.
2. Clay Shale	43	"
3. Coal	3	" 4 in.
Total	81	feet 4 in.

CENTER OF SEC. 17, T. 32 N., R. 9 E.—REED TOWNSHIP.

1. Drift	43	feet.
2. Shale	41	"
3. Coal	3	" 2 in.
Total	87	feet 2 in.

At no great distance from this point the east line of the coal field crosses the C. & A. R.R., running nearly due North and South.

CENTER OF SEC. 31, T. 33 N., R. 9 E.—WILMINGTON TOWNSHIP.

1. Drift	25	feet.
2. Shale	15	"
3. Coal	3	" 2 in.
Total	43	feet 2 in.

EAGLE SHAFT—BRAIDWOOD STATION.

1. Soil and drift	22	feet 6 in.
2. Sandstone—water-bearing	24	" 0 "
3. Clay shale—"soapstone"	27	" 6 "
4. Coal	2 ft. 10 in. to 3	" 10 "
	77	" 10 "
5. Fire clay	7 ft. to 8	"
6. Coarse, porous, water-bearing standstone	12	"
7. Fire clay	3	"
8. Coarse sandstone	6	"
9. Greenish fire clay	15	"

The section below the coal was obtained while boring for another seam of coal. No. 9, designated as "greenish fire clay," evidently belongs to the Cincinnati group, the party in charge of the boring not being competent to distinguish between these shales and those of the coal measures.

C. W. & V. COAL CO.'S SHAFT "G," NEAR CENTER OF N. E. QUARTER OF SEC. 7, T. 32 N., R. 9 E.—REED TOWNSHIP.

1. Black soil	1	foot	6 inches.
2. Yellow sand	7	"	0 "
3. Blue clay	0	"	6 "
4. Water-bearing gravel	0	"	6 "
5. Clay, mixed with small boulders	3	"	6 "
6. Water-bearing gravel	0	"	6 "
7. Clay, mixed with small boulders, pebbles, and fine sand	3	"	0 "
8. Clay, mixed with pebbles and fine sand	4	"	6 "
9. Clay, mixed with small pebbles and gravel	4	"	0 "
10. Blue laminated clay	5	"	0 "
11. Soft porous sandstone	4	"	0 "
12. Grey clay shale, quite soft	15	"	0 "
13. Blue clay shale	27	"	4 "
14. Coal	3	"	4 "
15. Clay	0	"	3 "
16. Coal	0	"	6 "
17. Fire clay, (good quality)			
Total	80	feet	5 inches.

C. W. & V. COAL CO.'S SHAFT "H," CENTER OF SOUTHEAST QUARTER SEC. 6 T. 32 N., R. 9 E.—REED TOWNSHIP.

1. Black soil	1	foot	4 inches.
2. Yellow sand	1	"	8 "
3. Yellow clay, impervious to water	2	"	0 "
4. Yellow clay, mixed with sand	2	"	6 "
5. Blue silt, the last two feet containing small boulders.	4	"	6 "
6. Hardpan	3	"	6 "
7. Hardpan, containing streaks of a hard, black substance, resembling rotten wood	2	"	6 "
8. Blue indurated clay	2	"	0 "
9. Alternate layers of clay, sand and gravel, the first eight feet being very hard, resembling soft sandstone	17	"	0 "
10. Blue shale	1	"	0 "
11. Sandstone	2	"	0 "
12. Blue shale	0	"	6 "
13. Sandstone	14	"	0 "
14. Blue shale	24	"	6 "
15. Coal	3	"	3 "
16. Massive bed of fire clay			
Total	82	feet	3 inches.

The Eureka Coal Company found coal in their shafts at the following depths :

Shaft No. 1, 115 feet. } Coal, 3 feet 6 inches at shaft.
Shaft No. 2, 88 " }

Wilmington Star Coal Company :

Crombie Shaft, 76 feet. } Coal, 3 feet.
Bailey " 72 " }

King's Shaft, 92 feet; coal, 3 feet.

No detailed sections of these shafts made public.

The northern and eastern outline of the coal in this county was very accurately stated in the Geological Report of Illinois, under the caption of Will County, all subsequent borings substantially verifying the line then drawn. I quote from page 212, Vol. IV. ; "Entering the county near the northwest corner of section 30, town. 33 North, range 9 East, it passes diagonally to the center of the south line of this section ; thence to the middle of the east line of the northeast quarter of section 31, and eastward to the same point in section 33 ; thence diagonally to the center of the north line of the northwest quarter of section 3, township 32 ; thence southwest to the center of the west line of the same section, and to center of south line of section 4 ; thence to the southwest corner of section 9, and in nearly the same course to the center of section 20 ; thence due south into Kankakee County."

TO BE CONTINUED.

Gas Manufacture in Paris.

THE Parisian company for lighting and heating by gas, founded in 1855 by the union of several companies which, previous to that time, divided the work of lighting Paris, produces a quantity of gas which exceeds annually 140,000,000 of cubic metres. The manufacture of gas is carried on in ten works, which supply both Paris and its suburbs. They are those of La Villette, Ternes, Passy, Vaugirard, Ivry, Belleville, Saint Mandé, Saint Denis, Boulogne, and Maisons-Alfort.

The chief product of manufacture is gas for lighting. It is obtained either in ordinary gas-retorts, or in the coke-furnaces patented by MM. Pauwels and Dubochet. The coke proceeding from distillation of the coal, when it comes from the retorts, is used for domestic heating, because it is very light ; the coke from the furnace, on the other hand, being hard and very dense, is sold either for railway uses or for metallurgical industries.

The company also possesses works in which it treats the sub-products of distillation, and other works in which are prepared the apparatuses necessary either for its exploitation or for the utilisation of its products by trade and the public. It is thus that the tar and ammoniacal waters form the object of special manufacture in one separate establishment, and in three workshops established in three of the principal gasworks.

The company itself manufactures at La Villette the retorts and all the refractory products it uses in its works; and the arrangement is on such a scale that furnace-pieces can be supplied to gas-works at a distance that may desire them. A copper smith's work-shop, also at La Villette, gives the company the means of providing all the apparatus of plate metal required in its operations, such as gasometers, reservoirs for water, tar, condensers, &c. In still another workshop it constructs the gas-engines, which, employed for several years past in different parts of Parisian industry, have popularized the use of gas as a motor force, replacing, advantageously in some cases, the steam-engine, and always with economy, manual labor. Lastly, it executes the laying of the pipes by which the gas circulates in the public streets. These operations are of great importance from the large consumption of gas, and the difficult conditions encountered in the streets of a large city like Paris. To satisfy the requirements of the service the company has devised new processes of laying and jointing the pipes, had recourse to pipes of uncommon diameter, and special apparatus, stop-cocks, &c.

The treatment of tar, the quantity of which annually exceeds 25,000 tons, is done in the central works at La Villette, which contains steam engines with a total force of about 80 horse-power, and employs ordinarily more than 120 workmen. This workshop, completely changed within the last five years, occupies a surface of 5½ hectares. The principal products obtained are :—The light essences, which undergo in one workshop various special treatments, the aim of which is to obtain the commercial products known under the names of benzine, for scouring, application of caoutchouc, &c. ; phenic acid, for preparation of picric acid and disinfection ; benzole, primary matter in the manufacture of aniline ; a new manufacture, that of anthracene products, employed in the preparation of artificial alizarine, has of late been added to the others. The heavy oil is utilised for conservation of wood, for oil paintings, and the manufacture of smoke-black, and can also be advantageously used in heating furnaces and steam boilers. The pitch is employed for agglomeration of slack coal, preparation of artificial bitumen, &c. Lastly, to utilise a residue which is almost without value, and always encumbering, an abundant product in gas works, coke-dust, the company has recently erected a special workshop, in which this dust is agglomerated with pitch. It thus obtains a fuel suitable for heating steam-boilers, and which may be mixed, in a certain proportion, with the coke used in heating gas-furnaces.

To avoid the inconveniences which may arise from the operations of a gas industry in the interior of a place like Paris, several important improvements have recently been introduced. Thus, to render impossible the infiltration of oily products into the ground—the effect of which is to alter the nature of water supplying the wells on neighboring properties—the tars and oils produced are stored in large reservoirs of sheet iron, placed at an elevation on blocks of masonry. These reservoirs are, besides, so arranged as to permit an easy surveillance at their edges, and also to economize a large part of the expense of manual labor at the

time of delivery. The oils, received directly on coming out of the serpentines, in iron tanks, are forced by air-pressure into the reservoirs. By this simple combination considerable labor is saved, while waste and causes of fire are avoided. Another special arrangement provides for the avoidance of the odorous emanations which would otherwise be produced while the pitch is being decolored in the basins. This arrangement permits of distributing daily, in the pits, and at a distance of more than 100 metres, without production of vapors, a quantity of more than 180 tons of pitch. Lastly, in the work of prolonged distillation of tar, in order to produce anthracene, an agitator apparatus of special arrangement has been fitted to the boilers, which is kept in action throughout the process. In this way are largely reduced the deposits which form at the bottom of the boilers.

The ammoniacal waters produced by distillation of coal are treated in these special works by means of apparatus devised by M. MALET. The quantity of ammoniacal products obtained in these works reaches annually about 3000 tons. The products are sulphate of ammonia, used for manufacture of alum, and in agriculture; its use as manure has been considerably developed within the last four or five years. The nitrogen assimilable by plants occurs in sulphate of ammonia in the fixed state, and so is not liable to be volatilized and lost, like that of Peruvian guano, and of every fermentable matter. Its effects are less rapid than those of guano, but they are more durable. The volatile alkali, or solution of caustic ammonia in water, is used for dyeing, scouring, frigorific machines on Carré's system, etc.

The introduction of special apparatus, combined so that the vapors liberated during the treatment of ammoniacal water are carried to hearths at the foot of tall chimneys, suppresses all inconveniences to the neighborhood, at the same time improving the general conditions of health in the workshops. The new apparatus, manometer and safety-valves, fitted to the boiler for distillation, obviate accidents which might sometimes occur from obstruction of the pipes by ammoniacal salts.

It is also at La Villette, and near the Saint Denis canal and the railways du Nord and de l'Est, that the works for manufacture of refractory products is centralized. The process of crushing and mixture of earths and cements, the kneading of the paste, and the conveyance to the bottom of the work, are effected mechanically with a steam-engine of 40 horse-power. The shaping of the pieces, which requires the greatest care, is done only by hand. The workshops, in which the products are dried, are heated, without expense, both by the heat lost from the baking-furnaces, and by the escape steam of the engine, circulating in pipes round the appartment. The baking is done in furnaces having two or four hearths, heated with coke got from the gas-works.

The quantity of retorts made annually is about 3,000. There are produced, besides, more than 20,000 various pieces of extra-refractory composition, for the fitting up of furnaces (blocks, arch-stones, &c.) and a million of refractory bricks.

The company has, further, found a means of utilising the slag from the hearths of gas-furnaces; it is made to enter into a composition containing more than half its weight of this matter, and thus very hard materials are obtained for paving of workshops, stables, &c.—*Iron.*

NEW PUBLICATIONS.

Harper's Magazine for November contains some articles of peculiar interest to many readers of this Journal. *The first Century of the Republic* is the inappropriate title of an interesting review of the great mechanical inventions of the last hundred years. A large part of these invensions, such, for example, as NEWCOMEN'S and WATT'S engines, STEPHENSON'S and other locomotives, early spinning machines, &c. &c. are necessarily foreign, and another title would have been more appropriate. The article on *The Transit of Venus* will well repay perusal. It puts a popular form to the question now attracting such great attention. There is the usual amount of entertaining reading, with which the readers of the Magazine are familiar.

A Practical Theory of Voussoir Arches. By Prof. WM. CAIN, C. E. Published by D. VAN NOSTRAND, 50 cents.

This useful little book is one of VAN NOSTRAND'S *Science Series.* It is a plain and simple exposition of the theory of MOSELY, amplified by Dr. SCHEFFLER. In the present form, Prof. CAIN simplifies, explaines and illustrates the most correct theory of Voussoir arches, and in doing so has performed a real service to the profession.

The Belcher Mine Fire.

