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NOTICE.

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AMERICAN INSTITUTE OF MINING ENGINEERS.

Announcement of the October Meeting.

SECRETARY'S OFFICE,
LAFAYETTE COLLEGE, EASTON, PA., Sept. 26, 1878.

The following outline of the meeting to be held in Northern New York has been sent to the Secretary by Mr. CYRUS BUTLER, Chairman of the Local Committee of Arrangements.

The first session for the reading and discussion of papers will be held at Ticonderoga on Tuesday evening, October 15th. It is desirable that members should arrive at noon on Tuesday, on the train leaving Albany at 7 o'clock A.M. Excursions will be made to the graphite and iron works, also to the fort and falls, during the afternoon.

Wednesday will be devoted to a sail around Lake George and to an evening session at Port Henry. On Thursday, the mines and furnaces of Moriah and Port Henry will be visited. On Friday, there will be an excursion to Ausable Chasm and to the Horseshoe-Nail Works of Keeseville.

The arrangements with the railroad companies as to fares, etc., are not yet completed. Members expecting to attend the meeting will please notify the Secretary promptly, that provision may be made for their accommodation, and that later information concerning railroad rates, etc., may be sent them.

It is earnestly desired that members will give early notice to the Secretary of their intention to read papers at this meeting. A number of interesting papers has already been announced.

The extremely interesting character of the mineral deposits in the Lake Champlain region, and the extensive iron and graphite industries which have been developed there, will insure for the projected meeting, it is believed, a large attendance of members. The beauty of the scenery of Lake George and Lake Champlain at this season will render the meeting additionally attractive, and it is expected that there will be a large attendance of ladies.

THOMAS M. DROWN, Secretary.

THE JETTY CHANNEL.

Our occasional references to Capt. EADS and his work at the mouth of the Mississippi have moved a number of his friends to address to us letters, newspaper extracts, etc., the burden of which is, that in spite of all hostile criticism and skeptical prophecy, the jetty plan is practically successful; and that due credit should be given to Capt. EADS for this undeniable triumph. Our correspondents would touch more successfully the real point at issue if they would tell us who said it was impracticable to obtain a navigable channel by means of jetties. Certainly not the Chief of Engineers, against whom their remarks are usually aimed. Not the difficulty of getting such a channel, but the cost of permanently maintaining it, was the ground of Gen. HUMPHREYS' objections to the plan proposed. Experience in similar cases abroad has presented just what *may* happen in this case, to wit, a great deal of premature rejoicing over the first effects of the jetties, followed by corresponding disgust and despair at their ultimate failure. We do not care to anticipate the settlement of the question which time will surely bring about. Meanwhile, the haste with which the "assured success" of the jetties is promulgated looks a little like the way in which political newspapers head their columns with the victorious rooster on the morning after election, and before the returns are in; because if they do not crow then, they may not have a chance to crow at all. *

AMALGAMATION VERSUS LEACHING.

In another column will be found a most interesting letter from Prof. KECK, a gentleman of long and varied experience in the treatment of silver ores. The result of his experience is decidedly unfavorable to the Augustin process of leaching—at least with the majority of ores. And as this expression of opinion coincides with the practical results arrived at in most of the Colorado districts where leaching was tried, it may be considered as indicating a fundamental weakness in the process, and not merely an accidental lack of skill in its operation.

The subject is a most important one, and as large amounts of capital are constantly being invested in this "theoretically simple and inviting but practically deceiving process," we commend Prof. KECK's letter to the perusal of "those whom it may concern."

THE CROSS-CUT EPIDEMIC.

It is quite surprising how many mines on the Comstock are "just about to cross-cut with favorable indications of striking something rich." There is a very epidemic of the cross-cut mania, for it has attacked nearly every mine in Nevada. Not a few of these, it is true, have had this attack of "just starting to cross-cut" so long that it has become chronic, as are also the "favorable indications for something rich," and the *actual condition* of *nothing rich*. In the mean time investors are being humbugged with these wild reports, and the lambs go in to be shorn or devoured with a spirit that might serve some of our eloquent preachers as a striking illustration of simple, child-like faith—"the evidence of things unseen."

THE PROTECTIVE POLICY IN CANADA.

The Canadians seem to have had a "tidal wave" of protectionism, and the government which will come from the recent election will, no doubt, impose a high import tariff on foreign products seeking a market there.

The effect of this movement will be to restrict the growth of the trade between this country and the Dominion, and it will probably bear most heavily on our coal and iron. We now send yearly about half a million tons of anthracite to Canada; and if our neighbors, following our example, should impose a duty of 75 cents a ton on this, the quantity sent would no doubt be greatly reduced, though this result would be worse for the Canadians than for us. It would be unbecoming in Americans to complain of this course on the part of our neighbors; but the old plan of letting our goods in free, or at 17½ per cent duty, while we put two or three times that rate on Canadian products, suited us very well. If the imposition of heavy duties by Canada should lead, as it probably will, to a reciprocity or customs treaty that would let the goods of each into the other country free, it would be as much more advantageous than protection for each, as we find it to be between New York and Pennsylvania.

PHOSPHORIC STEEL.

The paper recently read before the British Institution of Civil Engineers by Mr. ALEX. L. HOLLEY, giving the results of chemical and physical analyses of phosphoric steel, constitutes an important addition to the meager literature of this subject. Phosphoric steel, in which the amount of phosphorus exceeds that of carbon, has been manufactured into rails at Terrenoire for several years past; and these rails have been successfully used, in competition with those of Bessemer steel, upon some of the principal railways of France. Following upon this practical proof, a considerable business of the same kind has sprung up in Great Britain, favored by the commercial advantage which lies in the utilization by this method of old iron rails. It is evidently high time for a more thorough examination of all the conditions, characters, and relations of the new steel; and Mr. HOLLEY'S paper is a good specimen of the kind of investigation needed. Thirteen different charges are fully reported, with complete analyses of ingredients, descriptions of manipulations, and tests of the rolled products from the ingots. In another respect, also, this paper is a good specimen. It indicates how slow and gradual, after all, must

be the deduction of general conclusions from even the most careful and elaborate experimental data. Notwithstanding the great pains expended in this investigation, it seems to have revealed more "anomalies" than "laws." The relation between chemical constitution and physical behavior undoubtedly exists; but it is often so obscured by differences in manipulation or accidents of temperature, etc., that the composition of the material becomes insignificant in comparison with its condition. No doubt, as Mr. HOLLEY suggests, the possible unsoundness of test-pieces, or the lack of perfect uniformity in the metal, may explain some of the observed anomalies. As a general rule, the phosphoric steels are slightly stronger as to elastic limit than common steels having the same amount of carbon; but they possess a comparatively small ductility. Another important point, deduced from the Terrenoire experiments, which Mr. HOLLEY reports in an appendix, is the necessity of thoroughly working phosphoric steel, in order to give it its maximum malleability, strength, and ductility. It should be reduced in the rolls from large ingots.

"The phosphoric steels," says Mr. HOLLEY, "are well adapted to uses where great strength under a statical load is required; but they are not trustworthy, any more than steels rich in carbon, where they are subjected to severe sudden strains." This is in accordance with what we have heard of the Terrenoire phosphoric rails: that although once laid on a good road-bed they wear excellently, and seem as reliable as any others, yet a considerable percentage fail under the preliminary tests, and are rejected by the inspectors. The Railway Company's requirement is, that a 60-lb. rail, placed head up, on supports 39⅜ inches (one meter) apart, and successively loaded with weights, shall stand a weight of 44,100 lbs. (20,000 kilograms) without permanent set, and 66,150 lbs. before breaking. For the drop test, the requirement is, that the rail shall be placed head up on supports 3 feet 7½ inches apart, and under a falling weight of 661 lbs., first dropped 20 inches, and then from successively greater heights, shall not break at or below a stress of 4000 foot-pounds. According to the tables compiled by Mr. L. G. LAUREAU and given in Mr. HOLLEY'S appendix, *good* phosphoric steel rails, manufactured at Terrenoire, and containing C, 0·15 to 0·20; Mn, 0·25 to 0·35, and P, 0·27 to 0·32, easily fulfill these requirements. We quote two of the tables, as giving an interesting comparison with Bessemer rails:

TABLE A—DEFLECTION AND SET OF 60-LB. STEEL RAILS.

Under Statical Loads. Supports, 39⅜ in. apart.

LOADS.	BESSEMER STEEL.		PHOSPHORIC STEEL.	
	Deflection.	Permanent set.	Deflection.	Permanent set.
Lbs.	Inch.	Inch.	Inch.	Inch.
27,562	0·098	.....	0·091	.....
38,587	0·126	.....	0·118	.....
44,100	0·138	.....	0·133	.....
55,125	0·173	0·008	0·172	0·004
66,150	0·326	0·126	0·936	0·736
77,175	0·642	0·394	1·523	1·240
Breaking load.....	99,225 to 108,000		94,815 to 105,960	

TABLE E—DEFLECTION OF RAILS OF TABLE A UNDER BLOWS.

FORCE OF BLOW IN FOOT-POUNDS.	DEFLECTION.	
	Bessemer Steel.	Phosphoric Steel.
	Inch.	Inch.
1,084	0·031	0·070
1,620	0·062	0·144
2,168	0·144	0·288
3,252	0·295	0·472
4,336	0·515	0·917
5,420	0·952	1·338
6,504	1·307	1·811
Breaking stress in foot-pounds.....	8,124 to 9,214	7,592 to 8,124

By increasing the percentage of manganese from the amount above mentioned to one per cent and upward, the stiffness of the phosphoric rails is considerably increased. For instance, 60-lb. rails containing 1 to 1·20 Mn and 0·25 to 0·27 P, showed under a statical load of 77,175 lbs. only 0·940 in. deflection and 0·740 permanent set. The blow of 6504 foot-lbs. produced 1102 in. deflection. But the addition of manganese does not sensibly raise the elastic limit, though it diminishes the amount of deformation beyond that limit.

The experiments of Mr. HOLLEY were conducted at the Norway Iron Works, in Boston. In some of the charges, he says, "a flux was employed, which duplicate analyses and all physical tests, both at these and at other works where it was used, proved to have had no obvious effect upon the product." We presume this slight passing reference indicates a "patent process," concerning which there was a good deal of boasting a year ago, though there has been very little of late. Ingots from all the charges were rolled at the Norway works, and ingots from about half the charges were rolled at Troy. In the former works, the rolls were not well adapted for steel. Their reduction was too rapid—about 25 per cent in each of the first few grooves—and some of these grooves were gothic. "This," says Mr. HOLLEY, "was peculiarly bad for the early passes of ingots; because, while it drew two corners under compression, it left two corners of a metal which was as yet porous and weak to be stretched without compression. Hence a steel like phosphoric steel, which is particularly weak and 'cracky' at the comparatively high heat at which it enters the rolls, is pulled apart by gothic grooves, while box grooves, holding up all the corners, would make sound work. When the piece gets cooler, more condensed and stronger, gothic grooves, by reducing four sides at once, do more work in a given length of rolls."

Another disadvantage to which these ingots were subjected was their small size. They were only 6 inches square at the large end, and were rather long for their thickness. Large ingots, 12 or 14 inches square, if carefully bloomed and reheated, would undoubtedly give better results than small ingots, rapidly reduced, whenever, as in this case, the steel has a tendency to crack. This disadvantage of size in the ingots affected, of course, the rolling at Troy as well as that performed at Boston. The disadvantages above mentioned, arising from the character of the Norway train did not exist at Troy. Yet we find the ingots cracking almost as badly at the latter works as at the former; and we must confess that this part of the experiment makes rather a bad showing for the phosphoric steel. And we suspect that Mr. HOLLEY shares this feeling. He takes occasion to remark, in an introductory way, that "however well a steel may be adapted to certain uses in consideration of its cheapness, this consideration ceases to exist if the metal can only be nursed into shape by numerous operations, and at the risk of a large percentage of cracked and imperfect bars." And he points out very clearly and candidly that owing to the disadvantage already described, the phosphoric steel did not have a fair chance to exhibit its best behavior in rolling.

The mechanical manipulation is evidently going to be the chief problem of this manufacture. Not only the Terrenoire experiments, but the physical tests reported by Mr. HOLLEY (made mostly by Prof. THURSTON at the mechanical laboratory of the Stevens Institute) indicate that there is comparatively no difficulty inherent in the composition of the steel, except the difficulty of producing sound bars. That this will be overcome, we have no doubt; and we hope it will not be long before experiments will be made under better auspices as to size of ingots and shape of grooves. If they should be conducted in all other respects with such intelligence and skill as Mr. HOLLEY and his colleagues have exhibited in the present case, the day of phosphoric steel will perceptibly brighten. We know already that it is cheap, and that good bars or rails or plates of it are good enough for many purposes. SLADE'S earliest manufacture of it yielded boiler-plate of exceptionally fine quality. The problem is, to ascertain and maintain the conditions of uniformity in the manufacture, so as not to spoil two horns in making one spoon. *

NEW PUBLICATIONS.

TABELLEN ZUR BESTIMMUNG DER MINERALIEN, ETC. (*Tables for the Determination of Minerals from their External Characters.*) By Dr. ALBIN WEISBACH, *Professor of Mineralogy at the Mining Academy of Freiberg.* Second Edition. Leipzig: Arthur Felix. 1878. 8vo, 108 pp.

The peculiarity of the scientific instruction given at Freiberg has always been its intimate relation to practice. Dr. WEISBACH'S father, the celebrated author of the "Mechanics," was mighty in the realm of experiment as well as of calculation, and the son, even before he succeeded to BREITHAUPT'S chair, devoted special attention, as Instructor in Mineralogy, to the *Praktikum*, or exercise in the determination of minerals, which is, after all, the most important part of what the student can get in this branch at school. It was therefore quite in harmony with the nature of the man and the traditions of the place, that Dr. WEISBACH should perfect and publish a series of tables, facilitating the identification of minerals after the Freiberg system—namely, by their external characters alone, including, when necessary, a few simple and rapid tests of solubility, blow-pipe reactions, etc. This system differs from those of DANA and KOBELL, in laying less weight upon chemical relations. Theoretically, these are the most important. The science of mineralogy is no science at all without chemistry. But the art of determinative mineralogy may be successfully practiced without the immediate aid of analysis. Indeed, it is so highly important to be able to recognize mineral species without an appeal to the filter and the balance, that one who can not do this is scarcely to be called an expert mineralogist.

WEISBACH'S tables are known to American students through Prof. FRAZER'S translation and adaptation. The present edition contains two additional rubrics, giving respectively the crystalline habitus, and the character of the usual aggregates (massive, disseminated, pulverulent, etc.) and that of the fracture (fibrous, conchoidal, etc.), both of which are very useful. *

DIE MAGNETISCHE DECLINATION, ETC. (*The Magnetic Declination and the Isogonals in the Austro-Hungarian Kingdom and Adjoining Regions.*) *With a Map.* By F. POSEPNY. Vienna: Alfred Hölder. 1878. 8vo, 54 pp.

This pamphlet, reprinted from the *Berg-und Hüttenmännisches Jahr-*

buch, contains, besides the special data indicated by its title, an interesting introductory account of the history of exact study of terrestrial magnetism, the difficulties surrounding it, and its importance with relation to the mining industry. We infer from Mr. POSEPNY'S remarks that in many parts of Austro-Hungary little or no attention is paid to the variation of the needle, and that maps may often be found, even in official archives, upon which the results of compass surveys have been laid down, without any record of the data necessary for their subsequent verification and reference to the true meridian. If we consider the diurnal, annual, and secular variations, those which are caused by magnetic storms, and those which are referable to local magnetism of rocks and ores, it is evident that the compass can never be perfectly reliable; and although its great convenience will always secure its frequent employment, yet it should be corrected for all permanent records by careful reference to more accurate instruments and to meteorological data. *

GOLD AND SILVER MINES OF AMERICA. By R. C. STONE. New York: Scientific Publishing Company. 1878. 8vo, pp. 40. Price, 20 cents.

In this little pamphlet Mr. STONE has collected and gives in concise, readable form a vast amount of general information. The object of the author is to popularize precious metal mining, and to give the investing public, in easy, untechnical language, the salient features of this branch of industry. To this readable description Mr. STONE has added a mass of valuable statistical information concerning gold and silver, which he has gleaned from reliable authorities. No doubt this little pamphlet will receive a wide circulation and accomplish the purpose for which it was written.

CORRESPONDENCE.

Amalgamation versus Leaching.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: Since the publication of that article on AUGUSTIN'S process in your issue of May 18th last, I have received a good many letters with questions about it. Allow me a chance to get rid of this trouble by publishing the following remarks:

The finishing operations in the chlorination process are either amalgamation or lixiviation. The advantages of lixiviation over amalgamation are found—1st, in saving the unhealthy and formerly so expensive quicksilver; 2d, in working silver ores rich in copper, as the coppercus residues are valuable; and, 3d, in saving some motive power. But the advantages of amalgamation over lixiviation (speaking about working only raw ores, *not* metallurgical products) are found in the simplicity of the process, in the ability of allowing a high production upon a small surface, and in the possibility of working rich kinds of ores, which, in consequence of certain materials in their gangue (for instance, talcose schist, calcspar, heavy spar, etc.), cause insurmountable difficulties in leaching.

But also in regard to chlorination itself, it must be admitted that those pyritous ores, *so good* for amalgamation and the previous chlorination. must be avoided in using the lixiviation process, as they produce a good deal of soluble sulphates, which spoil the quality of the salt solution, which circumstance, besides the everlasting leaking of the many vats, is the great drawback of AUGUSTIN'S process. Every man who has followed this process by analytical researches will agree that only those ores can be chloridized to a high degree which contain pyrites enough to get *and maintain* the silver in the state of sulphate, before its chlorination takes place, and which—*if quartzose*—contain *not* more than three per cent of lead.

But ask any mining engineer, having lived in Colorado for some years, where, in Colorado, can such ores fit for an economical treatment by AUGUSTIN'S process be obtained in a quantity of at least 50 tons per week? His answer will be that there were, formerly, especially in the Georgetown District, surface ores of that quality, but not quantity; that there are some ores of that kind in Boulder County, also at Rosita, and near Ouray (San Juan). But those Boulder (Caribou) ores have been found to be more successfully treated by amalgamation; also the Rosita ores, which contain so much heavy spar that leaching goes on very slowly. The main advantage of leaching over amalgamation was, formerly, the saving of the quicksilver, which still had a high price a few years ago. And even if the price of quicksilver should rise again, no metallurgist who ever had to do with amalgamation works with their simple arrangements, and was unhappy enough to have to manage lixiviation works for raw ores, with their immense surface for a small production, with their everlasting nuisances of using pumps for lifting a corrosive fluid some forty feet high, with their large and always leaking vats, not to speak of the many other troubles in leaching, in cleaning the salt solution, etc., etc., would, with easy heart, change amalgamation for lixiviation. Capitalists investing in metallurgical business in Colorado ought to be very careful not to fall in love with AUGUSTIN'S process, which is, theoretically, as simple and inviting as it is deceiving in practice.

Most respectfully yours, RUDOLF KECK.

DENVER, COLO., September, 1878.

THE GRAND CANAL OF CHINA.—This canal is likely to share the fate of the Great Wall. This water-way was constructed by Kublai-Khan and his successors of the Yuen race, and is 600 miles in length. There are 10,000 flat-bottomed boats on this canal, and these are used in the transportation of grain. The *Echo* states that this great water-way is an enormous "white elephant," as it costs an enormous amount every year for repairs, the appropriations there, as elsewhere, not being entirely devoted to the purpose for which they are meant. Junks are delayed every month while channels are dug for their passage. This year, for the first time since the construction of the canal, the grain from Nanking, with the consent of the government, has been forwarded by sea, and this fact has impelled the Peking authorities to consider the expediency o f abandoning the canal as a commercial highway.

THE LOWE GAS AT BALTIMORE.

Extracts from a Report by Prof. Henry Wurtz, Ph.D.

SUSPENDED MATTER.

"It has been claimed by certain dogmatists that an inherent difficulty exists in the manufacture of gases into which petroleun products enter, because of an alleged impossibility of separation from such gases, by any process of condensation, washing, or purification of certain kinds of tarry or carbonaceous matters, which, they claim, are obstinately carried along with such gases to indefinite distances. A special set of experiments was entered into, for the purpose of testing in the most conclusive manner this assertion, so widely current among the opponents of progress in American gas technology.

"Six hundred cubic feet of the gas, taken directly from the holder, passed through my analytical train apparatus during ninety-one hours, made a gain in weight of 463 thousandths of a grain, equal to seven tenths of one grain of suspended matter per 1000 cubic feet of gas.

"A parallel experiment was made upon the gas-coal of one of the older Baltimore companies. Three hundred and sixty cubic feet of this gas, passed through during three days, deposited 772 thousandths of a grain, equal to 2·145 grains per 1000 cubic feet, indicating about three times as much suspended matter in this as in the Lowe gas. The place of experiment in the latter case being quite a long distance from the works, thus giving opportunities for settling of suspended matter, makes the result still more favorable to the Lowe gas.

"The six hundred feet of Lowe gas passed as above through the cotton did not communicate to the latter the faintest stain; and this result, which was repeated and confirmed several times, is conclusive against the notion of any suspended impurity, like tar or soot, being carried by it.

DENSITY DETERMINATIONS OF THE GAS.

"Great importance has always been justly attached by me to a reliable knowledge of the density of gas, and I have long urged that records of density should be kept up incessantly in all gas-works.

"Many found it difficult to put faith in the remarkably low density which was found by me for the Lowe gas as manufactured in Utica, in 1875, which was only = ·571. Extraordinary care was taken, therefore, to secure the most extreme accuracy. The density determinations were made by the ordinary Bunsen method of effusion, as modified by BOWDITCH and GOODWIN. It was found that to obtain uniform results with this apparatus, manufactured by Mr. GOODWIN, of Philadelphia, it is necessary that the inner tube from which the gas and air are effused, should have been recently washed out with a strong caustic alkaline solution, to render the gas chemically clean, and produce uniform adhesion of the water to its surface. The effusion of the gases becomes much slower, but more constant. The mean of 36 determinations gave ·5885.

"This density averages, therefore, a little higher than that of the gas made at Utica, as referred to above, the gas being at the same time of higher candle-power, both of which circumstances are due to the introduction, in the Baltimore works, of a larger production of hydrocarbons in the form of naphtha. At Utica, the average amount of enricher (crude petroleum) was only 3·25 gallons per thousand feet, and the candle-power is about 19·5.

"A very satisfactory uniformity of density at the same time appears, the extremes of the means of each day varying less than one per cent. This uniformity of density is important with reference to the distribution of the gas.

PHOTOMETRY OF THE GAS.

"With regard to illuminating power, this gas speaks so well for itself to all beholders that it was not judged necessary—when matters so much more urgent were at hand—to spend much time in photometric tests. On two days, nevertheless (the 6th and the 13th of April), the candle-power was elaborately determined with every possible care and precaution. The candle-powers, reduced to 60° Fahr. and 30 inches of barometer, for five feet of gas per hour were as follows: For April 6th, 22·28 candles; for April 13th, 22·75 candles; mean, 22·56.

"The whiteness of the flame of this gas is worthy of remark, there being apparently an unusually small proportion of orange rays, or red rays, or both.

"I may add that through an accident I was enabled, by observation, to verify what has rested on inference only in my mind hitherto—that the candle-power may be increased at will by a little larger dose of naphtha. On one occasion, the naphtha had been run through the generators at a more rapid rate than usual, early in the day, and it was found that the candle-power, when the holder was only partly up, had been raised to 23·95 candles.

PURITY OF THE GAS.

"The extreme freedom of this gas from all the impurities found usually in ordinary illuminating gas is very remarkable.

"Daily tests were made during the late afternoon hours, when the holder was well up, with lime-water for carbolic acid, with lead paper for sulphureted hydrogen, and with turmeric and feebly reddened litmus paper for ammonia. In each case the amount of gas used was five cubic feet of the meter, slowly passed over the reagent papers (prepared by myself) inclosed in glass tubes. The lime-water (which was strong) was placed in a test-tube, and a current of gas passed till the liquid had mostly disappeared, from being mechanically conveyed away by the current. The extraordinary fact must be stated that in no case was it possible to detect the smallest trace of carbonic acid, sulphur, or ammonia.

"I have no hesitation in pronouncing this the cleanest gas that has come within my observation, this observation having been very extensive. The experiments previously related, indicating the absence of any traces of mechanically suspended tarry matter, complete the evidence here given of the absolute efficiency of the purifying boxes.

"As for sulphur in the form of bisulphide of carbon and of mercaptan compounds, which do not act on lead paper, no opportunity has yet occurred for testing. From the high temperature of the Lowe 'superheaters,' however, the entire absence of these seems probable."

(TO BE CONTINUED.)

