#### JUNE 2, 1888.

#### THE ENGINEERING AND MINING JOURNAL



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Owing to unavoidable delays in engraving, the usual installment of Howe's Metallurgy of Steel has been held over this week.

THE announcement that an anarchist bomb factory has been unearthed in Connecticut leads us to suggest that the anarchists, if they really mean business, would do well to consult our advertising columns and avoid the waste of time and money in the amateur manufacture of explosives that don't explode, or go off when they are not expected to, and of fuse that refuses to burn, etc. They would do well also, to engage the services of practical miners in future operations.

So MANY references are made to the presence of silver in sea-water that it would be interesting to test the matter practically. The wet analysis of concentrated bitterns is a most delicate manipulation and easily subject to error. The stories of silver and gold recovered from ship's sheathing metal we believe to be without foundation, or, at least. if in any case the precious metals have been extracted in working over old sheathing, that they were not entirely parted from the copper in its original treatment. But let a series of carefully assayed amalgamated copper plates be exposed under fair conditions of a moderate tide-way and clear water, and removed for examination at periodic intervals. The volume of water passing over the plates could be, calculated, and the larger scale, and its aims were higher than have ever before been at-

amount of precious metal recovered, if any, would be known. Silver would probably exist as chloride or iodide in brine, and gold as terchloride. If present, even in excessively minute quantities, some indication should be given by the method proposed. The ocean does not hold out much encouragement as a silver mine, but the experiment would be interesting. Its conditions would, of course, be less favorable than, and different from, the recorded cases of float amalgam, being caught at a distance below mills, as on the Carson River. In this connection we may also remark that it is probable that there are some localities in which plates arranged for catching float gold and amalgam, or waste leach-water material, would effect small savings. Such plates would require almost no attention, and their small cost might often be more than covered by the small amounts of metal recovered. But we commend the sea-water experiment to the notice of any one who has plenty of curiosity, time, and patience.

#### MATERIAL FOR HIGH-POWER ORDNANCE.

To predict in advance of actual trial is always an unsafe and thankless task. On verification the prophet gets little credit ; while in case of a failure in his predictions he comes in for a good deal of hard usage. But still we venture to predict that the heavy-gun controversy will not be settled by any ingenious makeshift such as the wire-wound gun, the multiple-charge arm, the water-distributing device for equalizing shock, the converted cast-iron rifle, the built-up steel gun, or any of the orthodox patterns or novel inventions of the day. The heavy gun of the future will be a homogeneous casting. Its material will probably be mild steel, whether open-hearth or not, forged or unforged; or steel alloyed in such manner as to give sound castings, or some of the remarkable aluminum alloys which have shown such extraordinary strength in recent tests.

What the Rodman system has done for cast-iron ordnance, and what the Mitis process has accomplished for wrought-iron castings and the Cowles furnace has done for aluminum alloys, will be in time, we think. equaled by practice in large steel castings, in which blowholes and flaws will be eliminated or reduced.

There are two directions in which progress can be made; one in the way of mechanical improvement, in which the Whitworth fluid compression process offers some prospect of success, though it is not yet economically or technically what was claimed for it; the other is in a modification of the metal, by alloying or by different and improved metallurgical treatment. The solution may be found in either mechanical or chemical manipulation, and the outlook for a decisive result, as between either starting point, now seems to be about even. But the present system of built-up guns, with expensive material. large cost in forging, and enormous waste of material, is one which can not last. any more than the attempt to revivify obsolete types by inner tubing and ontside hooping of the old cast-iron ordnance. We do not think that the high-power steel rifle of the future will cost a dollar or more a pound. Such an assumption would reflect badly upon the skill of our steel-makers and ordnance experts, who have often overcome greater difficulties than are involved in making a sound steel casting of say fifty to one hundred tons

If the problem is to be simply a mechanical one, there is no reason why we should not have 150-ton hammers and other heavy appliances, the matter being merely a question of demand and supply. But if a better arm than the built-up gun can be produced, a stronger powder will at once come into use, and there will be a renewal of the polygonal controversy between gun material and powder, shells, and armor-piercing projectiles, and armor, etc. The whole question of armor versus guns will in all probability be settled in favor of the latter, and we shall in a few years see the middle age rejection of armor defense as against gunpowder repeated on a large scale, the offensive side taking the lead as against the defensive. For the present we look anxiously to our steel manufacturers to evolve a sound material for heavy ordnance. This is the main issue : if they succeed we need not worry about armor protection.

#### THE MINERAL CENSUS OF 1890.

There is some prospect that the eleventh census will be taken under considerable advantages in point of time allowed for organization and preparatory work, as compared with previous ones. The great difficulty connected with these spasmodic attempts to gather statistics at intervals of ten years is the want of a well-drilled and experienced force. If a small organization were constantly maintained, which would serve as a cadre to be extended when needed, the country would undoubtedly save money and obtain more satisfactory results. In the absence of such a system an early start is of the highest importance. Besides allowing time for planning the work, it is essential that the force should be selected deliberately.

The tenth census, that of 1880, was organized and conducted on a

tempted in this country or elsewhere. The results, while perhaps not coming up to the standard proposed by its able organizer, General WALKER, were certainly in advance of any thing before achieved. That they were open to criticism in many details was only to be expected. Figures do lie, and the best statistics have always a margin of error.

The utter failure of the ninth census in 1870 to gather adequate returns from the mining industry was probably the cause of the special effort made in this direction in 1880, when the mineral census was planned on a most elaborate scale. The supervision of the examination of the various mining industries and metallurgical works was entrusted to special agents of good professional standing, but for the most part They naturally made without experience in statistical work. the mistake, common to all amateurs, of attempting altogether too much, with the inevitable result of failing to grasp the main points. The reporting experts were mainly young men, who, though fairly educated so far as book and lecture-room information was concerned, were unfamiliar with actual practice and with the districts they were appointed to report upon. The data collected were of varying degrees of utility and in great measure unserviceable, inasmuch as the scattering details could not be harmonized and digested into a systematic whole. What they failed to accomplish was what, we suppose, Congress and the country had primarily in view-the collection of accurate statistics of production, costs, supplies consumed, labor employed, accidents, etc.

The precise cost of the mineral census is not known, as it was com plicated by the expenditures of the geological survey and in other ways. If it amounted, directly and indirectly, to \$300,000, as has been asserted, the results did not justify the outlay.

In the coming census of 1890 the difficulties will be repeated, but the experience gained in the tenth census will be of service, though it is not likely that many of those engaged in 1880 will be available for the eleventh census. The remuneration is so small, and the time of employment so brief that census work does not hold out very enticing inducements. We shall, therefore, probably see the direction of the investigation intrusted to agents who have other occupations demanding their time; who will have to rely upon subordinates for office-work and compilation; and who will employ as examining experts a fresh crop of untried men. the most efficient of whom will be those who embrace the opportunity of travel and ob-ervation through the mining regions, and do not enlist for the sake of the meager pay.

In the light of past experience some suggestions may be offered :

1. The principal object of a census is the collection and recording of statistics which will be of use to the various industries studied, and to the legislator and political economist. Attention should not be diverted from the main questions by side issues, however tempting.

II. The results should be compiled and published within some reasonable time after the collection of data. Most of the publications of the last census read like ancient history when they appeared. They would be valuable to the historian of the next century, but exhibited a state of affairs long out of date before the description was published There need be no reason for a similar tardine-s in the coming census, Neither compilers nor the Government Printing Office should have valid excuses with the work under efficient supervision. That accurate mineral stati-tics can be published promptly has been demonstrated by the work of the ENGINEERING AND MINING JOURNAL.

III. It has been proved that a segregation of work by subjects is preferable to a geographical division. Each agent in charge of a special branch will naturally subdivide the work of his subordinates territorially; but to harmonize the whole there should be a single head for each subj-ct. The awkward gaps in the returns of the last census show that independent organizations, treating the same subject in different localities, do not work well tog-ther. Sometimes they overlap.

IV. The reports should consist of preliminary bulletins, subject to re vision, and the final volumes. The latter should give the principal statistics in an intelligible, summarized shape, and not be loaded down with details. The work of compilation and editing implies a thorough digestion of the mass of figures accumulated, so that in published form the results will be available for ready reference, and the rehandling of original data on the part of the student avoided.

V. As a provisional division of the investigation and reports, we may suggest the following: (1) Coal, coke, gas, petroleum, and the lesser hydrocarbons ; (2) iron and manganese ; (3) gold, silver and quicksilver; (4) copper, lead and zinc; (5) fertilizers and minerals used in chemical manufactures ; (6) building materials ; (7) the minor metals and minerals; (8) a brief summary of the whole field. The points sought to be obtained in each of these fields should be chosen, worked out and published with a view to correlation. Thus, if the accidents in coal mining

most recent practice, something to mark the progress made and not a rehash of time-worn information. Careful study in detail of selected and typical works, one or two only of a class, will give more satisfactory results than an endeavor to describe every thing, good, bad and indifferent. The field of mining and metallurgical technology is such a wide and rapidly growing one that it is hopeless to attempt to cover it all in a series of census reports, and it would be better not to enter the field at all.

VII. There are many short cuts open in collecting statistics, especially of production, which give more r-liable totals than details from individual producers, and which should be taken advantage of to a greater extent than was done in 1880. And where absolute figures can not be had, as is generally the case in statistics, let us have round numbers honestly stated, with the compiler's estimate of the limits of probable error, rather than a misleading assumption of accuracy.

#### CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and netallurgy. Communications should invariably be accompanied with the name and iddress of the writer. Initials only will be published when so requested. All letters should be addressed to the MANGING EDITOR. We do not hold ourselves responsible for the opinions expressed by correspondents

#### Filver in Basalt.

EDITOR ENGINEERING AND MINING JOURNAL : SIR: In to day's issue of the JOURNAL you publish a note from the Panama Star and Herald, which mentions the occurrince of silver in volcanic ash collected on the coast of Ecuador, and which concludes as follows: "This is believed to be the first instance that silver has been volcable as noticed on the coast of Ecuator, and when concludes as follows: "This is believed to be the first instance that silver has been identified in material ejected from a volcano." In the summer of 1881 I had occasion to examine some of the (then) recently discovered silver-lead mines in the Wood River district, Idaho. On our way out by s age, from Bellevue to Blackfoot, on the Utah & Northern Railroad, we passed over several streams of lava-basalt which, in many places, retained the folds and wrinkles produced when it was in a molten condition. The road was so rough in places our progress was slow, and walking was preferable to riding, and I took advantage of an opportunity to examine the lava, thinking it would possibly contain some traces of minetal, as it was not very far from a district rich in silver. I was rewarded by inding copper starms in several places, and in one instance was able to obtain a few small pieces slightly colored by the copper. When I reached Salt Lake City I as-ayed the pieces, and found they contained silver at the rate of about three ounces per ton, or one part in 10,000 of lava. This is about eight times as much as was contained in the Ecuador ash, but mine were "selected" specimens. Respectfully. NEW YORE, May 26, 1888.

# The Chlorination of Gold Ores -- Newbery-Vautin Process.

EDITOR ENGINEERING AND MINING JOURNAL: SIR: In your journal of October 29th, I notice an article on Messrs. Newbery and Vantin's gold extraction process, and as I am working this process in this district, I was much interested in it.

I was of course well aware that this process was only an adaptation from American patents; but I thought we might flatter ourselves in being the first to practically make use of it.

I should like to make a few remarks on your article. I. The injection of compressed ore is all a fad, as it is evidently not mecessary, nor am I certain that it has ever been done. 2. If you in America were so successful with this process, why has it not become of more general use, as it is undoubtedly the best method of traction would a final successful with the set method of treating really refractory ores.

3. I disagree with you about the charcoal, as in no case have I found it a precipitant for any of the metals in solution except the gold, and I It is precipitate for any of the metals in solution except the goid, and it think the difficulties you found were only mechanical, namely, permit-ting the slime to run through with the liquor. Good secondary fitters are very nece-sary after the liquor has been precipitated through the leaching vats, but I quite agree with you that the charcoal is a cumber-some method; but it has two recommendations, namely, that the liquor passes straight through, and does not require to be allowed time to set the and this is a virtue that can hardly be overrated; and also that in its tle, and this is a virtue that can hardly be overcated; and also that in its

tle, and this is a virtue that can hardly be overrated; and also that in its action it is automatic and requires no supervision. S ill it would be adding very considerably to the value of the process if by an added precipitant the gold could be collected by itself; and I should be extremely obliged if you could give any mechanical plan of working the sulphureted hydrogen by which the liquor could be allowed to run off as fast as it came in. I think I might be able to do this, but expect, if practicable, you have already done it, and I should be most grateful for a plan of any vat in actual use by which the liquor can be immediately filtered off, leaving the gold behind. Having copper in our ore, besides the same difficulties you mention with sulphate of iron, we are debarred from using either of these pre-

with sulphate of iron, we are debarred from using either of these pre-cipitants, but find heavy carbureted hydrogen successful, and this gas can no doubt be injected in the same manner in which you use hydio-gen sulphide. Faithfully yours, THOMAS W. CONRAN. Nonrow, Gladstone, Queensland.

[The chlorination in revolving barrels with or without pressure has been in u-e in this country steadily for seven or eight years. The chi-f reasons for its not being more generally adopted are, doubtless, its greater complication and expense as compared with the old Plattner method, though it certainly works closer than this. The objections 10 charcoal precipitation have been mentioned in the ENGINEERING AND MUNIX. LOURDAL, and the objection with the closer in the ENGINEERING AND Inseed with a view to contribution. Thus, if the accidents in coar mining charcoal precipitation have been mentioned in the EXGINEERING AND are reported, those in the different ore-mining branches should be given; if the proportionate cost of labor is stated for silver mining, it should also be given for copper, and so on.  $\nabla I$ . The function of a census investigation is hardly a study of technical methods. But if this is to be attempted let us have the best and MINING JOURNAL, March 28, 1885) employed to catch the suspended precipitate, to have practically a continuous process in precipitating with hydrogen sulphide or ferrous sulphate. In our own practice we have precipitated and filtered with a single filter a tank of 1500 gallons in less than two hours. The hydrogen sulphide gives a precipitate easier to collect than that by ferrous sulphate, but as an offset it requires roasting before smelting.

The use of carbureted hydrogen as a precipitant has not, so far as w know, been tried here.—EDITOR ENGINEERING AND MINING JOURNAL.] we

The Carlisle Gold Mine and Mill, New Merico. EDITOR ENGINEERING AND MINING JOURNAL: SIR: Several items have appeared in the JOURNAL, through the Lon-don correspondence, concerning this prominent growing gold mining camp of the Southwest, and it seems awkward that the news should have to travel so far to be published. It is a fact that Grant County, New Mexico, papers do not seem to be aware that the larget gold camp of the Territory is in this corner of the county. Hitherto, however, the camp has been operated chiefly from fombstone instead of Silver City; the boundary line between the Territories apparently moved eastward camp has been operated chieff from formbetone instead of Silver City; the boundary line between the Territories apparently moved eastward three miles, placing Carlisle, as it is in spirit, in Arizona, so far as S.lver City interests are concerne 1. The camp is flourishing, with sixty stamps dropping and a smelting plant working up the sulphuret concentrates. So many changes have taken place since the present management acquired control, that perhaps a description of the camp may be advis-

able

The mine is operated with the hoisting-works which have been in use since the camp has been a producer, and which, together with the large engine of the original 20 stamp mill, were placed there through the fore-sight of a former superintendent, Wm. Farish, whose confidence in the

engine of the original volume function process into the integration of the original volume function of the original volume for the state of the original volume for the original volume for the state of the original volume for the original volume for the state of the state of the original volume for the state of the state of the original volume for the state of the state o reduced to a minimum. The rock-breakers of the two later (or additional) sets of twenty stamps,

The rock-breakers of the two later (or additional) sets of twenty stamps, however, stand higher above their respective bins and are a decided im-provement in this respect over the original mill. It might prove still better if the ore passed over "grizzlie," in the stopes, so that the fine and coarse ores could be brought up separately. At present the storage capa-city of the mill is not over 48 hours (un in the new and 24 in the old. Withiu the mill the machinery is arranged in sets of 20 stamps, show-ing the original 20 and two additions, it is the finest looking gold mill in the two territories. On account of the many vanners, etc., it has much more space under cover than the Vulture (Arizona) 80 stamp. The amalgamation is fully 86 per cent of the assay value. Considering the fact that no free gold is visible this seems remarkable. It is somewhat creditable to the new management that they obtain more amalgam per creditable to the new management that they obtain more amalgam per ton than the old. Whether this is due to the greater care of the mine foreman, Mr. Tembey, or the superior amalgamation of the mill foreman, Mr. Comiskey, is not said—a division of the honors is probably the solution-but the fact remains.