THE timbers in the new air shaft in the Belcher mine, on the Comstock, were recently discovered to be on fire. About 2 P. M. the fire broke out on the 800-ft. level, and a few moments afterward a huge volume of smoke poured out of the mouth of the shaft. An immense stream of water was brought to bear on the fire through the hoisting works' hose. Half an hour after the commencement of the fire the flames, which had hitherto been smouldering, burst out into the air with terrific violence, a distance of several hundred feet, hurling fragments of rock in every direction. At this stage the fire resembled a huge volcano in active operation. The few men who worked in the shaft when the fire broke out had a narrow escape from death.

When it was found that the flames could not be extinguished from above, eight men were lowered from the hoisting works to the drift at the 1000-ft. level to tear out the timbers and the track communicating with the air-shaft, and build a bulkhead to prevent the spread in that direction. The current of air is usually down the air-shaft, but the heat from the flames reversed the process, and the wind sucked down the shaft at the hoisting works. The men were engaged in the work, and succeeded in tearing up the timbers and the track, and had partly accomplished their object, when a fearful cave came down the air-shaft, which forced the flames as from the mouth of a huge cannon, full upon them. The result was most fearful. Six of the eight men were severely burned, and the other two more or less injured. The unfortunate men were speedily brought to the surface. They had done sufficient to prevent the flames from reaching the stopes connected with this level, wherein had been the chief danger. From this time the flames began gradually to subside. The opinion as to the origin of the fire is that it arose from the carelessness of one of the men employed in the 850-ft. level in leaving a burning candle sticking in the timbers. There are about 1000 men employed in the mine, and although strict injunctions are given to use every precaution with candles, still among so many there are sure to be some of careless habits.

Nitre Trade of Peru.

LIMA, 13th October, 1874.

During the perfect tranquillity at present prevailing in the Republic, popular attention is principally directed towards the different plans proposed with reference to the exportation of Nitrate of Soda. It appears to be a foregone conclusion that the law known as the *Estanco* will be repealed. It is generally believed that the two houses will adopt a resolution, obliging the exporters of nitrate to pay a duty of at least 25c. per quintal, and there even has been presented in the Chamber of Deputies a bill to the effect that the tax should be raised sixty cents. The favorite argument employed is that as a fertilizer nitrate is a dangerous competitor abroad to guano, and from the sales of the last-named article the country must find the resources to discharge its financial obligations in foreign markets. Possessed as is the Republic of the reserve fund to be derived from the sale of the seven million and a half tons of guano of a most superior quality recently brought to light in the South, it seems unjust to strike a death-blow at the nitrate trade in which colossal fortunes are invested, and an opening is afforded to many who can find no other means of employing their time and capital. Moreover, we have been made aquainted with the circumstance, deduced from the reports of leading foreign houses engaged in the sale of fertilizers, that nitrate is vastly inferior to guano in its producing properties, and that the negotiation of the one article need by no means interfere with that of the other. No definitive action has yet been taken by Congress. The manufacturers of nitrate of soda, and the foremost commercial men of the Province, held a meeting a few days since and appointed a committee, now in Lima, to represent their interests and oppose, as far as might be possible, the designs of the Administration and its supporters in the Assembly. —*Panama Star and Herald.*

The "Charlotte" Furnace.

THE product of Charlotte Furnace, located at Scottdale, Westmoreland County, for week ending October 31, 1874, was 319½ tons (of 2268 lbs.) grey forge metal. Average per day about 45½ tons. The proportion of Lake Superior ore used was one-eighth, balance Bloomfield hematite and raw native carbonates. The largest product for a single day was 40 300-2268 tons. The average yield was 45 per cent. This furnace is 16½ feet across the boshes.

One important cause of the increased production is the *lower temperature*, and consequent *greater dryness* of the air. According to L. LOWTHIAN BELL, the humidity of the atmosphere during the fall months is, on the average, about 40 per cent. less than that of the summer months. Another cause is found it the *dry condition* of the stock, both ores and fuel—no rain having fallen in this vicinity for some weeks. The third and, perhaps, the most important cause of all, is owing to the fact that our ores have been comparatively free from clay, slate, &c., the result of more careful attention and selection, both at the mines and in the stock-house. The temperature of the hot blast has not been increased—it being the rule never to carry over 800° F. More iron could doubtless be produced with a higher temperature of blast, but it would be at the expense of the hot blast pipes, and *quality* of metal. I will add, for the benefit of those using *cylinder* boilers, that our experience has been decidedly in favor of this class of steam generators.—*Frank Cowan's Paper.*

Iron Works at Sherman, Texas.—One Hundred Per Cent. Profit. (Estimated.)

A COMPANY is being formed for the purpose of erecting a blast furnace and rolling mill at Sherman, Texas, to work the red and brown hematite ores of the district. These are said to yield 39½ per cent. of metallic iron. The Company issues the usual questionable estimates of the cost of making iron; $18 is considered to be the figure, but, for safety, $23 is allowed for charcoal pig, which, it is claimed, is worth in St. Louis $36, netting $13 per ton. The *estimated* profits of the enterprise are nearly 100 per cent. per annum on the capital of the company, which is put at $225,000. In these dull times it is refreshing to find some corner of the country where people can still estimate on the profits of the good old times. It would be cruel to suggest even that these *estimated* profits may be merely an optical illusion, a kind of *mirage* of the old style profits, which have disappeared below the horizon of to-day. If not, it is a good time to "go west."

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

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Pumping Machinery.

WE publish in another column a highly interesting communication from Mr. HENRY R. WORTHINGTON, one of the leading hydraulic engineers and designers of water-works machinery in the United States. Mr. WORTHINGTON'S frank admission of his commercial interest in the questions which he discusses, does not, in our opinion, invalidate his judgment or his authority. Everybody who knows him will place as high a value as we do upon any statement of fact to which he is willing to sign his name. We cannot give further space this week for observations upon the general subject of duty-trials as they have frequently been conducted, and particularly of those trials by which the extraordinary figures, even exceeding 100,000,000 foot-pounds, have been obtained from Cornish and other engines ; but we promise ourselves to recur to the subject soon, and to give our readers an analysis of one or two instances, by way of illustration. Another point which it will do no harm to ventilate, is the peculiar manner in which specifications are drawn, in many cases, by boards of commissioners authorized to contract for water-works machinery. It seems to us that some conditions which we find imposed by such specifications upon competitors, although they may have been devised with a view of securing efficiency, really operate so as to narrow competition, and even exclude machinery of acknowledged excellence. Of course the honorable Boards referred to do not distinctly contemplate anything of this kind, and will be obliged to us for pointing out to them their unintentional mistakes.

Missouri Iron Ores.

Dr. ADOLF SCHMIDT, of the Geological Survey of Missouri, publishes an interesting article in the report for 1874, the continuation of his labors in the volume of 1872, relative to the iron ores of that State. The present article refers to the metallurgical properties of the Missouri iron ores and their fitness to foundry, mill, Bessemer, and crucible-steel purposes. The ores of Iron Mountain, Pilot Knob, Shepherd Mountain, and the specular and mixed ores of Central Missouri, as well as the limonites of the State, are tabulated by Dr. SCHMIDT according to a system indicating their grade of fitness for these purposes : "No. 1" signifying so good a quality, that the ore may be used exclusively, or nearly so, for the purpose referred to ; "No. 2," a medium grade, permitting the use of the ore in considerable proportion (one-half or more) mixed with better ores ; "No. 3" indicating so slight an adaptability to the purpose as to permit the use of the ore in a small proportion only. Omitting Dr. SCHMIDT'S remarks and explanations, and thereby doing him some injustice, we may give as follows a condensed statement of the grades which he has determined for different ores and for different purposes.

For the manufacture of charcoal, or coke, or raw-coal foundry iron, all the classes of Missouri ores, with the exception of Pilot Knob, are graded as "No. 1," though those of Iron Mountain and Shepherd Mountain are pronounced to be hardly phosphoric enough for use by themselves. Pilot Knob ore is graded as "No. 2" for charcoal foundry iron, and the poorer ore from Pilot Knob, namely, that containing less than 55 per cent. of iron, is graded as "No. 3" for foundry purposes with coke or coal as fuel. The trouble with the Pilot Knob ores is that they are too siliceous. They bear the same classification under the head of mill iron, where, however, the limonites appear in the third grade, being too phosphoric for this purpose, and Shepherd Mountain and Iron Mountain being ranked in the first grade.

For Bessemer iron, which Dr. SCHMIDT says should contain 2½ per cent. of silicon, and not over 0.11 per cent. phosphorus, Pilot Knob ore is graded as "No. 1" for charcoal fuel, and Shepherd Mountain and Iron Mountain, together with mixed specular ores of Central Missouri, are classed as "No. 2," the two former being not sufficiently siliceous, and the latter being too phosphoric. This is the fault, to a still greater degree, of the limonites, which consequently appear in the third grade. When coke or coal is used as fuel, Shepherd Mountain and Iron Mountain become "No. 1," and this classification is retained by the best Pilot Knob ores, though they are, under these circumstances, rather siliceous. Specular ores, lean Pilot Knob ores, and limonites, are classed as under charcoal.

For crucible-steel iron, charcoal being fuel, Shepherd Mountain and the best Pilot Knob are marked "No. 1," the latter being rather siliceous ; Iron Mountain (too phosphoric) and the poorer Pilot Knob ores (too siliceous) are classed as "No 2 ;" while the mixed specular ores and the limonites, being too phosphoric, appear as "No. 3." When coke or coal is used, the Shepherd Mountain ore heads the list, being the only one which Dr. SCHMIDT classifies in the first grade under these conditions.

He recommends calcination under all circumstances for the limonites, and thinks it will also prove advantageous to the Iron Mountain and Pilot Knob ores as well as, in some measure, to the Shepherd Mountain and Central Missouri ores. The use of some Missouri ores in fettling is pointed out by Dr. SCHMIDT. As he remarks, good fettling ore must be able to stand a high temperature without cracking and falling to pieces and without smelting. It should, therefore, not contain much water, nor much quartz, nor any admixture which would be liable to lower its smelting point, as alumina, lime, magnesia, alkalies. Neither should it contain much sulphur or phosphorus. It should be compact, so as not to smelt and to dissolve too rapidly when in contact with the iron bath in the puddling furnace. It should, finally, be neither too brittle nor too tough, so as to be conveniently broken into that shape in which it just happens to be needed for fixing up the puddling-walls.

Missouri contains, according to Dr. SCHMIDT, excellent ores for this purpose, especially the specular ores from Iron Mountain, Shepherd Mountain, and from the central ore regions. The last named ores, however, have to be picked, so as to separate the softest ore and to obtain the hard, unaltered ore as pure as possible.

The Properties and Uses of Extra Soft Cast Steel, obtained by the use of Ferro-Manganese.

CONCLUDED FROM PAGE 309.

CAST STEEL plates are now used in the construction of the French navy. None but the extra soft steel made with ferro-manganese has been found to fulfill the following

SPECIFICATIONS FOR STEEL BOILER PLATE FOR USE IN THE FRENCH NAVY.

Hot Tests.—From a piece cut from an angle iron, taken at random, there will be formed a cylindrical sleeve in such a manner that one of the leaves of the angle iron remains in a plane perpendicular to the axis of the cylinder formed by the other leaf. The interior diameter of the cylinder will be equal to 2½ times the width of the leaf left standing. A piece cut from another bar will be opened out till the two leaves lie in the same plane. A third piece taken from another bar will have the two leaves folded together. The pieces thus tested with all the precautions called for in working with a homogeneous (cast) iron should be perfectly free from cracks, flaws, or breaks, which would indicate an imperfect welding.

Tempering Tests.—Bars 1.6″ wide by 10″ long, taken in the direction of the rolling, will be cut from some of the angle irons ; these pieces will then be heated to a rather dark cherry-red, and plunged in water of 82° F. They should then show no more sign of temper than wrought iron of the best quality.