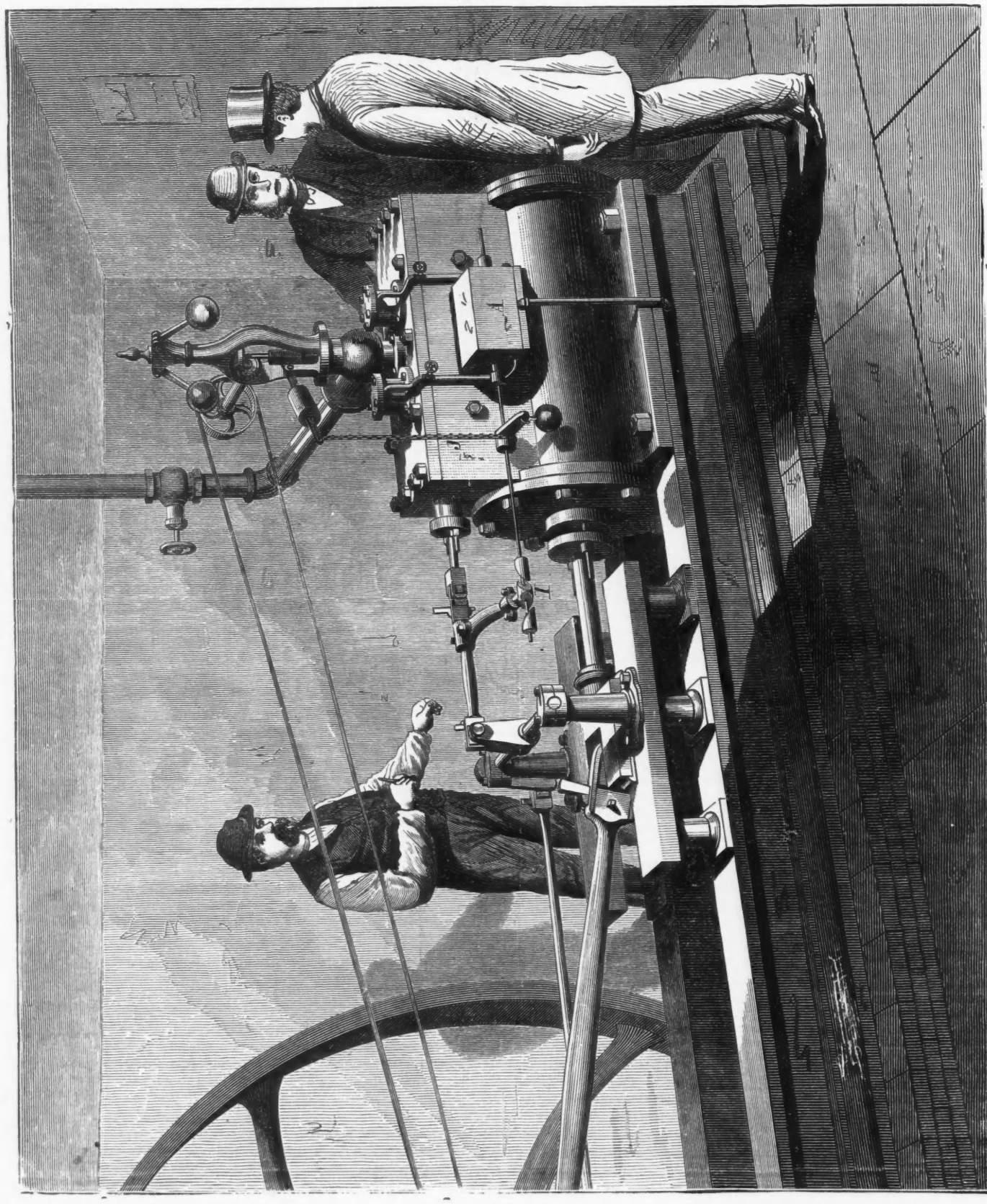
THE first invoice of perfumery ever shipped from this country to England was sent from Philadelphia some days ago.

IMPROVED VARIABLE AUTOMATIC CUT-OFF.

In the device herewith illustrated the inventor has aimed to provide a variable automatic cut-off gear which may be applied to plain slide-valve engines, and render the working of the same fully as economical as if they had been specially constructed in connection with an improved apparatus of the kind.

A general view of the apparatus in position is given in Fig. 1, and the details will be understood from Figs. 2 and 3. It is so constructed that should the motion of the engine become too rapid, it will cut off the steam automatically at each stroke of the piston until the engine has been slowed down to the proper speed. Besides the valve-chest is a secondary chest *A*, Fig. 3, in which is the valve *B*. This chest has an exhaust port *C*, and ports *D*, leading to the cylinders *E* attached to the top of the main valve-chest. The chest *A* is connected to the main-chest by a passage, so that the pressure may always be the same in both chests. In the cylinders *E* are spiral springs which rest upon steam-tight pistons to which are attached rods which pass down into the main valve-chest and are attached to elbow levers *F*. The holes in the chest through which the rods pass are made larger than the rods, so that the steam may have free passage. The elbow levers communicate, as shown, with plates *G*, placed on top of the slide-valves. These plates have ports through which the steam passes in its traverse through the ports of the slide-valve to the main cylinder ports. When the engine is running at ordinary speed, the plates *G* are in such a position that their ports may be directly over the main ports. To the valve-stem *H* is attached an arm which carries a wedge-shaped head *I* (see Fig. 1), and through this passes the valve-steam from the secondary chest. On the last-mentioned stem are adjustable collars, and also connected to the stem is a chain *J*, which carries a weight, and which, after making one or two turns around the stem, communicates with a lever which is connected with the governor.

With this construction, as the speed of the engine increases, the outward movement of the governor-balls causes the lever to be depressed



VARIABLE AUTOMATIC CUT-OFF.

and the valve-stem to be turned so that the head on the arm will strike the collars on the stem and thus move the valve *B* on its seat. As this valve moves, it connects one of the ports *D* with the exhaust *C*, so that steam may escape from the upper part of the cylinder *E*, with which said port is connected. This allows the steam pressure of the main valve-chest to raise the piston in said cylinder *E*, and hence to move the plate *G* with a positive motion to shut off steam. This happens at each stroke of the main piston until the speed of the engine has been reduced to its ordinary amount. The cost of attaching is comparatively small, as all of the old parts of the engine are utilized, except the old slide-valves and governor-valve, which are laid aside.

We give indicator-diagrams from an engine fitted with this cut-off in Fig. 4. The valve-gear has been, we are informed, in successful operation for the past six months on C. L. WESTON'S engine, corner Twenty-ninth street and Seventh avenue, New York City, where it may be seen in operation.

Fig. 3

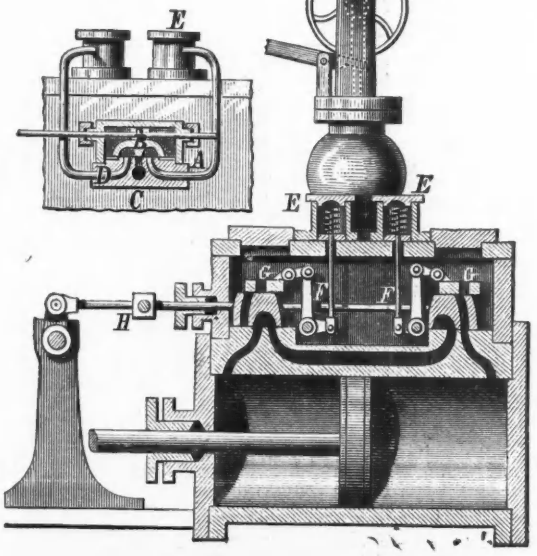


Fig. 2

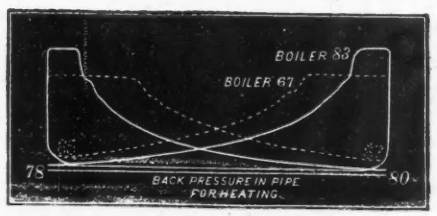


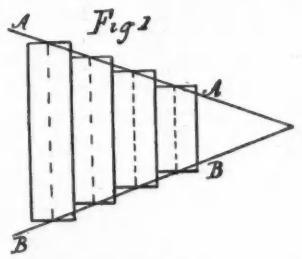
FIG. 4.—IMPROVED VARIABLE CUT-OFF.

LAYING OUT CONE-PULLEYS.

BY JOSHUA ROSE, M.E.

In laying out cone-pulleys, or stepped cones, as they are sometimes termed, for crossed belts, the belt will have equal tension when placed to run on any of the corresponding steps of the cones, providing that their axial shafts are parallel one to the other; that the largest cone of one pulley is in line, or *fair*, with the smallest cone of the other; and that the steps of the cones are equal, so that a line drawn from the center of the faces of the two end steps passes also through the center of the faces

Fig 1



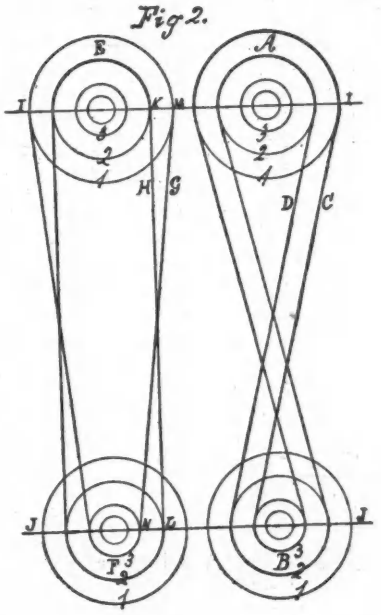
of all the other steps, as shown in Fig. 1 by the lines *A* and *B*. It follows also that if the cones were plain, that is, without steps, the tension would remain equal with the belt at any location on the cone.

In Fig. 2, *A* and *B* represent two stepped cones connected by the two belts, *C* and *D*, the latter running upon the middle, and the former on the end cones, the belts being crossed. It will be noted that in consequence of the crossing of the belt it has contact, on both the top and bottom steps, with more than one half the circumference of the steps, but the variation this would cause in the length of the belt is too slight to be of any practical value; hence it may be discarded. Measuring then the lengths of each side of the belt from the center-line *I I* to the center-line *J J*, we shall find *D* and *C* to be equal; and if we assume the diameter of the step marked 1 to be 10 inches, and that of the smallest, marked 3, to be 4 inches, the half of their added circumferences will be 21·99. In this case, the sizes of the middle cones, marked 2, will be 7 inches, and the half of their added circumferences (and this is the part of the cones around which the belt would lap) will also be 21·99 inches; hence, the sum of the arcs of contact of the belt around the pulley being equal in both cases, and the lengths of the sides of the belt being equal, it is obvious that the tension of the belt will also remain equal.

If the two cones are to be connected by an open or uncrossed belt, the case is different, because the length of the side of the belt, measured from center-line to center-line of the steps at their perimeters, will vary as the sizes of the steps vary. Thus, if we apply a pair of compasses at *K L* and at *M N*, we shall find the distance *K L* the shorter, and as a result the belt would have less tension when on those steps, and the degree to which this will exist will be in proportion to the length of the belt and the variation in the sizes of the steps of the cone.

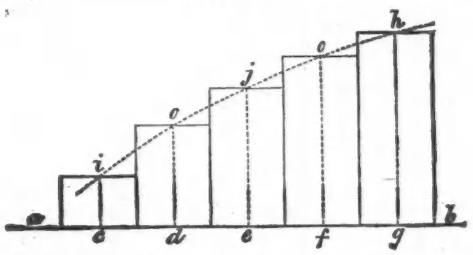
To remedy this defect, the cones are laid off as shown in Fig. 3, *a b* representing the axial line of the cone; *c, d, e, f, g* are the center-lines of

Fig 2.



the steps; and *h, i* a curve, whose radius will vary according to the conditions. The rule for finding it is, subtract twice the distance between the centers of the two cones from the total length of the belt (measured over the end steps) and divide the remainder by 6·2832, the quotient is the radius of curve required. The process is to mark from the center-line

FIG. 3.



a, b (Fig. 3) the radius of the end steps of the cone, as at *h, i*, to find the required center of curve from *h, i*, and the intersection of the curve with the center-lines of the steps, as at *o, o, j*, is the radius for the intermediate steps of the cone.

TUNNEL TIMBERING AND ARCHING.*

(*Continued from page* 131.)

GENERAL COMPARISON OF THE FOUR LEADING EUROPEAN SYSTEMS.

Now that we have been over the several systems, and considered them separately, it may be well, finally, to look at them together. There probably is no branch of engineering in which the situations to be met and the difficulties to be overcome are so diverse and so varied as in tunneling. It, therefore, is well to take advantage of all experiences to shape one to good judgment, when the occasion may arise for its exercise in new work. In America, owing to the peculiar characteristics of our tunnels, their being located generally and largely rather in loose rock than in soft ground proper, engineers have not as yet expressed any decided predilection for any one system over another in *soft-ground work*, but when the occasion has arisen, those in charge have met the problem as best they could on their own resources.

In Europe, they have their four distinctive systems, which we have just described, and the controversy over them on the continent has been very animated. It would hardly seem advisable to seek for a philosopher's stone in tunneling—to say, as RZIHA does, of the Austrian system, that this or that system is the best under any and all circumstances. (SCHOEN, in his *Tunnelbau*, takes the same ground as RZIHA, though

* Condensed from *A Treatise on Tunneling, Explosive Compounds, and Rock Drills.* By Henry S. Drinker, Mining and Civil Engineer. Published by John Wiley & Sons, New York. (Copy-righted.)

NUMBER.	SUBJECT EXAMINED.	ENGLISH SYSTEM.	BELGIAN SYSTEM.	GERMAN SYSTEM.	AUSTRIAN SYSTEM.
I.	Drainage, Ventilation.	Is very much favored on account of excavation of full tunnel cross-section, and the use of a bottom central heading.	Ventilation easy on account of rapid advance of upper part of section. Pumping very unfavorable on account of method of opening. Water in upper workings softens ground in the lower section and foundations.	Very unfavorable, almost same reasons as Belgian method.	Very favorable on account of excavation of entire tunnel cross-section.
II.	Excavation or mining.	Favorable in easy ground as long as timbering can be carried on as usual—*i. e.*, extraordinary blocking-up avoided. In *blasting ground* the system, on account of limitation by sections, is less favorable.	In solid rock, a little advantage gained. In ground exerting pressure, system is very much at a disadvantage.	Very unfavorable on account of want of space in the narrow side-headings, especially in hard rock, where large cavities at the sides are apt to be opened.	Very much favored on account of excavation of entire profile in openings accommodating themselves to nature of ground. In hard rock, favorable on account of using stoping method.
III.	Transportation.	Very favorable as long as extraordinary timbering is avoided (and it generally can be avoided).	Too expensive on account of interruption of transportation by removal of lower sections—*i. e.*, on account of building of transportation scaffolding.	Very expensive on account of narrow headings and the necessity of hoisting materials over the core, the spaces for side-walls being blocked up by timber if ground show much pressure.	Very favorable by full section offered and the location of the tracks on middle timbers; said to be even cheaper than English method, as timbering leaves sufficient space everywhere.
IV.	Masonry.	Cheap because mining stops when masonry begins, and there is sufficient free space left to work in, where extra props to the top bars are not introduced. In very bad ground there is a tendency, however, to force in the side-walls and the bottom up, there being no middle bracing. When the break-ups are multiplied, the cost is increased, as transportation of materials is necessarily hindered.	Not solid, chiefly on account of the disadvantages in underpinning the arch; very expensive on account of further danger to the finished arching from the bottom blasting.	Very expensive on account of narrow space left by core; on account of difficult transportation and difficult work in these narrow spaces at the sides; apt to damage masonry by blasting away core in solid rock; and in soft ground the small room for working in the side-headings results in poor masonry being put in, which will not stand pressure.	Sound on account of the close contact of masonry to the side, and the complete support afforded until the arch is keyed. Not as cheap as English system where the latter has no extraordinary timbering, and the length of the tunnel does not require numerous break-ups.
V.	Placing the timber in position.	Favorable, especially in ground where the bars are easily drawn and the timbers used over again in the succeeding sections. Costly where bars become caught and have to be walled in and new ones brought in. Somewhat dangerous where much blasting has to be done, owing to liability to displace the timbering.	Very expensive on account of the underpinning necessary.	Very expensive on account of narrow space left by centre-core and difficult transportation in narrow headings.	Very cheap because transportation easy and timbers on the average are short, and because the middle timbering is easily taken out when required
VI.	Avoiding to open too large faces.	In the English system, a large face is undoubtedly opened in enlarging downward, but it is done gradually, and the face is meantime held by the timbering put in and braced by the sill-rakers.	In swelling ground, the rapid advance of the top is very injurious on account of a large bottom surface thereby left open; in general, however, as in loose rock excavation, the rule may be said to be complied with.	Rule complied with only partially, leading to other great disadvantages. To prevent the opening of too much open surface has led to the centre-core system, which in itself allows large free faces, and these have proved very injurious, on account of pressure of material and swelling of ground.	Rule complied with entirely; working is in small openings, nevertheless full cross-section is taken out without making large faces in ground exerting pressure.
VII.	Influence of mining upon movements of ground.	By taking out short sections, the system works well. There is often, however, great pressure at the face.	Has been said to be unfavorable in loose ground.	Decidedly to be rejected, on account of chance of sliding in the middle core and its general insecurity.	Favorable when care is taken to choose length of sections well.
VIII.	Cross and longitudinal connection.	Cross-connection has been criticised; no longitudinal connection of timbers, except the sill-stretchers. In fact, the main roof-timbers are longitudinal.	Longitudinal and cross-connection both very insufficient.	When bar-timbering used, the case ranks about with the English; with spar-timbering,* both connections are there, but useless on account of motion of core.	The rule is very completely complied with.
IX.	Avoiding the concentration of pressure at one point.	Well carried out, but perhaps not so completely as in the Austrian system.	Rule not at all complied with.	With bar-timbering, not so well complied with as with spar-timbering, and with latter it is useless on account of motion of core.	Fully carried out.
X.	Exchanging of timber.	Undoubtedly very difficult, in the case especially of broken bars in heavy ground.	Very difficult, and in many cases impossible.	With both bar or spar timbering, very difficult on account of narrow space left by core, and care required, owing to motion of latter.	Very easy on account of longitudinal connection.
XI.	Parting and slipping of single timbers.	Somewhat apt to occur with the side-bars, but only where great pressure is *not* brought to bear. One of the characteristic features of the English system is that the heavier the pressure the closer the timbers bind.	Apt to occur.	Very much encouraged by motion of centre-core.	Avoided by the full cross-wise and longitudinal connection.
XII.	CORRECT USE OF TIMBER.				
a.	Support in the line of pressure.	Not fully carried out. Better, however, than in the Belgian and German systems.	Not fully carried out.	With bar-timbering not fully provided for; with spar-timbering useless on account of movements of core.	Completely carried out.
b.	Avoiding weakening of timber.	Well observed.	Not observed when timber trimmed on one side is used.	Not at all observed in bar-timbering; useless with spar-timbering on account of movement of core.	Completely complied with.
c.	Immediate substitution of masonry for timber when removed.	Observed in a remarkable manner. In this point, the English system is far in advance of all others.	Not complied with as well as in the English system.	Very much neglected.	Well observed.
d.	Regaining of timber.	Some loss by leaving the lagging and collars in place.	Very insufficiently complied with.	Much neglected on account of core and the complications of pressure often resulting therefrom.	Attempted as far as possible. Better effected, perhaps, than in other systems.
e.	Correct proportion of dimensions of timber.	Approximately well observed.	Well attended to.	Well attended to.	Well attended to.
f.	Smallest amount of timber.	Not strictly complied with in cases where much pressure occurs and auxiliary timbers have to be used.	Not complied with on account of faults in construction and the difficult underpinning work.	Observed worst in this of all the systems, on account of faults of construction and the great pressure brought about by mode of mining.	Well observed in that the timber is systematically put in according to the rules of timbering and mining.
XIII.	POSSIBILITY OF USING SYSTEM IN ANY GROUND.				
A.	System easily supported and quickly strengthened.	Limited by bar-timbering and on account of absence of middle framing. For this reason, the system may, perhaps, be judged insufficient for the worst kind of quicksand, etc.	Not of general application. Adapted best to moderately firm rock.	With bar-timbering, very much limited and seldom to be carried out. With spar-timbering, of limited application on account of movement of core.	On account of longitudinal bracing and middle timbering, this system may be considered strongest and best for ground exerting great pressure. It can of course also be used in other ground—*i. e.*, of all the systems, this can be used with effect in any material. Whether it would be advisable to universally apply it is, however, another matter.
B.	FIT FOR DRIFTING—TIMBERING, SHEET-PILING, ETC.				
a.	Setting the drifting forepoling.	The system, on account of the poling-boards being inserted across the line of the tunnel, instead of in the direction in which the tunnel is driven, is said not to be as well adapted to drifting in very running ground as the Austrian system.	Unsuitable.	Unsuitable.	Admirably adapted, as the forepoling or sheeting-plank is inserted in the direction of the tunnel-line.
b.	Fit to withstand pressure and pushing.	The system is said not to stand heavy pressure as well as the Austrian system.	Not at all appropriate on account of faults of construction and underpinning of roof of arching.	Not at all appropriate on account of faults of construction and motion of core.	Well adapted on account of middle framing and crosswise connection.
c.	Mining the whole cross-section at once.	The cross-section is excavated in a stope, not all attached at once at several points. The English plan probably affords in this respect the cheapest excavation.	Not adapted.	Not adapted.	Well adapted, being cut into small parts to be worked simultaneously.
d.	Easy placing of timbering.	Where the bars are drawn, this is well complied with.	Not appropriate.	Very expensive under all circumstances.	Well carried out.
XIV.	Tending to rapid work.	Where opposite workings can be had, and the miners and masons can interchange, the system works very rapidly. Where there is only one point of attack, one set, either miners or masons, must be idle while the other set works, but this is hardly ever the case.	In hard rock quicker than the English system, but not quicker than Austrian; in running ground, very slow, on account of care to be taken in underpinning.	Very slow on account of narrowness caused by core and increase of pressure caused also by it.	Said to be the most rapid system, on account of constant, uninterrupted work being carried on at each point until completed.
XV.	Safety.	Safer than either the Belgian or German systems.	Downright dangerous in running ground or quicksand.	Very dangerous because core cannot be relied upon.	Probably the safest system, on account of the middle framing and its crosswise connection, and from the fact that the arching is not delayed.

his assertions and assumptions in favor of the exclusive use of the Austrian system are not so sweeping.)

Means must be adapted to ends. For instance, who would think of applying this very Austrian system (admirable as it seems to be, in meeting wet treacherous ground) in most of our ordinary tunnels in America, through the slates and shales of the sub-carboniferous formations? It would be a waste of timber. Again, where a system has such manifestly good points as the English, giving, as it does, cheap excavation, with free, open, large space for the masons to work in, and quite sufficient strength for perhaps nine tenths of the ground one is apt to encounter, it unquestionably has met and doubtless will, in the future, meet with great favor in building tunnels through ordinary soft ground.

As to the center-core system, it seems hardly possible to urge much in its favor.

Suffice it to say, that, under any and all circumstances, in soft ground the center-core system has been well and thoroughly tried abroad, and the verdict of experience is emphatically and decidedly against it. Of course, any system of tunnel construction, the poorest and the most costly one, may doubtless be used in a tunnel, and the tunnel, by pluck and energy, be carried through successfully; but this is not the question. Theoretical rules can not be laid down for building constructions like tunnels, that are executed under such varying circumstances; but certain general positive experiences can be established, and one of the most prominent of these is the entire condemnation of the center-core system in soft ground. As to its use in harder ground, such as loose rock, though it does not there involve such radical defects of construction, still there are other systems—our own American one, for instance—which are better, stronger, and, above all, cheaper.

As to the Belgian system, it would seem to be condemned for general use in soft ground, as the underpinning of the arch in such material involves too much danger; but as to its application in moderately hard ground—as, for instance, that met at Mt. Cenis and at St. Gothard—it seems not only to be the favorite system abroad of the present, but the established one of the future. Mr. KAUFMANN, the inspecting engineer of St. Gothard Tunnel, assures us, in his account of that work, that no other system could keep pace, in arching and walling, with the rapid advance of the machine drill work.

With regard to arguing in favor of a system on account of the difficulties it may, in particular instances, be said to overcome, we must remember that sometimes it may happen that the very system of excavating and timbering which is praised for having withstood heavy pressure, or for having been used under enormous difficulties, may, in fact, have been in itself the very primary cause which either induced or in a great measure intensified those very difficulties; in fact, that men often boast of overcoming natural difficulties which their own bad judgment or want of skill may have brought on.

Above all things, we should remember that correct timbering seeks to avoid rather than to draw pressure, to meet it at once, and check the tendency to fall or to swell, as any movement of the kind, if not promptly checked, grows in an increasing ratio; and in excavating and timbering, we must always bear in mind the immense advantage, in *soft ground*, of early draining out the water by a bottom-heading.