The mill averages 1.70 tons per day for the 60 stamps. The ore must be crushed fine, but it crushes readily, despite the frequent reusage of the water, nearly 3 tons per head being a high result for a gold mill working on hard quartz. The percentage of finely disseminated sulphurets assists the crushing.

The crushing. From the copper plates the pulp passes directly to Frue vanning ma-chues, thirty-six in number, arranged in sets of three to each battery and in three rows. The original and second 20 stamps had but two vanners to the battery, *i. e.*, 16 vanners for 40 stamps. These were so manifestly insufficient—vanners do their best at about 5 tons each per theory while these in various provided 15 tons to the pair— 24 hours, while those in use were required to handle 15 tons to the pair-that another row was added with excellent results. This state of affairs is probably peculiar to this mill and is due solely to the high tonnage of

the mill. The old management shipped the best of their concentrates, all over \$40 per ton, and for awhile the new company did the same. In July, 1887, alterations were made in the mill, engine moved hack 12 feet, and the old system of belting back and forth abandoned (the batteries now belt with tightoners directly to the engine shaft, which is extended belt, with tightcoers, directly to the engine shaft, which is extended along the base of the batteries), and since the mill was started in August all concentrates have been allowed to accumulate until space was hard to find. Several thousand tons of concentrates were thus accumulated when the smelter blew in March 23th. The output with the 40 stamps was over 300 tons per month, and since the 60 started three months ago an average of 15 tons per horn, and shoet the oscillation of strange machinery, called the "Freiberg." built in years past to work the concentrates by any one of a variety of processes from chlori-nation and leaching to pan amalgamation with subsequent roasting. They have used the building for a smelting plant of four revolving roasters and a water jecket space

roasters and a water-jacket stack. The building is connected with the mill by a car track upon which the concentrates are run out. The concentrates are thence dumped to the foot of a little chain elevator which lifts them to a bin, whence they

the foot of a little chain elevator which lifts them to a bin, whence they are trammed to the hoppers of the roasters. The roasters, four (two with cylinders 6 feet internal diameter, 18 feet long, and two 7 diameter, 16 feet long), are connected with a long flue chamber built up the side of the hill, and ending in stone stack, a legacy, by the way of the "Freiberg." and the only feature of that mistake useful at present. Each furnace receives eight (8) tons of con-centrates as a charge, and is run 36 hours, requiring about 6 cords of

wood. The charge is then dropped to the feed floor, whence it is wheeled to the furnace. The furnace is a square brick stack (round inside), 12 feet between tuyeres and feed door, with round water jacket breast, 10 sections, 5 tuyeres, and a small independent jocket about the slag tap. The water jackets are short, about 4 feet high, and nar-row, and the internal diameter is 3 feet, while at the feed floor the furbace is 5 feet across.

Flue dust is caught in the stack itself, and there is no connection with dust chambers. This seems singular when the character of the material smelted, a fine powder, is considered The smelting is proving difficult. smelted, a fine powder, is considered The smelting is proving difficult. The concentrates are sulphurets, chiefly iron pyrites, said to contain 14 per cent lead, 20 per cent zinc, the remainder iron, quartz and sulphur. To make a smelting material, the roasting must be very complete. How well this is done is hard to say, but from the quantity of matte now being roasted in heaps, as the result of a short run, it would seem as if the dif-ficulties encountered in smelting the roasted product were due as much to insufficient roasting as to the zinc to which the trouble is assigned. Flixes are scarce, too. An energetic prospecting, stimulated by a reward of several hundred dollars, resulted in finding limestone about a mile from camp. Complete roasting should furni-h iron enough, but some is added. Still<sup>®</sup> the work is new and the difficulties by no means insur-mountable. There are good smelter men in charge, and they are unmountable. There are good smelter men in charge, and they are undaunted.

daunted. The nominal capacity of the furnace is 30 tons per 24 hours, but actually, so far, it has not exceeded 15 of concentrates. The blower is small, and it has been deemed advisable to place an air receiver (or tank) between it and the furnace to regulate the blast. The extremely fine charcoal packs, too. The hot water from the jackets is sent to the mill tanks by a steam pump. Steam is furnished from the mill boilers, but there is also a boiler at the smelter. The engine running the smelter is small, 12 inches cylinder, 16 inches stroke, 225 strokes. One thing that strikes the observer unfavorably about the smelter is the lack of bin room, especially for the coke, and the frequent rehand-ling, together with the cramped space. The coke 15 dumped from the ground far enough away and below the smelter to necessitate a team to haul it.

haul it.

The wood question, next to the water, is most important. Wood is carce and a large amount is needed. When the four roasters are runscarce and a large amount is needed. When the four roasters are run-ning, nearly 25 cords a day are required: hoist koilers, 3 cords; mill bollers, 11; roasters, etc., 10, at \$6.50 a cord.

boilers, 11; roasters, etc., 10, at \$6.50 a cord. The water is the key to the success or failure of the camp. It has been obtained by sinking the shaft and drifting on the vein. While the water lasted on a lovel, no further concern was entertained. From February, 1887, to January, 1888, the third (or 400 foot) level furnished the water; then there was a scarcity—the level was drained. The shaft reached the 500 and soon the drift encountered more water than was obtained from the third. At present there is an abundance, and the question is practi-cally settled for a year. At each level about one third more is obtained than in the precedug. There is now enough and to spare. The water is raised from the mine by steam pumps, the lowest amount upon which the mill could work at all being 5000 gallons fresh water per day. It is received in a circular tank of about 30 000 gallons capacity. Fresh water is used, when possible, on the vanners. The mill water carrying the tailings is flumed  $\frac{1}{4}$  mile to 10 large double tanks, each front (or sand) tank receiving an equal portion of the total water. From

carrying the tailings is flumed  $\frac{1}{4}$  mile to 10 large double tanks, each front (or sand) tank receiving an equal portion of the total water. From the "sand aok" the water flows to the "slum tank" of the pair. Six tanks are discharged each day. From the slum tanks the water flows into a sluce which carries it to the pump tank and thence it is forced to a square tank above the mill. By allowing a little water to run to each "sand tank," instead of permitting the entire volume to flow in a rapid, heavy stream through the series of tanks, all current is avoided. The settling is very thorough.

The pump is a Knowles, four cylinders, 10 inches diameter, 19 inches The pump is a Knowles, four cylinders, 10 inches diameter, 19 inches stroke, two pistons each; 25 strokes per minute; run by wire cable from mill. No water is wasted, and all lost goes out in discharging tailings. In the cañon below the tanks a dam was built and pump op rated by a "wind engine" placed to pump back such water as filtered through the tailings. It was not a success, and the "wind engine" was replaced by a steam pump. But this is not now needed. The mine water is unfil for diriching out the tailing supplied

The mine water is upfit for drinking, etc., the camp being supplied chiefly from neighboring wells by water haulers. The company's store, boarding-house, residences, etc., are supplied by condensed steam from the mill and hoist engine.

One annoyance (and expense) occasioned by this "hardness" of the water is the effect on the boilers. It is necessary to change bollers after ten days use. The scale is very thick and hard to remove. For this reason the hoist has two boilers and the mill four, the latter being run in pairs.

A large air compressor stands in the mill engine room and when running is under charge of the mill engineer. It is idle now, athough the air drills are regarded here as economical. The large amount of ore broken is said to be the reason the drills are not working.

Under the management of Mr. J. Longmaid and his son, J. H. Long-maid, the Carlisle G. M. Co. is achieving an unqualified success. The senior Mr. Longmaid has been prominent in Montana mining matters, is a recognized authority hereabouts No doubt is entertained that he will be successful ultimately with the smelting of the concentrates, although the peculiarities of the proposition are now causing him and his assistants considerable consist. siderably anxiety. con

consideration anxiety. Two suggestions may prove valuable to him: To rework his concen-trates, separating the galena, blend and pyrites, and handle each to much better advantage independently. This can be done quite cheaply. Next, as one source of trouble is the small amount of lead, to build a hearth and cupel his bullion for the lead. CARLISLE, New Mex., May, 1888.

company has been formed in Valencia, Spain, to establish an elec-A company has been formed in Valencia, Spain, to establish an elec-trical plant, which is to furnish all the power required in the various man-ufacturing industries in and about the city. It is to be capable of produc-ing 3000 to 4000 horse-power, and to transmit it to distances within the the limit of 35 miles. The plant is to be run by the water-power of the Turia Birger Turia River.

#### MICA MINING IN NORTH CAROLINA .- V.

#### By Wm. B. Phillips.

The minerals found in mica veins are both numerous and interesting. Some time before his death in 1885 the lamented W. C. Kerr, for twenty years State Geologist of North Carolina, prepared a list of the minerals found in mica veins, and this has been corrected by F. A. Genth and one or two added by W. E. Hidden. The list is as follows, according to Kerr:

The national	ionows, according it	D Dell.	
Albite,	Biotite.	Limonite.	Thulite.
Allanite,	Columbite,	Magnetite,	Torbernite,
Amazon stone,	Eusenite,	Menaccanite,	Tourmaline,
Apatite,	Glassy feldspar,	Muscovite,	Uraninite,
Arethunite,	Garnet,	Phosphuranylite,	Uranocher,
Autunite,	Gummite,	Rogersite,	Uranotil,
Beryl,	Hatchettolite,	Samarskite,	Yttrogummite.

"Harchettonte, Samarskite, Yttrogummite.
F. A. Genth\* corrects this list, and his criticisms are as follows:
"Amazonstone, perhaps, doubtful.
"Autunite (torbernite?), all autunite.
"Biotite, probably, but I have not seen it from mica veins, as far as I remember.

"Euxemite, does not contain TiO<sub>2</sub>, and hence in not true euxenite. "Glassy feldspar (sanidin), very doubtful. "Pvrochlore, in very minute octahedra at the Ray mine, with black

"Yttrogummite-I do not know of any analysis having been made : very doubtful.

"Fluorite, in pseudo morphous granular patches after apatite. "Apatite, seems to be fluorapatite.

"Orthoclase, often completely altered to kaolinite. "Quartz, of course."

Neuher Dr. Genth nor myself are able to identify Kerr's arethunite; it is most likely a *lapsus pennæ*. To this list Hidden has added fergu-sonite, which now sells for \$5 a pound. manazite and æschynite (?). Large masses of samarskite are found in some of the mines, a piece weighing 94 pounds being taken from the Mart Wiseman mine, in Mitchell County.<sup>†</sup> This formerly sold, I believe, for \$1.50 per pound, but is now offered at 75 cents per pound. The largest pieces ever found have been obtained from Mitchell County.

A rather curious bit of history and of etymology is associated with the feldspar altered to kaolinite. W. C. Kerr, in the paper previously referred to, says that the Indian name for the Smoky Mountains, Unaka mountains, is derived from the Indian word for *white*. Unakeh, and that they applied this name to them because they were accustomed to obtain white kaolin there, and to "pack" it to the coast for exportation 150 years ago. He does not give his authority for this statement, and I have years ago. He does not giv not been able to find it. H he makes no mention of it. He may have ascertained it himself, but if so,

not been able to find it. He may have ascertained it himself, but if so, he makes no mention of it. The farmers near the mines are accustomed to apply the disintegrated feldspar to their crops, and it has given good results, containing as it does from 10 to 15 per cent potash. Some attempts have been made to utilize the feldspar as a source of potash, but the experiments have not been successful on a commercial scale. With kainit of 13 per cent potash, selling at \$11 per ton, it is doubtful whether the potash can be economi-cally extracted from feldspar. I am informed that interest in the prob-lem has somewhat revived of late. The material can be had in any quantities at an almost nominal cost, as it is obtained in great abun-dance, and corstitutes at least one third of the dumps. From the list of minerals found in mica veins it will be seen that many of them are rare, and some quite so. Whatever agencies were at work during the formation of these veins they seem to have conditioned the occurrence of some of the rarer minerals in considerable quantities. It is not without interest that fluorine was present at the time, occurring as it does in fluorite and fluorapatites. The well-known decomposing power of this element, when present as hydrofluoric acid, or combined with lime, may have a bearing upon the constitution of the mica vein itself and of the minerals found in it. I have examined numerous speci-mens of apatite from Mitchell County, and so far have not observed any c'horapatite. Dr. Genth's experience, stretching over a much longer time than my own, and based on many more examinations, would seem to be in the same direction. The apatite as generally of the greatering the second The formation of the set of the

ever, says that the mineral reported as euxenite does not contain TiO<sub>2</sub>, and is hence not a true euxenite, and as germanium, besides occurring in argyrodite, is supposed to accompany titanium, it is hardly likely to be present in this so-called euxenite. Allanite is found in slender, black crystals, 6-12 inches long, at the Balsam Gap mine, Buncombe County, and at the Clarissa (Buchanan) mine, Mitchell County.‡ Albite occurs at the Presly mine, Haywood County, as an alteration product of the decomposition of corundum.‡ Columbite occurs im-bedded in samarskite at the Wiseman mine, Mitchell County, and roger-site at the same mine "in white mamillary crusts and httle pearly beads upon samarskite."‡

upon samarskite."‡

Monazite occurs in feldspar at the Ray mine, autunite and phosphur-anylite on quartz and feldspar at the Flat Rock and Clarissa mines, Mitchell County.‡

A piece of gummite weighing 6 pounds 6 ounces, but partly altered to uraninite, has been found in Mitchell County according to W. E. Hidden.

\*Priv. com., October 3d. 1887. † D. A. Bowman, priv. com., November öth, 1887 \*\* Minerals and Mineral Localities of North Carolina. 1881. F. A. Genth and W. C. Kerr. \$See abstract of Gerbard Krüss's paper before Munich Chem. Soc\* Dec. 16, 1887, in Excimenting and Mining Journal, Vol. XLV., No. 7, p. 125.

#### GLAZES FOR PORCELAIN WARE.

MM. Lauth and Dutailly have recently communicated to the French Chemical Society the results of their investigations on the red glazes MM. Lauth and Dutailly have recently communicated to the French Chemical Society the results of their investigations on the red glazes which are produced on porcelain by means of copper and its salts. The color produced in this manner is of a much more permanent nature and of a far superior tint than that which is obtained when oxide of iron is used for the same purpose. This red color, when used for decorative work on ancient porcelain, is often accompanied with a blue coloring matter beneath the surface of the glaze. It appears that the secret at-tached to the production of these colors was known only to the Chinese until recently, and that the red, known as Tsi-houng, or sang de bœuf, could not be imitated by the French at the porcelain manufactory at Sévres. In 1852, MM. Ebelmen and Salvetat endeavored to reproduce these copper colors in France by making careful analyses of fragments of Chinese porcelain colored in this manner, and then imitating, in the com-position of the glaze and clay employed, the Chinese specimens. The results of these earlier experiments are now in the ceramic museum at Sévres, and are the first examples of the kind produced in Europe. Other French chemists have since then attempted to improve on the first trials, and the problem has also been attacked by H. Seger, of the Berlin Porzellan Fabrik, and by H. Bünzli, at Krummnus, in Austria. MM. Lauth and Dutailly have established by their experiments that the maximum temperature which the Chinese red glazes can stand without losing their color approaches to that used for baking the new Sévres porcelain. By successively associating all the compounds capable of entering into the formation of a colorless glaze with oxide of copper, they have come to the following conclusions : That in the same series of glazes of approximately the same degree of acidity, the best results are obtained when there is a large proportion of alkalies and a small percentage of alumina. They have further noticed that if the alkaline metals be increased in relat a small percentage of alumina. They have further noticed that if the alkaline metals be increased in relation to the alkaline earths present, a finer red is produced, but at the same time the liability to break is increased. finer red is produced, but at the same time the liability to break is increased. By employing boracic acid or borates this inconvenience may, in some measure, be prevented. Lime, magnesia, various fluorides, and lead and iron oxides have also been tried; but the results obtained by their use have not proved satisfactory. A very good red glaze can be produced when zinc oxide and baryta are the bases present in the glaze. The cop-per can be introduced into the glaze in different ways. Oxalate of cop-per, simply mixed and not fused with the melt, gives good results; but if previously fused with the glaze, very satisfactory colors are produced. The quantity of copper salt employed depends on the time required for baking the porcelain, and also on the temperature of the furnace. Five per cent is the quantity which is recommended as the most suitable to use, and the addition of a small quantity of tin oxide is advantageous. The glaze which has given the best results has the following composi-tion : tion :

tion: Pegmatite, 31'17; sand, 36'37; fused borax, 12'98; dry carbonate of soda, 4'76; barium carbonate, 10'39; zinc oxide, 4'33. Correspond-ing to silica, 61'02; alumina, 5'85; alkaline oxides, 10'72; baryta, 8'42; zinc oxide, 4 51; boric acid, 9'48. This glaze has a degree of acidity represented by the number 5'39, that of the French glaze, No. 1, being 5'14. The bases are in the proportion which corresponds to the formula: formula:

By using this glaze with a similar one containing lime, MM. Lauth and Dutailly have succeeded in obtaining a great variety of colors on the same material, and in producing some effects on porcelain which have not hitherto been achieved.