Cold Tests.—There will be cut from the ends of each angle iron two bands 13.8″ long by 1.2″ wide. These, after being reheated and straightened out with the mallet, are planed off on the sides over the space of 0.8 x 8″. The planed portion of the edges of each band shall be connected by long curves with those portions of the edges which have been left rough. In this condition the bands will be subject to carefully measured increasing tensile strains till they break. The initial load will be 25.5 tons per square inch of section, and will be maintained for five minutes. Additional loads of 0.3 ton per square inch section will be applied at intervals of one minute, and after the addition of each the elongation of the piece will be noted. The mean of these tests should give figures not inferior to the following :

Mean breaking weight per square inch of section ..... 29 tons.
Elongation corresponding to this load ..... 20 per cent.

No single test made on what is considered a sound bar must stand a less breaking weight than 25.5 tons per square inch section, nor give a less elongation under it than 13 per cent. Every angle iron that does not stand these tests shall be rejected.

BOILER PLATE AND COVER PLATES OF MALLEABLE CAST STEEL.

Hot Tests.—There will be made a spherical cap with a flat edge in the original plane of the plate. The chord of this cap measured on the inside will be

equal to ten times its thickness. The flat rim will have a width seven times the thickness of the plate, and will be connected with the spherical portion by a curve having a radius equal to the thickness of the plate. This curve will be measured in the interior of the angle. The cap made in this manner with every necessary precaution should have neither crack nor flaw. This test will be made at least once for each different thickness of plate, and will be repeated as often as the enginee rin charge shall deem desirable.

Tests for Tempering.—Pieces 10 in. long by 1.6 in. wide will be cut from the plates both in the direction of the rolling and across it. These pieces will be heated to a dull cherry-red and then plunged into water at 82° Fah. They should show no more sign of temper than would bars of the best wrought iron.

Cold Tests.—Three pieces 13.8 in. long by 1.2 in. wide will be cut from the end of each plate, and these will be planed and subjected to the same tests as were the test pieces taken from angle iron. The initial load applied will be 25.5 tons and the elongation produced by successive additions to the load will be noted up to the point of rupture. The mean results of these tests should not be below the following :—

For plates above ¼" thick { Breaking load per square inch section, 29 tons. Corresponding elongation..... 20 per cent

For plates up to ¼" thick { Breaking load per square inch section, 29 tons. Corresponding elongation..... 18 per cent

In addition, no sound plate should stand less breaking load than 25.5 tons per square inch section, nor give a corresponding elongation of less than 13 per cent. Any plate not fulfilling these conditions will be rejected.

For cover plates the mean of the tests should give :

	Lengthwise.	Crosswise.
A breaking load not less than	30.5 tons.	26.5 tons.
Corresponding elongation	22 per cent.	18 per cent.

The uses to which the extra soft cast steel is applied in the French navy are as follows :

1. High pressure boilers.
2. Inside pieces, requiring, at the same, time great stiffness and lightness.

The French navy has not yet commenced making the entire hull of the vessel of soft steel. In the first trials, which were made with plates manufactured from *hard, highly carburetted* steel, it was found that those parts in constant contact with the salt water did not withstand its action as well as iron plates ; the experience of the Terre-Noire Company has changed this, for if we expose to the action of salt water plates of wrought iron, of extra soft steel and of the ordinary hard steel we find that the soft steel corrodes the least, the wrought iron comes next and the hard steel is the most injured. It would seem as though in the case of the latter there took place a kind of electric action due to the presence of carbon in considerable quantity, and which facilitates the oxidation of the metal by the salt water.

It is unnecessary to dwell upon the advantages which the use of extra soft steel offers in the construction of vessels ; it allows the weight of the hull to be reduced one-third, and even in some cases one-half. The capacity for useful freights will be correspondingly increased.

The first tests which have been made with this soft steel in the French mercantile navy having been entirely successful there appears to be a large field opening in this direction for the use of this metal.

In England, the distinguished engineer, Sir WM. FAIRBAIRN, made a series of experiments with extra soft cast steel. The results of these is given in the following letter to Mr. FERDINAND KOHN, of the Terre-Noire works:

MANCHESTER, November 10, 1870.

DEAR SIR : I have many apologies to make for the delay that has occurred in the completion of the experiments on the samples of steel submitted for that purpose. It would have given me pleasure to have done them at once, but I was seriously out of health at the time and had to leave home for several weeks. Since my return I had to work up arrears, and these untoward events will account for the delay.

The steel submitted for experiment consisted of six samples, which I have numbered I., II., III., IV., V., VI.; and, taking them altogether, they exhibit, according to the summary of results, considerable uniformity of character as regards ductility and strength. The highest as regards tenacity is below the average resistance of steel, but this is largely compensated by its ductility and powers of elongation, and *we have nothing comparable with it in any of the various manufactures with which I am acquainted.* In its powers of resistance to a tensile strain it stands against the Barrow steel as 27.1 to 32.2 ; but in ductility it stands in the ratio of .219 per unit of length to .0922 of the Bessemer steel manufactured at Barrow from the hematite ores. There are important features in the character of this description of manufacture, and it is admirably calculated for being drawn into the finest wire. I send you for comparison a copy of the report read to the British Association for the Advancement of Science on the mechanical properties of steel.*

The results of these experiments will show the difference between the steel manufactured by the Bessemer and Siemens-Martin process at the "Compagnie des fonderies" at Terre-Noire, and in hopes that the test may prove satisfactory and productive, I am, dear Sir, yours faithfully.

WM. FAIRBAIRN.

* Is not annexed here.

TERRE-NOIRE IRON CO.

SPECIMEN OF ¼ INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D 1.

Area of specimen before testing : 1.992×.264=.5258 sq. inch.

No. of experiment.	Weight laid on in lb.	Breaking Weight per square inch in lb.	Elongation per unit of length.	Remarks.
1	9,502		not perceptible	
2	12,862		"	
3	16,222		"	
4	19,552		"	
5	22,612		.029	
6	24,502		.035	
7	26,092		.042	
8	26,932		.046	
9	27,772		.0492	
10	28,612		.078	
11	29,452		.0837	
12	30,292		.1015	
13	31,132		.120	
14	31,972		.1817	
15	31,972	60,806	.231	Broke.

Fractured area : 1.696×.1532= .2598 sq. inch.—50.059 per cent. reduction of area.

SPECIMEN OF ¼ INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D. 2.

Area of specimen before testing 2.03×.264= .535 sq. inch.

No. of experiment.	Weight laid on in lb.	Breaking weight. per square inch in lb.	Elongation per unit of length.	Remarks.
1	9,502		not perceptible	
2	16,222		"	
3	19,552		"	
4	22,612		.0275	
5	26,092		.0475	
6	27,772		.0685	
7	28,612		.0835	
8	29,452		.106	
9	30,292		.1542	
10	31,132	58,190	.225	Broke.

Fractured area : 1.744×.1296= .2260 sq. inch.—57.76 per cent. reduction of area.

SPECIMEN OF 5-16 INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D 3.

Area of specimen before testing : 1.434×.342= .49 sq. inch.

No. of experiment.	Weight laid on in lb.	Breaking Weight per square inch in lb.	Elongation per unit of length	Remarks.
1	9,502		not perceptible	
2	16,222		"	
3	19,552		"	
4	22,612		"	
5	26,092		.0267	
6	27,772		.0362	
7	28,612		.0450	
8	29,452		.0545	
9	30,292		.0632	
10	31,132		.0760	
11	31,972		.1130	
12	32,810	66,959	.190	Broke.

Fractured area : 1.12×.230= .2576 sq. inch.—47.43 per cent. reduction of area.

SPECIMEN OF 5-16 INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D 4.

Area of specimen before testing : 1.44×.344= .495 sq. inch.

No. of Experiment.	Weight laid on in lb.	Breaking Weight per square inch in lb.	Elongation per unit of length.	Remarks.
1	9,502		not perceptible	
2	16,222		"	
3	19,552		"	
4	22,612		.0357	
5	26,092		.0662	
6	27,772		.0855	
7	28,612		.1015	
8	29,452		.1642	
9	30,292	61,195	.2225	Broke.

Fractured area : 1.13×.2072= .2341 sq. inch.—52.71 per cent. reduction of area.

SPECIMEN OF 7-16 INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D. 5.

Area of specimen before testing : .996×.47= .468 sq. in.

No. of experiment.	Weight laid on in lb.	Breaking weight per square inch in lb.	Elongation per unit of length.	Remarks.
1	9 502		not perceptible	
2	16,222		"	
3	19,552		.025	
4	22,612		.046	
5	26,092		.083	
6	26,932		.099	
7	27,772		.136	
8	28,612	62,136	.225	Broke.

Fractured area : .69×.302= .2083 sq. in.—55.5 per cent. reduction of area.

SPECIMEN OF 7-16-INCH STEEL PLATE TESTED FOR TENSILE STRENGTH. MARKED D. 6.

Area of specimen before testing : 1.04×.47= .4888 sq. in.

No. of experiment.	Weight laid on in lb.	Breaking weight per square inch in lb.	Elongation per unit of length.	Remarks.
1	9 502		not perceptible	
2	16,222		"	
3	19 552		.023	
4	22.612		.043	
5	26.092		.090	
6	27.772	56 816	.220	Broke.

Fractured area : .708×.31= .2194 sq. in.—55 12 per cent. reduction of area.

SUMMARY OF RESULTS OF EXPERIMENTS ON STEEL PLATES.

No. of experiment.	Mark on specimen.	Weight laid on in lb.	Breaking weight per square inch. lb.	tons.	Elongation per unit of length.	Value of work producing rupture.
1	D. 1.	31,972	60 806	27.14	.231	7023
2	D. 2.	31,132	58 190	25.97	.225	6546
3	D. 3.	32 816	66,955	29.89	.190	6361
4	D. 4.	30 292	61,195	27.31	.222	6807
5	D. 5.	28,612	61 136	27.29	.225	6877
6	D 6.	27.772	56 816	25 36	.220	6249

We may note the application of this extra soft cast steel in the manufacture of cannons. In 1870-'71, the Terre-Noire works furnished in seven months over 400 guns to the "Défense Nationale." The following are extracts from the official report of the artillery commission :

The mean of 244 tests for tensile strength gave :

The limit of elasticity..... 18 tons per square inch.
Breaking load..... 19.2 " "
Corresponding elongation..... 21 1 per cent.

In its resistance to bursting this metal offers a great advantage over the hard, carburetted steel for the manufacture of guns, and its quality may be still further improved by tempering in oil.

CORRESPONDENCE.

The Duty of Pumping Engines.

TO THE EDITOR : SIR—I have read with interest the article in your last number on the Providence Water Works, and particularly the intimation at its close, of your intention to take up the subject of "duty trials."

As a manufacturer of water works engines, I am commercially interested in this subject ; but I have no desire to advance my personal interests at the cost of truth ; and it has been to ascertain the truth for my own satisfaction and the benefit of my profession that I have prepared, with considerable labor, a table of working results, which I herewith enclose for your inspection, and (if you consider it sufficiently important) for publication. In the latter case, I beg you to present with it the following preliminary and explanatory remarks.

For many years, an annual record of the performance of pumping engines in England has been kept, which is technically called a "duty" record. The accuracy with which the work done by a pumping engine can be ascertained, makes a comparison between the results of different engines very simple and reliable. The quantity of water and the height to which it is raised being known, this comparison depends upon the amount of coal used for a certain amount of work. This is reduced to a common standard by first ascertaining the number of pounds of water raised by the use of 100 pounds of coal, and then multiplying this number by the height in feet to which it is raised. The product is the duty expressed in millions of pounds of water raised one foot high with one hundred pounds of coal. The same result may be stated in the number of thousands of pounds raised one foot high with one pound of coal. This is called the foot pound duty. A duty under the first form, which is the one generally used for water works engines, of 50,000,000 would, by the second form, be expressed as a duty of 500,000 foot pounds. If the measurements are accurately made, and the observations correctly taken, the economic value of different forms of engines can be compared with each other with great exactness.

This test does not, however, express the merits of an engine as regards its cost, reliability and durability.

What is called a duty trial, is, in most cases, confined to a trial of a few hours duration, under the most careful handling. To be fully accredited, an engine should be able to show a good continuous result, in addition to a short duty trial. Of course, no engine can make a high continuous record that cannot show a high duty under trial ; but it is also true, that an engine which can show such high duty, may be of comparatively small value for water works purposes, by reason of excessive cost, liability to derangement, and expensiveness of maintenance. Therefore, it is, that prudent hydraulic engineers attach but little value to an isolated duty test, unless fortified by a record of good current performance.