As to tunnels through hard or loose rock—certainly in the case of hard rock, which is self-supporting—top-headings are in general more advisable; but the advantages of a bottom-heading in soft ground have been conclusively demonstrated by our recent American experiences, and they seem universally advocated by the best tunnel authorities abroad.

NEVADA AND COLORADO MINES.

Special Correspondence of the Engineering and Mining Journal.

In the Virginia stocks there is very little change. *Sierra Nevada* is steady, with only a few sales, which is due to no positive news coming from the mine, as no visitors are admitted. It seems as if no particularly good news is to be reported from that mine, as otherwise it would no doubt be given to the public, to judge from the quantity of liberally distributed rich ore samples which were strewed on Virginia and Pine street after the cutting of the cross-cut. The public seems largely excited about the mine.

The spurt in *Gould & Curry, Best & Belcher, Hale & Norcross*, with the bonanzas, is probably due to the news of the new shaft for the first two mines, for which outsiders are needed to pay assessments. No doubt several spurts will be made and stock sold to outsiders to relieve insiders from defraying the expense of sinking the shaft. However, people should bear in mind that no benefit will be derived from this shaft for years yet. *Consolidated Virginia*, no doubt, went up on the rumor of resumption of dividends with October month, as I intimated in my last. Strong efforts will probably be made by the bonanza ring to place a large number of those shares, as well as *Ophir* shares and those of adjoining mines, and I should advise great caution in handling them. *Savage* seems to have gone up on water.

The play of *Scorpion North Consolidated* has been played well, as also of *Vermont*. As soon as high figures were reached and the insiders willing to realize, it broke the stocks. However, many have been "stuck" with these, as yet, wild-cats, whose surface is more valuable than their mines. *Original Keystone* is in the same category. *Sutro Tunnel* is closed to visitors.

Bodie has dropped off materially, as some say, due to having struck a horse, through which they now claim to have cut; as others say, because they have no more ore, the supply being exhausted, which it took six months to accumulate. Something must be the cause. C.

CONUNDRUM.

The following has been sent us by a friend in 'Frisco:

What is the difference between a jack in a box and the ore taken out of the Sierra Nevada cross-cut? Give it up? The one is put into a box to be taken out and shown to the public; while the other is taken out of a cut and boxed up tight at the end of the seventeen level, unknown to the public. JONNIESKAESQUAREDEAL—his × mark.

COLORADO MINES.

Special Correspondence of the Engineering and Mining Journal

BOULDER COUNTY.

The banks of Boulder forwarded $4800 worth of bullion for the week ending September 13th. The Caribou or Nederland mill started up on the 15th inst., after being shut down for two weeks for repairs. The mine has been yielding largely for several months. J. T. GRAHAM is running the New Jersey mill with good results. The ore treated comes mainly from the Native Silver mine, owned by the same company that built the mill. It is now worked under lease, and is in excellent pay. From one to five tons of ore are mined and milled daily, that rarely yields as low as $100 per ton, and from that up to $467. Many tons have been mined that ran from two to three hundred and fifty ounces in silver. The Monitor, Seven-Thirty, Belcher, No Name, and Boulder County are all yielding well.

GILPIN COUNTY.

The Cashier mine shows a steady improvement, and is turning out some good ore, although no mill runs are made except for tests. The developments consist of a shaft 221 ft. deep, a level started each way from the shaft 30 ft., and 100 ft. below the surface, and a tunnel or level 144 ft. long, driven in on the vein from Packard Gulch, 300 ft. lower than the shaft building. The work of sinking the shaft is to be resumed in a few days, while the lodes and tunnels are being pushed forward steadily. All of them show ore, the west 100-ft. level having seams of very rich quartz. The writer went through this mine during the present week, and these figures correspond with what was seen on the trip. The ore vein in the bottom of the shaft measured 44 in. in width, and has been gradually coming together and improving in value. Several cords of ore were seen at the mouth of the shaft and tunnel. If the mine keeps on improving in appearance, it will soon be enabled to pay handsomely. Twelve men are at work under the Superintendent, Joseph W. Holman.

Joseph Staudley, who owns and operates 900 ft. of the famous California lode on Quartz Hill, is steadily bringing his mine into producing condition. He has sunk a shaft from a depth of 350 ft. to one of 716 ft., and has begun to carry it down 100 ft. deeper. From this the 500-ft. level has reached a length of 280 ft. east and 300 west, the 600-ft. level 250 east and 200 west, and the 700-ft. level has recently been started. At the west end, around the abandoned 730-ft. shaft, considerable ground has been worked out with a yield years ago of $521,000. Nearly all of the eastern 700 ft. remains unworked except by the few levels and shafts, and stoping has just begun. There is considerable barren ground, especially near the surface. In the lower levels the ore yields from 6 to 8 ounces of gold, or from $90 to $120 per cord. Smelting ore is sold in considerable quantities at $75 or more per ton. The yield has lately increased to 1½ cords daily, and will doubtless double that amount this winter, The shaft is covered by a new substantial stone structure supplied with some of the best hoisting works, etc. in the State. West of Staudley, on the same vein, is the famous Hidden Treasure mine, now yielding $16,000 per month—one half profit.

Work is being started up on the lodes of the Wyandotte Consolidated Mining Co., lately organized in New York.

CLEAR CREEK COUNTY.

The Frostburg is proving itself more permanent and valuable every month. Ore is coming out in three or four places from different lessees, and other claims look well. There are eight distinct leasing parties. The ore mills from 150 to 350 ounces and over per ton. On this same Sherman Mountain the Cap. Wells has also lately come into pay, and has from 3 to 18 inches of ore, containing from 100 to 200 ounces of silver per ton. Near by, the Virgin lode is worked. The Benton, on Brown and Sherman Mountains, near the Dunderberg, promises one of the best lodes in the district. It is owned by the Benton G. and S. M. Company, L. G. Calkins, Agent. The ore mills from 248 to 700 ounces silver. The Oneida ground crosses that of the Dunderberg. Ten men are at work, and every eight or ten days 1½ to 2 tons of ore are sold. The last run gave 1610 ounces for first class, and 600 for second class. An assay from a new streak gave 9104 ounces. It is said to be the Dunderberg vein. Two parties of lessees are at work on the Backdone lode.

On Republican Mountain the Pay Rock, Dunkirk, Vulcan, Baxter, Loretta, Everett, Dives, and Eagle Bird attract the usual amount of attention. There is no let up in the uniform yield of the Pay Rock. A large force of men, including many lessees, are at work. Mill returns varying from 160 to 800 ounces are reported. In one place a half-inch streak yields at the rate of 2000 ounces per ton. A fine body of mineral has been opened in the Vulcan lode, which has a 60-foot shaft and 40-foot, 100-foot, and 85-foot cross-cuts, and a drift on the tunnel level 143 feet long. G. M. Henty, the new manager for the Republican Mountain Mining Company, has found a new pocket in the Edward Everett that contains from one to two thousand dollars in silver per ton. One foot of ore is visible in Lode No. 5 in the Lebanon tunnel. The Loretta is supplied with new steam hoisting works. Its shaft is 235 feet deep. The Diamond tunnel is 1400 feet long. Contractors are now driving a level from this tunnel on the Dives, and are in over 210 feet east. The Dunkirk employs 8 men at work in the 400 and 450-foot levels. There are a few inches of 400-ounce ore.

The White lode, on Red Elephant Mountain, was bought for $60,000 last month by W. H. Moore & Co., who took a one-half interest and Dr. Bigelow and brother, of Boston, and ex-Senator McDonald, of Arkansas, who took the remainder. Some consider the White vein to be identical with the Boulder Nest and Free America. All of these properties are yielding large quantities of rich ore; also the Joe Reynolds on the opposite or Columbian Mountain. The Free America is 360 feet deep, and employs 20 men. The Boulder Nest was 325 feet deep on the 1st inst., and employs 33 men; weekly product, 30 tons of ore; first-class yields from 300 to 500 ounces; second-class, 50 to 90 ounces.

The Farwell reduction works—old Judd & Crosby silver mill—at Georgetown, have been running for some time on custom ores. The Clear Creek Company's mill (Taylor & Sons, of New York) keeps steadily employed the year round.

CUSTER COUNTY.

The new discoveries near Ula, known as the Silver Cliff or Round Mountain mines, are described as "perfectly wonderful." A car-load of the rich surface silver ore, some of which is worth over a dollar a pound, has been shipped from Cañon to the Black Hawk smelting works. This is from the Racine Boy lode, owned by Baily, Beck, Curtis, Edwards & Co., of Denver, on which $10,000 has been refused for a one-twelfth interest. The Mallet works at Cañon obtained 158 ounces of silver last week from 1500 pounds of average ore from the Horn silver mines. The Silver Cliff mine is ready to ship ore. About one hundred claims are started, and 300 miners and prospectors are on the ground. A stage line has been started from Ula to Cañon. A town is springing up at these mines called Ball's Bluff. This is eight miles from Rosita. Specimens have been found containing 80 or 90 per cent of silver.

LAKE COUNTY.

The Chieftain mine at Leadville, owned by Yankee, Putnam & Co., is rumored to have been sold to H. H. Carpenter for $50,000. Among the newer mines with paying ore are the Matchless, Little Chief, Duncan, Dolphin, Climax, and Carboniferous. The new double-track incline on the Carbonate is down 80 feet, and is supplied with iron tracks and cars, with a whim at the mouth. It has lately been connected near the head with a cross-drift 100 feet long, running from the old main incline. But little has been taken from this mine for nearly two months, but the yield will hereafter be as large or larger than ever. There are five feet of ore in the new main incline. Twelve or fourteen tons of ore sold in August brought about $2200. The Iron, Dana, Shamrock, and Yankee Doodle are yielding moderate quantities of ore. The New Discovery is producing many tons daily of low and medium grade ores. The Winnemucca, owned by S. H. Foss, Dr. Bissell & Co., has lately come to be a heavy producer. In two months its ore sales footed $30,000.

GUNNISON COUNTY.

This summer some valuable silver and gold and silver-bearing lodes have been discovered on the slopes of the Elk Mountains. They are said to be large and uniform as a class and to assay well. A Chicago man named Smith is putting up a smelter there. Gunnison is a new county set off from Lake County. It extends from the latter west to the Utah line, being one of the most remote sections from any railway in Colorado. Another summer will see considerable development. There are gold diggings on some of the headwaters of the Gunnison and Grand rivers.

SAN JUAN.

Edward Innis has 60 men at work on his Highland Mary property, located not far from Silverton. The Highland Mary lode (proper) can be traced by the eye for a distance of 3000 feet from the gulch to the summit of the mountain. The fourth level employs 25 men, and for 180 feet shows a vein of very rich ore from eight to ten inches wide. It is said that the ore runs from a few hundred up to 2000 ounces of silver per ton. Eight hundred feet below a cross-cut tunnel has just cut the vein at a depth of 100 feet. This cross-cut and the first and second levels are driven by steam drills. The former has double rail tracks, and is 9 feet by 12 in size. The substantial stone engine-house and blacksmith shop has an 80 horse-power engine and boiler, furnishing power to operate 12 drills, 4 now being used. There are 2000 feet of iron track on the ground, and 2000 feet of 4-inch iron piping for conducting air in the drifts and main tunnel. COIN.

THE SIERRA NEVADA EXCITEMENT.

Special Correspondence of the Engineering and Mining Journal.

The center of interest of all the present Comstock and outside mines is the Sierra Nevada with its incline. Public opinion is strong for a "big bonanza;" but the public at present is very much excited, and our Eastern friends should take the sanguine tidings with a grain of allowance. The public is ripe to believe any thing and every thing, as long as it is in favor of the new strike. For the enthusiastic of our Eastern friends, I'll append you two assays of pieces taken out of the 15-ft. cross-cut, *and not average*. No. 1 shows $412 silver and $350 gold, making a total of $762. No. 2 gave gold $296.31, silver, $659.90, total, $956.21. So it shows that even at big depths, the rich sulphurets occur, and that there is room for a bonanza outside of Consolidated Virginia or California ground. The incline runs through the cap of the ore-body, whenever it cuts ore at all; but the last two weeks no ore has been cut, which accounts, probably, for the order not to admit any one for inspection. When ore did occur, it came in in bunches in the floor of the incline, sometimes to the extent of six inches; then, again, a foot or two and more feet, and, in turn, disappearing entirely. The latter, as said before, has been the case the last two weeks. There is no doubt that the cross-cut west, run in 15 ft., struck and opened rich ore; but why it was not continued, or, rather, why the diamond drill was not put in to find out the thickness of the body, is probably better known to the initiated than to outsiders. To me it looks quite as suspicious, that JOHN SKAE buys the control of the North Bonanza mine, a base mine, as it did to me when the benanza ring invested its superfluous cash in United States 4½ per cent bonds. If the Sierra Nevada ore-body is to outshine the bonanza ore-bodies, as people are desirous to have it, and if Sierra Nevada stock is worth what it is quoted, why then do insiders buy outside stocks? I have not the slightest doubt that, with the senatorial elections at hand, and the public excitement at fever heat, there will be large fluctuations, as well in Union as in Sierra Nevada, and both may go higher; but, if our Eastern friends ask, "Is the stock worth the money?" then I say, "To judge from developments only, no, it is not." CRUX.

DAYTON, NEV., September 16, 1878.

ALMADEN MINES.—The amount of quicksilver which has been yielded by the Almaden mines during the past three centuries is 120,179·6 tons, viz.: From 1564 to 1700, 17,863·72 tons; from 1700 to 1800, 42,149·501 tons; and from 1800 to 1875, 60,166·379 tons. At the rate of 12 fr. per kilogram, the total value would be 1,440,000,000 fr.—*Ann. des Mines.*

MOSANDRIUM THE SUPPOSED NEW METAL.

Concerning the existence of this alleged elementary substance, the discovery of which was announced at the late meeting of the American Association for the Advancement of Science, by Dr. J. LAWRENCE SMITH, of Louisville, Ky., our contemporary, *La Nature*, expresses some doubt, supported by the authority of M. MARIGNAC, a French chemist of high standing. This savant, we learn from *La Nature*, after a careful examination of specimens containing the supposed new metal sent him by Dr. SMITH, pronounces them to contain nothing but terbium. He (MARIGNAC) nevertheless announces as his belief that the spectroscopic studies of M. SORET have demonstrated the existence in the mineral gadalinite (from which Dr. SMITH'S mosandrium was obtained) of a metal which appears to be new to science. He does not believe, however, that this is the mosandrium of SMITH, but rather that it is the radical of an earth isolated by M. DELAFONTAINE.

We shall await the issue of what promises to be a lengthy controversy with interest. The definitive settlement of the question, should the genuineness of Dr. SMITH'S discovery be seriously questioned, will in all probability be indefinitely postponed, inasmuch as but little is known at best of the rare metals accompanying the alleged mosandrium, and the methods of effecting their separation are consequently imperfect and uncertain. Indeed, unless we are greatly mistaken, the name of the very metal terbium, with which MARIGNAC affirms the mosandrium of Dr. SMITH to be identical, upon many of the elementary charts of the chemical lecture-room is decorated with the appendage known as an interrogation mark, from which it will appear that MARIGNAC'S objection to the existence of mosandrium may after all be easily disposed of. We shall doubtless soon hear from Dr. SMITH on the subject.

NOTES.

THE Buckeye Engine Company, of Salem, O., shipped during the last week of August a saw-mill to Hamburg, Germany.

THE Baldwin Locomotive Works are receiving inquiries from all parts of the world for their street-car motors, which have gained such great popularity.

SALE OF THE GREEN POND IRON MINING COMPANY'S PROPERTY.—Attention is directed to the announcement in our advertising columns, by the trustee in bankruptcy, offering at public auction the property, machinery, buildings, etc., of the Green Pond Mining Co., of New Jersey.

HEAT CONDUCTIVITY.—Experiments lately made by M. Schuhmeister on the heat conductivity of cotton, wool, and silk, by a method similar to that employed by Stefan for determining the conducting power of gases, have led to the following results: The heat conduction of air being considered = 1, that of cotton is (on the average) = 37, sheep's wool = 12, and silk = 11; the cotton and the wool were unwrought. The latter was washed merino wool; the silk was in the state of cocoon fibers.

JAPANESE MINE MODELS.—At the Paris Exposition there are a number of fine models of Japanese mines. They are made up in sections and show the whole interior structure of the galleries. Miniature figures represent the miners in the act of performing various operations through which the mineral passes from the time it is detached by the miner's pick until it emerges above ground. One of the models represents a coal mine in the neighborhood of Nagasaki, and is accompanied by a lump of bituminous coal about $4 \times 3 \times 2$ feet.

INTERNAL HEAT OF ROCKS.—Daubrée reports some experiments upon the heat which may be developed by mechanical action in the interior of rocks, especially in clays, and applies his results to the theory of metamorphism. He finds that the heat increases much more rapidly when the mass is tenacious than when it is plastic, the particles in the latter case being, as it were, lubricated and slipping over one another. The experiments may, perhaps, also have an important bearing upon Mallet's theory of earthquakes and volcanoes.—*Comptes Rendus.*

ABSORPTION OF CARBONIC OXIDE BY LIVING ORGANISMS.—N. Gréhaut has experimented with mixtures of air and minute portions of carbonic oxide. He finds that a man or an animal, when compelled for a half-hour to breathe an atmosphere containing only $\frac{1}{779}$ of carbonic oxide, absorbs that gas in sufficient quantities to saturate about half of the red globules of the blood, so that they become incapable of absorbing oxygen. In an atmosphere containing $\frac{1}{1449}$ of carbonic oxide, about a quarter of the red globules are similarly saturated. These results are interesting and important in relation to physiology and hygiene.—*Comptes Rendus.*

THE Chinese are fast getting their revenge of the foreigners, especially the English, for compelling them to open their ports to the outside world. They are steadily getting the commerce and trade of nearly every land, originally established by foreigners, into their own hands; and it is said that from three quarters to four fifths of the commerce, great and small, of the country, introduced by the British, Germans, and Americans, is owned and controlled by the natives. These are so very shrewd, are so contented with small profits, and can live on so little, that the people of other nations can in no manner compete with them. They crowd out all other races, and the time seems not distant when they will be likely to have every thing their own way.

INFLUENCE OF ATMOSPHERIC ELECTRICITY UPON VEGETATION.—L. Grandeau.—It has been long ago remarked that in the neighborhood of an isolated tree deprived of branches to a great height vegetation develops feebly. In vines the shoots which extend under a tree rarely produce ripe grapes, though air and light circulate freely around them. Lofty trees bordering arable lands produce the same effects on the neighboring crops. In forests of high growth the underwood has disappeared and the turf where it exists is formed by plants, which never acquire the luxuriant growth they do in the open country. These results are generally ascribed to deficient light, influence of green light which has traversed the leaves, spreading roots, etc. To these causes the author's experiments enable him to add absence of static electricity in the air in such situations.—*Chem. News.*

THAUMASITE.—Before leaving Europe, to attempt the Northeast Passage, Prof. Nordenskjöld sent to the Paris Academy of Sciences an account of a new mineral recently found in Sweden, named Thaumasite. It has been met

with in (1) specimens brought by Prof. Nordenskjöld from the Gustav and Carlsberg mines, or the Bjelke mine at Areskustan, in 1859; (2) specimens of an old Swedish collection from the same mines 100 years ago, by M. Polheimer, mining engineer: (3) other specimens brought from the same mines this year, at Prof. Nordenskjöld's request, after the analysis of Nos. 1 and 2 had shown the strange composition of the substance, which contains at once silicic acid, carbonic acid, and sulphuric acid. The microscopical analysis shows that the mineral is a genuine new species, and not a mixture.

CUTTING RAILS.—The difficulty of cutting red or nearly white-hot rails, so that they may be all of the same length when cold, has been met, says the *Engineer*, in some German and Russian rail mills by an ingenious method: The rails are looked at through a dark glass; when they have cooled to a certain temperature, they can not be perceived. If a dark-blue or an orange-yellow glass is used, the rails may be still at a red glow, but the light radiated from them does not reach the eye. It may be considered that the light from two rails, observed through the same dark glass, disappears at the same temperature, and thus a rule is obtained for cutting the rails to the same gauge. Each rail is allowed to cool till it can no longer be seen through the dark glass, and is then cut. The result is said to be satisfactory.

BESSEMER AND SIEMENS-MARTIN STEELS.—Several steps in the advance of King Bessemer are recorded in our English letter this week. The most important of these, perhaps, is the abandonment by Mr. Siemens of the manufacture of Siemens-Martin rails, apparently on account of the great cheapening of Bessemer. This fact, our correspondent assures us, the *American Manufacturer* will be the first on either side of the ocean to announce. Bessemer rails are said to be being delivered at port of lading at the unprecedentedly low price of £5 13s. 6d., and forebodings are expressed that the steel-rail makers will yet find a way of still further depreciating the cost of their product. Siemens-Martin steel is about to be used for sheets for the use of the tin-plate makers, and it appears to be only a question of time now when Bessemer and Siemens-Martin steel shall be so cheap that they will take the place of wrought-iron for almost every purpose.—*Am. Mfr.*

EFFECTS OF THE SUTRO TUNNEL.—A reduction in the temperature of the 2000-foot level of the Savage mine, from 120° to 94°, since the Sutro tunnel penetrated that mine, is now reported, and the cooling process is still going on. If the air-draught through the tunnel into the mines can reduce the temperature 26° in so short a time at a depth of 350 feet below the level of the tunnel, there is a reasonable prospect that it will ultimately have a good effect upon many other mines put or to be put in communication with the tunnel. Men can work without danger of collapse at a temperature no higher than 94°, and thousands of miners have done good work in the gulches at 110°, but at 120° it is impossible for any man, however strong, to work more than a few minutes without rest. If the Sutro tunnel should bring about a like change in the temperature of the Comstock mines generally with that already realized in the Savage 2000-foot level, it will be the means not only of making mining more profitable, but of saving a very great waste of life and health attendant hitherto upon that kind of labor.

SUMMER REFRIGERATION.—Dr. Siemens, referring, in one of his public addresses, to the fact that an excess of temperature is as great a source of inconvenience in some manual processes and of personal discomfort as excessive cold can be, pertinently asks the question why a resort should not be had to refrigeration in summer as well as to calorification in winter—that is, if the one can be done at nearly the same cost as the other. So long as refrigeration depends upon the methods usually in vogue, its expensiveness must be regarded as a disadvantage; but Dr. Siemens expresses it as his belief that, by the use of properly-constructed machines, it will be possible to produce refrigeration at an extremely moderate expenditure of fuel and labor. The result of experiments thus far made in this direction justifies the employment of refrigerating apparatus upon a large scale, but it is difficult to conjecture what may yet be accomplished with an improved machine on strictly dynamical principles, because such a machine seems not limited to any definite theoretical point. In changing, for example, a pound of water from the liquid into the gaseous state, a given number of units are required, that may be produced by combustion of coal or by the expenditure of force; but in changing the same pound of water into ice, heat is not lost but gained in the operation—which heat must be traceable to another part of the machine, either as sensible heat or as developed force.

THE PART PLAYED BY COAL-DUST IN PRODUCING EXPLOSIONS IN MINES.—L. Simonin.—The author demands permission to make known certain facts which prove that it is in the majority of cases the heating of the coal-dust diffused in the galleries of the mines to which explosions are due. Referring to the catastrophe in the Jabin Mine at Saint Etienne (February 4th, 1876) he states, on the authority of the manager, that the mine in question contains very little fire-damp, and that the precautions hitherto taken with an exclusive reference to that gas are not sufficient. Others must be taken against the extremely fine coal-dust, which at the moment of the explosion of slight amounts of fire-damp, or even of blasting powder, liberates rapidly a part of the coal-gas which it contains, and propagates the explosion, reproducing the cause of the evil with so much the greater energy as the current of air is more violent. Thick crusts of coke (2 or 3 centimeters) prove this fact and explain how it is that extensive tracts in which fire-damp has never been observed are burnt like the rest of the workings. Hence, it appears that the precautions to be taken in fiery mines are complex whenever the coal-dust is rich in gas and very finely divided. Explosions may then ensue even in mines where fire-damp is unknown. There is no need to suggest the existence of cavities full of carbonic oxide, or of gaseous hydrocarbons, and suddenly laid open by a blow from the miner's pick. [Is not the attempt, recently made in some mines, to screen the coal below ground, a dangerous mistake as calculated to increase the quantity of dust diffused in the air of the mine?—*Ed. C. N.*]—*Chem. News.*

AMERICAN DIAMOND CUTTING.—The Cape diamonds, which now form the world's steady supply, all go to London; for this capital has become not only a great center for buying and selling, but also for cutting—an industry once monopolized by Amsterdam, but now equally shared with its rival. No one can estimate the great stores of yellow diamonds in the rough that lie there in merchants' safes awaiting sale But the fate of stones of this color is settled; they never can recover their lost prestige; or, granting that the flow from the mines should cease and that they should again become popular, the supply already on hand to work up and cut would suffice the world for dozens of years. On the other hand, the estimated 10 per cent of white Cape stones find an immediate sale, principally and ultimately after cutting, for the American market. American purchasers, it is said, are the most critical judging diamonds, and will have only the best white.