#### COAL MINING MACHINERY.

The adoption of coal cutting machines and machine drills in coal mining is becoming each year more general, as their advantages over hand labor are better appreciated. For many years the imperfections in coal cutting machines which made them expensive to keep in repair and heavy and hard to handle in the mines, made their introduction slow, while in some cases the miners unions objected to them and either prevented their adoption or fixed such a rate of wages for the men working them that there was little economy in their use. A few unsuccessful strikes have greatly changed this last drawback, while the improvements which are embodied in the Legg coal cutter have rendered the machine so simple and efficient that there is every prospect that in a few years more the mines which cut bituminous coal in this country by hand will be the exception

In coal seams of say 5 feet in thickness, 125 bushels or five net tons per day per man is an excellent average for good miners to cut and load. When we compare this with the work done in some collieries with the Legg machine, which makes from 500 to 600 square feet of under-cut in a shift of ten hours, and, it is said, has made over 1000 square feet in that time, the programs made can be compared.

time, the progress made can be appreciated. The following record was reported to and published in the ENGINEER Ine following record was reported to and published in the ENGINEER-ING AND MINING JOURNAL some months ago: Mr. Richard Sneddon, superintendent in charge of mine No. 4, Rock Springs, Wyoming, Union Pacific Railroad, on October 10th last, with the assistance of one man, with one Legg coal mining machine, carrying a three foot cutter bar, between the hours of 7 A M, and 5:30 P.M., undercut in rooms averaging from 24 to 30 feet wide, 195 lineal feet face, 5 feet under, producing in this 10-foot seam 295 tons of coal this 10-foot seam 325 tons of coal.

this 10-foot seam 325 tons of coal. With this as the highest record we have knowledge of, the economy of these machines in skillful hands can be understood; but excellent work is also done with them when handled by a very inferior class of labor, such, for example, as the negro convicts of Alabama. The relative economy of machine and hand work in coal will depend on the thickness and inclination of the beds, the presence or absence of "sulphur balls," and a variety of other considerations, but most of our bituminous coal beds lie at low angles and are well adapted to machine work, so that there are few places where the coal cutter would not effect work, so that there are few places where the coal cutter would not effect an important economy over hand labor. In personal letters received by us from one of the largest collieries in Ohio, our correspondent says: "We consider the Legg machine by far

weighs only from 1000 to 1400 pounds; it requires no track; is easily and quickly handled by two men; drives all entries and turns the rooms; and it cuts away but four inches of coal or fire-clay. The Legg rotary power coal drill is also one of the modern improve-ments in coal mining which reduces considerably the cost of drilling and effects economy. It is driven by compressed air. Its operation is easily understood from an inspection of the engraving.

# A NEW ZEALAND SULPHUR ISLAND.\*

#### By E. W. Emerson Macivor.

The wonderful little island known as White Island, in the Bay of Plenty, is part of the crater of a huge conical mountain which has long since been submerged. It lies about 50 miles east of Tauranga, and 20 miles out of the usual track of vessels crossing the bay between Cape Colville and East Cape. Sir J. Hector, F.R.S., the eminent Director of the Geological Survey of New Zealand, who visited the island in 1870, described it as a horseshoe-shaped range of mountains, having an alti-tude of from 800 to 900 feet. It had much the same shape and height when I explored it some thirteen years later, but at least half of it disap-



Legg Coal Mining Machine-Cutter Bar Partly Extended.



Rotary Power Coal Drill.



Legg Coal Mining Machine.

sliding frame is mounted the cutter bar, held firmly by two solid steel shoes, with suitable brass boxes. The cutter bar contains steel bits, made of tool steel, held in place by set screws. When the cutter bar is revolved these cutters or bits cover its entire face. The cutter bar is revolved by one endless steel chain from the driving shaft, and as it is revolved, is advanced by the above mechanism into the coal or other material to be undersuit to the desired death. The feed is through on and off hy means undercut to the desired depth. The feed is thrown on and off by means of a lever. The cut under the coal, five to six feet by three feet six inches is made and the cutter bar withdrawn in from four to six min utes.

Some of the advantages claimed for the use of these mechanical coal cutters:

Cutters: The machine is easily handled by two men. The construction of the machine is very simple. Any body of ordinary intelligence can understand and handle it with a few days' instruction. The parts are all durable, and with ordinary care will last a long time. The work is concentrated in the mines, requiring a much less number of rooms to produce a given number of tons of lump cos<sup>1</sup> as compared with hand labor.

Reduction of dead-work, having less track to lay to the several rooms, because of concentration, requiring a less number of boys and horses for gathering purposes.

The great saving and better condition of the coal. This machine . \* In Chemical News.

peared into the sea during the violent and disastrous volcanic disturb-ances in the northern part of the colony a year or two ago. I can not describe the island as it is now, and so must confine myself to a statement of what it was like in 1883. Its sides were steep, deeply furrowed, and even precipitous in places, and carried a good deal of scrubby vegetation besides some small but useful varieties of timber. At one place on the southwest side I observed a considerable deposit of guano, which, however, on analysis proved to be of very inferior quality. The island received its present name from the immortal Cook, probably on account of its emitting from its summit more or less dense clouds of white vanor. These clouds contained much free hydrochloric acid, and white vapor. These clouds contained much free hydrochloric acid, and the atmosphere in the vicinity of the island was in consequence often any thing but pleasant to the respiratory organs of those on board of passing vessels. When the barometer was high little or no vapor rose basing vessels. When the barometer was high inthe on ho vapor lose above the encircling crater wall so as to be visible from seaward; but when it was low the clouds often went right up into the air, and could then be seen from a long distance off, even before the island appeared above the horizon.

I landed at Crater Bay, on the southwest side of the island, which was the only place where there was a beach, and where there was a gap in the crater wall by which I could find easy access to the amphitheatre and

hot lake which occupied the interior. The beach consisted of large stones, and indeed boulders of trachytic lava, and extended a few chains from the sea. Beyond this point and within the crater the ground consisted of tufaceous cinter, superficially covered with gypsum. The inside of the crater had a most desolate appearance, as it was utterly destitute of vegetation. The wall was almost perpendicular all round, and of un-even height, being highest on its southern side. The early morning sun, shining through the feathery clouds of vapor which escaped from in-numerable fissures all round the top of one side of the wall, produced a very pretty effect, giving the dull rocks the appearance of having an a very pretty effect. giving the dull rocks the appearance of having an edging of bright silver. The flooring upon which I stood occupied about two thirds of the space within the amphitheatre, being about 40 acres in extent, and the lake, which stretched from side to side of the crater, covered an area of, I should think, 15 acres. On the opposite shore, and also at one end of the lake, active geysers could be seen throwing out steam and hydrochloric acid in great volumes. On our side of the amphi-theatre there were no geysers, though the ground was in many places treacherous and perforated with holes, in the bo tom of each of which there was a peculiar black acid mud in a violent state of ebullition. Here and there I noticed small fissures from which sububurged hydrogen and there was a peculiar black acid mud in a violent state of ebullition. Here and there I noticed small fissures from which subhureted hydrogen and steam escaped very freely. At the base of the wall, and close to the margin of the lake, there were extensive accumulations of a mixture of gypsum and sulphur. Samples taken from different parts of these de-posits were found to contain from 30 to 85 per cent of sulphur. While exploring this part of the amplithearre I came upon num-rous large balls of what at first sight appeared to be solid gypsum, but on breaking them with the aid of a stick they proved to be hollow shells, internally lined with projecting lemon-yellow prismatic crystals of sulphur, which quickly lost their transparency on exposure to the air! Some of these balls, or rather hollow spheres, were as large as old-fashioned homb-shells. One or two which I measured had a diameter of 25 cm. These mineralogical curiosities could not have been thrown from a distance, nor could they have been carried by water, but how they could have mineralogical curiosities could not have been thrown from a distance, nor could they have been carried by water, but how they could have been formed in situ puzzles me to this day. The only facts I can offer concerning them are -1. The shell-wall consisted of gypsum and a little sulphur. 2. The atmosphere within the sphere was much warmer than the outer air. 3 The shells did not occur near the lake or in proximity to active fumeroles. And 4. The sulphur found on them was invariably prismitic and transparent. Reason as I may, I can offer no theory to conclusion their formation. explain their formation.

It may be mentioned that the floor on this side of the lake reaches an elevation of nearly 60 feet above sea-level towards the interior between the lake and the sea, and then falls away to about 20 feet at the margin of the lake.

B fore proceeding further it will perhaps be well to say a few words about Lake Hope—a name given to this remarkable sheet of water by a previou explorer. It was first described by Dr. Roston and Lieutenant Edwin, R.N., of H.M.S. Brisk, in 1868. These gentlemen state that it had a temperature of 43.3 decrees C., and a uniform depth of 2 fathoms, at about 50 yards from the southern shore. It was then some 15 feet above sea-level. Hector, during his visit, also found the water to have a tem-perature of 43.3 degrees C., but estimated the height above sea-level at 25 or 30 feet. I found the lake to register 63 degrees C., and to be fairly un form in depth, as stated by Roston and Edwin, but it was unfathomable near the center. There could be no question, however, but that the appearance, temperature, and depth of the water were greatly influenced near the center. Incre could be no question, nowever, but that the appearance, temperature, and depth of the water were greatly influenced by metoorological and subrerranean influences. I was informed by Judge J. A. Wilson, of Touranga, an owner of the island and a man of service, that whenever there were unusual disturbances in the distint Hot Lake Country there were sure to be more or less remarkable changes in Like Hope. Now, when we consider that there are at least 90 miles of land and sea between the places, this observation appears most interesting, and it is in some measure supported by the fact that a great part of the island disappeared during the terrible eruptions in the Lake Country. However, without further reference to this point, I shall return to my own experiences. The lake, when I saw it, had a muddy appearance over its deepest part, but was blue-green and transparent elsewhere. The atmosphere over it was very irritating, owing to the hydrochloric acid, which came off from the water in abuudance, and from the fumeroles near the mar-gin. Two liter-of the water were taken for analysis, and when the sample re-iched my laboratory in Melbourne it was perfectly clear, but had dep sited small crystals of sulphate of calcium on the sides and bottoms of the bottles in which it had been put while warm. The cry-tals were analysis in 1000 parts:

Ferrous sul	phate	 15.254	Aluminium chloride	25.557
Aluminium	6.	 1.320	Sodium "	11 9:50
Ca ci im	6.6	 3.605	Silica "	0.670
M urnesium	6.6	 0 331	Hyorochloric acid	149.876
Pota sium	6.6	 4.715	Water, etc	776.059
Sodium	66	 10.033		

This water has also been examined by Skey (Trans. and Proc. N. Z. Instit., Vol. III., p. 278). It will be seen that free hydrochloric acid. chloride of aluminium, chloride of sodium, sulphate of calcium, and potash and soda alums are the principal constituents. The bottom of the lake, wherever visible, was thickly covered with oblique prisms of selenite. It may be mentioned that occasional bathing in Lake Hope had a very baneficial effect in some exceedingly bad cases of rheuma-

The actual production of sulphur and hydrochloric acid in the fumeroles at one end and on the other side of the lake was one of the most beautiful signis 1 am ever likely to meet with in the whole laboratory of Nature. The fumerole at one extremity of the lake was rather small, but none the less deposited round its orifice bright yellow sulphur at the rate of about one hundredweight per week, and sent forth limitless volumes of not hydrochloric acid and steam, which, as they ascended, often assumed the form of perfect vortex rings of great size. The hissing, rumbling and grunting noises were almost deafening, and at irregu lar intervals there could be heard—"from far in the bowels of the earth" ar intervals there could be hard— from far in the bowes of the earth —peculiarly loud reports, as of explosions, which were immediately fol-lowed by the projection of large pieces of dark amber-colored or red sul-

phur high into the air. The violence with which these projectiles were sent above the surface may be judged from the circumstance that I have seen pieces of sulphur weighing several pounds dashed against the rocks a hundred feet away from the fumerole. On the side of the lake opposite to that on which I landed a new fum-

erole had sprung into existence within a few weeks of the time of my visit, and it had in the short time developed into the most extensive on visit, and it had in the short time developed into the most extensive on the island. It was shaped like an inverted cone, had steep sides, con-sisting of a loose mixture of cinter, gypsum, and sulphur, made most with acid laden steam, and was about 40 feet deep. Its mouth had been raised about 6 or 7 feet above the surface of the ground, and had a diameter of perhaps 20 feet. The orifice of the fumerole from which the sulphur, steam, and hydrochloric acid came was circular, and did not occur exactly in the bottom of the cone, but rather to one side—a peculiarity, by the way, of all the fumeroles on the island. Pieces of sul-phur were shot to a height of 30 yards in the air. One peculiarity of the sulphur ejected from the various fumeroles was its variation in color. The material deposited at the orifices was for the most part pale yellow and opaque, but that which came out in lumps was quite transparent and ranged from orange to reddish brown in color. The tint generally became somewhat lighter as the lumps cooled. This darkness of color I found to be due to selenium, which occurred in some specimens to the extent of 1.75 and 2.1 per cent. About 10 tons of White Island sulphur were sent to Melbourne and used in vitriol making, but it

Island sulphur were sent to Melbourne and used in vitriol making, but it was found that the acid obtained from it had a very dirty appearance and deposited a large quantity of selenious matter on standing for a time. From that day the local manufacturers have refused to use the

time. From that day the local manufacturers have refused to use the sulphur, preferring to import the Sicilian article. Close to the fumeroles there were many large holes full of thin, black, boiling mud, which on examination I found to consist of clay, siliceous matter, gypsum and iron pyrites, suspended in a strongly acid water containing even more mineral matter than the water of Lake Hope. The latter was fed by boiling-hot streams, which rushed down the courses and deep furrows worn in the steep floor of the crater. The probability is that the sulphur and hydrochloric acid on the island result from the action of sea-water on hot beds of pyrites within the

center of the submerged mountain.

In concluding these notes I may say that the only indications of life on the island were a few rats, which certainly had shown a terrible want of wisdom in selecting such a home. I expected to hear, sooner or later, that the remains of this "earthly hell" have sunk for ever into the fathomless sea.

The Emperor Frederick has granted an annuity of \$250 to the widow of Reis, the originator of the telephone.

Locomotive Motive Power for Canals - The experiments in substi-tuting locomotives for horses along the Shropshire Canal, England, have been a fair success. The rails were I aid I inches apart. drew eight laden boats at the rate of four miles an hour. The engine

**Prize for E ectrical Essay.**—The Belgian Society of Electricians offers a prize of 250 francs for the best essay on the elementary principles of electricity. The competition is open to all electrical workmen, but of electricity. The essays need contain neither mathematical formulæ, nor the demonstration of fundamental laws.