I give an example of the way of calculating duty, adopted at the Newark test in 1870, of the Worthington Duplex Engine in use there :

Area of Plunger. Pressure in pounds. Load in pounds.
373.85 sq. in. × 75.68 = 28,293

$$\frac{\text{Load in pounds. 28,293} \times \text{Plunger moved, feet per hour. 10,908.4}}{\text{Coal consumed, 400 lb. per hour.}} = \text{Duty in foot pounds. } 771{,}578.40$$

or in another way, thus :

$$\frac{\text{Cubic feet displacement, per stroke. } 10.4042 \times \text{Strokes per hour. } 2{,}722 \times \text{Pounds per cubic foot of water. } 62.5 \times \text{Height in feet. } 174.82}{\text{Coal consumed, 400 lb. per hour.}} = \text{Duty in foot pounds. } 773{,}584.78$$

Also, the following formula adopted by FREDERIC GRAFF, Esq., Chief Engineer, Water Department, Philadelphia, for the engines under his charge :

$$\frac{P \times V \times H \quad 100}{F} = \text{Duty,}$$

wherein P represents pounds of water delivered per stroke, as ascertained by measurement of the plungers and calculation of their displacement ; V, the number of strokes made during the trial ; H, the head pressure in feet, including friction through the main, as ascertained by gauges placed on the ascending main just beyond the air chamber ; F, the number of pounds of coal actually consumed during the trial, not deducting ashes or clinkers ; neither reckoning the coal used in getting up steam nor banking fires.

It is evident that the annual result must, for many reasons, be considerably lower than that obtained in a short trial. In the annexed table will be found a number of these different results, computed upon all the coal used during the year. Nobody can question them, unless the Corporation reports upon which they are based are proved to be incorrect. They are certainly the best evidence we can command on the subject.

Note to Column 4.—It should be considered that an engine running for short times, or at intervals, incurs proportionate loss in heating up material ; the duty should therefore improve, as the running approaches to continuity.

Note to Column 5.—It is considered correct to credit an engine with so much resistance from friction as may be produced by the movement of the water through the forcing main and supply pipes, as the amount of this resistance depends upon the size, length and directness of these pipes. But no credit should be given to an engine for the friction of its own parts, or for that of the water through the chambers, passages and valves of the pump. This element of loss is under the control of the builder, and oftentimes expresses the difference between a good and bad form of pump.

It is sometimes difficult to get the exact numbers for this column, as but few reports make mention of the resistance against which the pumps work.

Note to Column 9.—This result is obtained by multiplying the number of gallons in column 8 by 8 34, which is the weight in pounds of a U. S. gallon of water.

HENRY R. WORTHINGTON.

239 Broadway, N. Y., Nov. 16, 1874.

ANNUAL DUTY OF PUMPING ENGINES,

Based upon the quantity of coal used at the engine houses for all purposes, as stated in the official reports of the works named.

1	2	3	4	5	6	7	8	9
Location of Works.	Date of Annual Report	Form of Engine.	Running Time.	Height of delivery in feet adding friction in main.	Total Coal used in Pounds.	Total U. S. Standard Gallons Pumped.	No. Gallons Pumped one foot high with 100 lb. Coal.	Duty in pounds lifted one foot high with 100 lb. Coal.
Chicago.	1861	Rotative.	3258½ hrs	110	3,353,526	1,122,465,120	3,581,700	29,871,378
"	1864	"	16 h per d.	110	5,963,393	2,336 108,454	4,309,066	35,937,610
"	1866	"	18 h. "	110	6,920,000	2,777,817,349	4,428,355	36 932,480
"	1868	"	18½ h. "	110	7,728,910	3,168,760,609	4,510,000	37,613,400
"	1869	"	23½ h. "	110	13,096,950	5,374,624,576	4,403,850	36,728,109
"	1870	"	24 h. "	110	17,475,180	6,801,146,720	4,281,200	35,705,208
"	1873	"	24 h. "	110	25,600,070	10,050,939,189	4,318,700	36,017,958
Brooklyn.	1862	Beam,	3082 hrs.	177	5,535,320	1,552,061 819	4,962 900	41.390 586
"	1863	"	1768 "	177	6,774-573	1,887,098,738	4,929,400	41,111,196
"	1867	"	22 h. per d.	176	14 309,495	4,459,286,139	5,495,200	45,829,968
"	1868	"	3444 hrs.	177	15,029 633	3,973 383 947	4,679,300	39,025.362
"	1869	"	5355 "	177	23,460.120	5,779,916,443	4,354.700	36.318,198
"	1872	"	3734 "	177	22,841,883	0,708 368,197	5,244,600	43,739,964
"	1873	Beam & Rot.	4209 "	177	25,625,210	7,929,616,904	5,479,200	45,690,528
Detroit.	1868	Rotative,	3770 "	86	3,386,140	1,668,545 125	4,237,600	35.341,584
"	1869	"	3905 "	86	3,547,840	1,646,810,325	3 991 800	33,291,612
"	1871	"	2587 "	86	4,507,040	2,300,150,605	4,388,900	36,603,426
"	1872	"	....	86	4,519,935	2,605,899,060	4,958 300	41,352,222
Montreal.	1874	"	4226 "	175 8	4,775.031	638 296,632	2,812,600	23,457,084
Lowell.	1874	"	978 "	161	762.212	186,683,702	3,943,200	32,886,288
Delaw'e. Phil.	1869	"	250 days.	135	3 860,120	705,442,350	2,057,900	17,162,886
"	1871	"	344⅔ "	135	5,148,416	1,186,131,144	3,105,000	25,895,700
Phil. 24th Wd.	1869	"	24 h. per d.	230	3,256,800	727,824,780	4,661,900	38,880,246
Germantown.	1869	"	322 days.	230	1,773,840	190.015,200	2,517,500	20,995,950
Louisville.	1863	Cornish,	1811 hrs.	141.75	1,287,978	369.678,750	4 068,500	33,931,290
"	1869	"	11h.6' pr d.	143.5	3,031,406	903,707 175	4,277,800	35,676,852
"	1870	"	11h.13 "	144	3,352 294	1,028,314,350	4,406,400	36 749,379
"	1871	"	10h.26 "	146	3,237,764	982,262,400	4,423,800	36,894,492
"	1872	"	10h.27 "	146	1.337,776	405,612.900	4,423.800	36,894,492
Cleveland.	1867	"	1935 hrs.	164	2 432,600	696 369,375	4,695,300	39,158,802
"	1868	"	2251 "	164	2,276,700	768,786,975	5,537,700	46,184,418
"	1869	"	2832 "	164	2,655,000	898,936,425	5,552,700	46 309,518
"	1870	"	3426 "	164	3,437,200	1,126,228,500	5,374,300	44,821,662
"	1871	"	4324 "	164	4 395,600	1,367,621,100	5,102,100	42,551,514
Jersey City.	1867	"	18 h. per d.	160	4,274,144	1,565,160,192	5,858,800	48,862 392
"	1868	"	17¾ h. "	160	4,561,320	1,714,570,544	6,014,400	50,160,096
"	1869	"	19 h. "	160	5,452,374	2,213,278,794	6,250,800	52,131,672
"	1871	"	....	160	7,930,040	2,839,608,237	5,729,300	47,782,362
"	1873	"	6551 hrs.	160	6,249,191	2,083,534,777	5,334,700	44.491,398
Roxboro, Phil.	1872	"	276 days.	340	1.991,024	285,688,405	4,862,000	40,549,080
Cambridge.	1870	Worthington Duplex,	8 h. per d.	100	892,578	588,763,182	6,596,200	55,012,308
"	1872	"	8 h. "	120	1,402,390	637,912,150	5,458,400	45,523,056
"	1874	"	3519 hrs.	132	1,511,700	740,151,600	6,454,800	53,833,032
Salem.	1871	"	156 days.	126	854,526	344,578,032	5,080,600	42,372,204
"	1872	"	6.6h. per d.	126	1,400,000	526,391,604	4,737,400	30,509,916
"	1873	"	2933 hrs.	126	1,520,170	654,259,518	5,422 700	45,225,318
Belmont, Phil	1872	"	13 h. per d.	217.75	4,816.309	1,054,210,990	4,766,100	39,749,274
"	1873	"	15 h. "	217.75	6,377,100	1,456,756,728	4,974,000	41,483,160
"	1874	"	365 days.	217.75	9 195.356	1,959,966,670	4,638,000	38,680,920
Charlestown.	1867	"	6 h. per d.	156.5	1,201,998	457,778,256	5,545,000	46,245,300
"	1868	"	10½ h. "	156.5	1,782,000	658,061,955	5 779,000	48,196,860
"	1869	"	11.2 h. "	156.5	2,441,660	859,565,733	5,513,400	45,981,756
"	1870	"	18½ h. "	160	3.467,449	1,408,484,028	6,499,200	54 203,326
"	1871	"	22½ h. "	160	4,380,450	1,831,485,375	6,689,600	55,791,264
"	1872	"	21 h. "	160	5,907,600	2,463,748,840	6,672,600	55,649,484
"	1873	"	6710 hrs.	162.8	7,032.250	2,830 951,338	6,553,600	54,657,024
Newark.	1871	"	6¼ h. pr d.	174.82	1,546,415	472,020,164	5.275,500	43,997,670
"	1872	"	12 h. "	174.82	3,117,111	904,038,857	5,070,100	42.284 634
"	1874	"	7759½ hrs.	160	4,441,167	1.632,865,234	6,427,400	53.604,516
Jersey City.	1873	"	5198 "	160	4,553,245	1,972,932,608	6,932,800	57,819,552

Mr. I Lowthian Bell and Mr. Thomas Whitwell, after visiting Eastern Pennsylvania and Pittsburgh, are this week taking a run through the Hanging Rock district of Ohio and the Chattanooga iron district. Next week they will probably visit Missouri and its Iron Mountain. We believe they expect to sail for home on the 10th of December. Prior to sailing, it is expected that they will accept the compliment of a dinner which has been tendered them at Philadelphia, by the American Iron and Steel Association, the exact date of which has not been decided upon.

In the Pas-de-Calais Coalfield, France, we learn from some official statistics that last year 15,246 workmen were employed at the coal mines, and that the average wage per man per annum was £42 5s.

COAL TRADE REVIEW.

Import Duty on Coal.

Anthracite free. *Bituminous*, per ton of 28 bushels, 80 lb. o 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 full and accurate returns of the production of our Anthracite mines.

NEW YORK, Nov. 20, 1874.

The Production of Anthracite Coal for the week ending Nov. 14, 1874, was as follows:

Tons of 2240 lb.	WEEK. Tons.	YEAR* Tons.
Wyoming Region.		
Delaware and Hudson Canal Co	47,543	2 084,459
Delaware, Lackawanna and Western R.R	53,124	2,187,457
Pennsylvania Coal Co	26,384	1,171,040
Lehigh Valley R.R	20,488	832,023
Pennsylvania and New York R.R	1,494	55,738
Central Railroad of New Jersey	40,657	1,309,804
Sold at the mines by L. & W. C. Co	820	19,641
	190,510	7,660,162
Lehigh Region.		
Lehigh Valley R.R	75,808	2,825,936
Central Railroad of New Jersey	29,414	1,041,078
Danville, Hazleton & W. B.R.R.,	877	34,605
	106,099	3.901,619
Schuylkill Region.		
Philadelphia and Reading R.R	162,134	4,721,217
Shamokin and Lykens Valley	12,227	844,942
	174,361	5,566,159
Sullivan Region.		
Sullivan and Erie R.R	536	31,391
Total of all the regions	471,506	17,159,291

* Year beginning Jan. 1.