We should be surprised if, in a country famed for its mechanical ingenuity, the art of cutting diamonds should be left exclusively to the old world; but it is, however, only within a few years that this industry has become established here. Mr. Henry Morse, of Boston, and Mr. Hermann, of New York, were the pioneers, and yet remain sole competitors, the former, with true Yankee ingenuity, solving the problem with distinguished success for himself, and the latter bringing with him a knowledge of the trade from Europe. The cleaning, cutting, and polishing of the rough stone can now be done as well here as abroad, or (as I believe, judging by results and from the testimony of experts) better. Stones cut in Europe are frequently remodeled and repolished in this country, thereby gaining much in value, and others abandoned in the rough as not worth cutting are here converted into excellent brilliants.—*Scribner for September.*

GENERAL MINING NEWS.

ARIZONA.

The *Enterprise* of the 7th inst. says: "We have encouraging mining news from every county in the territory. Pima, the only county that has not had mills constantly running, will shortly have four or five good ones in operation.

"The mills of Pinal County are producing a great deal of silver, and considerable rich ore is being shipped to San Francisco.

"The mining districts of Maricopa County are well filled with energetic men. The mills are grinding away. Helling's mill, to work Cave Creek gold ores, will shortly commence operations.

"Mohave County is keeping up her ancient reputation for richness. All is activity along the great McCrackin lode. Mineral Park people rejoice over the success of their mill; Hackberry is contributing a great deal of silver—arrangements are now in progress for putting a ten-stamp mill in Frees' Wash.

"The Yuma papers speak well of mining matters in their county; mills are running there, and more are being erected.

"Our own county, Yavapai, is now all right. The Tiptop, Peck, Senator, Crook, and Aztlan mills are running and paying. Other mills will soon be running. Miners are busy taking out ore; new ledges are almost every day recorded; placer miners appear happy and will remain in that condition while water lasts. Besides mills, the Agua Fria furnace and several arastras are working away. The territory was, last year, credited with a bullion product of about three million dollars. We'll double that amount this year. Our mines, that is, a few of them, are just scratched; we have not sufficient capital to work them as they should be worked, and no railroad to bring us cheap supplies.

THE CLIFTON COPPER MINES.

A correspondent of the Cimmaron *News and Press*, New Mexico, says: "Seven miles from the town of Clifton is the copper district which is six miles wide and twelve miles long. The copper veins crop out at intervals of 75 feet along the entire width of the district. These veins have an average width of 15 feet, some few reaching as high as 150 feet, and the surface stuff is 15 to 25 per cent copper. While considerable prospecting is going on, only one lead is being worked—the Longfellow. Three tunnels have been run into the three branches of this lead, giving a depth from the surface of 150 feet. Each of these branches averages about ten feet in width. They work no ore that runs less than 30 per cent. Some pockets of native copper yield 85 per cent. Twelve eight-mule teams convey the ore from from the mines to the reduction works at Clifton. Twenty tons of ore are taken out daily. The Mexican laborers could not live on the wages they have been receiving, and the company sent to California for sixty Chimamen, who, I learn, have arrived since our party left Clifton. They claim at Clifton that the Longfellow, together with six other leads now being developed, would keep a freight train busy hauling pure copper."

CALIFORNIA.

From the *Standard* of the 18th inst., we condense the following concerning the two principal mines of the Bodie district:

"The Bruce winze in the Bodie is down 39 feet; the Burgess south drift is in 113 feet, and the new shaft is down 100 feet. It has been rendered necessary to discontinue work in the latter on account of scarcity of timbers, but the foundations for the new engine and hoisting works are being put down as fast as timber arrives, and the engine will probably be running this week. In the Bruce stopes there has been but little change since last report. In stoping south, excellent ore is met with. In the Bruce winze the ledge is from twelve to fourteen inches wide, and of good ore. The walls are about four feet apart. Slow progress is made in sinking, as the porphyry is hard. The ground in the Burgess drift is quite soft, and the last 20 feet have been made rapidly. The ore in the upraise continues very good. The mill is running steadily, and the ores and every thing about the mine are looking satisfactory.

"The main shaft of the Standard has been sunk during the past week 8 feet; total depth, 685 feet. The rock continues very hard with no change in the amount of water. The north drift, 300-level, is in 420 feet; progress during the week, 10 feet. The ledge is 2½ feet wide, and is looking well. The west cross-cut, 400-level, is in a distance of 37 feet, in fair blasting ground. There has been no change in the Cook ledge since last report."

THE SIERRA BUTTES MINE.

Concerning this mine, the Dutch Flat *Forum* says:

"The quartz vein varies in width from five to forty feet and presents a milky white appearance. Seven main tunnels aggregating eight miles have been run at different altitudes, one being extended a distance of three miles. The lower tunnel is now advanced 2000 feet. The ore has been extracted to a depth of 1000 feet, and has never yielded to exceed $10 per ton, the richest being near the surface. Three mills have been erected on the mine, working sixteen, thirty, and fifty stamps, respectively. The mills are operated by water power, the water being taken from Sardine Lake—near Gold Lake of early notoriety—seven miles distant. Measures are now being taken to so utilize the water that one third of the usual spring supply will equal the power then obtained. Iron pipe is now being laid which will sustain a pressure of 600 feet, and turbine wheels will be substituted for those now used. Thirty-nine arastras are used to complete the reduction of the ore after it leaves the stamps. These are also worked by water-power, the water running successively from one to the other on its course to the river. The number of men in the employ of the company, directly and indirectly, is three hundred, although but 240 are engaged in the mine. With but few exceptions, all the miners are Cornishmen; none seek employment in the mills. The greater part of the ore yields but $4 and $5 per ton."

THE IDAHO GOLD MINE—ONE OF THE BEST IN CALIFORNIA.

The *Grass Valley Union* says of this mine:

"Work has been going on during the past month as usual, the producing stopes being from the 6th to 10th levels east, and on the 8th level west. The ore is of the same paying character and grade usually produced. Good headway is making in sinking the new shaft below the 10th level. At the commencement of August the new batteries of 15 stamps started up, making 50 as the full head of stamps in the mill, with a capacity for crushing 130 tons per day. The yield of the mine for the month has been $50,000, and the monthly dividend declared on the 6th inst. was $5 per share, amounting to $15,400. This is less than the usual dividend, but the company have been under heavy expenditures for several months past in making the new improvements in the mine and mill, and have in consequence temporarily reduced their dividends. There is every indication that the mine will continue to yield profitably for years to come. *The present is the 109th regular monthly dividend* of the mine, which makes the total amount disbursed to stockholders $2,464,000."

NEVADA.

From the Gold Hill *News* of the 18th inst. we extract the following:

"The situation in Sierra Nevada remains unchanged, the south winze continuing steadily downward, cutting occasional bunches of quartz and ore, just as it has been doing for the last 170 feet. Sinking the main south incline below the 2100 level is making good progress, the quartz and ore still showing at intervals in the bottom of the winze. The prospects for a big ore development, when the cross-cutting of the 2200 level shall have been commenced, are steadily increasing.

"In Ophir a new and important feature has been developed, the bottom of the main incline having very unexpectedly cut into quartz and low-grade ore. What the real value of this new strike may prove to be is yet impossible to tell, but the mere finding of quartz and ore at a point 250 or 300 feet west of the east vein of rich ore recently opened, and at a depth of 2160 feet in the main incline, is a matter of no small significance.

"Another favorable feature is the continuance of good ore in the bottom of winze of No. 3, now being sunk below the 1850 level in the Consolidated Virginia. The winze is now down 45 feet, passing the entire distance through good paying ore.

"Sinking the new joint shaft of the Gould & Curry and Best & Belcher has been commenced.

"On the south end of the lode the cross-cutting in Crown Point and Belcher has shown no new or valuable features during the week. In Overman, Alta, and the adjoining mines the preparations for cross-cutting and developing the lower levels are proceeding with the usual vigor. The entire outlook is cheerful and encouraging.

"The daily yield of ore of the Consolidated Virginia for the week has been 160 tons. The main south drift on the 1950 level is steadily advancing, the face in hard-blasting porphyry. It is now in 270 feet. The south drift from cross-cut No. 2, on this level, is also advancing, the face in low-grade ore. Cross-cut No. 3, on the 1850 level, is making steady progress, the face in favorable vein porphyry. The repairs to the main shaft have been completed to a point 25 feet below the 1500 station. The heat is still very great. The C. & C. shaft is now down 35 feet below the 2050 station. The flow of water is still strong.

"The daily yield of California amounts to 200 tons. The south drift on the 1900 level from the Ophir winze is in 21 feet, the face in hard-blasting porphyry. A lateral north drift is about being started at a point 400 feet west of the C. & C. shaft on the 1950 level. This drift will form a principal working thoroughfare and air-gallery, and when completed will connect directly with the Ophir on that level. A winze has also been started in the north ore-body designed to connect the 1750 and 1840 levels at that point. The north drift from the Consolidated shaft on the 1650 level is steadily advancing, the face in blasting ground. Sinking the C. & C. shaft is making good progress, the flow of water still being quite strong. It is now down 35 feet below the 2050 station. The heat on the lower levels is still very great.

"The 1550 station of the Alta is opened, and a drift started eastward to cut the ore vein. This drift is in a distance of 40 feet, the face in vein matter mixed with streaks of quartz carrying spots of good ore. The north drift on the 1450 level is steadily advancing along the west side of the ledge, the face in splendid quartz full of streaks and spots of good ore. The shaft is down 1580 feet.

"The north drift on the 750 level of the Leviathan is being pushed ahead with all the speed possible, the face still in quartz and clay and porphyry, on the west side of the ore vein. The small veins of quartz and ore encountered are of the most favorable character, and when the cross-cutting of the ore vein is commenced, which will be at no distant day, some excellent results may be looked for."

Independence.—A letter of the 13th says: "We have a fine body of ore in the face of the 175-foot level running north, average assay value to-day $201.98. On Wednesday evening last, the 11th inst., we made connection with the drift run by the De Frees Company, which shows a fine vein of ore throughout and adds very much to the development of the mine. The stopes are all looking well, ample ore can now be taken out to keep all the stamps in camp busy. Hope to get the G. P. mine early next week."

Hussey.—A letter of the 13th says: "The upper level stopes are still yielding their usual supply of good ore, and will continue to do so for a long time to come. The ledge encountered by upraise on the 300-foot level is looking splendidly, and we are drifting and upraising on the vein, which is increasing in size and quality as it is being opened. The northwest cross-cut on this level is now 70 feet, and we have some good ore in the face. The 490-foot level drift is now in from shaft 142 feet, and for the past twenty-four hours we have been in ledge matters. From the indications we are liable to strike the ledge any day. Will ship you about $8000 in bullion on Sunday."

THE HILLSIDE MINING AND MILLING COMPANY.

The *Stock Report* of the 16th inst. says of this property, which is located in the Bristol district, Lincoln County:

"It is opened by an incline shaft to the depth of 150 feet or more. From the incline two levels have been run, one at a depth of 100 feet, which, at this writing, has penetrated 90 feet in high-grade ore, which at its innermost point exhibits a lateral extent of 16 feet of like quality of mineral, while the bottom level or drift, 50 feet lower down, has attained a linear trend of 60 feet through ore of even a higher grade than what has been uncovered in the uppermost level. No cross-cutting, however, has been yet accomplished in the bottom drift; consequently the width of the ore-body at this point is unknown, which it is to be presumed equals, if it does not outrank in thickness, the point at which it was cut above. Notwithstanding the necessarily restricted character of these openings, there were extracted from them—incline, two drifts and cross-cut of extent named—above 1000 tons of ore, whose average assay value is $150 per ton in gold and silver, irrespective of the lead, which, besides being a great factor in the matter of facilitating and expediting smelting operations, will make, even at its present low price, no mean item in the aggregate footings-up at the end of each month. There are at present lying on dump at furnace, something over 500 tons of the above quality of ore, as much more mined out on dump at the mine, and from actual measurements it is demonstrated that there are more than 5000 tons developed in the mine ready to extract."

COAL CONTRACTS IN BELGIUM were let September 5th, for the supply of 96,000 tons of fine coal (*menu*) for the government railroads, at prices averaging about $1.18 per ton of 2204 lbs., some being $1.08. For large coal something like grate coal, the lowest price bid was $1.53.

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending July 30th:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
206,398	Slide-Valves for Steam-Engines	C. M. Miller (a)	Canton, O.
206,402	Carbureting Apparatus	Claude André Paquelin	Paris, France.
206,408	Steam-Boilers	William C. Wolfe	Johnstown, Pa.
206,417	Ore-Separators	Francis R. Brown	Denver, Col.
206,418	Ore-Jiggers	" "	" "
206,424	Metal Planing-Machines	Orril R. Chaplin	Boston, Mass.
206,448	Pumps	Friederich A. Helmecke	Round Top, Tex.
206,451	Hand-Pumps	James M. Holland	Wilmington, Del.
206,452	Ore-Separators	Denison L. Howard	Nottawa, Mich.
206,457	Vertical Steam-Pumps	H. A. Jamison and William Foster (b)	Brooklyn, N. Y.
206,460	Reciprocating Steam-Engines	Aaron Kissell	Findlay, O.
206,477	Apparatus for Manufacture of Carbon Bisulphide	Dubois D. Parmelee (c)	New York, N. Y.
206,486	Machines for Forming Iron Vessels	Thomas F. Rowland	Greenpoint, N. Y.
206,496	Pumps	William W. Stetson	Henry, Ill.
206,500	Governors for Valve-Motions	Harris Tabor (d)	Corning, N. Y.
206,548	Packings for Steam-Engines	John W. Edmonds (e)	Jersey City, N. J.
206,555	Steam-Engines	Frederick A. Gardner	Buffalo, N. Y.
206,558	Valve Actions of Duplex Engines and Pumps	William H. Guild, Jr.	Brooklyn, N. Y.
206,575	Dredging-Machines	Thomas M. Jones	Kansas City, Mo.
206,589	Safety-Valves	Frederick Lunkenheimer	Cincinnati, O.
206,597	Hot-Air Engines	Benjamin F. McKinley	Morning View, Ky.
206,604	Manufacturing of Copper Alloys Containing Manganese	Perceva lM. Parsons	Blackheath, Eng.
206,610	Extracting Metals from their Ores	John Prosser	Ottumwa, Ia.
206,616	Automatic Water Cut-Offs	Virginia M. King	New Orleans, La.
206,635	Preparation of Peroxide of Iron	Richard Steinau	Brunswick, Ger.
206,642	Apparatus for Preparing Gaseous Fuel	William S. Sutherland.	Halesowen, Eng.
206,643	Processes for Preparing Gaseous Fuel.	" "	" "
206,649	Anti-Friction Journal-Boxes	William Tucker (f)	East Brookfield, Mass.
206,655	Double-Acting Pumps	John G. Wolf	New York, N. Y.

(a) Assignor ½ his right to C. Aultman & Co., same place.
(b) Said Jamison assignor to said Foster.
(c) Assignor to John Chapman, Brooklyn, N. Y.
(d) Assignor to B. W. Payne & Sons, same place.
(e) Assignor to himself and Charles W. Benton, same place.
(f) Assignor ½ his right to John G. Avery, Spencer, Mass.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, with the full name and address of parties soliciting the same:

Proposals invited for—	*Name and address of parties from whom specifications may be had.*	*Latest date on which tenders will be received.*
Naval supplies, hardware, belting, etc	John S. Gulick, Navy Pay Office, Philadelphia, Pa.	Oct. 2
Completing unfinished abutments of bridge	W. S. Cappeller, County Auditor, Cincinnati, O.	" 3
Wrought and cast-iron work for U. S. Post Office at Boston	J. G. Hill, Sup. Architect, Washington, D. C.	" 3
Naval supplies for timber, zinc, lead, linseed oil, and stationery	C. J. Emery, " " " Boston, Mass.	" 3
Indian supplies (hardware and agricultural implements) and stock cattle.	E. A. Hoyt, Office of Indian Affairs, Washington, D. C.	" 3
Improvement of Cohansey Creek, New Jersey	J. N. Macomb, Col. of Engineers, 1619 Chestnut street, Philadelphia	" 3
Improving the channel at the mouth of Salem Creek, New Jersey	J. N. Macomb, Col. of Engineers, 1619 Chestnut street, Philadelphia	" 3
Improvement of Delaware River, between Trenton and Whitehall, N. J	J. N. Macomb, Col. of Engineers, 1619 Chestnut street, Philadelphia	" 5
80,000 lbs. candles, etc	A. H. Gilman, Pay Inspector U. S. Navy, 29 Broadway, New York City	" 9
Coal, 3000 tons	A. H. Gilman, Pay Inspector, U.S N. 29 Broadway	" 18
Hides	C. J. Emery, Pay Director, U. S. Navy, Boston, Mass	" 21
Wood for fuel, 600 cords hard, 100 kindling	Alex. J. Perry, Dept. Q. Gen. U. S. A., Governor's Island, N. Y	" 23
Railway construction and working, 2000 miles	F. Braun, Sec'y Dept. of Public Works, Ottawa, Canada	Dec. 1, "
Railway construction 310 miles	F. Braun, Secretary of Department of Public Works, Ottawa, Canada	Jan. 1, 1879
Locks and keys for mail bags	D. M. Key, Postmaster General, Washington, D. C.	Mar. 20, "

The Staten Island Water Supply Company, organized for the purpose of establishing water works on the island, will immediately proceed to procure the lands required for the project, and the total cost of the works will be about $350,000.

The Commissioners of Northumberland County, Pa., have advertised nineteen tracts of coal land at Sunbury, on the 15th day of October, 1878, amounting to over 2000 acres. The lands have been purchased from time to time by the Commissioners at tax sales, and are to be sold to the highest bidder.

A Chance for American Bridge Builders.—Great activity is just now being shown in the Austro-Hungarian Empire in the prosecution of all kinds of public works, and especially of those in any way relating to the extension of the railway system of the country. Among others there is talk of the construction of an iron bridge over the Drave at Eszeg, to replace the present ferry, at a cost of 800,000 fls., which would be carried out partly by the government and partly by the Alfoeld and Fiume Railway Company, which is domiciled at Pesth. It is also proposed to replace by iron bridges all the wooden bridges on the line worked by the Alfoeld and Fiume Railway Company and the Kaschau and Oderberg Railway Company, etc., and the construction of the proposed lines of railway on the military borders of Croatia and Slavonia is to be offered for public auction—in fact, according to *Herapath*, one line has already been adjudged.

Favorable Prospects for Railroad Contracts in Italy.—"The railroad schemes now under way in Italy are assuming magnificent proportions. The government has already adopted plans involving the construction of about 2500 miles of new railroad, mostly in Northern Italy. The capital required for these undertakings will amount to $130,000,000 for construction, and from $10,000,000 to $20,000,000 for equipment, which it is supposed to secure by a pledge of the public credit. The plan decided upon is to consolidate and extend the lines now running east and west from Trieste to Mount Cenis, and also the lines extending from northwest to southwest down the peninsula. These lines will be made the principal routes from which will be run out in various directions to the most important towns numerous branch roads. Engineers and railroad men are now engaged in laying out the proposed routes."

STATISTICS OF COAL PRODUCTION.

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

Comparative statement for the week ending Sept. 21st, and years from January 1st:

TONS OF 2240 LBS.	1878.		1877.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co..	43,120	1,448,279	.....	1,284,546
D. L. & W. RR. Co.	39,630	1,442,894	.....	1,311,352
Penn. Coal Co.....	19,640	583,337	51	715,663
L. V. RR. Co.....	17,166	561,248	5,140	606,924
P. & N. Y. RR. Co..	695	21,880	.....	32,931
C. RR. of N. J.....	23,598	639,818	2,550	870,707
Penn. Canal Co....	11,742	236,440	2,873	237,697
	155,591	4,933,886	10,614	5,059,820
Lehigh Region.				
L. V. RR. Co.....	31,014	1,681,847	103,319	2,270,505
C. RR. of N. J.....	39,954	911,860	44,373	1,019,774
D. H. & W. B. RR..	1,082	22,304	1,272	17,149
	72,050	2,616,011	148,955	3,307,428
Schuylkill Region.				
P. & R. RR. Co.....	98,490	3,415,240	180,811	4,717,334
Shamokin & Lykens Val.....	25,221	511,825	6,631	430,185
	123,711	3,927,065	187,442	5,147,519
Sullivan Region.				
Sul. & Erie RR. Co.	698	22,809	1,070	11,970
Total	352,050	11,499,771	348,081	13,526,737
Increase.....	3,969	.....	.....	.....
Decrease	.....	2,026,966	.....	.....

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

Receipts and shipments of coal at Chicago Ill., for the week ending Sept. 21st, and year from January 1st.

	Week. Tons.	Year. Tons.
Receipts.....	23,835	1,178,761
Shipments.....	9,460	177,829

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads amounts to 59,586 tons, as compared with the corresponding period in 1877.

Perth Amboy Business:	Tons.
Received for the week	9,694
Shipped for the week.....	12,219
On hand Sept. 21st.....	78,866

Coals Cleared on the Canals of the State of New York for the week ending Sept. 14th, and year from the opening of navigation:

Tons of 2000 lbs.	1878.		1877.	
	Week.	Year.	Week.	Year.
Anthracite	14,226	418,351	25,182	670,639
Bituminous.....	4,762	126,448	9,573	196,563
Total amount cleared	18,988	544,799	34,755	867,202

Belvidere Delaware Railroad Report for week ending Sept. 21st:

	Week.	Year. 1878.	Year. 1877.
Coal for shipment at Coal Port (Trenton).....	407	7,103	12,638
Coal for shipment at South Amboy	1,748	329,681	401,280
Coal for distribution.....	3,293	121,991	130,242
Coal for Company's use.....	3,362	57,777	50,377

The Production of Bituminous Coal for the week ending Sept. 21st, was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2,240 lb.....	45,304	1,083,610
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs.....	6,151	219,157
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.....	3,820	104,995
*East Broad Top.....	1,310	43,230
Clearfield Region, Pa.		
*Snow Shoe.....	397	17,108
*Tyrone and Clearfield.....	25,618	911,524
Allegheny Region, Pa.		
*Pennsylvania R. R	3,198	145,250
Pittsburg Region, Pa.		
*West Penn R. R.....	3,853	133,738
*Southwest Penn. R. R.....	667	19,018
*Penn & Westmoreland gas coal, Pa. R. R.....	15,314	476,474
*Pennsylvania R. R.....	6,561	294,241

*For the week ending Sept. 21st.

The Production of Coke for the week ending Sept. 21st:

Tons of 2000 lbs.	Week.	Year.
West Penn R. R.....	1,607	61,515
Southwest Penn. R. R.....	12,719	556,418
Penn. & Westmoreland Region, Pa. R. R.	1,947	55,515
Pittsburg, Penn. R. R.....	8,870	80,823
Total.....	25,143	754,265

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Sept. 27, 1878.

Anthracite.

On Wednesday, the 25th inst., the Delaware, Lackawanna, and Western R. R. Co. sold at public auction 50,000 tons of coal. The attendance was not large, and nearly all of the coal was taken by wholesale dealers. The bidding did not wear a strictly healthy appearance.

The following quantities of coal were sold and average prices received, comparison being made with the previous sale:

Tons.		Average prices Sept. 25.	Average prices Aug. 28.
15,000	Broken.....	$3.56	$3.52½
10,000	Egg	3.68	3.68
20,000	Stove.....	4.07½	3.98½
5,000	Chestnut.....	3.52½	3.37½
50,000	General average.....	$3.79	$3.72

Purchasers of broken were given the option of taking steamboat coal.

In making a comparison of the above average prices, it will be seen that the manufacturing sizes lost while domestic sizes gained in price. The gain in the latter, although questioned, is not up to what was expected from the large curtailment that has been made in the production of anthracite, and clearly points out that the demand is even less than the more conservative thought it would be. The auction sales have been subjects of so much manipulation, that consumers cease to frequent them with the object of purchasing coal. The only object of these sales appears to be to form a basis upon which to sell to the unwary. The more important buyers have been able to do better after the sales than before them, and therefore find it to their advantage to withhold bids, that the price may rule as low as possible.

The question whether the combination will survive beyond January 1st or not, is still much discussed, and is by no means settled in the affirmative. There seems to be a steadily growing conviction or appreciation of the fact that the combination effort to regulate the trade and advance prices has resulted in positive and permanent injury to the industry, and that it is not only temporarily reducing the consumption of anthracite, but that it is surely sapping the very foundations upon which the future development and prosperity of the trade depend. As we have many times pointed out in these columns, the manufacturing capacity of this country now greatly exceeds, and will continue to exceed, our home consumption. It is, therefore, quite evident to any practical intelligence that, unless we export the surplus of these manufactures, our home market must steadily suffer under the unremunerative prices and unsatisfactory conditions which invariably result from an over-supply. To send this mischievous surplus out of the country, and make possible a development of their industries, our manufacturers must compete, at best, on equal terms, and sometimes with freights against them, and without the bonus of protection in the markets of the world. To do this successfully they must have cheap coal—one of the most important elements in the cost of manufacturing and transportation. The conclusion seems as natural as inevitable. If the industries of the country are to be developed, if the consumption of coal is to be increased, and the trade to assume the immense proportions which the richness and position of our anthracite fields and the quality of their product render possible, prices must constantly remain so low as to enable our manufacturers to compete with goods made with cheap foreign coals. The whole country is interested in the rational solution of this problem.