**Phenomenal Wires.** — William Riddell & Co., Glasgow, have finished for the Glasgow Exhibition two pieces of wire, one of trass, 65 miles long and 48 w. g. in diameter. The other is of copper, 111 miles long, 48 w. g. in diameter, and was reduced at one process from 22 w. g. to 45, taking forty hours' continuous running to run it off. Except in the precious metals, this length has probably never been exceeded, and certainly never without annealing.

Development of Costa Rica.-The British Consul at San José states Development of Coeta Rica.—The British Consul at San' Joe's states that a concession of 7000 acres of land has been granted to Marco Soto, ex-President of Honduras, in order that he may form syndicates in the United States and Europe to develop the mines of the country, and estab-lish agricultural and other industries. Special privileges will be granted for a term of ten years, and all machinery and agricultural implements destined for the purposes of these industries will be admitted duty free.

Cables for Alternating Currents.—The Grosvenor Gallery Company have recently been testing an anti-induction electric light cable, in an underground conduit, in which were also several telephone wires. The results were most satisfactory. The cable contains a 19-strand wire, well insulated; around this is a copper sheath, which is also highly insulated; the strands and the sheath form the lead and return wires. When the copper sheath was not used as the return there was great induction, but the telephone remained absolutely silent when the copper sheath was utilized

Chlorination of Zinc Ores .- The Iron Silver Mining Company, of Leadville, Colo., has entered into a contract with the Omaha & Grant Smelting Company for the erection of a plant in connection with Grant Smelting Company for the erection of a plant in connection with the latter company's works, to extract the zive from the ores mined by the Iron Silver Company. The process is an experiment, the success of which will be of immense importance to Leadville. It will consist of a partial reasting of the ore for desulpurizing, and then an appli-cation of electricity to a chlorination process, which will precipitate the metallic zine and leave the residue a free smelting ore. It is the evelocitient of real constraints of a platter of the success. application of Platiner chlorination to zinc instead of gold ores.

Decision in a Mining Case .- The Mineral Estate Owes a Servitude Decision in a Mining Case.—The Mineral Estate Owes a Servitude of Support to the Upper Estate.—A decision of interest in this. as in all other mining regions, is that of the Peonsylvania Supreme Court in the case of Thomas Williams against J. M. Hay, from Somerset County. It is held that where one person owns the surface, and another person owns the coal or other minerals lying under-meath, the under or mineral estate owes a servitude of sufficient support to the upper or superincumbent estate. In this case it was contended that where the deed "provided, however, that the said W. J. Barr his heirs and assigns, in mining and removing the coals iron ore Barr, his heirs and assigns, in mining and removing the coals, iron ors and minerals aforesaid, shall do as little damage to the surface as pos. sible," the right to surface support was waived: but the Supreme Court holds that an absolute right to surface support is not to be taken away by a mere implication from language which does not necessarily import such a result.

such a result. **Coal Mining in Japan.**—The German consular reports contain some interesting information concerning the prospects of coal mining in Japan. Rich coal-fields are found in the islands of Kiusiu and Yesso. In the former there are four basins now being worked upon, having a superfi-cial area of 400, 155, 40 and 40 square kilometers respectively. The Karatin coal is a seam some 5 feet thick, in a sandstone formation, and having an extent of about 100 square kilome ers. In the island of Amakusa, to the west of Kiusin, there is anthracite. An extensive coal field exists also in the neighborhood of Tokio. There are besides, in other localities, brown coal and lignite in abundance. The Japanese have begun to work some of these seams. The output amounted to 700,-000 tons in 1851, but every year has seen a great increase. The G-rman consul remarks that the Japanese use the best European machinery and follow the most approved methods of mining adopted on the Continent follow the most approved methods of mining adopted on the Continent It might be worth while to bring machinery of American manufacture to the notice of the Japanese, who have lately bought largely in Germany.

The Fumst Safety Lamp.—This new safety lamp, which has been devised by M. Fumat, the cnief engineer in the French mines of the Gran.' Combe, gives a good light, and is not extinguished when it is violently shaken or held in an inclined position, and does not cause an When lowered into an explosive mixture of air charged with fire damp, when lowered into an explosive mixture of air charged with fire damp, when lowered into an explosive mixture of air and fire damp, an explo-sion takes place within the lamp as soon as the flame comes in contact with the explosive mixture; but by the ingenious construction of the protecting network, the heat generated is prevented from raising the temperature of the outer metallic portions of the lamp. Oil is used in this lamp, and it has been used for some time in the mines at the Grand' Combe and by the firemen of Paris, with very satisfactory results. MM. Mallard and Le Châtelier have also put the lamp to many severe tests in their laboratory, and have found that it fulfills all the conditions of safety which the inventor claims for it. Its cheapness, coupled with these properties, will, it is hoped, cause it to be used in other mines, where lamps of more expensive construction have hither been employed

these properties, will, it is hoped, cause it to be used in other mines. where lamps of more expensive construction have hither to been employed.
The Silver Excitement in Australia.—A Melbourne paper says: The "silver boom" has passed out of all control. Several hundred silver mining companies are now in existence, two or three of which have paid dividends. A new company has only to be whispered and all its shares are subscribed before the prostectus is fairly issued. Brokers formerly doing a gross business to the extent of a few thousands unorth, are now often lodging at their barks as many thousands per day. A seat on the S ock Exchange, worth £300 a few months ago, is now worth £1500. Will all this excitement last, or will it be followed by a prostrating reaction? Every thing goes on merrily while Stock Exchange values rise by leaps and bounds, but when the realization of profits commences in earnest; when calls are being freely levied, and when the public are carrying more high priced investment stocks than they can well finance, the utmost caution and prudence will have to be practiced to avoid a serious crisis. There is fortunately always the great recuperative power pos-essed by a new country with large resources to fall back upon. But this is not in itself any justification for gigantic speculations.
An Unpolishable Diamond.—A remarkable diamond was exhibited at a recent meeting of the New York Academy of Sciences by Mr. George F. Kuntz. It is of the class termed "extreme durate" by the French. It had been cut into the general shape of a brilliant, and its main face or table was then placed on the polising wheel. It was kept there for 100 days, the wheel revolving at the rate of 2,800 revolutions per minute. The diamond was held upon the rotating surface at a distance of about 15 inches from the center. Bised on these figures, a calculation showed that the surface passed over by the diamond anounded to 75,600 miles, or nearly three times the circumference of the earth. Yet it

Waste in the Basic Open-Hearth Process .- M. E. de Gachter and M. L. Camberdon have contributed to the *Génie Civil* a paper on the waste of metal in the basic or neutral open hearth as influenced by the re-car-burizing, which brings out some points worthy of notice. They discuss at length the theoretical considerations involved, and quote the following 383.634 383,635 383,651. analyses of steel and cinder :

		-Apa	lyses of a	teel		-Analy	rses of a	cinder		000 000
				Man- F	'rot' xide	P'roxide	T tal	Man-		380,002.
		Carbon. Per	Silicon. Fer	ganese. Per	of iron. Per	of iron. Per	iron. Per	gan-se. Per	Silica. Per	
	Refore final add	cent.	cent.	ceus.	cent.	cent.	cent.	Cert.	cent.	
A -	tion	. 0.078	0.037	0.075	17.44	3.95	16.33	3.98	15.3	
	During casting	. 0 09	0 037	0.302	15.12	1.3	12 72	9 15	14	
8.	ton	. 0.12	0.014	0.14	12 39	1.88	11	6.02	21 7	000 000
	During casting	. 0.15	0 014	0.371	9.21	188	8.36	10.63	20 7	383,6 8
C.	ti D	. 0.1	0.004	0.1	17.45	5.09	17.2	3.31	15.6	383.682
	During casting	. 0.193	0.013	0.325	14 08	3 14	13.3	10.6	19.4	1

The final additions for A were 145 kild grammes of 60 per cent ferro and 30 kildgrammes of ferro-silicon, with 9 per cent silicon; for B, 140 kild grammes of 60 per cent ferro, and for C, 182 kildgrammes of ferro and 40 kildgrammes of ferro-silicon. The figures in the analyses show that there was a notable reduction of iron from the cinder, as the result of recarburation, thus lessening the waste. By theoretical considerations they reach the conclusion that this is due principally to manganese, and that the aim must be to avoid, as much as possible, excessive oxidation of the bath and produce as little onder as possible. 383.707 383,763 383,764. 383,775. 383,777. 383,777. 383,795. 383,832. 383.844

#### BOOKS RECEIVED.

[In sending books for notice, will publishers, for their own sake and for that of book buyers, sive the retail price? These notices do not supersede review in another part of the Journal.]

Algoma West; Its Mines, Scenery and Industrial Resources. By Wa'pole Roland, C. E. Published by Warwick & Sons, Front street, West Toronto, Canada, 1887. Pages 190. Illustrated. Price \$1.00.

Bulletin of the New York State Museum of Natural History, No. 3.

Bulletin of the New York State Museum of Natural History, No. 3.
Building Stone in the State of New York. By John C. Smock, Albany, N. Y. Published by the Museum, Albany, N. Y., 1888. Pages 152 and Index.
Tables of the Properties of Saturated Steam and other Vupors. By Cecil H Peabody. Assistant Professor of Steam Engineering in the Massachusetts Institute of Technology, Boston. Mass. Published by John Wiley and Sons. New York, 1888. Pages 35. Price \$1.00.
Notes on Assaying of Lead, Silver, and Gold. By Frederick W. Clark, Assistant Professor Mining and Metallurgy, Massachusetts Institute of Technology, Boston, Mass. Published by the author. 1887. Pages, 40 and Index.

# DIVIDENDS PAID BY MINING COMPANIES DURING MAY AND FROM JANUARY 1st, 1888.

NAME OF COMPANY.	Paid in May.	Sinc. Jan. 1.	NAME OF COMPANY	Paid in May.	Since Jan. 1.
Atlantic, Mich		60,1 00	Mammoth, Utab		10.000
Alcuras, Idano		112.5 0	Mary Murphy. Colo		35.000
lalumet & Hecla, Mich		500 000	Montana Lt., Mon	*** ****	330.0.0
Carlis'e. N. M	50,000	50,000	Moroing Star, Colo	*******	25 01 0
Central, Mich.		40.000	Mt. Diablo. Nev	10,000	10,400
Colo. + et t., Colo		27.50	N. Belle Isle, Nev	50,000	200 0 0
Confidence, Nev	49.9.20	49 920	Ontario, Ulah	75,000	375,000
Cuns. Cal. & Va., Nev	108,000	540.000	Original, Mont		3.000
Daly, Utah	75,000	225.000	Osceola, Mich.		50.00
Junkin, Colo		80,000	Parrott, Mont		18,000
Eureka, Nev	12.500	75,000	Pittsburg, Cal.	29.850	29 850
Franklin, Mich		40.000	Plymouth Cons., Cal		80,000
larfi-id. Nev		12.500	Quick-llver, Cal., Pref.		172,000
Holconda, Id sho		120,000	Quincy, Mich		160.060
Frite Mountain, Moul.	100.000	900.000	seerwood. Mo	3.0.00	3,0:0
Hale & Norcross, Nev	56,000	56,000	SI-rra Puttes, Cal		15.312
H c a Cors. dont	15.000	75.000	Standa d Cal	5,000	45,000
Homestake, Dak	25.0 0	125.000	Swansea, Colo.		3.0 0
Hope, Mont		50.000	Tamarack, Mich		120,000
Idaho Cal	46.500	1:39.500	Viola Lt., Idaho	37.500	37.500
Iron Silver, Colo.		100.0 0	,		
Jay Gould, Mont	24.000	136.000	Total	772,270	\$ 235,583

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

The following is a list of the patents relating to mining, metallurgy, and kindred sub-ects, issued by the United States Patent Office.

83.429.

383.430.

383.4 1

483,448.

383,463, 383,503, 383,520,

383,521

383,530. 383,534.

Interface in the interfact of number, metallurgy, and kindred sub-parents GRANTED MAY 29th, 1885.
Hydropneumatic-Pressure App tratus. Thos. Arthur, Bangor, Pa., Assignor of one half to kobert J. Nagle, same place.
Steam-Engine. Will am K. Austin, Brooklyn, N. Y.
Railway Kait. David T. Bernett, tremon, N. J.
Vatve for Water Gazes. Clark B. Dunton, Portland. Me.
Nail ng Machine. Louis Goddu, Wincuester, Assignor to James W. Prooks, trostee Cambridge, Mass
Dumping Car. Ge rge H. Griggs, El zutethport, N. J.
Chemical Eagine. Kandait T. Vao Valkenburg, Mascheter, Mich.
Production, Transmission and Distribution of Electric Currents. Charles E.
Fritts, New York, N. Y.
Rolling Tir s. Peter Gendron, Toledo, O.
Rotary Engine. J. Seph C. Jarvis, Huutington, W. Va.
Pipe-Molding Apparatus. Andrew H. McN al and William A. Stineruck, Bur-lington N. J.
Thermo-Electric Apparatus for Co-trolling the Temperature of Water in Pipes. Edwin Y. Newman, Washington, D. C., Assignor to the Newman Anti-Freezing Water Pipe Co. Chucago, Ill.
Apraratus or Automatically G-merating and Burning Ioflammable Vapors. Claude A Faquelin, Paris, France.
Axile B. X.Miling Machine. A drew Paterson, McKeesport, Pa., Assignor to the Nath Bar Tube Works Company, B ston, Mass
Automatic Fuel Recurary for Heiders. George K. Brettell, Rochester, N. Y., Assignor forme there to William A. Wilson, Same blace.
Armature for Dynamos. Frank E. Fisher, D-trout, Mich.
Dynamo Armsture. Frank E. Fisher, D troot, Mich.
Dynamo Armsture. Frank E. Fisher, D troot, Mich.
Concentric Piston Steam Engine. Abner D. Biker and Francis P. Huyck, swanon, Assi noss of one there to Warner E. Roberts, Norwalk, O. 383,536.

383 538 383,540.

383,557

383,564 383 565. 383,567. 383,603.

383 609 383 614. 383,617.

Armature for Dynamos. Frank E. Fisher, D-Prot. Mich.
 Stracuse, N. Y., Assignors to the J. F. Pease Furnace Company, same para
 Core-attor for Hollow C strame Engine. Abner D. Baker and Frank A. Austin. Network, N. Y., Assignors to the J. F. Pease Furnace Company, same para
 Concentric Piston Stram Engine. Abner D. Baker and Francis P. Huyck, "swanon. Assi noss of one third to Albert E. Soberts, Norwalk, O. Y.
 Teamature for Dynamos and Motors. 383 616. Synchro izing Device for Alternate Current Dynamos. 383,617. Alternate-Current and storage systems of Electrical Distribution. 383,622. Alternate-Current and storage systems of Electrical Distribution. 383,623. Combined Auternate-Current and storage systems of Electrical Distribution. 383,624. Combined Auternate-Current and storage systems of Electrical Distribution. 383,623. Combined Auternate-Current and storage systems of Electrical Distribution. 383,624. Combined Auternate-Current and storage systems of Electrical Distribution. 383,625.
 Paratus for Washing and Purifying Illuminating-Gas. John H. R. Dinsmore, Liv-rool. Eng.
 Parenof Cregetric Motors. Richard H. Mather, Windsor, Com.
 Greut ' ontrol ng Apparatus for Electric Lighting Circuits. Oliver B. Sure, Pa.
 One for Electric Current George Westingh use, Jr., Pittsburg, Pa.
 One for Electric Current George Westingh use, Jr., Pittsburg, Pa.
 Ossido Electrical Indicator for Alternating Electric Currents, and Storage Electric Currents, and Storage Electric Currents, and Philosano, 283,663. Electrical Indicator, 383,670. Electrical Indicator, 383,673. Method of Indicating Electric Currents, assignors to the Westinghouse Electric Company, Electric Currents, Storage S

#### PERSONAL

Dr. J. Magin, mining engineer, has gone to Mazatlan, Mexico, on professional business.

Mr. Eugene G. Barrows, for a number of years connected with the New York iron trade, died on the 27th ult.