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 Nov. 14, was as follows:

Tons of 2000 lb., except where otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	44,522	2,120,461
Barclay Region, Pa.		
Barclay R.R. tons of 2240 lb	6,466	266,713
Broad Top Region, Pa.		
Huntingdon & Broad Top R.R	4,907	199 508
Clearfield, Region, Pa.		
Snow Shoe	1,317	52,934
Tyrone and Clearfield	14,168	543,977
Allegheny Region, Pa.		
Pennsylvania R.R	3,782	180,445
Pittsburgh Region, Pa.		
West Penn. R.R	4,005	171,230
Southwest Penn. R.R	179	6,933
Penn. and Westmoreland gas coal, Pa. R.R.	15,426	770,793
Pennsylvania R.R	6,271	400,139
Kanawha Region, W. Va. to Nov. 7.		
Chesapeake and Ohio R.R	2,316	119,851
Shipments from *Block House Region, N. S.*, to Nov. 7.		
Consigned to the Provinces, tons 2240 lb	543	13,745
" " " United States " " "	662	15,082
" " Cuba " " "	....	571
Shipments from *Pictou Region, N. S.*, to Nov. 7.		
Consigned to the United States tons 2240 lb.	....	47,156
" " " West Indies " " "	180	11,749
" " Canada " " "	1,113	98,015
" " Other provinces " " "	681	67,928
" " South America " " "	466	3.355

The following comparative statement of the shipments of coal from the Nova Scotia mines, from January 1st to October 1st, 1874, is from the *Halifax Chronicle*:

	1874. Tons.	1873. Tons.
Cumberland	35,157	16,835
Pictou	280,758	242,990
Cape Breton	252,812	381,226
Other Counties	3,162	6
	571,889	641,057

The Production of Coke for the week ending Nov. 7.

Tons of 2000 lb.

	Tons.	Year. Tons.
Tyrone and Clearfield	24	721
Alleghany Region	....	106
West Penn. R.R., " " " "	552	38,645
Southwest Penn. R.R " " " "	11,256	304,854
Gas Coal, Penn. R.R. " " " "	960	35,280
Pittsburgh Coal, Penn. R.R. " " "	1,675	56,208

The production of Anthracite for the week ending Nov. 14th was as follows: Wyoming Region, 190,510 tons, being 11,431 tons more than the preceding week. In the Lehigh region, 106,099 tons, or 6,597 tons more than the week before, and in the Schuylkill region, 174,361 tons, being 18,047 tons more than the preceding week.

The total production of Anthracite from all the regions was for the week 471,506 tons, as against 435,117 tons the preceding week, (or an increase of 36,389 tons), and 400,330 tons for the corresponding week last year. From January 1st to Nov. 14th, there were produced 17,159,291 tons, as against 17,859,686 tons for the same period last year. The figures of last year's production are taken from the Pottsville *Miners' Journal*.

The receipts at Port Richmond were 65,000 tons; shipments, 49,000 tons; and balance on hand 128 500 tons.

Returns from Greenwich, Philadelphia:

	Bituminous.	Gas Coals.
Receipts	4,635	1,025
Shipments	4,115	814
On hand	1,199	773

The receipts of coal by the Michigan Southern RR. at Buffalo for the week were 5,728 tons. The shipments by Lake, 4,770 tons.

The Delaware and Hudson Canal Company has in stock at Honesdale 45,000 tons; at Rondout, 75,000; and at Weehawken, 9,000 tons.

	week.	year 1874.	year 1873.
The receipts of coal at Coal Port (Trenton)	6,179	254,432	311,436
" " " South Amboy	13,805	550,025	413,207
Shipments at Coal Port (Trenton)	5,078	252,938	315,228
" South Amboy	14,167	562,349	406,717

Production of Bituminous Coal. 1874.

Tons of 2000 lb.	9 months.	Oct.	10 mos.
Blossburgh Region	631.451	85,967	717,418
Barclay Region	259,665	24,436	284,101
Broad-Top Region	174,457	16,009	190,466
Cumberland Region	1,942,783	263,240	2,268,010
Clearfield Region	507.699	89,212	596,911
Alleghany Region	158,854	21,591	180,445
Pittsburgh Region.			
West Penn. RR	146,471	24.759	171,230
Southwest Penn. RR	5,480	1,453	6,933
Gas Coal, Penn. RR	676,814	93,980	770,794
Pittsburgh Coal, Penn. RR	344,735	55,404	400,139
Saw Mill Run RR	68,957	..	..
Cleveland and Pittsburgh RR	226,762	..	..
Pittsburgh, Cincinnati and St. Louis RR	431,040	..	..
Erie and Pittsburgh RR	201,563	..	..
Pittsburgh, Fort Wayne and Chicago RR	159,373	..	..
Castle Shannon RR	87,901	..	..
Pittsburgh and Connellsville RR	296,105	..	..
Monongahela Nav. Co	1,848,656	..	..
Keeling & Co	140,014	..	..
Wettengal & Gormley	9,585	..	..
St. Louis Region.			
Tenn. Coal & R.R. Co	54,603	8,175	62,778
St. L. A. & T. H. R. R. Belleville Branch	112,799	..	..
B. & S. I. R.R	63,940	..	..
Illinois and St. Louis	1,605	331	..
Indiana North and South RR	4,906	945	5,851
Evansville & Crawfordsville RR	10,989	..	..
Ohio & Mississippi RR	78,994	26,320	105,314
Kanawha Region.			
Chesapeake and Ohio RR	106,600	..	..
Warrior Region, Ala.			
South and North Alabama RR	16,460	..	..
Cahaba Region, Ala.			
South and North Alabama RR	3,085	..	..
S. R. & D. R.R	10,855	..	..
Chicago B. & Q. R.R	244,289	..	..
B. & M. R.; R.R	54,754	..	..
	9,082,244		

Trade continues as heretofore reported. The approach of the closing of navigation creates quite a demand for stove and chestnut sizes, while for the manufacturing sizes there is but little inquiry. The representatives of the combined companies will convene at the call of the President, and, as no such call has been made, it is not generally known when the next meeting will take place. It is claimed that prices will stand as they are now until the opening of the next season, and then make an abrupt drop to the lowest figure of the '75 programme. If such is to be the case, there will probably be an almost total suspension of business for a time previous to the declaration of next year's prices. The underselling, heretofore reported, continues, and will have a tendency to bring about concessions in the roundabout way. It would be better were the companies to adopt an open average reduction each month, until the base of the '75 programme price is reached.

Coastwise freights continue without change, about $1 30 being the ruling rate to Boston.

The usual monthly sale of Scranton coal is advertised in another column; 50,000 tons will be disposed of.

The following are given as rumors, in which we have considerable faith: A reduction of wages to the amount of 25 per cent. will be made in the Wyoming region, while it is pretty well understood that the Schuylkill and Lehigh basis will be lowered. It is understood that the programme prices of '75 will start about 50c. a ton under those of this year, and that the Combined Companies will meet the Pennsylvania Coal Company on prices for steamer use, and export coal from the first of next month.

The system of season contracts adopted by the Combination during the current season has many objections, and is giving much trouble to the trade at the present moment. It would not be at all surprising if some other plan were adopted for the coming season.

There is nothing worthy of note doing in bituminous coal. A cargo of the Waverly Company's nut coal (the first of this size ordered by the gas companies here) has been consigned to one of the gas companies of this city, on trial for gas purposes. The price of Cumberland coal continues nominally as heretofore reported, with but small transactions. Freights are nominally unchanged, although rates are not quite so firm.

WAGES AT THE CUMBERLAND MINES.

The following are some items of wages taken from the pay rolls of one of the Cumberland companies: smiths, $3 00 per day; helper, $2; carpenters, $2 75; brakemen on incline, $2 75: roadman, $2 75; dumpman, $2; drivers, $2@$2 25, and laborers $1 50@$2 25. The miners are paid 65c. per ton for mining, and their only expenses are for oil and sharpening, which makes but a very small item on a month's work. At some collieries, where the Union has control, a miner is not permitted to mine more than five tons a day, while he could mine from eight to ten tons, and make very good wages. At these figures we were shown that the earnings of industrious miners run from $75 to $100. It is true that in this region the miners are only furnished with steady work for about eight or nine months in the year, and about quarter time for the balance. With the demand for a cheaper fuel, and in the face of a probable reduction of wages and, possibly, of the price of coal in the anthracite regions, we think that some corresponding reduction will necessarily have to be made in the Cumberland region. In comparison with the wages paid for the same class of mechanics and labor in other sections, we do not see why a reduction should not be made here, if for no other reason than to reduce the selling price of coal, which would stimulate the demand, and result in increased profits to the producers. There does not appear to be much unison among the Cumberland companies, but the tendency to get to "hard pan," in all manufacturing business, calling for cheaper fuel, will probably eventually drive them to some arrangement for their mutual protection, and it will be better for them to follow with the general drift of the country than to be compelled to take abrupt action when business is resumed upon the lower basis.

Foreign coal remains as heretofore reported. The strike in the Pictou region is ended.

Wholesale Prices of Anthracite Coal for Nov. 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 Newburgh	5 15	5 15	5 25	5 45	5 90	4 85
*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 at Port Richmond.						
Schuylkill white ash	5 05	5 15	5 25	5 40	5 90	4 45
Schuylkill red ash	...	....	5 40	5 50	5 95	4 55
Shamokin white and red ash	....	....	....	5 40	5 90	4 45
N. Franklin	....	....	5 85	5 85	5 90	4 45
Lorberry	....	....	6 20	6 20	6 20	4 80
Lykens Valley	....	....	....	6 85	6 85	5 40

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

† f.o. b. in New York Harbor.

	Per ton.
Freight from Hoboken and Weehawken to New York	40c.
" " Elizabethport & Port Johnston to New York	40c.
" " South Amboy to New York	45c.
" " Newburgh to New York	65c.
" " Port Richmond, "Phila." to N. Y. alongside	95c.
" " Rondout to New York by boat or barges of the D. & H. Canal Co. "delivered"	50c.

Wholesale Prices of Bituminous Coal.

Domestic Gas Coals.

Per ton of 2240 lb. Shipping Ports.	At the 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 50	7 20
Murphy Run, W. Va. at Baltimore	5 50	7 20
Fairmount, W. Va "	5 50	7 20
Newburgh Orrel, Md. "	5 50	7 40
Cannelton Cannel, W. Va., at Richmond.	11 00	12 00
" 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'ey
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		6 25
James River, carbonite, at Richmond, Va	6 75		9 00
" bituminous, "	4 00		6 25
*Schooner freights from Baltimore to New York are			$1 25
Barge " " " " "			1 70

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 delivered	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.

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
Carbonite	"	"	" 12 00
Cumberland	"	"	" 9 00

Coal Trade of Philadelphia.

PHILADELPHIA, Nov. 18, 1874.

A combination of circumstances renders the anthracite coal trade duller than it is generally at this time of the year, which, at the best, is but the winding period of the shipping season. One of the main causes which have contributed largely to this dullness, and would have done so even if the markets were not so well stocked as they are, is the demoralization which naturally follows the artificial advance in prices on the 1st inst., and which would have been absurd at this season of the year under any condition of the market. It has been the straw breaking the camel's back. It renders also the expected move to reduce wages, shortly to be made, a great inconsistency. If prices of coal and rates of transportation should be reduced to meet the depression in all branches of business, the wages should also come down, and with the steadier work which would follow the increased consumption, the workmen would actually derive a benefit; but there is no indication of a desire to assist business, and those best informed seem to expect the prices at the beginning of the next shipping season to be higher than the opening rates this year. About lowering the charges for transportation not one word is said.

Vessels at this port are accumulating, and large schooners can be had at $1 60@$1 50 to Boston, which is an extraordinary low rate for this season of the year, and un-heard of before. The owners of vessels have suffered heavily this summer and fall, perhaps not more so than many other large interests, but it looks very much as if every branch of business interfered with by some of the corporations was bound to suffer, without even a corresponding benefit to the would-be monopolizer. If a temporary advantage can be shown as the result of the policy of the combined companies, it is clear to those whose views are governed by sound business principles, that if persisted in, nothing can be expected in the future but a permanent injury to the anthracite coal trade.

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.

60 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. Nov. 18, 1874.

Quotations unchanged. See last issue.

Boston. Nov. 18, 1874.

Quotations unchanged. See last issue.

Buffalo, N. Y. Nov. 18, 1874.