There is also another and more restricted view of the case. Our own experience, confirming that of the whole history of the coal trade in other countries, has shown that cheap coal is the essential condition of a rapid growth and large consumption in the coal trade. The great companies which now monopolize the anthracite trade are enormously burdened with debt; they have immense sums invested in undeveloped coal lands and they can never attain to a condition of substantial prosperity but by an enormous increase in the use of anthracite. True, the fostering of the conditions which are necessary to bring about this great increase in the consumption of coal may not seem to offer quite as large immediate profits on the ton of coal, as would the exercise of the power to exact high prices from those who, for the moment, can not do without the fuel. No doubt there is also some supporting power in the straw which drowning men are proverbially said to clutch at.

Our great coal companies might take a lesson. They are frantically clutching at, and are going down with, the straw of combination-forced-high-prices which is totally inadequate to float them; while, if they boldly strike out with the reserved force of economy and honesty, and the favoring tide which low prices would bring to them, some of them, at least, may get safely ashore; but if they continue clinging to the straw, which is rapidly losing its original buoyancy, they must inevitably sink together, or only drop the deceptive float when so far exhausted and numbed as to be incapable of real effort.

Retail dealers report a very good trade as having been going on during the past ten days, and already the wholesale trade is improving, although it is too early for the retail dealers to be making important inquiries, as they have been carrying very large stocks, and can do a liberal business without feeling the necessity of making large purchases. Prices of domestic sizes are stronger, although we hear that Scranton coal has been sold, since the auction sale, at less than the average prices supposed to have been secured there. While the Board of Control resolved that the combination be continued until April 1st, it is by no means a certainty that it will. That resolution was subject to the ratification of the Lehigh operators within ten days, which time is up, and we are informed that all parties have not yet agreed to it. Even though they should, it would not then be a certainty, for in the mean time there will be the operations of the year's business to put before directors and stockholders, and elections of officers, etc., all of which may materially change the policy of some of the companies, and probably will do so.

The Lehigh Valley Coal Co. has issued a circular for October, making no change in prices as compared with this month. The Delaware and Hudson Canal Co. advances the prices of grate, egg, and chestnut, each 5c. per ton, the other sizes remaining unchanged. The regular circular of the Pennsylvania Coal Co. is unchanged. The contractors' circular for coal f. o. b. at Newburg ranges from 16c. to 22½c. below the average prices received at the auction sale on Wednesday. There has been much talk about an advance that is to be made in prices, owing to the curtailment in production. The companies will do very well to get what they represent they are asking. There is considerable opposition to all propositions to make further advances, while there are some who think that the present prices are too high and a great injury to the trade, by curtailing the markets and offering the bituminous and coke trades an opportunity to secure business formerly held by anthracite. We learn of an offer to deliver in this market, duty paid, 20,000 tons of Newcastle steam coal at $3 per ton. This low price is of course due to the large number of vessels coming to this country in ballast to carry back American products The quantity of coal that could be sent here at no freight, or a merely nominal one, would of course be limited, but nevertheless it could have a very disturbing effect upon our markets.

The defeat of the government in the late Canadian elections points to a duty being placed upon American coals; if so, the shipments there will probably be largely decreased.

The production of anthracite coal last week was 352,050 tons, as against 411,677 tons the previous week, and 343,157 tons the corresponding week of 1877. The total production from January 1st to September 21st was 11,499,771 tons, as compared with 13,526,737 tons for the like period of last year, showing a falling off this year of 2,026,966 tons.

Bituminous.

There has been a better inquiry for this description of coal during the past week, and more business has been done. Shipments continue liberal, and vessels are in fair supply at unchanged rates of freight. The Maryland Coal Co. has issued two circulars, one giving instructions for the use of bituminous coal and another giving a list of tests and certificates of leading consumers as to its economy as compared with anthracite. The figures as to the quantity of coal necessary to do a given amount of work are in favor of Cumberland bituminous by from 12 to 30 per cent. Many manufacturers have had their attention drawn to bituminous coal; some have tried it, and are highly satisfied with the results, while others have continued the use of anthracite, fearing to try a new thing. This circular, added to the many certificates received by other producers of bituminous coal, must do much to popularize this kind of fuel. The very low prices at which soft coals can be delivered at many points should attract much more attention than they have, and they certainly will secure a larger part of the trade if an

effort is made to continue the anthracite combination during 1879.

New York.

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

	Lump.	Steamer.	Grate.	Egg.	Stove.	Chestnut.
WYOMING COAL.	$	$	$	$	$	$
Lackawana, at Weehawken	3 60	3 60	3 65	3 80	4 20	3 65
*Pittston, at Newburg	3 55	3 55	3 65	3 75	4 05	3 50
L. Val. Coal Co., at Amboy	.....	3 75	3 50	3 60	4 10	3 50
Kingston at Hoboken	3 50	3 60	3 70	3 85	4 20	3 60
Wilkes-Barre at Pt. Johnson	3 60	3 60	3 70	3 85	4 20	3 60
Plymouth Red Ash at Port Johnson	.....	.....	3 70	3 85	4 30	3 60
Swoyers at Eliz. Pt. or S.A.	3 75	3 75	3 60	3 75	4 20	3 60
LEHIGH COAL.						
L. V. Coal Co., at P. Amboy.	4 10	..	3 90	3 90	4 10	3 50
Cross Creek, at Port John.	4 00	3 90	3 90	3 90	4 20	3 60
Buck Mount. Vein at Elizabeth Port or S. A.	4 25	4 00	3 90	3 90	4 20	3 60
SCHUYLKILL COAL						
At Pt. Richmond, Phila.						
Hard White Ash	3 30	3 30	3 30	3 45	3 85	3 35
Free-burning W. Ash	.....	.....	3 25	3 40	3 85	3 25
Schuylkill Red Ash	.....	.....	.....	3 70	3 85	3 25
Lorberry	.....	.....	3 70	3 85	3 85	3 35
Lykens Valley Vein	.....	.....	3 70	3 95	3 95	3 55
†*Alongside in N.Y. Harbor.*						
Hard White Ash	4 10	4 10	4 10	4 10	4 40	3 80
Free-burning W. Ash	.....	.....	3 80	3 95	4 40	3 80
Schuylkill Red Ash	.....	.....	.....	4 35	4 50	3 90
Lorberry	.....	.....	.....	4 60	4 60	4 25
Lykens Valley Vein	.....	.....	4 60	4 70	4 70	4 35

* Fifty cents per ton additional for delivery in New York.

† On coal delivered f. o. b. at the Philadelphia and Reading Coal and Iron Co.'s Wharf at Williamsburgh, the current date of harbor freight will be allowed from the prices here given.

Wholesale Prices of Bituminous Coal.

DOMESTIC GAS COALS.

Per ton of 2240 lb.	At the Shipping Ports.	Alongside in New York.
Westmoreland and Penn	$4 25	.....
At Greenwich, Philadelphia	.....	$5 50
At S. Amboy	5 00	5 50
Kanawha at Richmond	4 10	5 40
Red Bank Cannel, Pa., at Philadelphia	8 00	8 50
Youghiogheny, Waverly Co., at Balt	4 00	5 65
Despard, West Va	4 50	6 00
Murphy Run, West Va., at Baltimore	3 75	5 85
Fairmount, West Va., " "	3 75	5 70
Newburg Orrel. Md. " "	3 75	6 00
Cannelton Cannel, West Va	.....	10 00
" Splint " at Richmond.	6 00	7 00
" Gas Coal at Richmond	4 00	5 65
Peytona Cannel, W. Va., at Richmond	.....	10 00

MANUFACTURING AND STEAM COALS.

Cumberland at Georgetown and Alexandria	2 75@2 90	4 35@4 50	
Cumberland, at Baltimore	2 90@3 00	4 35@4 50	
Cl'rfi'd "Eureka" and "Franklin."			
At mines	0 75	.....	
At Baltimore	3 25	.....	4 50
At Philadelphia	3 25	.....	4 50

FOREIGN GAS COALS.

	Sterling.	Am. cur'ncy	
Newcastle, at Newcastle-on Tyne	7s.6d.	$2 50@	$3 50
Liv. House Orrel, at Liv.	25s.		13 00
Ince Hall Cannel "	35s.6d.		18 00
" Gas Cannel "	25s.6d.	10 00@	10 50
Scotch Gas Cannel, at Glasgow, nominal	25s.		7 50
	Gold.		
Bl'k House, at Cow Bay, N.S.	$1 75		$4 50
Caledonia, at Pt. Caledonia.	1 50		4 25
Glace Bay at Glace Bay	1 50		4 00
Lingan, at Lingan Bay	1 50		.....
Intern'l Mines, at Sydney	1 75		4 50
Pictou, Vale Mines, at Pictou	2 00		4 70

Retail Prices.

Per ton of 2000 lbs,

Anthracite.

	G. & Egg.	Stove.	Chest.
Pittston coal delivered	$5 00	$5 00	$5 00
Lack. coal, delivered below 59th St.	4 50	4 75	4 50

Bituminous.

Liv. House Orrel	$18 00	American Orrel	$11 00
Liv. House Cannel	18 00	Red Bank Cannel	7 00
Am. "	11 00	Cumberland	9 00
Ca'n'l't'n Bl'k, or splint.	10 00		

Boston, Sept. 25, 1878.

The coal trade holds a moderate business, without any further advance in prices as yet. The receipts of bituminous are on orders, but now and then a resale through the brokers occurs, which does not more than cover the obligation of the original purchase. Small freights are stiff at $1.25 from Baltimore, and $1.40 from Georgetown; but heavy tonnage is just now rather nominal, notwithstanding the fleet at either end of the coal ports are small. Within the past fortnight there have been four cargoes of culm or Nova Scotia screenings upon the market that have not realized more than $2.75 delivered; but a couple of orders taken for cargoes yesterday stiffened the market at that price. In English cannel there is considerable ease at $10 on the steamer's wharf; this does not allow over two shillings for freight. In gas coal the market is at a stand, all the city and near-by gas-house yards being full.

In anthracite the demand is from broken and furnace sizes, which continue scarce, feeling the effect of the twenty-five per cent mine reduction. All orders on these large sizes are behind, and a cargo arriving here would have little difficulty in securing an advance of 10 to 15 cents a ton on the cost and expenses. This can not be said of other sizes of anthracite. The economy of households, as well as the moderate demands of steam-users, is perceptible on every hand. On Friday last an adjourned meeting of the retail dealers of Boston was held in Mr. Mosely's office, and adjourned with little apparent evidence that the desired 50 cents advance would be secured unanimously. The meeting occurs again the coming Friday, when the difficulties are expected to be settled. The story is an old one, but, in brief, is that some are content with a profit that others can not live on. The following table illustrates the point:

	Cost in Philadelphia.	Cost on wharf in Boston.	Selling price. delivered.
Broken	$3.30	$4.55	$5.00
Egg	3.40	4.65	5.25
Stove	3.75	5.00	5.50

It will be borne in mind that the dealers buy 2240, and as a rule sell 2000 lbs. in a ton. The screening, etc. average a waste of 100 lbs. to the ton. Here, then, is a margin of 140 lbs., worth about 30 cents, which, if the ante-room discussions of last Friday's meeting can be credited, is by one or two non-consenting dealers thought sufficient profit. A compromise of an advance at retail of 25 cents a ton it is generally believed would be agreed to. Philadelphia freights are $1.15 on small tonnage and $1.08 to $1.10 on 600 and above coasters. From New York the quotation is given at 90c.@$1. The stock of coal is fair, although the dealers have taken on about one third less this season than last. There is no anticipation of a famine of coal, as the twelve coal steamers, aggregating 9400 tons, could make round trips in ten days, and so quickly relieve any distress.—*Daily Advertiser.*

Buffalo, Sept. 23, 1878.

[Specially reported by C. M. UNDERHILL.]

	Delivered at				
	Elmira.	Ithaca.	Syracuse	Rochester.	Oswego
	Afloat.	Afloat.	Afloat.	Afloat.	F. O. B
Lump	.....	.....	.....	.....	.....
Grate	$3.75	$3.60	$3.60	$3.85	$4.05
Egg	3.85	3.70	3.70	3.95	4.15
Stove	3.95	3.95	3.95	4.20	4.40
Nut	3.85	3.85	3.60	3.85	3.90

	Delivered at					
	Sodus Point.	Charlotte.	Erie.	Buffalo.		
	F.O.B.	F.O.B.	F. O. B.	Afloat.	F. O. B.	Ret. Del.
Lump	.....	.....	.....	.....	.....	.....
Grate	$4.05	$4.05	$4.55	$4.15	$4.55	$5.15
Egg	4.15	4.15	4.65	4.25	4.65	5.25
Stove	4.40	4.40	4.90	4.50	4.90	5.50
Nut	3.90	3.90	4.40	4.00	4.40	5.00

Cost of coal from Erie, Oswego, Sodus Point or Charlotte for Western market, same as if shipped from Buffalo.

BLOSSBURG COAL.
Per ton of 2000 lbs.

	To dealers.	To consumers.
By car or boat	$3.25	$3.25
In yard	3.40	3.60
In car	.....	3.65
Delivered	.....	4.00

Chicago, Ill. Sept. 22, 1878.

[Specially reported by Messrs. RENO & LITTLE.]

The following are the present prices of coal per ton of 2000 lbs. delivered:

Retail prices of coal delivered per ton of 2000 lbs

Lackawanna Stove	$6.25	Erie and Brier Hill	$5.00
" Chestnut	6.00	Wilm'gton & Ill.	$3 00@3.50
" Grate	6.00	Blossburg	5.50@6.00
" Egg	6.00	Piedmont	7.00

Stocks of all kinds of coal liberal. Trade dull.

Cincinnati, O. Sept. 23, 1878.

[Specially reported by the Consolidated Coal & Mining Co.]

Per bushel of 72 lbs.

	Retail delivered.	Wholesale afloat.
Youghioghney	11c.	7½c.
Camden	9c.	5½c
Cannel	17@18c.	13c.

Anthracite, delivered, $7@$8 per ton of 2,000 lbs.

Philadelphia. Sept. 26, 1878.

Work is to be resumed on October 1st. The local trade will absorb all of the domestic sizes of hard W. A. coals at full circular rates. Prices on board are not yet fixed. The views of producers and buyers in the Eastern markets are very wide apart, and this arises from the fact that with the exception of broken coal, the Eastern markets are well supplied—while New York and the local trades are very much behind last year, and willing to pay better rates than Eastern buyers. The result, with the small quota of October, will be that a very small proportion of the small production for that month will reach tide-water for shipment Eastward.

There is but little coal at Port Richmond, and vessels have accumulated. Part of a fleet which arrived this week went light to Baltimore and Georgetown, rather than wait for resumption. There is not likely to be a change in rates during October, the wharves being in a condition to hold the bulk of the receipts.

Pittston, Pa. Sept. 24, 1878.

Pennsylvania Coal Company's Coal in Yard.

Retail per ton of 2,000 lb.

Lump, Egg, and Stove	$2 25
Chestnut	2 00
Pea	1 00

Delivered, 50 cents per ton additional.

Richmond. Sept, 24, 1878.

[Specially reported by S. H. HAWES, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$9.00	New River Bituminous	$3.30
Coalburg Splint	4.50	Clover Hill Coal	2.50
Lewiston "	4.50	Norwood Gas and Steam Coal	2.70
Kanawha Gas Coal	4.10		

Sandusky. Sept. 23, 1878.

[Specially reported by Messrs. BLACK & CLARKE, Agents Con Coal and Mining Company.]

Per ton of 2000 lbs.

ANTHRACITE.

	Grate.	Egg.	Stove.	Chest
Lehigh	$6 00	$6 00	$6 25	$5 75
Wilkes-Barre	4 80	4 90	5 15	4 65
Pittston	4 80	4 90	5 15	4 65

BITUMINOUS.

Massillon	$2 85	Straitsville	$2 50
Hocking Valley	2 50	Piedmont	4 10

Prices retailed delivered 50c.@75c. above car prices.

San Francisco. Sept. 19, 1878.

COAL.—Imports from January 1st to September 1st, 1878:

	Tons.		Tons.
Anthracite	9,472	English	19,612
Australian	90,065	Mt. Diablo	65,401
Coos Bay	21,677	Rocky Mountain	371
Cumberland	802	Ione	621
Bellingham Bay	2,820	Carbondale	2,024
Vancouver Island	87,780	Ounalaska	300
Seattle	69,645		

The arrivals thus far during the month from New South Wales, etc., have been of considerable importance, and the cargoes not sold prior to arrival were promptly placed at some advance upon the rates ruling in July and August, say $6@$6.25 for Steam, and $6.37½@$6.50 for Wallsend. This improvement is yet sustained, although no material rise is expected by reason of the large amount of Seattle and Vancouver Island coals daily arriving from the North and sold at very low prices. The Nanaimo and Seattle coals are entering largely into local use for house purposes, while the screened Wellington comes into direct competition with West Hartley, and can be sold at less price with profit to the importer. The Bellingham Bay and Coos Bay mines are sending us less supplies than heretofore, while the Seattle and Vancouver mines appear to be steadily increasing their output. The California Mount Diablo mines make a less important factor in our markets than heretofore, although the prices are very low for both coarse and fine, screened and screenings both being used almost exclusively for steam purposes by local factories and by steamers on inland waters. Arrivals during the week include the following: Joseph S. Spinney from New York, 752 tons; Tam O'Shanter, 1013 tons Seattle; Undaunted. from Liverpool, 1366 tons; ship Duncan, 2040 tons Newcastle; Arcata, 360 tons Coos Bay; City of Panama, 715 tons Nanaimo; ship Sterling, 1612 tons Liverpool; Ravenswood, 1230 tons Sydney. Yesterday's arrivals include ship Robert Lees, from Newcastle, N. S. W., 1500 tons; ship Samaria, from Baltimore, 1848 tons; Harriet Howe, 1000 tons Seattle.—*Commercial Bulletin.*

St. Louis, Mo. Sept. 24, 1878.

Reported by JAMES J. SYLVESTER, Secretary of the Anthracite Coal Association.]

Retail prices, delivered. Ton of 2000 lbs.

ANTHRACITE.

	Per ton.		Per ton.
Lackawanna	$7.50@.....	Lehigh	$8.50@.....
Wilkes-Barre	7.50@.....	Connells. Coke.	6.00@.....
Schuylkill	7.50@.....	Blossburg	7.75@.....

Sept. 10, 1878.

[Specially reported by Messrs. LEWIS P. HARVEY & Co.]

BITUMINOUS.

Big Muddy	$3.65	Piedmont	$7.25
Indiana Block.	3.25	Pittsburg	4.35
Illinois Coals	2.25@2.50	Peytona	7.50
Blossburg	7.75	Lehigh Val. Ant.	7.50@8.00

Toledo, Ohio. Sept. 21, 1878.

[Specially reported by Messrs. GOSLINE & BARBOUR.]

We quote the following as the present prices for coal, delivered on cars here, per ton of 2000 lbs.:

Ton of 2000 lbs.

	Grate.	Egg.	Stove.	Chest.
Pittston	$5.05	$5.15	$5.40	$4.90
Wilkes-Barre	5.05	5.15	5.40	4.90
Lackawanna	5.05	5.15	5.40	4.90

Lehigh lump, $5.75.

The remaining grades same as quoted in your last issue, viz.:

Ton of 2000 lbs.

Straitsville lump	$2 60	Massillon nut	$2 40
" nut	2 25	Willow Bank lump	2 85
Shawnee lump	2 60	" nut	2 40
" nut	2 25	Cumberland	5 00
Hocking Valley lump.	2 60	Blossburg	4 60
" nut.	2 25	Morris Run	4 60
Massillon lump	2 85	Gas Coal	3 30

Retail prices, delivered in the city, are: Stove, $5.25; Grate, Egg, and Chestnut, $5.

FREIGHTS.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for four weeks ending September 26th, 1878, are given below.

DATE.	From	To	Cargo.	R'te
Aug. 22	New York	Genoa	Coal	4.00
" 29	Port Johnson	St. Johns, N. B.	Coal	1.00
" 29	Baltimore	Kingston, Jam.	Coal	3.50
" 30	Hoboken	Charlottetown.	Coal	1.40
Sept. 3	Hoboken	Key West	Coal	2.25
" 5	San Francisco	Nanaimo	Coal	3.00
" 7	Georgetown	Aspinwall	Coal	4.00
" 9	Philadelphia	Aspinwall	Coal	4.00
" 12	New York	Yarmouth, N.S.	Coal	1.25
" 13	Boston	San Francisco.	Iron	9.00
" 13	Wood's Dale	Philadelphia.	Guano.	1.00
" 14	Piermont	Baltimore	Iron ore	80
" 17	Baltimore	Trinidad	Coal	3.00
" 17	New York	Alexandria	Ph'sp'te	90
" 17	New York	Baltimore	Ph'sp'te	90

Lake Freights on Coal and Iron Ore.

Representing the latest actual charters up to Sept. 25th.

From	To	Rate per ton.	From	To	Rate per ton.
Ashtabula.	Milwauk'e.	30	Cleveland .	Milwaukee	30
"	Chicago...	45	Escanaba	Cleveland*	90-$1
Bay City..	"	60	"	Ashtabl'a*	90
Black Riv..	"	40	Marquette	Chicago...	$1.20
"	Milwaukee	45	"	Cleveland*	1.20
Buffalo	Cleveland*	40	"	Ashtabl'a*	1.00
"	Chicago*..	25	Oswego ...	Chicago...	80
"	Milwaukee	24	"	Milwaukee	86
"	Detroit...	15	"	Detroit. ...	45
Charlotte..	Chicago...	70	Sandusky..	Toronto .	90
Chicago ...	Milwaukee	25	"	Milwaukee	45
"	Green Bay	30-35	Toledo	Milwaukee	50
Cleveland	Toronto. ..	80	"	Cleveland*	40
"	Chicago...	40			

* Iron ore.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to Sept. 26, 1878.

PORTS.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Allyn's Point....	1.00	.....	.....
Bangor, Me.....	.....	1.40	90
Bath, Me.....	.....	1.25	90
Baltimore.....	40@48	.....	.....
Beverly, Mass....	.....	.....	90
Boston, Mass.....	1.10@1.15	1.25	85@9
Braintree.....	1.15	.....	.....
Bridgeport, Conn.	†95	1.25	60
Bristol, R. I.....	1.27½	1 30	70
Brooklyn.....	85	.....	.....
Cambridge, Mass.	1.27	.....	90
Charleston.....	1.00	.....	.....
Cambridgeport ..	1.18	.....	90
Charlestown.....	1.10§	.....	90
Chelsea.....	1.12	.....	.....
East Cambridge.	1.10	.....	90
Fall River.....	.....	1.25	70
Gardner	1.17½‡	.....	.....
Hartford.....	.....	1.25	.....
Hingham.....	1.25	.....	.....
Hoboken.....	.....	1.20	35
Hudson.....	.....	1.40	.....
Jersey City.....	.....	1.15	35
Lynn	1.25	.....	90
Marblehead.....	1.12½	.....	.....
Milton.....	1.15	.....	.....
Middletown.....	.....	.....	90
Nantucket, Mass.	.....	.....	90
Newbern.....	85	.....	.....
New Bedford	1.05	1.25	70
Newburyport	1.10¶	1.45	1.00
New Haven.....	1.12	1.25	60
New London.....	.....	1.25	60
Newport.....	1.05	.....	70
New York.....	80@85	1.25	35
Newark	.....	1.35	.....
Norfolk, Va.....	50	45	.....
Norwich.....	1.12@1.00‡	1.35@1.40	70
Norwalk, Conn ..	.....	1.35	55
Pawtucket.....	1.15	40	75
Petersburg.....	70	.....	.....
Philadelphia. ...	.....	70	.....
Portland.....	97½†	1.25	.....
Portsmouth, N.H.	1.20	1.40	1.00
Providence.....	1.05	1.25	70
Quincy Point....	.....	.....	90
Richmond, Va ...	60	.....	.....
Rockland.....	.....	.....	90
Roxbury.....	.....	.....	95§
Saco.....	1.45	.....	1.05
Salem, Mass.....	1.15@1.28	1.40	90
Savannah.....	1.30	.....	.....
Somerset.....	1.05	.....	70
Scituate.....	.....	.....	90†
St. John, N. B....	.....	.....	1.10
Stamford.....	95	.....	.....
Staten Island....	91	.....	20
Wareham.....	.....	1.40	.....
Washington.....	46@60	60	.....
Williamsburg....	.....	.....	35
Yarmouth, N. S..	.....	.....	1.25

Boston to Alexandria and Georgetown, $1.45. Washington to Wareham, $1.45.