Mr. John B. Parish, mining engineer, St. Louis, is making an examination of the Black Girl mine, near Oursy, Colo.

Mr. John M. Watt, Mine Inspector of the Eighth Bituminous district, Pa., has resigned his office, to take effect June 1st.

Prof. Harrisen E. Webster, of Rochester University. Rochester, N. Y., has been elected to the Presidency of Union College, at Schenectady.

Mr. R. J. Frecheville of Loudon, mining engineer, has gone to Mexico to inspect mining properties on behalf of Messrs. John Taylor and Sons.

Messrs. Hamilton Smith, Jr., and Henry Janin mning engineers, have gone to Alaska, it is said, to examine the Treadwell mine on Douglass Island. said, to

Mr. Alex. Glass, the late general manager of the steel plant and nail mill at Hammond, Ill., has been appointed to a similar position at the nail works in Terre Haute, Ind.

We learn that the announcement of the death of Mr. Alfred Nobel, at Cannes, France, in our issue of April 2ist, was incorrect. It was Mr. Ludwig Nobel who died, and not the famous introducer of the high explosives

It is reported that Mr. John Howell, to whose resignation as manager of the Reno Reduction Works Reno, Nev., we referred in our last issue, has accented a similar position in Australia at a salary o \$10,000 a year.

Mr. Charles Spang, Sr., of the firm of Spang, Chal-fant & Co, and Spang Steel and Iron Co., who has been resident of France for over twenty years, is at present in this country. It has been about six years since his last visit.

Captain Richard C. Gray, a prominent steel manu-facturer of Pittsburg, Pa., died in New York on May 28th, aged 66 years. Captain Gray was a member of the firm of Park Brothers & Co., Lt., of the Black Diamond Steel Works.

The Columbia College School of Mines faculty, it is reported, is about to appoint an examiner in Salt Lake City, Utah, of applicants for admission to the school, so that candidates can ascertain without going to New York whether or no they are qualified to enter.

Mr. E. E. Olcott, mining engineer, New York, is about to go to Surinam, Dutch Guiana, on professional business. During his absence, which will be until about September 1st, he has left his local professional matters in charge of Mr. Wm. Allen Smith, E.M.

Mr. Alexander Lavenberg, known as "Old Walker-ville," at Butte, Mont., ded there on the 25th uit., aged 54 years. He came to Montana in 1867, and accumulated quite a fortune, which was swept away by fire. Several years ago he "ame to Butte, where, it is said, he died possessed of \$250,000.

Mr. Joseph Yelloly Watson, died in London, Eng-land, on the 18th ult., aged 71 years. Mr. Watson was a well-known mining man, and was the author of "Compendium of British Mining," "Gleanings among Mines and Miners," etc., and for many years published an annual review of the "Progress of Mining."

James B. Hayes, Chief-Justice of the Supreme Court of Idaho Territory, died on the 31st. ult. The first case brought before Judge Hayes after his ap-pointment was the Mormon test oath case, in which he held that the law was constitutional, an opinion after-wards affirmed by the Supreme Court. The opinion was able and widely commented on at the time.

Capt. John Daniels, Superintendent of the Tama Capt. John Daniels, Superintendent of the Tama-rack Mining Company, Mich., who has returned from his European trip, has brought back many new ideas in machinery, which will reduce cost of hoisting and also cost of plant. This illustrates the suggestion we recently made that mining companies generally would find great advantages in securing the services of con-sulting engineers whose duty it would be to keep them advised of the progress made elsewhere in mining ap pliances. pliane

The young Earl of Dudley, who arrives at his ma-The young Earl of Dudley, who arrives at his ma-jority during the present year, inherits an enormous fortance. He owns 25,000 acres of land in Stafford-shire and other counties, with a rent-roll of £123,000. This, however, conveys no idea of his wealth, as he owns large colleries in Staffordshire, from which he draws immense revenues. An idea of the magnificence of his mausion, Dudley House, may be formed from the fact that the balustrade to the staircase is made of solid silver

Mr. John T. Hill, President of the Benton Consolidat-ed Muning Company, of Storey County, Nevada, had Mr. W. J. Collins, Superintendent of the company, arrested at San Francisco on May 22d, on three charges, viz., for forgery, perjury, and embezzlement, while acting as Superintendent of the Benton Consoli-dated mine and handling its funds. He is said to have committed the crimes with which he is charged by manipulating the pay-roll and sworn vouchers which he rendered to the company. Mr. Collins wa

a well-known mining man on the Pacific coast, and his arrest was a great surprise in San Francisco.

a weil-known mining man on the Pacific coast, and his arrest was a great surprise in San Francisco. Prof. Roland Duer Irving, the eminent geclogist, in charge of the United States Geological Survey in Wis-consin and Minnesota, died at Madison, Wis., on the 30th ult., of paralysis, aged forty-one years. He was son of the late Rev. Pierre P. Irving, of New Brighton, S. I., and a grand-nephew of Washington Irving. He was born in New York City, and was a graduate of the Columbia College School of Mines in the class of 1869. The degree of Ph. D. was conferred on him by that institution in 1879. After serving as assistant in the Ohio Geological Survey, he was elected in 1870 Professor of Geology, Mining and Metallurgy in the University of Wisconsin, and he has since retained that position. From 1873 till 1879 he was Assistant State Geologist of Wisconsin. In 1880-82 Professor Irving was one of the United State census experts, and in 1882 he was placed in charge of the Lake Superior riving valuable official reports on geological subjects. Professor Irving was recently asked by Mr. Powell of the United State Survey to attend a scientific conference to be held in Europe this summer, and was considering the matter when taken down by his last illness. His body will be brought to Tarry-town for burial in the Sleepy Hollow Cemetery.

#### FURNACE, MILL, AND FACTORY.

The Catoctin furnaces in Maryland have been sold to a syndicate

The steel plant and nail mill at Hammond, Ill., has been shut down for an indefinite period.

The buildings of the Perry stove works at South Pittsburg, Tenn., were destroyed by fire on May 26th.

The strike at the Joliet Steel Works, Joliet, Ill., has been amicably settled. The men were given an advance of 10 per cent in wages.

It is reported that a Connecticut firm has received an order from the Russian Government for 400,000. 000 empty copper cartridge cases.

Swedes Furnace at Norristown, Pa., will in the future be operated by Herksher & Sons, of Philadel-phia, and will be put in blast June 4th.

The spiegel furnaces of the Lebigh Zinc Company. at Bethlehem, Pa., have been lighted after a year's idleness, and the first cast was made May 28th. This puts the entire plant in operation.

The Deer Lake Company's furnace at Deer Lake, Mich., which was blown out on May 5th, will prob-ably be put in blast again about June 15th It was closed down to allow of necessary repairs being made.

The Dayton Coal and Iron Company, whose great plant is situated in East Tennessee, on the line of the Cincinnati Southern Railroad, has announced a re-auction of wages of  $12\frac{1}{2}$  per cent The cause given is the current depression in the iron market.

Every department of the Colorado Coal and Iron Com Every department of the Colorado Coal and From Com-pany's steel works plant at Pueblo, Colo., it is said, would be in blast by June 1st. The company has re-ceived the contract for making the steel rails for the road that is to be built from Seattle to Spokane Falls, Washington Territory.

In the United States Court at Harrisburg, Judge Paul confirmed the sale of the Columbia Liberty Iron Furnaccs in Shenandoah County, Va., at \$51,600. The property was sold under a decree of foreclosure last January to George W. Pearson, of Trenton, N. J. The cash payment was \$12,000.

The eight weeks' strike of the puddlers at the rolling mills of McLanahan, Smith & Co., and the Hollidays-burg Iron Company, Pa., have been declared off. The puddlers demanded \$4 a ton and the Philadelphia scale; but have agreed to accept the companies' offer of \$3.75 a ton and the Harrisburg scale.

The boiler in the plate mill of the Eureka Iron and Steel Works at Wyandotte, Mich., exploded on the 1st inst., completely wrecking the entre building. Three workmen, George Green, Patrick Finn and Terry McCoy, were killed and several others injured. The loss on mill and machinery is about \$10,000.

The Stokes & Parrish Elevator Company has been been incorporated, with a paid-up capital of \$100,000. Mr. Samuel E. Stokes is President, and Mr. W. H. Ambler Treasurer. The company will manufacture and sell first-class elevators, engines and hoisting machinery, etc. The works will be located at Phila-delphia, Pa.

While fixing the bell at the blast-furnace of the Stewart Iron Company, of Sharon, Pa., on May 31st, an explosion of the gas which accumulated in the bell occurred. One man was instantly killed, and the three others so dangerously burned that it is feared they will not recover. Considerable damage was done to

In the case of the Woodstock Iron Company, locat-ed near Anniston, Ala., the Secretary of the Interior on May 31st decided that the purchase of unoffered lands by said company under the provisions of Sec-tion 1 of the Act of June 15th, 1880, was illegal, and directed the cancellation of all unpatented entries to said company said company. 

The Berlin Machine Works, of Berlin, Wis., will remove its works to Beloit, Wis., where it will occupy the former plant of the O. E. Merrill machine shops. The Berlin company moves to Beloit to get better busi-ness facilities, the shipping opportunities at Beloit being much better, and the citizens contribute \$9,000 as an extra inducement

The Wiswell Electric Mining Machinery Company, of Boston, Mass., has advised us that the owners of the Howie gold mine, near Monroe, N., C., who have been using the Wiswell mill with great success the past eight-een months, have just ordered two more mills for the same property. The May Virginia gold mine, Tella-dega, Ala., has just purchased a Wiswell mill. The Wiswell Company has also just sold an extensive plant for Cuba.

The Harris Corliss Engine Works, Providence, R. I., heretofore conducted under the name of Wm. A. Harris, has by act of the General Assembly of the State of Rhode Island been incorporated, and is now styled William A. Harris Steam Engme Company. Mr. Harris, who established the business in 1864, is president and treasurer of the new company, and the works will be conducted and managed in the same manner as when run in histown name.

The gas furnaces which were built at the Birming-bam, Ala., rolling mills some time ago and are being used for burning gas instead of coal, are working sat-isfactorily. The company now has four of these fur-naces in operation and will build five others before the end of the year. In addition to this work, a good deal of repairing will be done through the summer, and several new pieces of machinery will be placed into position also. The mills are now in full operation. The Bundon Lean Company which compariso an ac

position also. The mills are now in full operation. The Blandon Iron Company, which operates an ex-tensive rolling-mill at Blandon, near Reading, Pa., posted the following notice June 1: "At the presert time the cost of manufacturing ex-ceeds the selling price of our products. We have therefore decided to close down the mill to-night for an indefinite period." This will throw nearly 200 men out of work and paralyze affairs at Blandon, as nearly the entire borough depends upon the mill for support. support.

support. The Woodstock Iron Company, of Anniston; the Clifton Iron Company, of Jenifer, and the Shelby fron Conipany, of Shelby Iron Works, all of Alaba-ma, have entered into an agreement whereby their product can be placed on the market urder control of a commissioner, who will sell through a duly accred-ited agency the product of all their charcoal furnaces. The prime object of the commission is the maintenance of just and equitable prices for their product. There has been no consolidation of the companies. The three companies together now have six large charcoal fur-naces completed and two large coke furnaces build-ing. ing.

ing. Carnegie, Phipps & Co. and Carnegie Bros. & Co., Pittsturg, Pa., will, it is said, pro-pose a reduction of wages to their employés, to take effect July 18tb. Heretofore these firms have always refused to act with the other manufacturers when the new amalgamated scale for the following year was offered for signature. While they will not unite officially with them this year, they will nevertheless ask for a reduction with the others. The reduction will affect all the mills except the Edgar Thomson, at Braddock, where the sliding scale went into effect some time ago. Among them are the works at Homestead, the Twenty-ninth street n.ills, the Thirty-third street mills, possibly the Lucy furnaces, and the new steel mill at Beaver Falls. The Birmingham Hardware Manufacturing Co.,

and the new steel mill at Beaver Falls. The Birmingham Hardware Manufacturing Co., Birmingham, Ala., organized with a capital stock of \$150,000, has taken steps looking to the establishment of a large tool and implement factory at Birmingham at an early date. The incorporators are: J. J. Wor-den, President of the Binghamton (N. Y.) Hoe and Tool C $\cdot$ ; C. B. Russell, of Bridgeport, Conn., and Dr. H. Caldwell, representing the Elyton Lead Co. The latter company alone has subscribed \$40,000 to the entire line of machinery of the Binghamton Hoe and Tool Company, Binghamton, N. Y. All this machin-ery will be removed to Birmingham. The company bas also consolidated with the Tack Works of Birm-ingham, and will enlarge the present plant, and consolidate the whole affair. The tack works are now in full operation.

#### CONTRACTING NOTES.

Machinery and supplies wanted. See page xiv. Contracts open will be found on page xiii and xix<sup>1</sup> Newcontracts this week: No. 905, Water-Works; No. 906, Pump. No. 907, Storage Dam to be Lined; No. 908, Water-Works; No. 909, Canal; No. 910, Pine, Hydrants, Pumps, etc.; No. 911, Electric Lights; No. 912, Ship Railway; No. 913, Ircn and Steel.

The contract for dredging in the North River at Pier (new) 43 and at the pier at Fifty-fifth street, New York, has been awarded to the Union Dredging Com-pany, for 20 cents a cubic yard.

Messrs. Cofrode & Evans, engineers and contrac-tors, of Pottstown, Pa., have been awarded the con-tract for erecting an extensive plant for the Roanoke Rolling Mill Company, of Roanoke, Va.

The contract for dredging Crooked Lake and outlet, Albany, N. Y., has been awarded to A. R. Wright, of Portland, Me., at 33 cents a square yard. Fifteen thousand dollars has been, appropriated for this

#### GENERAL MINING NEWS.

The holders of certificates of the Natural Gas Trust, the adjunct of the Standard Oil Trust, to the number of a dozen or so, held their annual meeting in the office of the trust in the Standard Oil Building, New York, on the 31st ult., and elected John D. Archtold and Benjamin Brewster, Trustees. Mr. John Bushnell, the Secretary, when questioned about the nature of the Natural Gas Trust, said "that it was a non-active trust, which merely exercised a sort of supervision over the affairs of the combined gas companies, de-clared dividends, and did other harmless things."

The lake shipments of iron ore for the week ended the 23d ult., according to the Marquette Mining Journal aggregated 106,339 gross tons, of which quantity 73,463 tons went from Escanaba, 13,683 tons from Marquette, 2,918 tons from St. Ignace, and 16,575 from Ashland. This makes a total for the season to that date of 215,012 tons. The shipments of the corresponding date last spring had reached 386,740 tons.

#### ALABAMA TALLADEGA COUNTY.

# SOUTHERN SMELTING AND REDUCING COMPANY.

SOUTHERN SMELTING AND REDUCING COMPANY.-This company has been organized by Alfred R. Light-foot, M. T. Singleton, J. M. Sullivan, J. A. Mont-gomery, J. R. Shields and Goldsmith B. West. The company proposes to build a large smelting plant at or near Tailadega, and to smelt and treat ores. The capital stock is placed at \$150,000, with privilege to increase to \$500,000. ALASKA.