Quotations unchanged. See last issue.

Chicago, Ill. Nov. 16, 1874.

Specially reported by Messrs. RENO & LITTLE, Coal Merchants.

Receipts of coal at this port by lake since May 1st, 1874, were anthracite, 350,920 tons; bituminous, 249,177 tons.

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

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

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

Cleveland, O. Nov. 18, 1874.

Quotations unchanged. See last issue.

Cincinnati, O. Nov. 17, 1874.

Quotations unchanged. See last issue.

Detroit, Mich. Nov. 10, 1874.

Quotations unchanged. See last issue.

Erie, Pa. Nov. 18, 1874.

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. Nov. 16, 1874.

Specially reported by Messrs. H. McCOY & Co.

We have to report a general advance in the price of coal, with brisk demand. Western coal being limited in supply, on account of a strike among miners in block coal district, miners demand an advance of 15 cents per ton over old rates. Operators say they will not give it. So the matter stands. Some miners, however, have gone to work at the old price, and the opinion is that the men will give in, and go to work at old prices.

We append following quotations, wholesale and retail.

Per ton of 2000 lb.

BITUMINOUS.

Wholesale on board cars in city.

Best Block coal	$3 10	Indiana cannel	6 75
Best Highland	2 50	Hocking Valley	3 25
Block Nut, per car	20 00	Youghiogheny	6 00
Highland " "	18 00	Blossburg (smithing)	7 30
Block slack, per car load	15 00	Piedmont "	7 75
Peytona, cannel per ton	8 75	Gas coke, per bushel	100

ANTHRACITE (Lackawanna).

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

Retail, per bushel of 70 lb.

Block	16c.	Peytonia Cannel	32c.
Highland	14	Indiana "	26
Highland Nut, dom. use	12	Youghiogheny	26
Block " "	12	Blossburg	27
Slack, steam, "	8	Piedmont	30
Block & Highl'd Mt. steam	9		

ANTHRACITE.

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

Louisville, Ky. Nov. 17, 1874.

Quotations unchanged. See last issue.

Milwaukee, Wis. Nov. 16, 1874.

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

Retail prices per ton of 2000 lb.

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

New Orleans, La. Nov. 14, 1874.

Pittsburgh coal, retail, per bbl	75c.
" wholesale	45@47½c.
" to steamboats, per box	60c.
" to manufacturers, per bbl	65c.
" shipments per hhd	$7 00
Anthracite, retail, per ton	$12 50
" wholesale per ton	$9 00
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 00

Pittsburgh, Pa. Nov. 16, 1874.

Reported by our Special Correspondent.

Trade remains very dull, both in coal and coke, with no prospect of an early improvement. The iron manufacturers and the puddlers have been holding a series of private meetings on the wages question. The manufacturers have demanded a reduction of $1 per ton, while iron remains at 3c. per lb., and a corresponding reduction when the card rate is below 3 cents. The puddlers, as yet, decline to accede to the demand, and it is quite probable that they will not accede to it, in which case a general lock-out is to be expected, which will necessarily throw a great many coal miners out of employment.

A rain continuing through last night, and still continuing, encourages river coal men that we will have a coal-boat rise. Prices remain unchanged.

Per ton of 2000 lb. and Bushel of 76 lb.

	per ton.		per ton
Youghiogheny coal	$2 00	Pittsburgh retail delivered	
" coke	2 50	per bushel	90@100
Connellsville coal	2 10	Anth'cite on cars Lehigh	$7 75
" coke	2 75	" " Wilkes-Barre	6 75
Pittsburgh coal	1 85		

Twenty-five to fifty cents per ton additional for delivery.

San Francisco.

From the *Commercial Herald*, November 5.

Imports from January 1st to November 1:

Anthracite	9,942	Vancouver Island, tons	41,410
Australian, tons	101,204	Bellingham Bay, tons	11,885
Coos Bay, tons	40,242	Rocky Mountain, tons	323
Cumberland, tons	12,148	Seattle, tons	4,235
English, tons	17,768	Mt. Diablo (9 mos.)	151,166

Imports for the week have been of considerable importance, yet prices for the most part were well sustained. A cargo sale of 700 tons "*Brisbane*" concluded at $8 85. Colonial spot cargoes may be quoted at $10@$10 25. We note arrivals during the week from New South Wales of 706 tons per *Malacca*, 1713 tons per *Austria*. Bellingham Bay and Coos Bay supplies continue in order, quotable at $8 50@$10 50 respectively. The California, Mt. Diablo and Black Diamond mines find ready sale at $6 25@$8 25 per ton for coarse and fine. The market is well and abundantly supplied with Anthracite and Cumberland at unchanged rates. The ship *John Gamble* from Newcastle, N. S. W., is at hand, with 1446 tons.

St. Louis, Mo. Nov. 16, 1874.

Quotations unchanged. See last issue.

From the *Railroad Register*.

The receipts of coal at St. Louis for the month of October were as follows: (Tonnage 2,000 pounds.)

Ohio and Mississippi	16,067
Chicago and Alton	376
Indianapolis and St. Louis	3,150
Belleville and Southern Illinois	34,428
St. Louis and Southeastern	20,512
Illinois and St. Louis	27,516
Cairo and St. Louis, narrow gauge	1,972
Vandalia Line	15,924
Total	114,946

Since January 1, 1874, ten months, from same sources the total receipts, exclusive of gas coals, wagon receipts, and Vandalia Line prior to October 1st, were 697,167 tons. The gas coals and wagon receipts for 1873 aggregated 3,000,000 bushels.

The following is from the same paper:

"One thousand five hundred coal miners are on a strike in St. Clair County, Ills., and the citizens of Belleville have organized a military company for protection. Four cents a bushel for mining, eight hours labor, and the miners' weight are demanded by the Union, who propose to prevent all "Black Legs," as they are called, for working for less. The price has been 3 cents a bushel, the past season, for mining, and if allowed to do so, 1,000 idle men in St. Louis could find work that would pay them $3 a day at the former prices. St. Louis is dependent on this district for coal and as production has stopped, our quotations are merely nominal. We trust no permanent strike will exist."

St. Louis, Nov. 17.

The strike is considered at an end, with a victory for the proprietors, there being too many "black legs" who were willing to work at 3c. per bushel.

Montreal. Nov. 16, 1874.

Reported by our Special Correspondent.

Per ton of 2,240 lb.

Scotch Steam	$4 50@4 75	Cape Breton Steam	$4 00
Pictou "	4 25	Newcastle Smiths	5 50

Anthracite at retail, 2,000 lb., delivered, less 5 per cent.

Egg	$8 00	Nut	$8 00
Stove	8 50	Chestnut	7 75

Toledo, Ohio. Nov. 16, 1874.

Per ton of 2000 lb.

Specially reported by Messrs. GOSLINE & BARBOUR.

Retail.	Retail.
Wilkes-Barre and Scranton.	BITUMINOUS.
Large and Small Egg, $8 00	Blossb'g and Cumberl'd, $3 00
Stove 8 25	Massillon Lump 6 00
Chestnut 8 00	Briar Hill 7 00
Lehigh Lump 10 00	Straitsville 3 75
	Hocking Valley 4 00

Halifax, N. S. Nov. 16, 1874.

Reported by our Special Correspondent.

We have no alteration to advise you of in prices of coal, those given you last week remaining the same to this date. We may, however, state that the coal trade is generally dull, large supplies having been laid in, in the early part of the season.

Prices per ton of 2240 lb. in gold.

Sydney (old mines)	$4 50	Little Glace Bay	3
Gowrie	3 50	Blockhouse	
Victoria	3 50	Albion (at Railroad)	

Freights.

Rates of freight from Baltimore and Georgetown are not so firm as last reported, and we accordingly shade our quotations to Boston to $1 60, and to New York, $1 35. No doubt concessions on these figures could be obtained on shipments of any consequence. Philadelphia rates continue unchanged. The nominal quotation of $1 35 to Providence may serve as a guide to the different points. Rates from Elizabethport, Port Johnston, and Hoboken, continue nominal, with scarcely any demand for vessels, we accordingly continue our stereotype quotations of $1 20 to $1 35 from these points to Boston, and to Fall River, Providence and Newport, 85c.

REVIEW OF THE BRITISH COAL AND IRON TRADES.

Compiled from our exchanges bearing date to November 7th, 1874.

In the North of England, business is quieter than last week, there being less desire to buy pig iron for forward delivery. Nevertheless, prices are maintained very firmly, and in some cases makers have obtained higher prices for small lots. At the Middlesbrough market, yesterday, No. 1 was selling at 70/ net cash, though business was done at 71/; No. 3 stood at 65/ cash; and forge at from 57/ 6d. to 58/ 6d. cash; No. 4 foundry was quoted 61/. Stocks are said to be exceedingly low. The rail trade, which is the staple of the district, is in an unsatisfactory condition just at present, and some of the largest mills are closed, while others are put on short time, because it is found impossible to secure orders at a remunerative rate. Bar and plate manufacturers are well employed. Ironfounders and shipbuilders are doing a large amount of business. There is a lull in the demand for coal, and colliery owners are declining to enter into long contracts till the wages question is settled. The decision in the wages question, which was left to the umpire, Mr. RUSSEL GURNEY, has been made known. The men are to be reduced to 30 per cent. above the standard of 1871, or a reduction of between 9 and 10 per cent. from present rates, instead of 20 per cent. as was demanded by the employers.

In the Tyne and Wear districts, the demand for steam coal has fallen off during the past few days, but for household qualities there is an average enquiry, and prices have been advanced. The average rate for Northumberland steam coal is between 15/ 10d. and 16/ 4d. per ton usually, and the actual price at present rests between these figures. The compromise of the dispute in the Northumberland coal trade appears to be satisfactory to all parties concerned.

In North Staffordshire, the orders which are received suffice to keep the works in full operation, but the coal trade is rather

dull, and the pits are only working about four days a week. The North Staffordshire miners have paid £750 as a deposit on the purchase of a colliery, which they are proposing to carry on under the co-operative principle. The capital of the company is being raised in £1 shares.

In South Staffordshire, there are now 74 blast furnaces in operation out of 153 erected, and the number employed in ordinary times is about 100, so that there are some 20 or 30 yet to be blown in to make the production come up to the average. At present there is no likelihood of any further number being re-lighted. In the North of England, 128 furnaces are at work and 24 are laid off, while in Scotland 119 are blowing out of 157 built.

The Sheffield coke manufacturers have reduced their prices from 2/ to 3/ per ton, and the quotations are now 20/ per ton less than they were when trade was so brisk.

From South Wales we hear that trade is bad, but this is usually the case towards the end of the year. A good deal of attention is being devoted to the consideration of the question of another fall in wages, without which manufacturers say they cannot carry on their works. The output of coal is large, and notwithstanding this, the prices continue good, simply because there is a good export demand, which keeps stocks from accumulating. From Cardiff alone, last week, 79,000 tons of fuel were exported. Coal is quoted at 14/@15/ for screened large, and 5/ 6d.@10/ for small.

In Scotland there has been, during the past week, a better demand for makers' iron, and prices have been advanced for best numbers about 2/ 6d. per ton. The warrant market has also been firm. The shipbuilding industry has but poor prospects before it, and the demand for plates has fallen off somewhat in consequence. In other departments, though some of the mills are fully employed, dullness is the order of the day. There is an abundant supply of coal, the output being in excess of the demand. Household is selling well. The various districts are affected by the dissatisfaction of the miners relative to the wages question. Strikes are common, and some of the men are actually claiming advances of wages.

In the West Coast district, the iron trade is rather slack at present, and the demand for all kinds of pig iron is small. Enquiries are pretty numerous, however, but these are only regarded as "feelers," and do not lead to much business. The steel trade is active, as is also the iron shipbuilding department.

Belgium —Government has at last decided to distribute among the ironworks the order for 6,000 tons of rails. The price paid by the authorities will be 205 fr. (£8 4/) per ton. The news from abroad confirms what we previously stated as to the future reserved to steel rails. We are informed that CREUZOT has contracted to supply 30,000 tons of steel rails for Russia, which, added to other orders sent in some weeks since, makes the purchases of steel rails for the Empire amount to more than 70,000 tons. Most of these rails have been sold at £11 9/ per ton delivered at Cronstadt, but one lot of 4,000 tons has been concluded at even a lower price. France, England, and Germany share amongst them these important orders.