*And discharging and towing. † And discharging. ‡ And towing. § 3c. per bridge extra. ¶ And pilotage.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Sept. 27, 1878.

American Pig.—We note sales of about 2000 tons of Nos. 1 and 2 Foundry iron, mostly on private terms. The best Lehigh iron can be procured on the basis of $17 for No. 1 Foundry. There has been more business doing for a few weeks past, but for a fall trade it is very small, and, as a consequence, prices are no better. We quote No. 1 Foundry at $16@$17; No. 2, $15@$16, and Forge, $14@$15.

Scotch Pig.—We note a sale, on private terms, of 200 tons of Glengarnock, to arrive. Outside of this there has been but a small retail trade. We quote Eglinton at $21.50@$22.50; Glengarnock, $23@$24; Coltness, $23.50@$24.50.

" According to the circular of Messrs. John E. Swan & Bro. of Glasgow, under date of September 13th, the number of furnaces in blast was 92, against 87 a year previous. The quantity of iron in Connal & Co.'s stores was increasing, and amounted to 192,751 tons, as compared with 159,700 tons twelve months earlier. The shipments were improviag. as compared with the corresponding time last year. but up to September 7th there had been a loss of 51,791 tons, as compared with the like period of 1877. The imports of Middlesbrough iron show an increase this year over last of 6755 tons. The following were the quotations of some of the leading brands of No. 1 Scotch pig iron; Gartsherrig, 55s.; Coltness, 57s 3d.; Summerlee, 53s.; Langloan, 56s.; Glengarnock, 53s., and Eglinton, 48s. 6d. The average price of warrants in August was 49s. 3¼d., as against 55s. 1¼d. in August, 1877. The prices of some brands of Scotch pig iron are nearly as low now as at any previous time in the history of the trade, and there is nothing to indicate an early recovery, but rather that prices may still further decline. Middlesbrough iron, f. o. b., Tees, is quoted as follows: No. 1 Foundry, 42s. 6d.; No. 2, 40s. 6d.; No. 3, 39s.; No 4, 38s. 3d.; and No. 4 Forge, 38s. Bessemer iron, f. o. b., Barrow, is quoted as follows: No. 1, 65s.; No. 2, 62s. 6d.; and No. 3, 60s."

Rails.—We learn of no business in either iron or steel rails. We quote iron, at mill, at $32@$36, and steel at $42@$45.

The quotations for 50-lb. rails, f. o. b., English ports, are as follows, per ton: Steel, £5 15s.; iron, £4 15s.

Exports from Great Britain to the United States during the first eight months of 1876, 1877, *and* 1878:

	1878.	1877.	1876.
	Tons.	Tons.	Tons
Iron—Pig.....	18,540	28,028	26,142
" Bar, angle, bolt, and rod.....	3,352	3,589	1,200
" Railr'd, of all sorts	591	1,049	160
" Hoops, sheets, and plates.....	555	4,032	5,934
" Cast or wrought, and all other m'factures unenumerated...	1,364	1,561	2,978
Tin plates.....	69,755	70,270	59,214
	1878.	1877.	1876.
	£	£	£
Iron—Pig.....	76,749	116,766	111,541
" Bar, angle, bolt, and rod...	30,524	38,048	15,397
" Railr'd, of all sorts	5,658	10,844	3,815
" Hoops, sheets, and plates.....	8,258	41,997	66,693
" Cast or wrought, and all other m'factures unenumerated...	29,365	36,845	59,744
Tin plates.....	1,249,794	1,378,739	1,298,828

Old Rails.—Sales aggregating 2000 tons are reported on private terms. We quote at $17@$18.

Wrought Scrap.—A sale of 500 tons on private terms is reported. We quote, from yard, at $20@$21.

Baltimore. Sept. 23, 1878.

[Specially reported by Messrs. R. C. HOFFMAN & Co.]

The iron market remains about same as last report, with fair demand. Prices about as follows:

Balt. Char....	$26.00@$28.00	M. & White...	$13.00@$14.00
Va. "	26.00@ 28.00	C'lC.B.Blooms	50.00@ 52.00
Anth.No.1....	19.00@ 20.00	" " Billetts	52.00@ 55.00
" " 2....	18.00@ 19.00	Refi'd Blooms	43.00@ 45.00
" " 3....	16.00@ 17.00		

Boston. Sept. 25, 1878.

The iron trade has had a fair jobbing demand for merchant bar, at from $1.70 to $1.75, the sales almost exclusively to interior dealers stocking up, and machine shops on repairing orders. The mills hereabouts are running, but are not so filled with orders as to embarrass the prompt delivery of any new business. The Pembroke, it is understood, started Tuesday. A significant fact in connection with our mills, is the fact that old horse-shoes, the most desirable stock, have slumped down to 80 cents, f. o. b., and well selected scrap to 75 cents. The bankrupt stocks of New York pig-iron are probably influential in this turn downward, but the sales have been liberal, and the impression is prevalent that the $16 No. 1 has about all been taken up. There is a feeling among the hardware dealers that cut iron rails have had a slight weakening, and that the quotation $2.25 is wholly nominal.

The demand for plate-iron here is light, but the mills, as detailed during the week in our Industrial Notes, have taken large orders from petroleum speculators, who are buying and storing for a rise. We quote 2¼ cents firm, and for No. 1 charcoal 2⅛ cents.—*Daily Advertiser.*

Buffalo. Sept. 20, 1878.

[Specially reported by Messrs. PALEN & BURNS.]

Prices per gross ton delivered on cars at Buffalo:

	4 mos.
No. 1 Foundry.....	$17.50
No. 2 "	16.50
No. 3 Forge.....	15.00
B 1.....	17.00
American Scotch A 1.....	19.50
" " B 1.....	18.50
" " No. 2.....	18.00
" " No. 3.....	.....
Best selected Connellsville coke, per net ton.....	4.75

Chattanooga. Sept. 23, 1878.

[Specially reported by J. F. JAMES, Dealer in Iron & Metals.

Tenn., Ala. & Ga. Charcoal, No. 1 Foundry	$16 00@	$17 00
Tenn., Ala. & Ga. Charcoal, No. 2 Foundry	15 00@	16 00
Tenn., Ala. & Ga. Charcoal, Gray Forge....	13 00@	15 00
Tenn., Ala. & Ga. Coke, No. 1 Foundry.....	18 00@	19 00
Tenn., Ala. & Ga. Coke, No. 2 Foundry.....	16 00@	17 00
Tenn., Ala. & Ga. Coke, Gray Forge.....	14 00@	15 00
Charcoal or Coke, white and mottled.....	13 00@	.....
Old rails.....$18 00@$19 00	Wr'ght scrap,	
Old car wh'ls. 16 00@ 17 00	No. 2.....$11 00	
Wr'ght scrap,	Cast scrap... 10 00	
No. 1..... 16 00	Muck bar.... 30 00@ 32 00	

IRON ORES.

Red hematite or fossiliferous f. o. c. at mines, about 55 per cent metallic iron..... $1.25

Brown hematite about 55 per cent metallic iron..... 1.75

Cincinnati. Sept. 24, 1878.

[Specially reported by Messrs. TRABER & AUBERY, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, viz.:

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1..	$21 00@	$22 00—4 mos.
"	No. 2 "	20 00@	.....—4 mos.
"	Soft Silver Gray.....	19 00@	.....—4 mos.
"	Mill.....	18 00@	19.00—4 mos.
Tennessee	No. 1 Foundry.....	21 00@	.....—4 mos.
"	No. 2 "	20 00@	.....—4 mos.
"	Mill.....	18 00@	19.00—4 mos.

STONE COAL.

Ohio	No. 1 Foundry.....	$17 00@	.....—4 mos.
"	No. 2 "	16 00@	.....—4 mos.
"	No. 3 "	15 00@	.....—4 mos.
"	No. 4 "	14 00@	.....—4 mos.
"	Mill.....	16 00@	.....—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry.....	18 00@	19 00—4 mos.
" "	No. 2 "	17 00@	.....—4 mos.
" "	Stove..	16 00@	.....—4 mos.
" "	Mill.....	17 00@	.....—4 mos.

CAR-WHEEL.

H'n'g R., C. B	Hecla, Vesuvius, Etna, Buckhorn, Jefferson.	$30 00@	35 00—4 mos.
Maryland, "	Cedar Point	35 00@	.....—4 mos
Missouri, "	Maramec.....	28 00@	... —4 mos

BLOOMS.

Charcoal ..... $45 00@$50 00—cash

SCRAP IRON.

Cast.....	40c. @ 45c.—cash
Wrought.....	62½c.@ $1.00—cash

Columbus, O. Sept. 24, 1878.

[Specially reported by Messrs. KING, GILBERT & WARNER, Dealers in Pig Iron and Ores.]

There has been an increased inquiry for pig-iron the past week, but sellers are not inclined to accept offers that they would have taken a month ago. Consumers are also beginning to realize that the bottom has been reached, and are more willing to offer on round lots.

The usual time, four months, allowed on quotations.

FOUNDRY IRONS

No. 1 Hanging Rock Charcoal.....	$22 00@	$22 50
No. 2 " " "	..... @	.....
No. 1 Hocking Valley soft and strong from pure limestone ores.....	18 00@	18 50
No. 2 Hocking Valley soft and strong from pure limestone ores.....	17 00@	17 50
No. 1 American Scotch.....	18 00@	18 50
No. 1 Moxahala.....	18 00@	18 50
No. 2 "	17 00@	17 50
No. 1 Shawnee.....	18 00@	18 50
No. 1 Eliza (Jackson County).....	18 00@	18 50
Silver Gray.....	16 50@	17 00

MILL IRONS.

Gray neutral.....	16 00@	17 00
Mottled and white neutral.....	15 50@	16 00
Gray cold short.....	16 00@	16 50
Mottled and white cold short	15 00@	15 50

Cleveland. Sept. 24, 1878.

[Specially reported by Messrs. C. E. BINGHAM & Co.]

Per gross ton, on four months' time. Subject to change without notice.

FOUNDRY IRON.

No. 1 L. S. Charcoal..	$23 00	Am. S., No. 1, Ch. Val..	$20 00
No. 2 " " ..	22 00	" " B—1, " " ..	18 00
No. 1 Anthracite.....	20 00	" " No. 2 " " ..	18 00
No. 2 "	19 00	No. 1, Massillon.....	19 00
No. 1 Bituminous.....	20 00	B—1, "	17 00
No. 2 "	18 00	No. 2, "	16 00

CAR-WHEEL AND MALLEABLE IRON.

No. 3, L. S. Charcoal.	$24 00	Nos. 5 & 6, L. S. Char.	$24 00
No 4, " " ..	24 00		

BESSEMER IRON.

Nos. 1 & 2, L. S. Char.. .... $23 00

FORGE IRON.

No. 1, Gray.....$18 00 | White and Mottled....$16 00

Louisville. Sept. 24, 1878.

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

The market for pig-iron is firm at full figures, with a fair demand. We have no change to report either in tone or price. The usual time, four months, is allowed on quotations below.

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal...	$21 00@$22 00	$19 00@$20 00
Southern Charcoal.....	18 00@ 18 50	16 50@ 17 00
H'n'g Rock, Stc'l & Coke..	19 00@ 20 00	18 00@ 18 50
Southern Stonecoal & Coke	18 50@ 19 00	17 00@ 17 50

"Amer. Scotch"... $18@$19 | Silver Gray... $15@$17.00

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral.....	$16 00@	$17 00
No. 1 Stc'l & Coke, Cold-short & Neutral....	16 00@	16 50
No. 2 Stc'l & Coke, Cold-short & Neutral....	15 00@	15 50
No. 1 Missouri and Indiana, Red-short.....	20 00@	21 00
White & Mottled, Cold-short & Neutral.....	14 50@	15 00

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast.....	$29 00@	30 00
Alabama and Georgia, Cold Blast	28 00@	29 00
Kentucky, Cold Blast.....	25 00@	28 00

Milwaukee. Sept. 24, 1878.

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

CHARCOAL IRON.

No. 1 Lake Superior per gross ton.....$23 00—4 mos.
" 2 " " " " ..... 22 00—4 mos.

ANTHRACITE IRON.

No. 1 Anthracite per gross ton ..... 23 00—4 mos.
" 2 " " " ..... 22 00—4 mos.

STONE COAL AND COKE.

Warner's Am Sc'th (Bk.Band, per ton$24 00@ ....—4 mos.
Soft Silvery per ton .... 21 00@ ....—4 mos.
Ohio Stone Coal..... 22 00@ ....—4 mos.

CAR WHEEL.

Lake Superior ores per ton .....$24 00@25 00—4 mos

Philadelphia. September 26, 1878.

[Specially reported by JUSTICE COX, JR., & Co., Iron Merchants, 333 Walnut street, Philadelphia.]

Pig-Iron.—The demand for pig iron continues to be fully active, but low prices are the rule. The lots, large and small, are only moving at the lowest prices, with the exception of one or two companies' iron that brings full two dollars above the low prices asked. We can report sales of about 4000 tons, in lots from 10 to 1000 tons, and quote No. 1, $17 to $19; No. 2, $16 to $17; Gray Forge, $14.50 to $16. Chickies only got $19 for No. 1.

Manufactured Iron.—The demand for plates is brisk; we hear of two or three mills refusing orders at any thing but an advance, and in at least two cases the advance was obtained for prompt delivery; in fact, plate mill men have come to the conclusion that now is the time to get a new dollar for an old one, at least, more than they have been doing for the past two years. In bars the demand is better, and some mills that have been selling at low-water prices are disposed to refuse all orders not at full price and extras. Skelp is in quite brisk demand, orders for several hundred tons having been given out this week; but skelp, unlike almost all other manufactured iron, continues to be accepted at the low prices ruling last month, when an advance could be given, as well as on plates or bars. We quote: Bars, 1 75-100 to 2c., firm; plates, 2⅛ to 6c., firm; skelp, 1 9-10 to 2c., weak.

Rails.—We have nothing new to report in either steel or iron rails. We quote: Steel, $42 to $44; Iron, $32 to $36, all at mills.

Old Rails.—There is some little demand for old rails, but only low prices make sales. We quote $17.50 to $18.50, Philadelphia.

Old Wheels.—We quote old wheels dull at $17 to $18.

Scrap.—Cast is quiet at $12 to $16; Wrought, $20 to $22.

Pittsburg. Sept. 24, 1878.

[Specially reported by A. H. CHILDS.]

The demand for the best qualities of pig iron is well maintained, and there has been a slight advance in the price asked for good western red shorts. Common neutral and cold short mill iron have met with better sale than before, but the abundant supply of these irons prevents any immediate improvement in price. There is some improvement also in the demand for foundry iron, which has hitherto been very dull.

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$20.00	M. & White	$15.00@$16.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	20.00@ 23.00
Gray Forge	16.50@ 19.00	Cold Blast W.	35.00@ 37.00

Richmond, Va. Sept. 24, 1878.

[Specially reported by ASA SNYDER, Esq.]

There is an increased demand for gray forge pig-iron with sales of over 600 tons the past week. Foundry pig has not maintained its activity. Old rails are firm. I quote as below:

Amer. Scotch Pig Iron			$21.50@$22.50
Anthracite	"	No. 1	19.00@ 20.00
"	"	No. 2	18.50@ 19.00
"	"	No. 3	17.00@ 18.00
"	"	Mottled	15.00@ 16.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			19.00@ 22.00
" " " " "		neutral	27.00@ 28.00
" Warm " " "		cold short	18.00@ 20.00
" " " " "		mill	17 00@ 18 00
Old Rails			16.50@ 17.50
Wrought scrap No. 1			16.00@ 17.00
Cast scrap—Machinery			15.00@ 16.00
Richmond Refined Bar Iron			2.00@ 2.10
Horse-shoes			4.00@ .....
Mule-shoes			5.00@ ..
Old Dominion nails (standard size)			2.25 keg.

Freight by sail to New York, $1.60 for 2240 lbs.

METALS.

NEW YORK, Friday Evening, Sept. 27, 1878.

There is, upon the whole, a fair amount of business doing, but, as profits are small or business is being done at a loss, dealers continue to complain.

RECEIPTS OF METALS AT NEW YORK FOR THE FOUR WEEKS ENDING SEPTEMBER 26TH AND YEAR FROM JANUARY 1ST, 1878.

	Sept. 5.	Sept. 12	Sept. 19.	Sept. 26	Year from Jan. 1
Copper, bbls	56	716	293	1,033	18,877
Copper, boxes	.....	....	.....	....	113
Copper, cakes	.....	....	190	....	12,049
Lead, pigs	4,149	1,877	1,641	1,410	227,036
Spelter, pieces	549	1,052	633	628	34,527
Quicksilver, flasks	62	....	.....	....	971

Gold Coin.—During the week under review the price of gold has ranged from 100⅛ to 100⅜, and closed at 100⅜.

Copper.—The business in this article continues to be small, and the price appears to be sustained by main force. The business done during the past week has been at 16c., at which the market closes firm. The latest cable advices quoted Chili bars at £60 10s.@ £61, and Best Selected, £67@£68. A correspondent, under date of London, September 16th, says:

"Chili Bars have been quiet, but steady, since our report of the 13th inst., both sellers and buyers being unwilling to enter into any important transactions prior to arrival of the telegrams with news of the charters. We have, therefore, to note only about 150 tons for Saturday and to-day, consisting of named brands at £60¼, favorite marks at £60¼ and £60½, cash, together with a small quantity of best brand at £60¾, same terms.

"Late this afternoon advices came of charters of 1900 tons for the past fortnight, of which 950 tons in bars and ingots, 650 tons in ores and regulus for England, and 300 tons in bars for France. Price at Valparaiso, on 13th inst., was $16.10; exchange, 37d.; which, with steamer freight of 60s., is equal to £61 laid down in Liverpool, but without any commission to merchants on either side:

	1878.	1877.	1876.	1875.
Charters:	Tons.	Tons.	Tons.	Tons.
Jan. 1st to Aug. 31st.	32,261	28,454	31,267	32,097
Jan. 1st to Sept. 13th	1,900	1,853	2,865	2,530
Shipments:				
Jan. 1st to Aug. 31st.	30,568	30,285	33,152	32,095
August only	4,500	3,493	5,334	5,654

The same correspondent, under date of the 17th inst., says:

"The charters do not seem to have produced any effect on the market, and quotations for Chili bars remain in the same position as they have been for the last fortnight, viz., at £60 to £60¼ for G. O. B.'s, £60¼ to £60½ for favorite marks, rather buyers at the lower figures, and a few sellers at the higher rates. Best brands keep exceedingly scarce, and of those held in the greatest esteem there is virtually nothing for sale, except at extreme prices."

Tin.—There has been much more activity in this article, and prices are higher; 100 tons due here by the Game Cock about the middle of October are reported to have been sold at 13c.; 50 tons, on spot, at equal to 13⅝c., and 750 to 1000 pigs at 13⅝@13½c.; 15 tons, due in December, are reported sold at 13¼c., 60 days. More is offered at the same price without takers. Our quotations are rather broad, owing to the different views as to values. We quote Straits at 13⅜@13⅝c.; L. & F., 13⅝@13¾c., and Banca, 17c. There arrived during the week the Glammis Castle, from Singapore, with 4630 slabs of tin. Of this quantity there had been sold to arrive 2000 slabs at 13½c. and 500 slabs at 13¼c. The London cable quotation for Straits is £56 10s. At Singapore the quotation is $17.75, and at Penang, $17.60, with exchange at 3s. 9½d. Our London advices, bearing date of the 17th, say:

"Tin was a trifle easier, and sales of about 90 tons Straits and Australian, chiefly the latter, have been made at 57 1-20 down to 57 1-40, principally at the last-named figure."

Tin Plates.—There is a very fair business doing in these. Prices are very irregular, owing to the scarcity of certain sizes. We note sales of about 5000 boxes of coke tins at $4.57½@$4.65, and 1000 boxes of charcoal tins, assorted, at $5.75 for I. C. We quote per box, as follows: Charcoal, bright, ⅛ X, Melyn grade, $5.80@5.87½; and Allaway grade, $5.62½@$5.75; charcoal ternes, Allaway grade, $5.25@$5.30; coke, bright, B. V. grade, $4.70@$4.75; and coke roofing, 14×20, $4.70.

Messrs. Robert Crooks & Co., of Liverpool, under date of September 12th, say of tin and terne plates:

"During the past week the stock of cokes referred to in our circular of the 5th instant has been sold at prices varying from 13s. 3d. to 13s. 6d. per box. This is having the effect of forcing some of the needy makers to accept a similar figure in order to obtain orders. Charcoal tins and ternes are far from strong, though not quite in the demoralized condition of coke tins. Coke ternes are little inquired for, and the make is so limited that prices are nominally maintained."

Lead.—The sales of the week, all told, have not probably exceeded 250 tons at 3⅝c. There are rumors of further business, but we have not been able to authenticate them. The outlook for this article is not encouraging. The prospects are in favor of stocks in the mines increasing before January 1st, and prices declining.

The San Francisco *Commercial Herald* of September 19th says: "The Oceanic, for China, carried 311,750 lbs. pig-lead.

Spelter and Zinc.—There is a quiet business going on here in spelter, and a better business West, at 4⅞@5c. Sheet zinc is quiet at 5¾c.

Antimony.—The arrivals are light and business not active. Cookson's is quoted at 12½c., and Hallett's at 12c.

Quicksilver.—The San Francisco *Commercial Herald* of September 19th says: "The market is very sluggish, and the price nominal at 41c. The Oceanic for Yokohama carried 175 flasks. The Montana for Mexico carried 181 flasks."

Bullion.—The market in London had the first rally on Wednesday and yesterday that it has had for some weeks, and showed not a little strength. It is presumed that this was in consequence of the apprehended Indian war. The German government, for the first time since silver was 53½@54d., entered the market yesterday and sold £100,000 at 51¾d., and since then the market has been naturally weaker, as it can scarcely be expected to rise if the Germans show a disposition to sell at ruling prices. London quotes 51⅝d.; New York, 112½; and San Francisco, 12 per cent discount.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London Pence.	N. Y. Cents.	DATE.	London Pence.	N. Y. Cents.
Sept. 21	51 9-16	112½	Sept. 25	51 11-16	112⅝
Sept. 23	51 9-16	112½	Sept. 26	51 11-16	112⅝
Sept. 24	51¼	112¼	Sept. 27	51 5/8	112½

BULLION SHIPMENTS.

We give below a statement showing the latest bullion shipments in addition to those announced in our issue of Sept. 21st:

Sept. 9,	Independence,	Nevada	$9,984.69
" 9,	Leopard,	"	9,181.67
" 13,	Tibo Cons.,	"	11,936.18
" 14,	Northern Belle,	"	10,081.92
" 14,	California,	"	80,291.07
" 14,	Con. Virginia,	"	52,205.03
" 16,	Manhattan,	"	11,640.77
" 12,	Standard,	Cal	64,913.13
" 12,	Bodie,	"	122,845.26
" —	New York Hill,	"	*14,120.00
" 13,	Silver King,	Arizona	44,000.00
" 11,	McCracken,	"	8,158,46

* August shipments.

The Coinage of France.—The Philadelphia *Ledger* has the following: "Through the polite attention of the banking house of Drexel, Harjes & Co., at Paris, we are furnished with a report of the coinage of France, which has just been addressed by the Director of the Mint to the Minister of Finance, showing the number of gold and silver pieces struck since 1795 to the end of the year 1877. The former date was selected as the point of departure because that was the period when money commenced to be coined on the decimal system. As regards gold coin, the remark should be made that in 1877 none but 20f. pieces were produced. The issue for that year amounted to a value of 255,181,140fr., that is to say, 12,759,057 pieces. For the years preceding 1877 the nominal value of pieces struck since 1795 was—in coins of 100fr., 44,346,400fr.; in those of 50fr., 46,568,700fr.; those of 40fr., 204,432,360fr.; 20fr., 6,708,899,220fr.; 10fr., 1,013,641,610fr.; 5fr., 233,440,130fr. Adding to the above the number of 20fr. pieces produced in 1877, we obtain a general total of more than eight milliards and a half (8,506,313,560fr.) of gold money coined in France since the date of 1795, equal to 1701 millions of dollars. As to silver, the specie produced in 1877 arises solely from orders given to the mint before the promulgation of the decree of the 6th August, 1876, which suspended the coining of 5fr. pieces. Those struck reach a value, in that year, of 16,464,285fr. No other silver money was struck in 1877. From 1795 to 1876 France coined 5,510,000,000fr. in silver, equal to 1102 millions of dollars, which included of 5fr. pieces more than five milliards; those of 2fr. for 152 millions, 1fr. for 193 millions, and 50c. for 89 millions. The total value of the bronze money struck in 10, 5, 2 and 1 centime pieces reaches, from 1795 to the present time, the sum of 62,702,787fr. 40c., equal to 12 millions of dollars."