#### COPPER DEPOSITS.

COPPER DEPOSITS. The Juneau (Alaska) Free Press says: From Lieut. Henry P. Allen's report of his explorations up the Copper River we learn the following interesting facts about the country: "Copper River is a stream of considerable size, very swift, and difficult of assent in boats. It is not confined to one channel, thus forming many large islands, and its volume of water is so great that the stream spreads over nearly the entire bottom of the valley. Along its banks are large gravel bars, and the country throughout is marked with ex-tensive glacial deposits. After passing the glaciers, bars, and the country throughout is marked with ex-tensive glacial deposits. After passing the glaciers, which lie about 40 miles back from the coast, the climate in summer is dry and warm, and in the winter it is mild and no great depth of snow falls. The mountain ranges are very high and are marked by many lofty peaks, the highest of which is Mount Wrangel, which is now considered the highest moun-tain in North America. But a few years ago Mount Wrangel was an active volcano, breathing out flames and molten lava, and now sends out clouds of smoke and wapors. The mountain is situated northeast of Mount St. Elias and about 200 miles back from the coast and in the very heart of the mineral regions of Alaska." Alaska.

coast and in the very heart of the mineral regions of Alaska." In regard to the mineral resources of that section Lieut. Allen speaks as follows: "The minerals of Copper River have long been a source of speculation, owing to pieces of pure copper, knives, and builets of the same metal having been brought down to the coast by the natives. Some of the specimens are supposed to be associated with sil-ver, and in fact I have heard of some brought down which assayed in Boston \$80 per ton silver and 60 per cent of copper. Nicolai's house, situated on the Chit-tostone, the south branch of the Copper, and six miles above the mouth of the Chitty to River is supposed to be in the heart of the mineral region, and by bim we were shown a vein near his house, which, at that sea-son of the year (April) was above the snow line. He gave us, however, some specimens which proved to be bornite, a sulphuret of copper and iron carrying when pure 55 per cent copper. He said the native copper was on the Chittyto River, between his house and the central branch of Chittyna, as well as on other tritu-taries of the same. He had builets of pure copper in his possession. "We to rund specimens of bornite also in the hands of

taries of the canada and the second specimens of bornite also in the hands of "We found specimens of bornite also in the hands of the natives of Nandellis, just across the divide from the head of the Copper and on the headwaters of the Tananah. The waters of the Chittyto (Copper Water)

the head of the Copper and on the headwaters of the Tananah. The waters of the Chittyto (Copper Water) are of a deep yellow color from flowing through beds of copper, and the natives informed me that the waters were poisonous, and that salmon would not ascend the stream. Its length is probably not over 15 miles. At one place on the main Copper, on an island, were springs so strongly impregnated with mineral that their water could not be elrunk. Even a sip left for a long time a disagreeable taste. "In ascending the Copper River it was observed that the banks were green hornblendic rock, intersected by mineral-bearing quartz veins. Up further these gave way to a green basalt, which had at its northern end a fine quaiity of slate that split easily into lamine trans-versely to its bed. A few miles from the mouth of the Chittyna it cuts through bluffs of beautiful green stone, intersected by white veins, which appeared to be linestone. The pebbles and boulders in the river bed are much discolored by copper stains, but not to such a remarkable degree as those of its tributary, the Chittystone. The mountains around the head-waters of the latter are sandstone and felspathic granite. A feature of some of the high banks of the Upper Copper is the strata of boulders many feet be-low the surface." ARIZONA,

#### PIMA COUNTY.

PERLESS MINING COMPANY. — The recent strike has spurred the company on to further explorations in the mine. A contract for 1000 cords of wood has been let and parties are at present engaged in delivering it, The mill is shortly expected to start up.

#### CALIFORNIA. MONO COUNTY.

# MONO COUNTY. BULWER CONSOLIDATED MINING COMPANY.— During the last fiscal year ended April 1st, 1888, the company at Bodie produced bullion valued at \$10,-327.02. At the opening of the fiscal year the com-pany had a cash balance of \$724.20 on hand. The dis-bursements at Bodie footed up \$29,922 88 and at San Francisco \$8,237.87, in New York \$2,153.28, or a total of \$40,814.03. Thus the expenses at the mine were at the average rate of \$2,493.75 per month.

STANDARD CONSOLIDATED MINING COMPANY. -The STANDARD CONSOLIDATED BINING COMPANY.---THE company has furnished us with the following official statement: April 1st, balance on hand, \$75,787.25; bullion pFoduct, \$11,640.98; tribute ore from lease of old dump, \$2,067.30; total, \$89,495.53. Dividend, \$10,000; expenses, \$15,496.38. May 1st, balance cash on hand, \$63,999.15.

#### NEVADA COUNTY.

SPANISH GOLD MINE.—Although paying dividends, the Spanish mine is not yielding so profitably as was the case a few months ago. This is accounted for by the fact that the management extracts and crushes all the ore—does not grade it. It is here that ore is extracted and reduced at an average cost of sixty cents a term. cents a ton.

## CANADA.

PROVINCE OF ONTARIO. A syndicate known as the Michigan and Canada Tunnel Company, with a capital of \$100,000,000, has been organized in Canada, and will at once qualify for transacting business under the Michigan State laws. This syndicate is composed of D. O. Mills, of New York; George Bliss, of Morton, Bliss & Co.; Mr. Laidlaw, of the Bank of California; Mr. Hawkes, of the Michigan Central Railroad Company; Nicol Kingsmill, counsel for the Michigan Central Railroad in Canada; George Laidlaw, of Toronto; and Andrew Onderdonk and James Ross, a contractor and engi-neer. The purpose of this syndicate is to tunnel the Detroit River at Detroit. Mr. B. Baker, of London, the engineer of the Forth Bridge in Scotland, and James Ross, of Quebec, one of the contractors of the Canadian Pacific, after a thorough investigation have announced that the building of the tunnel can be ac-complished with comparative ease. CENTRAL AMERICA. PROVINCE OF ONTARIO.

#### CENTRAL AMERICA.

#### HONDURAS.

HONDURAS. POTOSI MINING COMPANY.—This company was or-ganized last year with a capital stock of \$1,000,000, 500,000 shares. The principal office is at Philadel-phia. The company has a concession of twelve square miles in the department of Cochluta. This area is said to contain several promising mines of gold and silver, the principal of which is the San Benita. Honduras is rapidly becoming a very active mining country, and many miners are going to this place. We learn from parties who have returned from there, the pay is usually \$50 per month. board and traveling

the pay is usually \$50 per month, board and traveling expenses for "hand drill" men, as httle machinery is used, and about \$75 for mill engineers. It is claimed that the climate in the interior is healthy, and those re-turning from the mines very forcibly bear out the assertion

To mining companies, Honduras offers the advantages of surface mining, cheap labor, and unknown, but certain, mineral wealth The government is also will-ing to make very liberal concessions.

#### COLORADO.

The report of Dr. George C. Munson, director of the Denver branch of the United States Mint, of the pro-duction of Colorado for the year 1887 shows \$4,908,-637 66 in gold; \$15,883,986.65 in silver; \$6,834,-078,08 in lead, and \$34,461,81 in copper, making a total of \$27,661,164.20.

The total production of gold and silver of Colorado nines from 1859 to 1887 shows a total of \$255,818,min 766 75

In his introductory remarks Dr. Munson says: A number of features were developed that are deserving of brief mention. The average value of the ore pro-duced was less than during the previous year, and the tonnage was much larger. A reduction in the cost of production, transportation and smelting is noticeable. The establishment of concentrating mills and the in-crease in the number of skilled men employed is also commented upon, as well-as the general improvement in mining, milling and smelting plants. The average cost of mining an ounce of fine gold was \$8.009, and the expense of milling was \$7.85. The average cost of producing an ounce of silver by the smelting method was 75 cents, this figure includ-ing transportation.

ing transportation. The value of the product of the State was calculated on the following basis: Silver, \$1.2929; gold, \$20.00; lead, 4.5 cents, and copper, 11.25 cents per pound.

read, 4 b cents, and copper, 11 25 cents per pound. COLORADO COAL AND IRON COMPANY.—The com-pany has ceased to work on its coal-fields down the river, near Aspen, says the *Sun*, of that place. The men were all paid off, and the superintendents and managers were discharged. It is stated that the trouble is the cumulative dissatisfaction of years be-tween the C. C. & I. Company and the D. & R. G. Railroad, and the present shut down is preparatory for a new deal all around.

SOUTHERN COLORADO COAL COMPANY .- This com-SOUTHERN COLORADO COAL COMPANY.—This com-pany has been organized with a capital stock of \$5,000,000. Incorporators, James K. Robinson, Charles B. Patterson and Lafe Pence. The principal office will be at Denver, and the place of operation in Las Animas and Huerfano counties.

#### CLEAR CREEK COUNTY.

CLEAR CREEK COUNTY. COLORADO CENTRAL CONSOLIDATED MINING COM-PANY.—Work is going along smoothly at the Hall tunnel, which will have a length of 4500 feet. The company is working two shifts per day and two drills, one ingersoil and one Sargent drill. The tunnel is now in over 500 feet. The Colorado Central will have three compressor plants with an aggregate of 190 horse-power, two on the south side of the mountain and one on the north, and two 35 horse-power hoisting plants. KOHNOOR & DONALDSON MINING COMPANY.—Fire

and two 35 horse-power hoisting plants. KOHINOOR & DONALDSON MINING COMPANY —Five new Gilpin County concentrating tables are being put up in the Donaldson mill at the mouth of Fall River. Twenty-five stamps in this mill are at present being run constantly on ore from various mines. The tramway from the Champion mine is now in good working shape and ore is being dumped into the mill at a lively rate. The entire fifty stamps in the mill will soon be pounding out gold.

NEATH MINING COMPANY, — The officers of the com-pany have just visited the property, and have author-ized the sinking of the main shaft 100 ree rdeeper, and the running of new levels to open up more ground. Fifteen stamps will be added to the Neath mill.

PIONEER MINING COMPANY.—The property will be thorougly developed and the old Pioneer mill will be replaced with a new mill.

#### CUSTER COUNTY

CUSTER COUNTY SECURITY MINING AND MILLING COMPANY.—The Security mine at Silver Cliff has closed down under instructions from the East, and all of the miners have been discharged. The mine is rapidly filling up with water, and the prospects of an early resumption of operations are not very flattering. An attachment for \$27,000 has been placed on it at the instance of "Dr." R. C. Flowers, of Boston. The sheriff is in charge. A refusal on the part of a majority of the stockhold-ers to pay the voluntary assessment probably accounts for this. The ENGINEERING AND MINING JOURNAL long ago predicted that this company would come to for this. The ENGINEERING AND MINING JOURNAL long ago predicted that this company would come to grief. This would appear to be a good time for the swindled stockholders to review "Dr." R. C. Flower's statements concerning the property and to make him disgorge some of the money they brought him. Is he now proposing to get the mine for its true value— nearly nothing—and get up a new company to buy it accum? agam ?

#### LAKE COUNTY.

The Antioch mill is running successfully, and is treating 100 tons of ore daily at a total cost for min-ing, tramming and milling of \$1.10 a ton

ADAMS MINING COMPANY.-The ore recently struck is most identical with the Maid and Henriett struck is most identical with the Maid and Henriett. second contact and though not so high grade as that found in the upper contact is good shipping ore. The high excess of iron and per cent of lead carried make it a desireable smelting ore. The present ore chute, which was cut from the Discovery shaft though the same as the ore opened in Brookland of the Adams, is practically virgin ground. The output of concentrat-ing ore at the Adams continues about the same.

ing ore at the Adams continues about the same. LILLIAN MINING COMPANY.—There is in contem-plation the running of a 500-foot tunnel from the Lil-lian forty-stamp mill into the mines of the company, which will at once develop the property 100 feet deeper than the present workings and expedite and economize the conveying of the ore from the mine to the mill. LINER PRESENTED CONSULTATEM MARKED CON-

LITTLE PITTSBURG CONSOLIDATED MINING COM-PANY.—The Supreme Court of Colorado has decided that the Little Pittsburg Company shall pay to the Little Calef Company \$34,000.

#### OURAY COUNTY.

OURAY COUNTY. BLACK GIRL MINING COMPANY.—This company has been organized with a capital stock of \$4,000,000, to conduct a mining business in Ouray County. The incorporators; A. D. Pendleton, W. C. Schultz and C. M. Napton.

CARBONATE QUEEN.—This mine has been leased and bonded to the Carbonate King owners. The shaft will be sunk to a depth of 106 teet and the vein thoroughly prospected. The Carbonate Queen is an extension of the Carbonate King.

#### PARK COUNTY.

LONDON.--This gold mine will be extensively. worked this summer, and the mill is being repaired. preparatory to the treatment of the quartz.

#### PITKIN COUNTY.

The shipments of ore from Aspen during the week ended May 25th amounted to 2188 tons. Of thus amount 954 tons went to Denver, 522 tons to Lead-ville, 531 tons to Pueblo and 131 tons to Kansas City Aspen MINING AND SMELTING COMPANY.—The weekly shipments now amount to 900 tons.

## SUMMIT COUNTY.

SUMMIT COUNTY. MONITOR MINING AND MILLING COMPANY.—The company has just issued a circular from which we take the following: During the year various improve-ments have been made at the mine and include the deepening of the main shaft fifteen or more feet, and it is now down nearly seventy feet, showing muneral. The main tunnel to connect with this shaft was run in fifty feet additional on surveyor's lues, making this tunnel sixty five feet in length, and which, if continued about one hundred feet further, will undoubtedly make a good showing for the company in the way of development. The total expenses at the mine have been between \$400 and \$500 while the expenses at the New York office for this, the first year, have been much heavier than they will be the coming year, as the listing fee

than they will be the coming year, as the listing fee

to the Consolidated Stock and Petroleum Exchange-

to the Consolidated Stock and Petroleum Exchange-State taxes, legal expenses, etc., will not have to in incurred again. They have amounted to about 81,100. The treasurer's report shows a balance on band of \$154.75, besides 14,500 shares of «tock----working capital. The company is entirely free from debt. The funds have been very economically ex-pended, no salaries having been peid, with the excep-tion of a small amount foroffice boy. The Wiswell Electric Mining Machinery Company's offer (through their Pay out of the net product of the mine, provided the Monitor. Company furnishes the building to cover the same), still holds good. It is hoped that enough interest will be taken by the stockholders to try and dispose of the stock held by the company working capital), at a fair market price, so that the more the same), still holds good. It is hoped that enough interest will be taken by the stockholders to rover the same), still holds good. It is hoped that enough interest will be taken by the stockholders to rover the same), still holds good. It is hoped that enough interest will be taken by the stockholders to rover the same). Still holds good, It is hoped to try and dispose of the stock held by the company working capital), at a fair market price, so that the more the from the Victoria Mining Company, which Monitor Company will be a producer in less than six months from date. CUBA.

#### CUBA.

CUBA. According to a royal order recently published, Cuba will be divided into two mineral districts, the Eastern district being composed of the provinces of St. Jago de Cuba and Porto Principe, and the Western district of the provinces of Havana, Santa Clara, Matanzas and Pinar del Rio. Each district will be placed in charge of a generical mina increation of a special mine insp arge

#### DAKOTA. LAWRENCE COUNTY.

DEADWOOD-TERBA MINING COMPANY.-The com-pany is working low-grade ore, and little more than paying expenses it is said.

#### IDAHO.

IDAHO. CASTLE CREEK GOLD MINING COMPANY.—Official reports to us of the annual meeting of this company, held on the 28th ult., show that nothing outside of as-sessment work had been done the past year, owing to scarcity of water. The company has no outstanding debts. Of the \$100,000 capital there was represented \$53,442 at the meeting. The old board of directors were re-elected.

#### CASSIA COUNTY.

CASSIA COUNTY. SHOSHONE GOLD MINING COMPANY.—We are offi-cially informed that work is being pu-hed vigorously on the company's property, which consists of about 200 acres of gravel bars, with about one mile of water frontage on Snake River, and that it is the intention of the management to put the company again on a dividend basis.

dividend basis. CUSTER COUNTY. DICKENS-CUSTER COMPANY.—It is stated that the company will coon start its diamond drill in prospect-ing the Badger mine on Custer Mountain. The mine has been a paying one, and has produced a large quantity of high-rade ore, but most of the rich in sight has been taken out, says the Challis Messenger. It is evide t to our mind that the Badger contains considerable wealth, and by proper amount of pros-pecting will prove it. The mine at pr-sent contains a large ledge of low-grade ore running from \$5 to \$10 per ton, but does not pay for milling. IOWA.

#### IOWA.

WHITEBREAST FUEL COMPANY. -In our last issue we stated that the company's miles at Cleveland had been abandoned. We have been officially advised that this statement is not correct, and t at the company's mines at Cleveland have not been abaudoned. The cominnee at Calverant have not been abalacted. In com-pany is still operating there on a large scale, and has eccently equipped a new shaft with what is possibly the finest coal mining equipment in the West. We are ad-vised that it was only the old shaft No. 1 at Caveland, which has been worked now for the last twelve years, that was abandoned, and a portion of the machinery moved to Illinois where the company is about to work extensively. extensively.