The Belgian iron trade remains flat, and prices are without alteration, but the coal trade is in a tolerably satisfactory condition.

IRON MARKET REVIEW.

New York.

Nov. 20, 1874.

American Pig;—Trade continues as dull as heretofore reported, and while there has been no general open decline, yet there is a continual underselling. Some irons are on the market for buyers' "best figures," and others, for prompt cash, are selling in small lots at marked concessions. We note the sale of about 1000 tons, mixed brands, Thomas iron; also 500 tons of gray forge from another company, at a private price. We continue to quote nominally $27@$28 for No. 1 foundry; $25@027 for No. 2; and $23@$24 for gray forge. No. 2 iron is comparatively high, owing to the scarcity of good brands. Although a declaration of a reduction of the miners' wages at the anthracitic mines has not yet been made, it is pretty generally felt that the miners will be asked to submit to a decline of 25 per cent. from their present wages. It is unknown what action the miners will take should such a thing come to pass, but it is believed that it will result in a strike; at all events, the coal companies would be much disappointed did it not. Should a strike occur it would not be desirable to the producers that it should last more than two months, and the furnace companies will have sufficient time to lay in a stock of fuel to carry them over. Some may not be able, or feel willing to lay in that amount of stock, and may take this opportunity to go out of blast. It is impossible, at the present moment, to give the bearing of such a strike upon the iron market. As will be seen by our Coal Trade Review there is a rumor that the basis prices of 1875 will start at 50c. a ton under last year's, but as furnace lump was not advanced during the past season, there is no telling as to whether our iron manufacturers will be benefited by this.

Scotch Pig.—There is but little doing in this article. Prices are firm, stocks small, and but little or none on the way. The great competition existing in American No. 1 irons has driven our manufacturers to producing so good an article that in many foundries, heretofore using Scotch iron, there is none being used. It may now be called strictly a "fancy brand." We continue quotations without change. Eglinton at $37; Glengarnock, $30@30; and Coltness, $40@41.

Rails.—The only transactions we note is 500 tons from a Pennsylvania mill, at $55 per ton, delivered in this city. The quotations may be given at $50@54 at the mills. The available stock of Foreign rails, as heretofore reported, is rather limited, and prices are more firm, $50, gold, being the asking price; but this appears too high, when compared with the quotations for American. Bessemer rails are without change. There are no transactions reported, and we continue our quotations at the Eastern mills at $75@80, and at Chicago at $80.

Old Rails.—The transactions in this article are very light. We note the sale of 250 tons at $28 50.

Scrap Iron.—There have been no transactions, and in the absence of business quotations are quite nominal.

Chicago

Nov. 17, 1874.

Quotations unchanged. See last issue.

Cleveland.

Nov. 18, 1874.

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

You will note below about $1 per ton decline from our last quotations.

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

Cincinnati.

Nov. 17, 1874.

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

Our pig iron market remains without material change. Prices of No. 1 foundry grades are well supported. Lower grades are weak and quotations nominal.

CHARCOAL.

Hanging Rock, No. 1, Foundry	$30 00@32 00	4 mos
" No. 2, "	28 00@29 00	4 mos
Mill	26 00@27 09	4 mos
Tennessee No 1, Foundry	29 00@30 00	4 mos
Tennessee. No. 2 "	27 00@28 00	4 mos
" Mill	26 00@27 00	4 mos
Missouri, No. 1, Foundry	31 00@32 00	4 mos

STONE COAL.

Ohio No. 1, Foundry	28 00@30 00	4 mos
" No. 2, "	27 00@28 00	4 mos
Ohio Mill	25 00@26 00	4 mos
Missouri, No. 1, Foundry	29 00@30 00	4 mos
" No. 2, "	27 00@28 00	4 mos
" Mill	26 00@27 00	4 mos

CAR-WHEEL.

Hanging Rock, C. B.	50 00@53 00	4 mos
Tennessee "	45 00@48 00	4 mos
Missouri "	45 00@48 00	4 mos
Alabama "	45 00@48 00	4 mos

BLOOMS.

Charcoal	80 00@ 90 00	cash

SCRAP IRON.

Cast	75@ 1 00	cash
Wrought	1 25@ 1 50	cash

Indianapolis, Ind.

Nov. 16, 1874.

Quotations unchanged. See last issue.

Louisville.

Nov. 17, 1874.

Specially reported by GEORGE H. HULL, Esq.

The market is dull at quotations, and round lots cannot be sold except at some concession in price. There is not much disposition to force iron on the market, and the sales are limited.

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

HOT BLAST—CHARCOAL.

No. 1 foundry, from Hanging Rock ores	$30 00@33 00
No. 2 " " "	27 00@28 00
No. 1, forge, " "	25 00@26 00
No. 1, foundry, " Tennessee "	28 00@30 00
No. 2 " " "	26 00@27 00
No. 1, forge, " "	25 00@26 00
No. 1, foundry, " Alabama "	28 00@30 00
No. 1 " " Iron Mountain "	30 00@33 00

HOT BLAST—STONECOAL.

No. 1, foundry, from Missouri ores	30 00@32 00
No. 2, " " "	28 00@30 00
No. 1, forge " "	27 00@28 00

COLD BLAST—CHARCOAL.

11 Wheel from Hanging Rock ores	45 00@50 00
" " Tennessee "	43 00@45 00
" " Alabama "	44 00@46 00
" " Georgia "	44 00@46 00
" " Missouri "	43 00@45 00
" " Kentucky "	43 00@45 00

Milwaukee, Wis.

Nov. 16, 1874.

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

Per ton of 2,240 lb.

Scotch ranges	$40 00 to	$45 00
No. 1, Lake Superior Charcoal	36 00 to	8 00
" 2, " "	34 00 to	36 00
" 1, " " Anthracite	35 00 to	36 00
" 2, " " "	33 00	

Pittsburgh, Pa.

Nov. 17, 1874.

Specially reported by A. H. CHILDS, Esq., commission merchant for the sale of pig iron, blooms, ore, &c.:

The metal market is in a very depressed condition, with good gray forge offered at $25, 4 mos.; sales light, and outlook by no means satisfactory.

No. 1 Foundry, anthracite or bituminous	$27 50@28 00	4 mos
No. 2 " " "	26 00@27 00	4 mos
Gray Forge " "	25 00@25 50	4 mos
White and mottled " "	22 00@23 00	4 mos
Hot blast charcoal	30 00@35 00	4 mos
Cold " "	40 00@50 00	4 mos

From the *American Manufacturer* of Nov. 18, 1874.

PIG IRON.

The situation has not improved any since the date of our last report; and, furthermore, the general outlook is not as favorable as it was a week ago. Unless the puddlers accede to the reduction proposed by the manufacturers, which at this writing is doubtful, a general suspension appears almost inevitable, as the mill owners are very emphatic in the declaration that unless the cost of manufacture can be reduced there is no other alternative. In order to keep their mills running, our manufacturers must compete for the Eastern trade, and this they cannot do unless the cost of manufacture is further reduced, as prices are lower now than they have been at any time since the war. This being the condition of affairs there is, as might be expected, very little inquiry for pig iron, as mill owners do not at the present writing know how long they will run, hence they are buyers only for immediate necessity, having resolved to carry no more stock than is absolutely necessary. The general tone and spirit of the market, therefore, continues very unsatisfactory and unfavorable to the selling interest, and prices are weak with a drooping tendency; indeed, it would be impossible in the present condition of the market to dispose of anything like a round lot at any price scarcely, as mill owners do not know how long they will run, as this depends upon the action of the puddlers and, in addition, they will continue to adhere closely to the hand-to-mouth policy as long as there is a probability of prices going still lower, as seems to be the case at the present time.

MANUFACTURED IRON.

The demand for all kinds of finished irons is on the wane, as it usually is at this particular time, and there is not much prospect of any material or general improvement until after the new year sets in and the spring trade opens up. In the event of the puddlers acceding to the reduction in wages, most, if not all, of the mills will endeavor to continue in operation, but if they refuse, a general suspension before the 1st of January is not improbable. As it is, some of them have been obliged already to change from double to single turn. Prices continue weak, in sympathy with the raw article, and while we continue to quote on a basis of $2 50@$2 60 for merchant bars, it is probable that an order of assorted sizes could be placed at still lower rates, but we do not believe that any of our manufacturers would sell bars alone under our quotations.

Pig metal sales reported for the *American Manufacturer* for the week ended November 11, 1874:

BITUMINOUS COAL SMELTED FROM L. S. ORE.

50 tons	No. 1 foundry	$28 00	4 mos
30 "	No. 1 foundry	27 00	4 mos
100 "	No. 2 foundry	26 50	4 mos
100 "	gray forge	25 00	5 mos
450 "	gray forge	24 50	4 mos
100 "	gray forge	24 00	cash.
100 "	mottled and white	23 00	4 mos

ANTHRACITE.

10 tons	No. 1 foundry	$30 00	4 mos

CHARCOAL.

60 tons	No. 2 & 2 foundry, H. R.		P. T.
20 "	No. 1 foundry, L. S.	34 00	4 mos
10 "	Cold Blast, Eastern	46 00	4 mos

COKE.

100 tons	gray forge	$25 00	4 mos

San Francisco.

From the *Commercial Herald* of Nov. 5.

Oregon supplies of Pig Iron are continued by every steamer. The *John L. Stephens* brought us 66 tons. This we continue to quote at $46 per ton. Tin Plate is dull and nominal. The steamship *Cyphrenes* from Sydney brought 95 blocks and 100 ingots Tin. This Australian tin is saleable here, but at a low price as compared with Straits. The *Edith* for New York carried 1353 pigs Selby's Refined Lead, and of ore the following: Chrome, bbls. 16, sks. 3266, tons 151; Copper, gunnies 654, sks. 5252.

St. Louis.

From the *Railroad Register*, November 13.

During the month of October there was almost a total suspension at the iron mines. The receipts of iron ore for that period by the Iron Mountain road were 2,950 tons; Atlantic and Pacific, 5,140. Total, 8,090. The total receipts of pig iron during October amounted to 2,420 tons. In 1873, 61,088 tons of pig iron arrived at St. Louis. For the first ten months of 1874 the receipts were 42,688 tons. 1,230 railroad bars were received at St. Louis in October, 1874. During the year 1873 the receipts were 112,534. The total receipts of iron ore from mines of Missouri for 1873, were 350,000 tons; since January 1st, 1874, to November 1st, the receipts at St. Louis have been 156,585 tons. Pig iron is a little more active this month than last, at slightly lower prices than our previous quotations. The amount of pig iron consumed by manufacturers in St. Louis, during the present season, is about equal to that of the past year for same length of time.

The following are quotations:

No. 1 foundry. Stone coal, Mo	$32 00@$34 00
No. 2 foundry, " "	28 00@ 30 00
Mill " "	26 00@ 28 00
No. 1 foundry, charcoal, Mo	30 00@ 32 00
No. 2 " " "	28 00@ 30 00
White and mottled charcoal, Mo	33 00@ 34 00
Tennessee charcoal, No. 1 foundry	32 00@ 34 00
Alabama charcoal, No. 1 foundry	32 00@ 34 00
Scotch, according to brand	43 00@ 45 00
Massillon	38 00@ 40 00

American Scotch	40	00
Hanging Rock	34	00
Missouri, cold blast charcoal	43 00@	45 00
Tennessee, " "	45 00@	49 00
Kentucky, " "	55 00@	57 00
Alabama & Georgia, co'd blast charcoal	46 00@	48 00
Missouri charcoal blooms	85	00
Ore—Iron Mountain	7	00
Maramec	6	50

METALS.

NEW YORK, NOV. 20, 1874.

Gold Coin.—During the week past, gold has ranged from 110¼ to 111¼, and closed yesterday at 111¼.

Bullion.—Fine silver bar is quoted at $1 26½@$1 27⅛, gold, per ounce, and fine gold bar at par ($20 67, gold, per ounce.)