Silver and Finances in Japan.—The Japanese government are now engaged in a fresh attempt to get rid of the inconveniences attending the use of the Mexican dollar as the monetary basis of their foreign trade. They have decreed that the Japanese "trade dollar," which has hitherto been current only at the open ports, shall henceforth be made universally current, and may, therefore, be used in making and receiving payment of taxes, and in all other public and private transactions. In order to facilitate the coinage of the trade dollar, it is announced that the minimum weight of silver receivable at the mint shall be reduced from 1000 to 500 ounces; that the mint charges for coining shall be cut down to 3 per cent, and that the limit of time for delivering coin in exchange for bullion be reduced from 20 to 10 days. It is hoped that these alterations will lead to the trade dollar being issued in quantities sufficient to drive the Mexican dollar out of circulation. There is, however, very little chance of this. The Mexican dollar contain 416 grains of silver, 9·10 fine, while the trade dollar contains 420 grains of equal fineness, and there are not likely to be many willing to give the greater weight of silver, and further bear the expense of its coinage, to obtain a coin which will simply circulate on an equality with the Mexican dollar. The change, however, shows the want that is felt for a good silver currency in the East—a want which the advocates of a British trade dollar propose to supply.

The *Japan Gazette* of August 6th says: "In June last year the government levied a loan upon the newly-established Kuwazoku bank of 15,000,000 yen. With 10,00,000 yen now raised, the exchequer will have been enriched within a year by no less than 25,000,000 yen of borrowed money, or about 40 per cent of the income. Some curiosity is shown to learn the disposition of the advances. The chief subject of interest has been the realization of the internal loan offered by the Japanese government to the people. The terms of the loan are these: government bonds for 50, 100, and 500 yen, bearing 6 per cent interest, redeemable within a period of twenty-five years by annual drawings, have been issued for an amount of yen 12,500,000 at 20 per cent discount. Notwithstanding the fact that an operation of a similar character was inaugurated in 1873, with the additional advantage of loans in paper money then made in exchange for government bonds bearing 6 per cent interest, being redeemable in gold, this issue of government bonds was, the native press asserts, eagerly subscribed for to an extent vastly in excess of the amount invited."

Salt Lake Ore and Metal Market.

SALT LAKE CITY, Utah, September 27, 1878.

Argentiferous Lead (*Base Bullion*), $22 to $25 per ton for lead; $1.13 to $1.15 per ounce for silver; $20 per ounce for gold. The quotations for silver are based upon the silver in the lead of 80 to 120 ounces per ton of 2000 lbs.

The *Inter Ocean's* correspondent, under date of the 16th inst., reports the following:

"The last sale of bullion was made at $28 per ton for

lead, and $1.13 per ounce for silver, and these prices may be said to be the market.

"A sale of 100 tons of carbonate ore, assaying 57.85 per cent lead, and 66.41 ounces of silver to the ton, sold for $78 per ton, which is about the state of the market on choice ores.

"The shipments of ore and bullion for the week ending September 14th were as follows: 25 cars bullion to Pittsburg, 5 cars to Omaha, 10 cars to Chicago; 8 cars ore to Omaha, 6 cars to Hilliard; bullion, 841,565 lbs.; ore, 303,263 lbs.—total, 1,144,828 lbs."

FINANCIAL.

New York Stocks.

NEW YORK, Friday Evening, Sept. 27, 1878.

The dealings in the coal shares have been small during the week under review, and the hand of the manipulator was plainly observable. Although the price of coal at the auction sale showed a slight advance, yet it gave no strength to the quotations of the stocks. The sales of Delaware and Hudson Canal aggregated 1819 shares at 49⅝@50¾, closing at 50¾; Delaware, Lackawanna, and Western Railroad, 58,247 at 52¾@54⅝, closing at 54⅛; New Jersey Central, 4590 shares at 37⅝@35½, closing at 36¼.

Mount Farm Coal and Oil Co.—This company has declared a dividend of 2 per cent.

The National Tube Works Co.—This company pays a quarterly dividend of $3, October 1st.

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore for the week ending the 27th inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	... ...	.....	30	.....
St.L.,I.M.& S.R.Co..	100	5⅞	5⅞	5⅝	100
Spring Mt. Coal Co.	50	.....	.....	50	.....
*Cambria Iron Co..	50	.....	.....	55	.....
*Penn. Salt Mf'g Co.	50	.....	.....	70	3
*Westm'land C. Co.	50	....	.....	55	.....
*Buck Mt. Coal Co..	50	.....	.....	36	....
*Schuyl. Nav. Co...	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	.....	.....	95	.....
†B.&O.RR.Co.2d pf	100	.....	.....	85	.....
" " " com	90	93⅛	90	93	125
†George's C'k C. Co	100	.....	.....	86½	.....
†S. Clara M'g Co...	100	.....	.....	25	.....
†Atlantic Coal Co.	10	.....	.....	1.15	.....

BONDS.	Prince'l. When Due.	Int'est. When Due.	Hig'st.	Lowest.	Amount.
D., L. & W., 7s, conv	1892	J. & D.	.....	103¼	.....
" " " " 2d mtge.	1881	M. & S.	103½	.....	7,000
N.J.C.,1stmtge.new	1890	F. & A.	113½	113¼	3,000
" " " 1st mtge.,con	1899	Q.	73⅝	72¾	*15,000
" " " convt.....	1902	M. & N.	.....	.....	.....
Lehigh & W. B., con	1899	Q.	46⅞	46½	*4,000
Am. Dock & Imp. 7s	.....	J. & J.	.....	.....	.....
St.L.I.M.& S..1st mt	1892	F. & A.	104	103⅞	11,000
Ches. & O., 1st mtge	1899	M. & N.	27¼	.....	2,000
D & H C Co.,1stm.rg	1884	J. & J.	.....	100	.....
" " " "	1891	J. & J.	.....	100	.....
" " " " m.loan cp	1894	A. & O.	103½	103⅜	11,000
" " " " rg.	1894	A. & O.	.....	100	.....
" " " " new mge.	.....	.....	.....	.....	.....
*L.V.R.,1stm.6s.cp.	1898	J. & D.	113¾	.....	1,000
" " " rg.	1898	J. & D.	.....	112	.....
" " " 2d m. 7s,rg.	1910	M. & S.	115	.....	5,000
" " " con.m.6s,rg	1823	J. & D.	100¼	100	2,000
" " " " 6s cp.	1923	J. & D.	100¼	100	12,000
*Pa.RR.,1st m.6s,cp	1880	J. & J.	104¾	.....	10,000
" " g. m., 6s, cp.	1910	J. & J.	.....	107½	.....
" " " 6s, rg.	1910	A. & O.	.....	107	.....
" " con.m.6s,rg.	1905	Q.	95	.....	1,000
" " " 6s, cp.	1905	J. & D.	95½	95¼	60,000
" " new loan, 5s	.....	.....	.....	.....	.....
*P.& R. R., 1st m. 6s, R. C. 43-44.....	1880	J. & J.	.....	.....	.....
P. & R. R., 1st m. 6s, R. C. 48-49.....	1880	J. & J	.....	.....	.....
P.& R. R.,2d m. 7s cp	1893	A. & O.	.....	.....	.....
" " " scrip....	1882	J. & J.	.....	.....	.....
" " " in.m.7s,cp	1896	J. & D.	.....	.....	.....
" " " c.m.7s,cp.	1911	J. & D.	.....	102½	.....
" " " " 7s. rg.	1911	J. & D.	103	.....	6,000
" " " cvt.7s,R.C	1893	J. & J.	55	.....	500
" " C.& I.Co.,Deb 7s, R. C.....	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.....	'92-3	various	.....	.....	.....
L. Nav. Co.,6s,rg.m.	1884	J. & Q.	106	.....	1,000
" " RR., rg. m.	1897	F. & Q.	.....	105½	.....
" " cvt. co. G. R.	1894	M. & S.	.....	95	.....
" " " Gold R. C.	1897	J. & D.	95½	95	8,500
" " con.m.7s,rg.	1911	J. & D.	.....	70	.....
*P.& N.Y.C.,7s,R.C.	1896 1906	J. & D.	.....	114½	.....
*Pa Canal, 6s, cp..	1910	J. & J.	.....	60	.....
*Schuyl.Nav.,1st m. 6s. rg.....	1897	M. & Q.	....	.....	.....
*Sus.Coal, 6s, rg...	1911	J. & J.	.....	.....	.....
†Balt.&O. RR., 6s..	1880	J. & J.	102	.....	500
" " " " 6s..	1885	A. & O.	.....	105½	.....

Total transactions for the week.....$160,500

* Assessed.

Philadelphia Stocks.

PHILADELPHIA, Friday Evening, Sept. 27, 1878.

The Philadelphia market for coal shares has exhibited but little change during the course of the past week's operations, from the ordinary movements noted for some time past. The sales amount to about 50,000 shares, of which Pennsylvania stock contributes in the dealings 31,989 shares, closing at a slight advance. Reading stock also is better, the final sales being made at 16¼, with sales of 18,000 shares, In the remaining portion of the list the business has not been important.

Gas Stocks.

NEW YORK, Friday Evening, Sept. 27, 1878.

A remarkable decline has taken place since our last in our list of quotations of the gas stocks of New York and vicinity. The total decline in the stocks of fifteen companies comes within the neighborhood of $3,000,000. In some stocks the fall in the market value amounts to one third of the whole capital. The recent experiments by the city with the electric light undoubtedly alarms holders of gas stocks; and should the city ever adopt the electric light for the public parks, and places for which it is admirably adapted, it will have the effect of causing serious inroads into the incomes of the gas companies.

The Napanee (Ont.) Gas-Works.—These works, it is stated in a local paper, have been sold to the Banque du Peuple, for $5000. A little over a year ago the works were constructed at a cost of nearly $15,000.

The Citizens' Gas Co., of Poughkeepsie, N. Y., has reduced the price of gas to $2 per thousand feet.

The Hoboken Common Council on the 24th inst. adopted a resolution cutting off the gas from the parks, churches and lower wards, 135 lamps in all, because of a lack of sufficient funds in the treasury.

The East Liverpool (O.) Gas Co. gives notice to its consumers, that all connections made to its mains for fuel purposes, must be severed by Oct. 1st, it only having capacity to supply the increased demand for lighting purposes.

Natural Gas for Manufacturing Lamp-Black.—A Petrolia (Ont.) correspondent of the *Commercial Gazette*, of Pittsburg, writes as follows: "The Transfer Company put a well down, and struck an immense vein at the depth of 1490 feet, which they had under control and running all their machinery in thirty-six hours, with enough gas to spare to run several more establishments of the same kind. They now can dispense with some labor and then save the amount that it cost for coal per year ($6000). We have also just above us, on the Butler Railroad, one of the largest lamp-black establishments in the United States, which is made by thousands of gas jets burning against slate, which forms the black, and is scraped off and shipped to all parts of the world."

The Electric Light in Agriculture.—Rev. Canon Bagot, of Athy, England, is experimenting at harvesting at night with the aid of the electric light.

AUCTION SALES:

Metropolitan Gas-Light Co.—34 shares at $125@$129 per share, and $560 scrip at 101 per cent.

Manhattan Gas-Light Co.—100 shares at $162½@$167½ per share.

New York Gas-Light Co.—20 shares at $80 per share.

Cambridge Gas-Light Co.—45 shares at 121¼@120.

Boston Gas-Light Co.—3 shares at 770.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks, No. 30 Broad street, New York:

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	Am. of last.	Date of last.	QUOTATI'NS Bid.	As'd
	$		P. ct.				
Mutual, N. Y....	5,000,000	$100	6	1½	July, '78	70	73
" Bonds...	90,000	1,000	6	3½	Aug., '78	.....	102
N. York "	4,000,000	.....	8	4	May, '78	70	80
Metrop. "	2,500,000	100	10	5	Aug., '78	120	.....
" Certfs...	1,000,000	.....	7	3½	" '78	100	103
Harlem "	1,850,000	50	6	3	Feb., '78	40	42½
Manhat. "	4,000,000	50	....‡	5	May '78	150	170
Brooklyn, Bkln.	2,000,000	50	15	5	Apr., '78	140	145
Nassau	1,000,000	25	....‡	3	July, '78	60	70
" Certfs...	700,000	1,000	7	3½	May, '78	90	97
People's.....	1,000,000	10	....‡	3½	Jan., '76	20	30
" Certfs....	300,000	1,000	7	3½	July, '78	65	75
" Bonds....	325,000	.....	7	3½	May, '78	90	96
Metrop. "	1,000,000	100	5	2½	May, '78	50	62
W'msb'g "	1,000,000	50	8	1½	July, '78	.....	90
" Certfs...	1,000,000	.....	7	3½	July, '78	.....	97
Citizens'.....	1,200,000	20	....‡	3	July, '78	60	70
" Certfs...	320,000	1,000	7	3½	Apr '78	90	97
J. C., N. J.....	750,000	20	10	7½	July, '78	145	155
Municipal, N.Y.	466,000	50	.....	.....	.....	90	96
" Bonds..	750,000	.....	.....	.....	.....	.....	...
.....	.....	.....	.....	.....	.....	.....	...

Copper Stocks.

Reported by WILSON W. FAY & Co., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveller Building, 31 State street.

BOSTON, Wednesday Evening, Sept. 25, 1878.

The state of the market on these stocks is in a decidedly better condition than it has been for some time: there appear to be more legitimate orders in the market to buy and sell, and principally to buy, it being a noticeable fact that there is but little of any of the stocks for sale on the market, and that the orders to buy force them up gradually and surely, and a comparison of the present prices with those of a month ago shows an improvement of from one to two per cent.

But what is needed most in these stocks is confidence by the outside public, who have in past years been stuck pretty badly by some of the badly-managed stocks that have been on the market and who have therefore turned their attention more to California Stocks within the past five years, and left the Boston Mining Stocks almost neglected.

Calumet and Hecla has advanced to $181 bid and $181½ asked, with sales up to $181, and has every appearance of going higher.

Central is quiet at 27@30.

Copper Falls sold at 1½, and closes 1½@1⅝, and looks quite firm

Franklin remains steady, at 6¼@6¾, and no sales.

National is in demand at 20c., ass paid, and offered at 50c.

Osceola sold up to 12½, and looked quite strong, but is a little weaker at present; closing, 11 bid and 13 asked.

Ridge is rather quiet, and we should not be at all surprised if it was a good purchase at the present price. It closes 1⅛@1¼.

Quincy has sold at 13, and is now offered at that, and 12 bid.

Duncan spurted, and sold up to 4⅛, but immediately fell back again and now looks pretty weak at 3¾@3⅞.

International also jumped and sold at 67½c., but dropped off to 50 bid and 55 asked.

Gold and Silver Stocks.

NEW YORK, Friday Evening, Sept. 27, 1878.

A year ago, by making comparisons of months or longer periods, we were able to note a growing interest in gold and silver mining. Now, by making comparison of one day with another, we are able to note the growth. Sierra Nevada, Bodie, and some such mines are household words, and although the public thinks that the money has been made in these, yet they believe that there are other stocks that will do equally well, and they are anxiously awaiting a "point" that will enable them to make a fortune. The "points" (beware of them!) are numerous enough; the fortunes, however, are not so plenty. The desire among capitalists to put a certain amount of their fortunes into legitimate mining enterprises is growing at a very rapid rate, and some of the better schemes offered have met with good success. When these mines begin to pay large dividends, as it is supposed they will, then the public will have much more faith in mining investments, and will submit itself to be badly fleeced by wild-cat schemes reported upon by some Deputy Mineral Surveyor or by some interested broker never heard of before. The success of two good mines will, unless the public be constantly placed upon its guard, pave the way for floating a dozen "that have better indications at the surface than the famous Consolidated Virginia had," but which are nevertheless worthless.

There is a great desire to do a strictly gambling business in the San Francisco stocks, but the majority of people either know not how to do so, or can not make proper arrangements in this market. More interest is being taken each day in the dealings in California stocks at our Mining Exchange, and the late call, devoted to these stocks only, is attracting much more attention. The arrangements for quotations are not yet satisfactory, and are not likely to be until they are promptly sent direct to the Secretary of the Exchange. There is a very important business doing directly with San Francisco, and to those desirous of dealing in these stocks we can say that there are a number of quite reliable firms, members of our Mining Exchange, who make purchases either here or in San Francisco, as may be deemed most desirable.

We hear of several important and valuable mines that will probably be offered the public for subscription, at a fair valuation, during the winter, and which will afterward be placed on the regular list of the Mining Exchange, and afford a legitimate business. Although the interest in mining investments is growing very rapidly, yet the first important excitement will be in San Francisco stocks, not because they are more desirable, but because there will be a larger field for operation, and because the fluctuations will be much wider. When the owners of mines without a representation at any Stock Exchange observe this interest, they will then seek to have them listed in great numbers in this market, and eventually the regular list of our Mining Exchange will furnish us with all the excitement necessary to the encouragement of speculation or gambling, which the dealings in mining stocks generally become in times of excitement.

"PUTS," "CALLS," "STRADDLES," AND "SPREADS."

These are common terms with the small gamblers in stocks in the East, who, as they become familiar with the great fluctuations constantly taking place in the San Francisco mining stocks, become anxious to secure "puts," "calls," "straddles," and "spreads" on them. For their information we quote the following from a late number of the San Francisco *Daily Stock Report:*

"This form of stock operations has never been quite domesticated on this coast. It has been tried several times—at least 'the put and call' business has—but the fluctuations always proved too great for the man who ran the bank, so to speak. There isn't much to be made at it except at a very wide margin, and that is just the 'distance' that doesn't tempt people to come in. With 'straddles' and 'spreads' there is no chance at all, except on such terms that nobody, not even the most desperate gambler, will accept. Sam McKee is regarded as the pioneer 'put and call' man here. Sam is wide awake, energetic, and he brought the business fresh from Wall street; but with stocks jumping around with ten and fifteen per cent fluctuations on one call, there wasn't much show for Sam. That is to say, he couldn't adjust his 'distances' within a mile of safety, and, after a few weeks' operations, he went up in a balloon inflated with a hot current of profanity and malediction. Sam owes pretty nearly every body on 'puts' and 'calls,' and though he has made des-

COAL TRANSPORTATION AND GENERAL MINING STOCKS.

COAL STOCKS.

NAME AND LOCATION OF COMPANY.		Feet on Vein.	Capital Stock.	SHARES. No.	Par Val.	ASSESSMENTS. Total levi'd to date.	Date and amount per share of last. Mo.	Yr.	Amt.	DIVIDENDS. Total paid to date.	Last Dividend. Mo.	Yr.	Amt.	Rate per Ann.	HIGHEST AND LOWEST PRICES PER SHARE IN CURRENCY AT WHICH SALES WERE MADE. N. B.—Quotations of D., L. & W. R. R., and Pa. Coal Co. are per $100—two shares. Aug. 21. H.	L.	Sept. 23. H.	L.	Sept. 24. H.	L.	Sept. 25. H.	L.	Sept. 26. H.	L.	Sept. 27. H.	L.	SALES.
Consol. Coal	Md.		$ 10,250,000	102,500	$100	$				$				Per c'nt												25		20
Del. & H. Canal	Pa.		20,000,000	200,000	100	*				38,821,104	Aug.	1876	4	9	50	50	50½	50⅝	50⅝	49⅝	50	50	49¼	49¼	50⅜	50	1,819
Del., Lac. & W. R. R.	Pa.		26,200,000	524,000	$50	*					July	1876	2½	5	53½	53	54	53¼	53⅞	52⅞	53¼	52⅛	53¼	52¾	54⅜	53⅛	58,247
Lehigh C. & Nav.	Pa.		10,448,550	208,971	50	*					Nov.	1876	1½	5½			18¼	18	18¼	18	18¼	18⅛	18⅛	18⅛	18⅛	18⅛	1,836
Lehigh Valley R. R.	Pa.		27,228,855	540,858	50	*					July	1878	1		40	40			39⅜	39¼	39¼	39¼	39¼	39¼	39⅝	39⅛	125
Maryland Coal	Md.		4,400,000	44,000	100	*					Jan.	1876	1½	1½													
N. J. Central R. R.	Pa.		20,600,000	206,000	100	*					Apr.	1876	2½	2½	37⅞	36⅞	36⅞	35⅛	36⅝	36	36	36	35¾	35⅛	36¼	36	4,590
Pennsylvania Coal	Pa.		5,000,000	100,000	50	*					May.	1878	3														
Pennsylvania R. R.	Pa.		68,870,200	1,337,404	50	*					May.	1877	1½	8	34	33⅜	34⅛	33¾	34½	34	34¼	34	34⅜	34⅛	35	34¼	31,989
Phil. & Read. R. R.	Pa.		34,278,175	685,563	50	*				43,012,49	Jan.	1876	2½†	10	15⅝	15½	16	15¾	16	15¾	16	15¾	15⅝	15⅝	16¼	16⅛	18,070

GENERAL MINING STOCKS.

Dividend Paying Mines.

American	Col.		1,000,000	100,000	10	*				80,000	Sept.	1878	$0	10	12															
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,288,200	July	1878	1 00	15,397,200	Apr.	1876	1	00	12															
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*				56,831	Nov.	1877		25																
Bobtail Tunnel, g.	Col.		100,000	20,000	5	52,000	July	1873	0 30	48,000	June	1878		50																
Bodie, g.	Cal.		5,000,000	50,000	100	25,000	Feb.	1878		550,000	Sept.	1878	5	00	20															
California, g. s.	Nev.	600	54,000,000	540,000	100					29,160,000	Aug.	1878	1	00	24	14⅜	14½	14⅜		16¼	15¼	15½		15⅛	15	14½		465
Calumet & Hecla, c.	Mich		2,000,000	80,000	25	1,200,000				13,450,000	Aug.	1878	5	00	20	180		180½		181								25
Central, c.	Mich		500,000	20,000	25	100,000	June	1862	0 65	1,260,000	Feb.	1878	5	00																
Chollar Potosi, g. s.	Nev.	1,400	2,800,000	28,000	100	1,750,000	Sept.	1878	5 00	3,080,000	Feb.	1872	1	00																
Copper Falls, c.	Mich		1,000,000	20,000	50	535,000	May.	1876		100,000	Nov.	1871	1	00																
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June	1873	3 00	40,500,000	June	1878	1	00	12	16¼	16	17⅝	17	17¾	17¼	17	16	16⅜	15¾	16	15½	735
Confidence, g.	Nev.	130	2,496,000	24,960	100	256,320	Apr.	1878	0 50	78,000	May.	1865	8½		8½															
Cons. Her. & Roe	Col.	16,500	1,000,000	100,000	10	*				120,000																				
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	1,773,370	June	1878	1 00	11,588,000	Jan.	1875	2	00	24															
Eureka Cons., g. s. L.	Nev.		5,000,000	50,000	100	100,000		1876	1 00	2,950,000	Aug.	1878	3	00	24															
Eureka G. Mg., g.	Cal.	1,680	2,000,000	20,000	100					2,149,000	Apr.	1878	0	25																
Franklin, c.	Mich		500,000	20,000	25	380,000	June	1876	5 00	585,000	Nov.	1871	1	00																
Gould &Curry, g. s.	Nev.	612	10,800,000	108,000	100	2,666,000	Apr.	1878	1 00	3,826,800	Oct.	1870	10	00																
Grand Prize	Nev.	1,500		100,000		100,000	July.	1878	1 00	400,000	Feb.	1878	1	00																
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	2,914,000	Aug	1878	1 00	1,598,000	Apr.	1871	5	00	12															
Hukill, g. s.	Col.	3,283	1,000,000	100,000	10	*				200,000	Sept.	1878	0	10	12	4½		4¼								4.20		325
Independence	Nev.	1,500		100,000		55,000	Feb.	1878	15	15,000	Aug.	1878		25		3¼		3¼						4¼	4	3¾		330
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	300,000	Aug.	1878	1 00	1,252,000	Mar.	1870	5	00																
Leopard, L. g. s.	Nev.	1,500	5,000,000	50,000	100	150,000	June	1878	50	162,500	Dec.	1876	0	50																
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*				120,000	Mar.				12															
Minesota, c.	Mich.		1,000,000	20,000	50	436,000	June	1860	1 00	1,820,000	Mar.	1876	0	50																
Moose	Col.	39,000	2,000,000	200,000	10	*				550,000	Mar.	1878	0	25	10	3.05	3			3		3.05	2.96	2.95				850
National, c.	Mich.		500,000	20,000	25	195,000	Oct.	1875	1 00	360,000	Oct.	1873	1	00																
N. Y. & Colorado, g.	Col.		1,000,000	50,000	20	*				20,000	Mar.	1877	0	20				2	1.90					2	1.90	1.95		700
Northern Belle, s.	Nev.	1,800	5,000,000	50,000	100					1,425,000	Feb.	1878	1	00																
Ontario	Uth.	3,000	10,000,000	100,000	100					1,700,000	Sept.	1878	1	00	12							39⅝		39⅝		39¾		250
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,236,000	June	1878	1 00	1,394,400	Mar.	1864	4	00																
Pewabic, c.	Mich.		500,000	20,000	25	185,000	June	1868	3 00	460,000	July	1873	1	00																
Phœnix, c.	Mich.		1,000,000	20,000	50	817,500	Sept.	1870	3 00	20,000	Jan.	1876	1	00																
Plumas	Cal.		1,000,000	100,000	10					70,000	Sept.	1878		10				4¼		4¼						4.35	4.30	700
Polar Star, g. s.	Col.	1,300	500,000	50,000	10	*				5,000	Jan.	1878	0	10																
Quincy, c.	Mich.		200,000	20,000	10					2,230,000	Feb.	1878	5	00																
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	600,000	Aug.	1878	1 00	3,075,000	Sept.	1873	3	00																
Ridge, c.	Mich.		500,000	20,000	25	200,000				90,000	Feb.	1875	1	00				1½											105
Rye Patch	Nev.	1,600		30,000		97,500	Nov.	1876	0 50	105,000	Dec.	1877	0	25																
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10					250,000																				
Savage, g. s.	Nev.	800	11,200,000	112,000	100	3,972,500	Sept.	1878	1 00	4,460,000	June	1869	3	00																
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*				10,000	May	1877	0	10	12									90c.		75c.		300
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	2,050,000	July	1878	1 00	102,000	Jan.	1871	1	00	10															
Silver King										400,000	Aug.	1878	0	50																
Standard	Cal.			50,000		50,000	July	1878	1 00	450,000	Aug.	1878	1	00																
Tip Top	Ariz	1,500		100,000		120,000	Aug.	1878	50																					
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120,000	100	3,798,000	Sept.	1878	1 00	2,184,000	Aug.	1871	2	50																

Non-Dividend Mines.