#### KANSAS

noved to filmois where the company is about to work extensively. <u>KANSA</u>. The Boston *News Bureau* publishes the following: Sate book have been found at futchison, and it is feotored in previous issues of the ENGINEERING AND found to futch the sate of the Atchison, Topeka & Santa Fe Railroad. Wells have been sunk in vari-ous directions, and it has been accurately determined ing country, at a depth of 400 to 475 feet. It is about 800 feet thick. The area tested includes about 100 guare miles. The profits of the business have induced averaly purchased locations and materials. The Nouth Hutchinson Sait and Mining Company has already enlisted considerable capital. The Dia-mond Sait Company, with a capital of \$50,000, has formany, et a depth of \$500,000 is also organize, owners de well. The Hutchinson Sait and Mining Company, with capital of \$50,000 is also organize, on work these sait deposits. The president of this to work these sait Company is composed of promis-to work these sait Company, of Warsew, N.Y., Muchinson. Its works were planned to produce 500 produced Sait Company, of Warsew, N.Y., Mutchinson. Its works were planned to produce 500 produces and subser works, the curput is considerably present than anticipated. The discovery of yock by a set of South Hutchinson, is the function of the first of commence the manufacture of south strates any eastern work, the curput is considerably present than anticipated. The discovery of yock by a set of South Hutchinson, is the fait of 1887, Indrilling for coal, gas or oil, sait was un-angentedly struck 485 feet from the surface, The

drill was sunk 1100 feet, and not far from the salt it passed through a 27-inch vein of coal of splendid qual-ity. This salt business is expected to materially in-crease the earnings of the Atchson R. R. Co.

#### MEXICO.

A dispatch from the City of Maxico says that Luis Huller has concluded a cash purchase of 5,000,000 acres of land for colonization purposes in the States of Chiapas and Chibuabua. Mr. Huller's agents in Rurope have forwarded a number of German families during the last month to Chiapas.

#### The Mexican Financier reports the following:

MABAVILLAS MINING COMPANY.—It is stated that this company has adjusted its trouble regarding the La Luz mine by paying the claimants \$280,000, of which \$100,000 was in cash, the remainder to be delivered in monthly instailments of about \$20,000. As soon as the Supreme Court gives the Maravillas people possession, the La Luz mine will be again operated.

REAL DEL MONTE COMPANY.-The shares are quoted at \$1100.

SANTA GERTRUDIS MINING COMPANY,-This com-pany is looking finely, with shares at \$550 to \$600. The Amistadsett, belonging to this company, is doing xcellently.

TROMPILLO MINING COMPANY.-The property is in a good condition. A dividend on payable shares will soon be declared. The dividend on free shares \$10. Quotations, \$500 to \$550.

#### MICHIGAN.

#### COPPER MINES.

COPPER MINES. AMYGDALOID MINING COMPANY.—The mortgage given by the company December 12th, 1881, at two years, tor \$10,000, is overdue and unpaid, and liable to foreclosure and sale of all of company's property under the same.

CALUMET & HECLA MINING COMPANY.—President Agassiz has returned to Boston. It is understood that the main engine was pretty seriou-ly damage is destroyed by the late fire, but underground damage is thought to have been comparatively light. The Boston Herald says that there is a belief that the new general manager, S. B. Whiting, will be less experimental and more practical than some who have directed affairs in the past. A dividend of \$5 per share is ex-pected in July. CALUMET & HECLA MINING COMPANY .- President

KEARSABCE MINING COMPANY.—The rock house is about to be erected. Stoping will be started as soon as it is up and the rock ready to be handled. The mine will probably be producing early th's summer. Stamping will be done at the Osceola stamp-mill.

MASS. -The tributors have cleaned and sent forward mass. - Ine tributors have cleaned and sent forward all of their copper taken out through the winter about thirty-two tous. Most of them will go back to work again on tribute, satisfied they can flud good copper in the ground left standing by the company and in the old stulis.

# IRON MINES.

IRON MINES. ANVIL MINING COMPANY.—The mine is sending out about 200 tons per day and is looking well. RUBY MINING COMPANY.—The property of the Puritan Mining Company, which was recently sold to M A. Hannah & Co., will hereafter be known as the Ruhy mine, the new company having been organized under that name. The tru-tees of the company are M. A. Hannah, L. C. Hannah, S. W. Folsom and G. Gould. Gould.

#### MONTANA.

MONTANA. The report of Spruille Braden, assayer of the Helena mint, of the output of gold and silver in Montana in 1887, shows that the total output of gold was \$5 778,-536 28: of silver, \$17 817,548 95: total of gol i and silver, \$23,796,085.23. Mr. Braden, speaking of the placer mines, says: "They are fast dropping in the rear. While 1 believe there are many placers, the quartz mine is the best releance now. Though this as-sy office was estab.ished principally for the benefit of placer mines, we flud the production of gold on the whole is increasing every year, though in some sec-tions it is diminishing. From the Cœur d'Alene District we got in 1885, \$450,000 worth; in 1886, we got in \$150,000, and it has been decreasing ever since. Our principal gold producing district is from the counties of Lewis & Clarke, Deer Lodge, Missoula, Silver Bow. Madison and Beaverhead. Railroads do not in-crease the production of gold by stimulating miners to prospect, or offering advantages of easy transporta-tion."

#### BEAVERHEAD COUNTY.

HECLA MINING AND REDUCTION COMPANY.—The company's works are running to their full capacity. The three furnaces treat about seventy-five tons of first-class ore and concentrates, and the output in lead (carrying silver) is about two car loads per day. The most of this ore comes from the Cicopatra mine on Lion Mountain, which produces about 2000 tons of ore ner month ore per month.

#### DEER LODGE COUNTY

CONBINATION MINING AND MILLING COMPANY. Thi company at Black Plue is getting reary for the start-ing of its eptire mill. The Buena Venture, the claim over which the company has been in litigation, shows very favorable prospects, with about 875 tons of ore already on the cump. The Combination No. 1 is also looking well and there is ready for working over 800 tons from this claim.

WEST GRANITE MOUNTAIN MINING COMPANY.-At the annual mesting of the stockholders held at Helena May 28th, the following officers were elected

for the year ensuing: A. M. Holter, President; E. T. Zimmerman Vice-President; H. L. Parchen, Treas-urer; C. K. Mills, Secretary; J. K. Pardee, General Manager; A. A. McDonald, S. T. Hauser, A. H. Wernz, of St. Louis, and A. J. Weil, of the same place, were elected directors.

#### LEWIS AND CLARKE COUNTY.

HELENA SMELTING COMPANY.—Articles of incorpo-ration have been filed by this company, which has a capital stock of \$1,000,000. The tru-tees are: S. T. Hauser, J. T. Murphy, O. R. Allen, A. J. Davidson, A. J. Seligman, H. M. Parchen, A. M. Hulter, all of Helena; R. R. Rossiter and Mr. Haberman, of New York. The works will be built at once within six miles of Helena.

miles of Helena. SILVER BOW COUNTY. HUMBOLDT.— (o) mel P. R. Dolman released to George W. Farlin and Thomas C. Gorrie his interest in the Humboldt mice, situated just west of the Chear vrit, for ten thousand dollars. He has had a bond on the property just two years, and it has yet three months to run. The original bond was for \$35,000 and it was renewed last October. It is thought that the winches is for a company who intend to run. and it was renewed last October. It is thought that the purchase is for a company who intend to use the carbonate ore for fluxing purposes.

SILVER BOW MINING AND MILLING COMPANY.-The Parrot Company has relinquished the lease of the Pacific mine and the latter is now being run by the Silver Bow Company.

SYDNEY CONSOLIDATED MINING COMPANY .- Sink ing has been resumed. The shart is now down 125 feet and will be continued to the 250-foot station before the mine is quite large two pumps will be used. There is now in the treasury a sufficient sum to sink the staft 400 feet, with cross-cuts and drifts at every 100 feet. There is yet remaining in the treasury of the company 12,500 shares of stock, which will be held as a reserve

## NEVADA

ELKO COUNTY. NORTH BELLE ISLE MINING COMPANY.-The super-North BELLE ISLE MINING COMPANY.—The super-intendent of the mine at Tuscarcia has advised the company that, owing to the stoppages at the mill oc-casionally, the bad condition of the boiler and a shad-ing off in the grade of ore, he advises the suspension of dividends p nding the expenses to be incurred in the erection of the new concentrating plant and the setting up of a new boiler in the mill.

ESMERALDA COUNTY.

BLUE LIGHT.—This copper mine is about to become ne property of New Yorkers. tł

#### HUMSOLDT COUNTY.

According to reports, a new company has been or-ganized to work the Cottouwood nickel aud cobalt mines. Reduction works are to be built on the ground.

STOREY COUNTY-COMSTOCK LODE.

We condense the following from the Virginia City Chronicle :

BALTIMORE MINING COMPANY.—The 382 level will be drained in a tew dwys to admit of the re umpton of operations in the west drifts on that level, in the face of which ore was showing at the time they were flooded. The pump is able to handle three times the amount of water now coming in. BROEW.—The text run at the Courser mill in Six.

BROPHY.—The test run at the Courser mill in Sixmile Canyon, of ore from this mine in Flowery district is completed and the stamps hung up until the bullion result of the clean-up is ascertained. If the test proves satisfactory the extraction of ore from the mile Lest proves satisfactory the extraction of ore from the mine on a more extensive scale will immediately begin. The mine is controlled by San Francisco capitalists who are determined to thoroughly prospect the prop-erty. The Brophy ground was patented as early as 1867, and was located several years prior to that date by William Brophy and A. J. Davis. The Brophy has never been prospected to a greater depth than 150 feet. below the surface, but has yielded considerable bullion. The 900 level can be chi fly prospected by running a northwest drift from the bottom of the North Bonaiza incline shaft—but a tew hundred feet distant from the Brophy line.

CHOLLAR MINING COMPANY.—The electric plant at the Chollar mill will be in place and ready for a test run about July 1st.

CONFIDENCE MINING COMPANY.-The total bullion shipments for May up to the 21st uit. amounted to \$106,314 90.

CONSOLIDATED CALIFORNIA & VIRGINIA MINING COMPANY.—The stamps at the California battery mill will begin dropping on ore from this company when-ever the crushing capacity of the Carson River mills is curtailed by a lack of power to operate them during the summer months. Bullion shipments for May up to the 28d ult, have amounted to \$189,388.70.

to the 250 uit, have amounted to \$159,505.40. HALE & NORCROSS MINING COMPANY — The ore shipments to the M-xican mill for the week ended May 21st aggregated 1009 tons, showing an average value of \$37 per ton by pulp assays. The stoles th oughout the mine are looking very well. There is bullion on hand, and previously shipped for the month amount-ing to \$70,574.97.

ing to \$70,574.97. **KEYES** MINING COMPANY.—A report of the survey of the underground worki gs, just made, recommends the op-ning of the level below the 240 to explore the vein at that depth, with a strong probability that a fine body of bigb-grade ore will be developed. There are 25 tors of ore on the dump, extracted from the development on the 240 level, which will produce \$200 in builtion to the ton. The ore will be hauled to the Fisher mill in Six-mile Cason, for crushing.

OCCIDENTAL MINING COMPANY .- The company will OCCIDENTAL MINING COMPANY.—The company will be added to the first of bullion-producing mines when ore-crushing power is available. There is now a large quantity of ore on the dump which is being constantly added to. The output from the mine can be ma-terially increased above the present average when re-quired, as there is a large area exposed, and that now extracted is merely what is positively necessary to re-move in explorations.

SAVAGE MIN'NG COMPANY.—The ore shipments dur-ing the week ended May 23d aggregated 560 tons, pulp assays showing an average value of \$25 per ton. Builion of hand, and shipped on May account, soc 000 \$28,000.

WEST YELLOW JACKET MINING COMPANY.—The development of this mine in Gold Hill District was re-sumed May 23d. The company intends shortly to in-crease the force of miners. The stock of the West Yellow Jacket is listed on the Pacific Board, San Francisco, and will be called in the big board this month. month.

#### NEW MEXICO.

#### GRANT COUNTY.

PAULINE MINING COMPANY.—The first mortgage bonds for \$10,000 are soon to be issued by this com-pany. The money derived from their sale will be used in the development of the property.

#### SANTA FE COUNTY.

SANTA FE COUNTY. SANTA FE COPPER COMPANY.—Articles of associa-tion of this copper company have been filed in New Mexico by Jay A. Hubbell, of Michigan, Stephen W. Dorsey of New York, and others of New Mexico. The stock is fixed at \$5,000.000. The object is the work-ing of the Cafiyon del Agua grant mine, at San Pedro, so long in itigation, and to which we referred in our issue of February 4th.

#### NEW YORK.

FORT ANN ORE COMPANY.—The property of this company has been sold at Whitehall by the receivers. The hudding was started at \$5000 and was run up to \$15,000, at which price the property was sold to J. F. Winslow, of Poughkeepsie.

#### OHIO.

OHIO OIL COMPANY.—The Standard Oil Company has purchased the property of the Ohio Oil Company, thus ending opposition in the Ohio field.

#### PENNSYLVANIA.

The following corporations have appealed from the settlement of State taxes made by the State's finan-cial officers: Alexandria Coal Comnauy, Icans, \$447; Carbon Coal Company, bonds, \$17,528; Greensburg Fuel Company, bonds, \$114; Hempfield Coal Com-pany, bonds, \$19,950. COAL.

A syndicate has purch-sed 10.000 acres of coal land, located in the Black Lick field, Cambria County. The price paid was \$12 an acre. Iron or and tire-clay abound on the land. It is stated that 1500 coke-ovens will be established within two miles of Ebens-

W. P. Rend has purchased the coal underlying the Kelso farm, on Miller's Run, Washington County, and will open coal works at that place.

The breaker at Thomas Oliver's colliery, near Tam-aqua, was badly damaged by a railroad accident last week. The supports were knocked away, and one-half of the breaker was completely demolished.

A convention to perfect the organization of the mine workers of the Wyoming and Lackawanna regions will be held at Wilkes-Barre on the 6th inst.

ATURAL GAS. ATLANTIC NATURAL GAS COMPANY.—This com-pany, which struck gas last week at Cherry Tree, at a depth of 1300 teet, has leased 60,000 acres of gas ter-ritory, and began laving pipe June 1st, to supply Altoona, Tyrone, Huntingdon and Harrisburg. OIL.

Exports of refined, crude, and nanhtha from the fol-lowing ports, from January 1st to May 26th.

	1000.	1307.
	Gallons,	G Ilms,
From Boston	9 6.006	1.829 1 0
Philadelphia	43,916, 142	56.122 617
Batimore	1.323 053	3.006 1(6
Perth Amboy	8.418 115	6.882.165
New York	136,104,440	139,922,123
m		
Total exports	191,687,806	207,562.812

The Keystone refinery and pipe line were sold on the 28th ult., at receiver's sale, to a representative of the Standard Oil Company, for \$94,000.

#### UTAH.

The new serpentine stone deposits between Salt Lake and Provo are to be opened and worked. The stone is of a dark, greenish turt, and it is the intention to use it for trimmings and facings in connection with the gray Thistle stone. The serpentine will be used also for table, mantle and interior decoration as well.

#### SALT LAKE COUNTY.

The Mingo smelter, near Salt Lake City, which was burned March 4tb, has been rebuilt, and is ready to blow in. It is now one of the best plants in the West, and has been made as near fireproof as possi-ble

#### SUMMIT COUNTY.

CRESCENT MINING COMPANY.-The working force bas been increased, and over 100 tons of ore come down over the tramway daily. Surface water is at

present a source of some little trouble, but as soon the new pumps arrive and arrive in the but as the new pumps arrive and are in position sinking in incline the shaft along the vein will be resumed.

incline the shaft along the vein will be resumed. MASSACHUSETTS MINING COMPANY.—Sinking has been resumed in the shaft at this mine, formerly the Empire, and by the 1st of June the 600 level will have been reached, and then a large station will be cut out so that one of the big pumps can be placed there for use if it is required. When this work is completed and the air compressor and Burleigh drilis arrive, drifting on the course of the vein will be cummenced. There are about forty men employed at the mine. SAMFSOV MINING COMPANY.—The working force at this mine now numbers about twenty-five men, and considerable ore is being taken out and shipped to n arket. Most of the ore comes from the 300 and 400 levels. There is no water in the workings, and de-velopments are carried on without much difficulty. It is not yet known positively whether the contem-plated concentrator will be erected at the n.ine this summer.

summer.