Copper.—There has been but little activity in the market during the past week. The sales amounted to about 300,000 lb. spot at 22¾c.@22¾c., and 400,000 lb. January to April delivery at 23⅛c.@23¾. The asking prices to-day are 22¾c.@22⅞c. for spot; 23c. for December delivery, and 24c. for deliveries from January to April. The latest London quotations, by Cable, are £97 for Best Selected, and £89 for Chili bars. The stock in this market is very light, for this season of the year, and with any increase in the demand from manufacturers, an advance might be expected. As it is, the market appears to be held firm by the continued advance and strength of the Foreign market. The following we take from our latest foreign circulars, under date 7th inst.:

"The continuance of large deliveries, with a further reduction in stock, has had a beneficial effect on the value of copper, and we have to quote an improvement of £5 per ton since our last issue. Consumers stood out against any advance for some time, but at last they appear to have become convinced, and have been operating largely. Smelters have eagerly absorbed all the ore and regulus offering, at stiff rates. The delivery from Liverpool and Swansea has been somewhat over 5,000 tons.

"The total stock shows a reduction of about 2,200 tons since 1st October, and about 7,500 tons since 1st January this year, the effect of which, considering our now diminished stocks, must be greater than last year; in fact, confidence is being engendered for a fresh advance, and should any general spirit of speculation set in, we may see much higher prices in a short time.

"*Australian.*—The transactions reported have not been as large as usual, owing to there being but little in second hands. Wallaroo is now quoted £96; Burra, £94.

"English has again moved with foreign, and a fair business has been done. We quote now Tough, £93; Select, £94 to £95; Manufactured, £97 to £100.

"The following are the stocks on the 1st November:

	Oct. 1st, 1874.	Nov. 1st, 1874.	Nov. 1st, 1873.	Nov. 1st, 1872.
	Tons.	Tons.	Tons.	Tons.
Stock, Liverpool and Swansea	15,500	12,700	22,500	20,700
" Havre	2,970	3,427	1,920	300
" London	5,142	4,849	4,398	7,100
	23,612	20,976	28,818	28,100
Chili Produce, afloat chartered	7,550*	8,000	6,000	11,100
Total	31,162	28,976	34,818	39,200

Tin.—There have been some large transactions in pig, but the particulars are still kept private. Straits is quoted at 21¾c. for spot, and 21¾c. to arrive; L. and F., 21¾c.; Refined English, 21¾c.; and Banca, 26c., all gold. The stock of Straits is not heavy, and there is none to arrive for some time. Yesterday's quotations from London, by cable, were as follows: Straits, £92 10/; at Penang, $24¾@$25; English Refined, in London, £101; L. and F., £99.

MESSRS. VIVIAN, YOUNGER & BOND, under date of London, Nov. 6, say:

"There is not any important advance in the price, and the figures given below do not exhibit any improvement, the receipts having been enormous. But the deliveries have been very heavy, and the purchases during the last fortnight (mostly of Australian at £90, and Straits to arrive up to £93) have pretty well cleared the market of all which has been pressing. During the last few days but little has offered, and we close firm at our quotations, spot tin being especially scarce.

The stock of Foreign Tin in London and Holland is thus estimated:

	Nov. 1, 1874.	Nov. 1, 1873.	Nov. 1, 1872.	
Foreign Tin in London	2,952	1,704	1,286	tons.
Banca Tin in Holland	450	718	1,410	"
" (in Company's hands)	3,991	4,269	1,020	"
Billiton Tin in Holland	756	552	542	"
	8,149	7,243	4,258	"
Quantity of Straits, Banca and Biliton Tin afloat for Europe	2,100	1,100	2,400	"

Quotations on the same dates being for Straits:

£92 10/ £121 £143 per ton."

Lead.—During the past week there have been sales in a jobbing way, aggregating about 100 tons at about $6 30. About 100 tons of Western lead has arrived, which was mostly bought two weeks ago at 6¼c. The Western market is now firm at 6½c. currency. The Government price remains at $6 35, with little or no disposition to meet buyers' views. A cargo of Selby lead, amounting to 6000 pigs, is held at $6 35 on wharf. Foreign is quiet at $6 80. The receipts of lead at St. Louis during October amounted to 42,235 pigs, and from January 1st to November 1st, to 352,088 pigs, against 356,037 for the whole of 1873. Our foreign advices report considerable firmness.

* Besides this, there are 3,100 tons advised by Cable.

Spelter and Zinc.—We note the sale of 20 tons at 6¾c. The stock is light and demand very good. We quote Foreign at 6¾c.@6½c. gold, and Domestic at 6¾c. currency. Zinc is in good demand with light stock, and is quoted at 8¾c.@8¾c.

Antimony.—There is a very good demand with light stock, and prices are firm at 12c.@12½c. The manufacturers made an advance of £2 this month, and will do so each month until the 1st of February or March. This gives considerable tone to the market.

Manganese.—There is at present but little doing in manganese, some of which is imported from England and Germany. The first is recalcined, and the latter of low grade, not more than 60 per cent. An ore called pyrolusite, which comes from Ilfeld in the Hartz, is quite unlike a manganese from Georgia styled pyrolusite. We quote Georgia manganite, 70 to 74 per cent., at 3c. gold; New Brunswick manganite, 65 to 75 per cent., 2¾c. gold.

Quicksilver.—The price in San Francisco is quoted at $1 50. In London, it is quoted £25 per flask (75 lb.) In New York the price continues at $1 60

Miscellaneous Stocks.

NEW YORK, NOV. 20, 1874.

The following list, during the operations of the week, has fully maintained the activity noted in our last, the prices, however, are somewhat lower. Our quotations of the Philadelphia items represent the closing prices on the 18th inst. The most notable transaction of the day was the transfer of 3,100 shares of Lehigh Navigation at from $48¾ to $49. Small transfers of Lehigh Valley RR. were made at our quotations, the market closing unsettled. A semi-annual dividend of 4 per cent. and also an extra dividend of 1 per cent. has been declared by the Spring Mountain Coal Co., payable on the 10th proximo. Sales of the following items occurred during yesterday's operations at the N. Y. Stock Board at our quotations: 500 shares Quicksilver, 50 shares N. J. Central, 200 shares Consolidated Coal Co., and some 200 shares D., L., and Western RR. Co. Sales of the Delaware and Hudson Canal Co. transpired during the day at 116—this item has remained firm at nearly this figure for a long time past. We note sales of the Pennsylvania Coal Co., on the 18th inst., at 245. St. Louis and Iron Mountain has been pretty freely dealt in during the week at from $23 to $24 per share.

New Jersey Central R. R. Co	—	107⅜
American Coal Co	—	59½
Maryland Coal Co	—	19⅞
Pennsylvania Coal Co	—	245
Quicksilver Mining Co. Preferred	—	39
Reading R. R. Co	—	54¾
Delaware and Hudson Canal Co	—	116
Lehigh Coal and Navigation Co	—	48¾
Lehigh Valley R. R. Co	—	61¼
Catawissa Preferred	—	40
Delaware, Lackawanna & West. R.R.Co.	—	109½
Consolidated Coal Co	—	47
Little Schuylkill R. R.	—	47¼
Huntington & Broad Top R. R. prefrd.	—	12
St. Louis & Iron Mountain	—	24
Susquehanna Canal	—	6
Delaware Division Canal	—	—
Spring Mt. Coal Co	—	70¾
Cumberland Coal and Iron Co	—	48

Boston Stock Market.

BOSTON, NOV. 19, 1874.

The most notable feature in the following list of Copper Stocks during the operations of the week has been the decline of Allouez to $3½ per share; it is intimated that the reason for this unusually low figure is due to the fact of a very large assessment being levied to carry on improvements which the stockholders think are not needed, nor which the condition of the mine will warrant. We note a slight advance of Quincy and a decline of $1 per share in Calumet and Hecla. The sales during the operations on the 18th inst. were as follows: 200 shares of Petherick at $1 per share, 140 do. of Quincy at from $43 to $43¾, and a few shares of Calumet and Hecla, at $134¾ per share.

Allouez	3½	Pewabic	—
Calumet and Hecla Co.	134	Phœnix	4¾
Copper Falls	10	Quincy	42½
Central	—	Ridge	6
Franklin	—	Rockland	—

San Francisco Stock Market.

BY TELEGRAPH.

NEW YORK, November 19, 1874.

We still continue to note a general advance in the following list, from the San Francisco Stock Board, under advices dated the 17th inst.: Crown Point, Raymond and Ely, and Meadow Valley, are the only exceptions to the upward tendency of the list, the quotations placing them slightly lower than per last report; the market, however, without exception, is firm and active. Consolidated Virginia exhibits a further advance over our last quotations of $14 per share, sales of which were effected during to-day's transactions at the remarkable figure of $155 per share. Savage is quoted at $90, an advance of $14, as compared with our last. Sales were made of the following items on the 16th instant, at the prices annexed: Alpha, $17; Overman, $57; Ophir, $74, and Pioche, $4 per share. A dividend of $3 per share has been declared by the Crown Point Mining Company, payable on the 13th inst.; and also $3 per share by the Consolidated Virginia Mining Company, payable on the 10th inst.

Savage	90	Raymond & Ely	16
Crown Point	52	Meadow Valley	5¾
Yellow Jacket	100	Eureka C. V. Bid	8¾
Kentuck	18	Ophir	—
Chollar Potosi	57	Alpha	—
Gould & Curry	18	Consolidated Virginia	155
Belcher	54	Overman	—
Imperial	13	Sierra Nevada	9¾

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 Council earnestly requests members to forward to the Secretary, for preservation, copies of all printed mining and geological reports, particularly pamphlets, which may fall in their way. It is believed that by this means a large amount of valuable fugitive information concerning different regions and properties in this country, may be caught and preserved.

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

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

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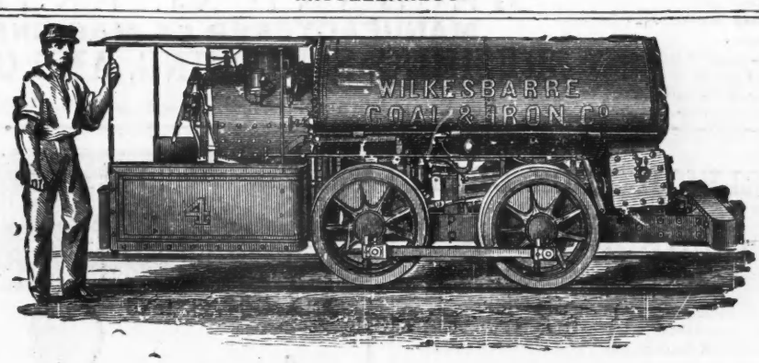

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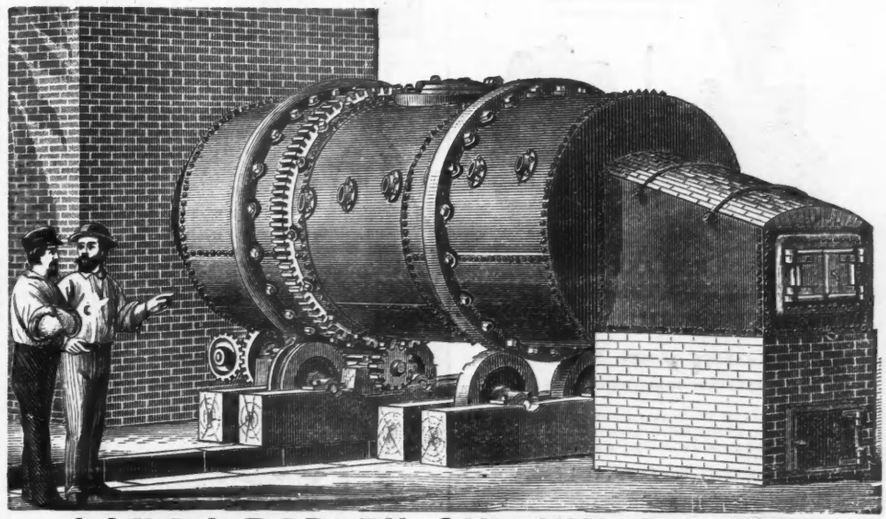

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