Allouez, c.	Mich.		1,000,000	20,000	50	940,000	May	1876	5 00																					
Alpha, g. s.	Nev.	300	3,000,000	3,000	100	240,000	Mar.	1878	1 00																					
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*										16c	15c													1,100
Bertha & Edith, g.	Vir.	645 acs.	3,500,000	350,000	10	*										5c	3c	4c		5c	4c	5c		5c	4c					10,200
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	438,590	Apr.	1878	1 00																					
Buckeye	Col.		2,000,000	400,000	5	*										57c				58c				55c						1,300
Bullion, g. s.	Nev.	943⅛	10,000,000	100,000	100	2,952,000	Aug.	1878	1 50																					
Caledonia, g. s.	Nev.	2,188	10,000,000	100,000	100	1,440,000	May.	1878	0 50																					
Cashier	Col.		500,000	250,000	2	*																								
Cleveland, g.	Col.	3,715	250,000	25,000	10	*																								
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	100	675,000	Apr.	1878	0 20																	2		200		
Con. N. Slope & E. C.T.	Col.	15,000	500,000	10,000	50	*																								
Dahlonega	Ga.		250,000	250,000	1	*												14c	12c			15c	14c	16c	15c	16c	15c	16,000		
Dana, c.	Mich.		500,000	20,000	25	68,000	Jan.	1863	0 50																					
Dawson, s.	Ont.		1,200,000	60,000	20																									
Duncan, s.	Ont.		1,200,000	60,000	20	75,000	July	1876	41⅔																					
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	380,000	Jan.	1878	1 00							4¼		4½		4¼		4	3⅝	3⅝				900		
Findley, g.	Geo.		200,000	200,000	1																									
Gold Placer, g.	Col.		5,000,000	200,000	25											*52c	49c	51c	50c											6,200
Granville, g.	N. C.	357 acs.	1,000,000	100,000	10	*			0 50							23c	20c	21c	20c	21c	20c	23c	21c	22c	21c	22c	21c	10,900		
Humboldt, c.	Mich.		500,000	20,000	25	100,000	Sept	1876	0 15															1				400		
International, s.	Ont.		1,200,000	60,000	20																	50c						350		
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	635,000	Sept.	1878	1 00									7¾		8		8½						40		
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,658,500	Aug.	1878	1 50																					
King's Mountain, g.	N. C.		1,200,000	120,000	10	*																1.65						200		
Lacrosse	Col.	3,900	1,000,000	100,000	10	*										31c	26c	32c	29c	31c	29c	30c	27c	29c		30c	27c	52,000		
Leviathan	Nev.	2,000		100,000		240,000	May.	1878	05							90c		90c	1.85	95c		1.90	1.80	1.60		1¾	1.70	2,775		
Luzerne	Col.	4,200	5,000,000	500,000	10	*																								
Madison, c.	Mich.		500,000	20,000	25	123,000	Sept	1876	0 10																					
Mariposa preferred	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1 00							3		2½								3		215		
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1877	1 00							2.60						2	½	2¼				300		
Memphis	Col.	6,000	300,000	60,000	5	*																								
Mesnard, c.	Mich.		500,000	20,000	25	160,000	Apr.	1876	0 50																					
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	217,400	May.	1878	0 50																					
Mt. Bross Tunnel	Col.	8,600	2,000,000	200,000	10	*																								
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Sept.	1878	3 00																					
Osceola, c.	Mich.		1,000,000	40,000	25	2,567,880	Nov.	1877	3 00																					
Petherick, c.	Mich.		500,000	20,000	100	165,535	Mar.	1876	0 50							12½												100		
Pleasant View, g.	Col.	1,200	200,000	20,000	10	*																								
Quicksilver preferred	Cal.	8,500	4,291,300			*																								
" common	Cal.	acres.	5,708,700	100,000	100													13								33		100		
Rockland, c.	Mich		500,000	20,000	25	495,000	Jan.	1874	1 00																			10		
Reg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr.	1876	5 00																					
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,242,000	July.	1878	0 50																					
Star, c.	Mich.		500,000	20,000	25	265,000	Mar.	1876	0 50																					
Superior, c.	Mich.		500,000	20,000	25	340,000	Mar.	1874	0 25																					
Union Cons. g. s.	Nev.	850	10,000,000	100,000	100	310,000	Apr.	1878	0 25																					

g. Gold. s. Silver. L. Lead. c. Copper. * Non-Assessable. † A dividend of 3⅛ per cent. was declared on the preferred stock of this Co. in July, 1876.

Total Assessments levied to date..... 52,528,240
Total Mining Dividends to date..... 230,275,332

Total Sales of Coal Stocks for the week..... 116,696 shares,
Total Sales of Mining Shares for the week..... 111,675 "

perate efforts to bridge the chasm and begin anew, he has been unsuccessful."

The subscription books of the Penobscot Snowdrift mines have been closed, the stock having all been taken at par. The capital stock of this company is $500,000, divided into 100,000 shares of $5 each. This deserves more than passing notice, as it is the most important transaction in mining stock that has taken place in this market for years. Let us look into the causes of its success. *First*, and most important, the mine was developed to an extent sufficient to show a large amount of wealth in it, and the operations of six months showed a net profit of over $100,000, and the ability to greatly increase these earnings with additional developments and the necessary machinery and appliances for handling and treating the ore. *Second*, the mine was offered by a gentleman thoroughly familiar with mining enterprises, and one who held the confidence of the mining public. *Third*, the mine was described in a full and practical manner, and the public was asked to judge it upon facts, and not upon the record of Consolidated Virginia or any other bonanza having no connection whatever with it. *Fourth*, it was offered at a fair valuation. *Fifth*, as a natural result of the other conditions, the mine secured the indorsement of a reliable banking house and the good wishes of those desirous of furthering legitimate mining enterprises. This property has not absorbed all the capital awaiting investment in mining enterprises; on the contrary, it has paved the way for floating many more mines of merit, and the next effort made upon as good a basis will be even more successful than this. Let those who have good mines, to which they are desirous of giving a market value, have careful, full reports made upon them, and offer them through some respectable house at a fair valuation and not upon a basis of fortunes to every one who in any way takes part in floating them. A great trouble with most mining schemes is, that the public is asked to pay, quite frequently, several times the price at which a mine could be bought from the owner, in order to afford promoters enormous commissions. The result of this policy is, frequently, that the owner of the mine fails to make a sale and the promoter becomes a seedy bore who never makes a commission. Let those who enter this business select only first-class properties and offer them through responsible firms at a small profit, with the view of doing a large business, and the results will be more satisfactory all around. The owner of the Penobscot has several mines of good promise, which, when developed sufficiently to demonstrate their value, will be offered upon this market. This, however, will probably take several months.

Each week the business in San Francisco stocks increases, until it looks as though even our fancies will be crowded out by those of San Francisco. The dealings during the week embrace 465 shares of California, at $16⅛@$14⅛; 735 Consolidated Virginia, at $17⅝@$15⅛; Independence, 330 at $3¼@$4¼; Tip Top, 200 at $1¼@2¼; Consolidated Imperial, 200 at $2; Julia, 40 at $7¾@8⅛; Kossuth, 1000 at 95@60c.; Hussey, 2200 at $1.15@70c.; Bechtel, 100 at $2¼; Leeds, 100 at $2¼; and Leviathan, 2775 at 90c.@$1.90@$1.70.

The dealings in the more important stocks of the regular list have been as follows: Hukill, 325 at $4.50@$4.20; Moose, 850 at $3.05@$2.90; New York and Colorado, 700 at $2@$1.90; Ontario, 250 at $39⅝@$39¾; Plumas, 700 at $4.25@$4.35; Seaton, 300 at 90c.@75c.; King's Mountain, 200 at $1.65.

In the light weights of our list the dealings have been as follows: American Flag, 1100 at 15c.@16c.; Bertha and Edith, 10,200 at 3c.@5c.; Buckeye, 1300 at 58c.@55c.; Dahlonega, 16,500 at 12c.@16c.; Findlay, 6200 at 52c.@49c.; Gold Placer, 10,900 at 20c.@23c.; Granville, 400 at $1, and Lacrosse, 52,000 at 32c.@26c.

It is reported that Dahlonega has struck some rich ore, and that inside parties are buying the stock. We are unable to authenticate the former.

A meeting of the stockholders of the Gold Placer Mining Co. was held at 31 Broad street yesterday, when some lively discussions took place as to the manner in which the affairs of that company had been handled. The result of the meeting was to show that although a large amount of stock had been sold to enable the company to make developments, the money, with the exception of about $1500, had been all gobbled up by some one. A very generous use of the word "fraud" was made, but the meeting adjourned with a vote that nobody deserved that title. There has certainly been some grand swindling done in the transactions in this stock, and it is a shame to permit the matter to drop where it has, and we question if it will be permitted to do so. We are glad to learn that the Committee of Securities is making an investigation of several very questionable enterprises that have been put through the Exchange, and the nature of which we called attention to at the time, and we hope that such examples may be made as will make it at least unpleasant, if not dangerous, to attempt similar operations in the future.

SAN FRANCISCO MINING STOCK QUOTATIONS.

Daily Range of Prices for the Week.

NAME OF COMPANY	CLOSING QUOTATIONS						Opening Sept. 27.
	Sept. 20.	Sept. 21.	Sept. 23.	Sept. 24.	Sept. 25.	Sept. 26.	
Alpha	15⅛	15	16⅛	19½	20	19	19
Alta	17	17	17½	19¼	19¼	16½	.....
Belcher	10⅛	.....	10	12½	12¾	11¾	11
Best & Bel.	33	33½	39	37½	34	34	33
Bullion	13	13⅜	15¾	17	16½	16¾	17
Caledonia	4⅛	4⅛	4⅛	6	5⅞	6	6
California	14	14½	15	15	15	14½	14
Chollar-Pot	48½	50	75	67	63	60	58
Confidence	9	11	13½	11½	12¼	11	.....
Con. Va	15⅝	17	17	16⅛	16	16	15⅛
Crown P'int	9⅛	9⅜	10	13	11½	10¼	11
Eureka Con	37	38½	38¾	42	42	42	42½
Exchequer	5½	5⅝	7	8	8⅛	8	8
Gould &Cur	18¾	19⅞	24½	24½	23	22¼	21
Grand Prize	5⅝	5¾	5⅞	6	6	5¾	6
Hale & Nor.	18¼	22¾	36½	36	31½	32	31
Julia Con	6⅞	7	7	7½	7⅜	7	7
Justice	9⅞	10¼	9⅞	10¾	11	11⅛	11
Kentuck	7¼	7½	9	9¼	9½	8⅛	.....
Mexican	72⅜	90	88½	87½	84	84	82a84
North. Belle	10½	10	10	10	9⅞	10⅛	10
Ophir	68½	89	89	86	82	83	82a79
Overman	19	18⅛	20¼	26¼	25½	24	24
Ray. & Ely	5⅞	5	5¼	4½	5¾	6	6
Savage	19½	22	30	30	25½	25½	24
Seg. Belcher	41	35	35	38	43½	40	.....
Sierra Nev.	205	210	202	214	208	208	212
Silver Hill	3⅛	3¼	.....	.....	4	3¾	.....
Union Con.	140	156	152	151	149	146	145
Yel. Jacket	24	27½	28¾	26¾	28½	30	29½

While to-day's opening quotations of the San Francisco stock market are not all at the highest of the week, yet the majority of stocks fully sustain the best quotations, and some of the prices still evince a disposition to gradually improve on the recent marked advances. The market is certainly buoyant, and the old-time feeling seems to pervade California street, the record of sales there showing an increase on the steadily-improving business recently noted. Alpha, Belcher, and Best & Belcher open to-day at fairly-sustained prices, and Bullion and Caledonia at the highest of the week. California and Consolidated Virginia have declined somewhat from the best prices as prevailing on the 23d inst., but fully sustain the quotations recorded a week ago.

Chollar-Potosi has been a marked feature in the operations, advancing to $75 on the 23d, from which it has gradually declined, opening to-day at $58. Crown Point shows an improvement. Exchequer opens at the highest. Eureka Consolidated has shown steadily increased strength throughout the week, opening to-day at $42½. Recent information from this mine is of the most encouraging character. Grand Prize is firm at $6. At the annual meeting of this company, on the 17th inst., 55,024 shares were represented. The Secretary submitted his annual report for the fiscal year, ending September 17th, 1878, showing the total yearly receipts to be $1,082,622.44, disbursements $1,050,407.80, leaving a cash balance on hand of $32,214.64. The net yield of bullion was $850,388.

Mexican opens at $82@$84, against $62½ a week ago. The highest price yet attained by this stock was on the 21st inst., when it touched $90. Ophir has been one of the features of the week, advancing to $89 on the 21st inst., which price was sustained throughout the dealings on the 23d inst. It has, however, gradually declined since then, opening to-day at $82@$79. Our correspondent, writing from the Comstock, under date of the 20th inst. says:

"The main incline in the Ophir has for some days shown a softer rock and clay, with, since yesterday, mineral-bearing quartz coming in off and on. It is no doubt promising, and this causes the rise to-day, as also that of Mexican. Many think Mexican has it already, but this is probably speculation.

"When Mackey arrives next month, we shall probably see another gamble in the bonanza stocks."

This week has witnessed the highest regular price yet attained in the new bonanzas—Sierra Nevada and Union Consolidated, the former reaching $214, on the 24th inst., and opening to-day at $2 below this figure and the latter advancing on the 21st to $156, and opens $1 below this price.

The quotations of Yellow Jacket are prominent in the advance movement, as is also that of Raymond & Ely, this latter stock probably in sympathy with the general improvement.

No satisfactory explanation has been published as yet explaining the cause for the recent sudden decline in the stock of the Bodie Mining Company from $52, as recently attained, to $14.50 on the 16th inst. It is now generally conceded that the policy of paying such heavy dividends from the start was an unwise one. A recent letter from the mine, which is published in the San Francisco *Stock Report* partially explains the reason of the decline:

"The winze on the Bruce vein, now down 30 or 35 feet, was started at a point in the vein where a 'horse' nearly filled the fissure, and it was expected that in sinking a few feet the winze would pass in to ore, and the 'horse' make out to the south. For some time the 'horse' hung on, and nearly cut out the ore. Within a few days, however, the ore has shown greater strength, and now looks as if it would cut out the 'horse' and come in solid. Of course no man can say any thing definitely on this point, as actual development is the only thing that can tell the story. As they stope up on the vein (above the 250 level the stopes are now up about 80 feet) the fissure is very much wider than in the drift level, ranging from 6 to 13 feet, and in the extreme upper workings the ore is broken up by numerous 'horses' and is of lower grade than formerly. It is still very rich ore, but not so rich as last month, and the yield of bullion for September will not come up to that of August by a considerable amount. The mine is hardly opened yet; but little over 100 feet of the extreme northern end of the claim has been prospected at all, and this only on one level—the 250. When the Bruce winze has been sunk to a depth of 100 feet below this level, and drifts run north and south and cross-cuts made east into the 'Gildea' vein, and west into the 'Burgess,' I look for the mine to again come out as a wonder. Until then nothing new can be said of it. As to judging of the 'continuance' of veins of this character, I note what you say, but respectfully submit that no one is possessed of the power to do so with any degree of accuracy; certainly I do not lay claim to any such gift. The formation in Bodie is different to any thing ever seen before; we can tell nothing about it except as we see it, and must guess at the rest."

The *Commercial Herald* of the 19th inst. says of the market:

"Continued activity prevailed in the mining stock market during the past week, the excitement being somewhat varied in its location, and embracing a more general field of operations. Those stocks that were very prominent last week have been more or less neglected, and some spirit has been put into the bonanza mines again by the rumor that new ore-bodies have been discovered, the sales at the close having been very large at a considerable advance. The freedom with which the purchasers were supplied does not look very favorable, and the fluctuations are also rather too marked to warrant a strong forward movement. However, the general brightening of prospects throughout the length and breadth of the Comstock Lode is very cheering, and favorable developments are looked for from various quarters. The wild-cat spirit is still abroad, and the opportunity of levying assessments, at a time when all is excitement, is not neglected. Outside districts continue to stand well on the market, and the flow of bullion from these sections is quite large, and increasing. The sales in the regular sessions of the San Francisco Board aggregated $5,300,000 the past week, with one day's adjournment to attend the funeral of Alexander Austin, a late member."

MINING ASSESSMENTS DELINQUENT IN SEPTEMBER.

Following is a list of the mining assessments delinquent at the respective offices in September, so far as made public, from the San Francisco *Stock Report*:

Name.	Per Share.	Amount.	Del. Sept.
Aurora Tunnel	$0.15	$9,000	20
Bechtel	50	30,000	19
Belmont	40	20,000	2
Benton	35	37,800	5
Boyle	15	16,200	4
Bullion	1.50	150,000	16
California and Arizona	5	5,000	30
Champion	10	3,000	27
Colorado River	25	12,500	9
De Frees Mill	10	10,000	6
Echo	2	2,000	26
Electric	3	1,500	19
El Dorado W. and D. G	2.00	7,500	16
Endowment	50	50,000	30
Gila Consolidated	3	3,000	28
Golden Fleece	50.00	50,000	28
Hale & Norcross	1.00	112,000	18
Hazard Gravel	10	3,000	9
Ida Livingstone	2½	2,500	20
Justice	1.50	157,500	1
Kentuck	1.00	30,000	
Martin White	1.00	100,000	
McClellan Consolidated	25	25,000	
Mint	20	10,000	1
New York	30	30,000	3
Newton Hydraulic	8	8,000	2
North Consolidated Virginia	1.00	100,000	16
North Dayton	25	25,000	30
Northern King Mill	10	10,000	21
Oak Grove	5	5,000	10
Phœnix	50	25,000	30
Pliocene	10	5,600	30
Raymond & Ely	1.00	30,000	12
Richer	50	25,000	30
Sierra Nevada	1.00	100,000	4
Stanislaus River	50	15,000	23
Succor Mill	50	34,200	16
Talisman	10	10,000	3
Tioga Consolidated	10	10,000	4
Utah	2.00	40,000	18

The foregoing list comprises 40 claims, including 22 in Nevada, 13 in California, and 5 in Arizona. Of those in this State, 5 are in the new mining district of Mono County. Of those in Nevada, 14 are in Storey County. In several cases, the above is the first assessment which has been levied.

During the first eight months of this year 305 calls or assessments on the stocks of Nevada, California, and Arizona mines were made. The total amount of these 305 calls is close upon $10,000,000, all of which has or will become delinquent by the 30th of September. This is a considerable

sum to take out of the market in nine months and invest in a single industry. The amount is larger than for any corresponding period. The annual amount of delinquent assessments since January 1st, 1873, has been as follows:

Delinquent in 1873	$6,671,000
" " 1874	6,777,000
" " 1875	11,880,000
" " 1876	11,608,000
" " 1877	11,598.000
" January 1st to September 30th, 1878	9,956,000

There are yet three more months to be added to complete the total for the year, and at the way these taxes have been multiplying of late, the aggregate for the year 1878 will not fall much short of $13,000,000. Below is a list of the more prominent Comstock lode assessments already levied, to become delinquent in October:

Name.	Per share.	Assessment
Chollar-Potosi	$5.00	$140,000
Crown Point	1.00	100,000
Consolidated Imperial	20	100,000
Julia Consolidated	1.00	110,000
Ophir	1.00	100,000
Overman	3.00	115,000
Savage	1.00	112,000
Ward	30	33,000
Wells Fargo	50	54,000
Yellow Jacket	1.00	120,000
Total	$14.00	$985,000

Assessments, with dates when delinquent: Cons. Imperial, 20c., October 23d; Crown Point, $1, October, 16th; K. K. Cons., $1, October 16th; Ward, 30c., October 18th; Panther, 10c., October 17th; Yellow Jacket, $1, October 15th; Ophir, $1, October 11th; Wells Fargo, 50c., October 11th; Caledonia, 50c., October 21st; Golden Gate Cons. Hydraulic Mining Co., 50c., October 18th.

The Bodie Gold Mining Co., has declared $600,000 in dividends since July 31st.

The Standard Mining Co., including its last dividend, No. 13, has paid $650,000.

NEW INCORPORATIONS.

We note the recent organization of the following companies, in addition to those announced in our issue of September 7th, 1878:

Addenda,	Cal.	$10,000,000
Ajax,	"	5,000,000
Beaconsfield,	"	10,000,000
Bodie Hydraulic Mining & Water Co.,	"	5,000,000
Booker Cons. " Co.	"	10,000,000
Bunker Hill " "	"	5,000,000
Crescent G. & S. " "	"	10,000,000
Dudley Mining Co.,	"	6,400,000
Eureka Cons. Blue Gravel Mining Co.,	"	5,000,000
Favorite G. & S. Mining Co.,*	"	6,000,000
Golconda Gold " "	"	10,000,000
Golden Gate " "	"	5,000,000
Headlight " "	"	10,000,000
Humboldt " "	"	10,000,000
Lady Alice Tunnel & Mining Co.,	"	10,000,000
Maybelle Mining Co.,	"	6,400,000
Montana " "	"	2,000,000
Orient " "	"	10,000,000
Relief Consolidated Mining Co.,	"	6,000,000
Republic " " "	"	6,400,000
Resolute Tunnel & " "	"	.....
Riqueza " "	"	10,000,000
Russian G. & S. " "	"	10,000,000
Rustler " " "	"	6,000,000
South Bulwer " "	"	10,000,000
The Three Brothers " "	"	10,000,000
The University G. & S " "	"	10,000,000
True Blue " " " "	"	5,000,000
Union Quartz " "	"	100,000
Blue Jacket Mining Co.,	Nev.	10,000,000
California Consolidated Mining Co.,	"	10,000,000
Collison " "	"	6,000,000
Columbia " "	"	10,000,000
Curtis Cons. " "	"	10,000,000
Fairfax " "	"	10,000,000
Flowery " "	"	10,000,000
Germania " "	"	10,000,000
Mackey " "	"	5,000,000
Middle Hill " "	"	10,000,000
North Bonanza " "	"	10,000,000
North Cons. California* " "	"	10,000,000
North Scorpion " "	"	10,000,000
North Utah " "	"	10,000,000
Sherwood " "	"	10,000,000
South Potosi " "	"	10,000,000
Chatauqua & San Juan " "	Col.	200,000
Mills Tunnel, Mining, and Ore Reducing Co.,	"	300,000
Twin Lakes Metallurgic,	"	24,000
Hayes Gold and Silver Mining Co.,	Ariz.	2,400,000
San Pedro Mining Co.,	"	10,000,000
Caledonia " "	Mon.	10,000,000
Prince of Wales Copper Mining Co.,	Alaska	10,000,000

The Dallas G. and S. Mining Co., of Gilpin Co. Colo., has filed an amendment to its articles of incorporation, making the stock, which was formerly assessable, non-assessable.

The Boston Mining Co., of Summit Co., Colo., has increased its capital stock from $400,000 to $500,000—50,000 shares.

The Klamath Quartz Mining Co. has filed a notice of the increase of its stock from $200,000 to $10,000,000.

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