WEST ONTARIO CONSOLIDATED MINING COMPANY -Surface water bandicapt work in the shaft of the Farish & McLaughlin group, west of the Daly. The shaft is now down about 360 feet. No dritting has been done lately. As so in as the shaft reaches the 400-foot level drifting will be resumed. In the upper levels there is a good ore showing.

#### WA SHINGTON TERRITORY.

The trouble in the mines of King County, to which we referred in our last i sue, continues to increase. The Knights of Labor of New Castle miners on the 30th ult notified the agent of the Oregon Improve-ment Company that unless the company came to their terms and to agree to recognize the Knights of Labor and no other organization they would refuse to work.

#### WEST VIRGINIA.

#### PRESTON COUNTY.

WEST END COKE COMPANY.-This company has been organized at Tunnelton; \$250 have been subscribed been organized at 1 unneiton; \$200 nave neen subscribed and paid in, with the pivelege of increasing the capital to \$100,060 in all. The sub-cribers to the stock are Arnold J. Bonafield and William H. Watkins, of Tunnelton; John N. Baker, of Evansville: Melville M. Jeffreys and John W. Mason, of Grafton. Besides mining coal and making coke the company will mine and work fire-clay.

#### WISCONSIN.

#### GOGEBIC DISTRICT.

GOGEBIC DISTRICT. The men at the Nimikon mine stopped work May 21st, and the Moore-Benjamin properties are now practically idle. The mines, says the *Gogebic Iron Tribune*, of Hurley, have contracted quite an addition to their old debts since last January, and as nearly as we can ascertain no particular effort is now being made to settle matters up; but on the other hand there appears to be a disposition to fight honest claims and to continue the dishonest practices which have char-acterized the management for the past eighteen months, and have supported their families on promises and what assistance they could get from our business men. men.

#### COAL TRADE REVIEW.

#### NEW YORK, Friday Evening, June 1. Statistics.

**Production Anthracite Coal for week ended** 

May Loth, and year from Jam	Bry IBL:	100**
Town on OOAG and Weath		1007.
IONB OF 2240 LBS. WPOR.	YPAP.	Yopr
P & Fead. RR. Co., 125,601	2,043,637	3,035,843
Cent. R. R. of N. J.121,358	1,969,491	1.890.183
L. V. RR. Co 177,889	2,193,706	2.056.820
D. L. & W. KR. Co. 85,479	2,559,969	2.079.174
D. & H. Canal Co., 60,543	1 718, 36	1 52 207
Penna, RR	1,597,294	1,219,672
Ponna Coul Co 02.259	578 071	558 199
Day no Conci Co. 15 509	00 025	64 0.96
renta. canar co 13,000	84,010	04.000
Tota 684,410	12,753,479	13,232,307
Decrease	478.8.8	
Increase 40.725		
The above table does not inc sumed and sold at the mines, of the whole production. Production for correspondin 188411,406,453 [ 188411,430,860]	which is about g period : 1885 1826	9,964.872
the second s		
Production Bitumin May 26th, and year from Jan	ous Coal for	week ended

10ns of 2000 pounds, unless otherwise designation of 2000 pounds, unless otherwise designation of the state o

	]	888	
	Week.	Year.	
Phila. & Erie RR	65	27,44L	
*Cumhurland Md	78 400	1 371 185	1

EASTERN AND NORTH	ERN BHIPMENTS.	1887
Week.	Year. 27.441	Year 713
Cumberland, Md 76.409	1,371,185	1,095,101
Broud Top. Pa.	10,604	00,030
H. & Broad Top RR	149,737	155,175
now Shoe 2,291	56.514	72,976
Karthaus (Keating). 940 Fyrone & Clearfield., 57.493	63,963 1,418,7 3	1,302,925
Tipton 1.864 Alleghany Region, Pa.	25,242	2,056
Gallitzin & Mountain. 14,910	378,234	348,909
Norf'k & West, KR 33,750	645 032	472,028
Ches. & Ohio RR †34,672	751,329	624,721
Total 224.638	4,960,872	4,241,022

WESTERN SET	MENTS.	
Pittsburg Region, Pa.		
West Penn RR 5 222	159,176	132,166
Southwest Penn. RR., 1.986	42 182	61.403
Pennsylvania RR 4,969 Westmoreland Region, Pa.	117,266	92,498
Pennsylvania RR 39 060 Mononoghela Region Pa	722,406	613,640
Pennsylvania RR 7,018	140,606	149,739
Total., 58, 55	1,181,696	1,049,448
Grand total 283.893	6 142,368	5,290,468

**Production of Coke** on line of Fennsylvania RR. for week ending May 20th, and year from January 1st, in tons of 2000 µounds: Week, 83,276 tons: year, 1,575,428 tons; to corresponding date in 1887, 1,537,495 tons.

#### Anthracite.

The anthracite market is decidedly more active than it has been, and especially is this the case with the companies. The individual operators having ad-vanced their prices to about *net* circular rates are now sharing the business with the companies, whereas a few weeks ago they did it all themselves. Prices re-main us beretofore, and there is no question of chang-ing them before the first of July. Then, however, we think that an advance of price of perhaps twenty-five cents a ton will be made, and it is therefore to the in-terest of consumers and dealers to lay in stocks now while they bave the advantage of the lower rates, for there is not the least probability of any break occur-ring in the combination during this season. The weakess point, in fact the only weak point, in the anthracite trade lies in the fact that some of the companies, notably the Lackawanna & Western and Delaware & Hudson, have considerably exceeded their quota in the total production. The figures for May are not yet all in, but the excess of output is probably less than it was in April. During June, the production is fixed at 2,600,000 tons, and it is to be hoped that the two companies mentioned will reduce their excess and keep down the output strictly within the samount. The eity contract has recently been filled at, it is The anthracite market is decidedly more active than

this amount. The city contract has recently been filled at, it is said, \$5.09 delivered. The coal is mostly broken, but covers all sizes. This figure is 35 cents a ton more than the city paid last year, and it is certainly an ex-tremely remunerative one to the dealer who took the tremely remunerative one to the dealer who took the contract. It must leave fully 50 rents a ton, which on the 18,000 tons of the contract makes a handsome profit. We hear of many of the larger middlemen making pur-chases this week, and of a large demand coming from the North and from the West The Western buriness, in fact, promises to considerably exceed that of last year, and there are complaints already of a scarcity of cars for it. It is possible that the increase in this direction may compensate for the loss of trade in the East, one to the demoralization of the iron business and the stoppage of so many furnaces. Circular quotations continue as follows : Broken, \$3.75; Egg. \$4; Stove and Chestout, \$4.25; Pea, \$3 to \$3.30 for free burning coals, f.o.b.

#### Bituminous.

<section-header><text><text><text><text><text>

#### Boston.

#### [From our Special Correspondent.]

May 31.

[From our Special Correspondent.] The demand for anthracite coal has been fair. The market continues quite strong. The wings of the indi-in the shipment of coal that their offerings at our period stove coal much under the companies quite strong of 4.25. There is some coal to be had at \$4.15 f.o.b., but the cherp coal is about all gone. The same comparat ve scarcity of broken coal is noted, and buck-wheat coal is also in limited supply at from \$2,05 for this sime of the year, but there is no overstock at present. There have lately been good sales of pea to around a the store of the year, but there is no overstock at present. There have lately been good sales of pea to exert this time of the year, but there is no overstock at present. There have lately been good sales of pea to ever the have to use anthracite coal to obvise to soot. The same range of f. o. b. prices continue, namely, \$26 do as the pool price, and \$25.05 for outside price. The Nova Scotia ports thaw out very slowly, but in a few weeks the first arrivals of cuin from Cape Breton will make their appearance. Owing partly to the avance in freights, and partly also to the fact that the conduction of the price will be advanced some what, probably fully as much as the nominal advance.

in domestic coal. The price last year was in the imme-diate vicinity of \$2.60 delivered. The freight situation is a strong one, and rates hold

well up. We quote, exclusive of discharging: New York, 80 (255c; Phila/lelpha, \$1@\$1.10; Baltimore, \$1.10( \$1.15; Newport News and Norfolk, \$1.05@\$1.10; Richmond, \$1.15(@\$1.25. The demand for coal at retail has now simmered down to very small proportions; but as it held on longer than usual, the dealers feel that they have noth-ing to complete of well up.

down to very small proportions; but as it held on longer than usual, the dealers feel that they have noth-ing to complain of. The unusual harmony which has prevailed in the retail coal trade ci cles at this port for a year past has borne further fruit in the organization of an exchange, which already has 80 members, and is to be put into working order at once. Messrs L. G. Burnham, Hora-tio Welliegton and a few others started the movement and the trade has caught it up readily. The intention is to have a place of general atsemblage where news and notes of general interest shall be kept on record. The cost is estimated at about \$4,500 per year, and already sufficient amounts have been pledged. The plan is to chargh members at the rate of three dollars per 1000 tons handled, and this arrangement appears to give satisfaction. We quote prices as follows, 2000 pounds to the ton delivered: Stove, \$6: Egg, \$5.75; Broken, \$5.50; Nut, \$6; Frankun, \$7.25; Lehigh, Egg, \$6; Broken, \$5.75; Bituminous (on the wharf), \$4.25.

#### Buffalo.

#### [From our Special Correspondent.]

[From our Special Correspondent.] The yearly contract for the supply of bituminous coal to the Vanderbilt railroads was made a few days since. The quantity is stated to be in the neightor-hood of one million tons. Buffalo parties have se-cured a liberal share of the contract, namely: Messrs. Albright & Smith, J. Langdon & Co., Bell, Lewis & Yates Coal Mining Co. and the Rochester & Pittsburg Coal and Iron Co. The price obtained has not been made public, but Dame Rumor says it was "ex-tremely low," being "fully 25c. a ton below the figures of 1887 and at least 35c. per ton below the figures of 1887 and at least 35c. per ton below the figures of 1887 and at least 35c. per ton below the science the year." This was reported (ENGINEERING AND MIN-ING JOURNAL February 25th) to have been at \$2.05 at International Bridge, which would make the Vanderbilt contract on this basis only \$1.70 a ton, as against \$1.85 per ton the price of Grand Trunk contracts in 1887. contracts in 1887

contracts in 1887. The Buffalo Water Commissioners advertised for 15,000 tons of grate coal some weeks since, as an nounced in the ENGINEERING AND MINING JOURNAL at the time. On May 23d, the day for opening bids, only 3000 tons were offered, part at \$3.90 by the Lackawanna, at \$3.87 by the Reading, and \$3.95 by the Lehigh companies. These bids were rejected as being too high, as the price was only \$3.75 last year. A local newspaper says: "The water department has need at once for coal, but inasmuch as there was no other responses to the advertisement they have resolved not to be coerced into paying whatever price the coal rout to be coerced into paying whatever price the coal ring chooses to make for them, and will, therefore, resort to the use of soft coal, which sells for less than 32 per to."

Last Monday forenoon Governor Hill signed the bill appropriating \$570,000 for improving the canals of our State by enlarging the locks and deepening the prism,

Last Monday foremon Governor Hill signed the bill appropriating \$570,000 for improving the canals of our State by enlarging the locks and deepening the prism, etc., etc. The communication of the Fire Commissioners, rec-ommending that the supply of natural fuel gas should be cut off from our city, was referred and the City Engineer authorized to visit cities in Pennsylvania where the gas is in use, to ascertain what safeguards are used to guard against the dangers of explosions, etc. The gas fuel company are determined to do their best to restore confidence in their commodity. There was a large fleet of ore vessels awaiting up cargoes of coal in our harbor the beginning of this week, and some delay was experien ed in loading them. The trouble arises from lack of system in reporting ar-rivals and clearances at this and other lake ports. It is really almost impossible to locate the whereabouts of barges and such like craft, but the law is at fault in the first place and the laziness of the captains in the scond. The result is that a fleet of vessels arrive quite unexpectedly and the chutes and docks are then taxed to their utmost capacity; then a long wait for coal, and then grambling *ad libitum*. Lake freights on coal are strong; business very brick for Chicago and Milwaukee, and all vessels taken freely on arrival, besides many on their way down. The shipments of coal by lake from May 24th to 30th, both Chicago. 30,210 to Milwaukee, 2350 to Duluth, 5750 to Superior, 100 to Bay City, 8180 to Green Bay, 550 to Superior, 100 to Bay City, 8180 to Green Bay, 550 to Marine City, 830 to Manitowoc, 1800 to Sheboy-an, 1020 to Toledo, 220 to Port Huron and 1000 to Washburn. Total shipments thus far this season, 373, 621 net tons. The rates of freight were: 85c. to Chicago, Milwaukee and Green Bay, 90c. to Maritowoc and Sheboygan. 65c. to Marquette, 60c. to Marine City, 830 to and freight were: 85c. to Chicago, Milwaukee and Green Bay, 90c. to Maritowoc and Sheboygan. 65c. to Marquette, 60c. to Maritowoc and Sheboygan.

Canal freights reported: 2 loads coal dust to Syra-cuse, 50c. gross ton free on and off; nominal'y asking 100c. to New York and 85c. to West Troy or Albany,

gross ton, free on and off. Steam hoisting apparatus is to be used at Sheboygan before long. This will lower coal rates at least five cents a ton.

The long delayed fleet of twenty vessels with 24,000

tons of coal entered Port Arthur on May 23d. Nav-igation is fully opened at last.

#### Pittsburg. May 31. [From our Special Correspondent.]

Coal.—The situation here remains unchanged. There were no further shipments to the Southern and Western markets, the water in the Ohio not being sufficient. The late run cleared the pools pretty effectually during the past two days. Most of the tows that left with coal on the last rise have returned with empties. The prospect at this writing is favor-able for another rise. able for another rise.

PRICE OF COAL PER 100 BUSHELS = 7600 LBS

Connellsville Coke,-The situation is unchanged. Manufacturers have not yet come to an understand-ing in regard to the price of coke. The rates remain: Blast-Furnace, \$1 per ton f.o.b. cars at ovens; foun-

Blast-ruthace, \$1 per ton 1.0,0. cars at ovens, foundries, \$1.15.
Freights.—New rates to Pittsburg, 80 cents per ton;
Chicago, \$3; Springtield and Urbana, Ohio, \$2.75;
Tole to, \$2.90; Cincinnati. \$2; Indianapolis, \$2; all valley points, \$1.50; East St. Louis, \$3.50; St. Louis, \$3.65.

#### FREIGHTS.

Southern Freight.—The Southern Railway and Steamship Association have issued a circular an-nouncing a reduction of freights from Birmingham and Chattanooga to points on and beyond the Ohio River. The Birmingham and Chattanooga rates are, respectively: To Cincinnati, \$2.90 and \$2.40; to Louisville, \$2.65 and \$2.40; to St. Louis, \$3.15 and \$3.15; to Chicago and Detroit, \$4.15 and \$3.90; to Cleveland, \$3.15 and \$3.56, and to Pittsburg and Wheeling, \$4.80 and \$4.30 respectively. The latest actual charters to May 31st per top of

The latest actual charters to May 31st, per ton 2240 pounds :

2240 pounds : **From Philadelphia to:**—Alexandria, .85: Bath, Me., 1.00<sup>\*</sup>; Boston, 1.00@1.05<sup>\*</sup>; Charleston, .75@.80; Charlestown, .90<sup>\*</sup>; Crown Point, Mass., 1.05<sup>\*</sup>; Fall Kiver, .90<sup>\*</sup>; Gloucester, 1.10<sup>\*</sup>; Lyon, 1.25<sup>\*</sup>; Marblehead, 1.05<sup>\*</sup>; Milton, 1.20<sup>\*</sup>; New York. .90<sup>†</sup>; New Bedford. .90<sup>\*</sup>; New burryport, 1.15@1.25<sup>\*</sup>; Norfolk, .55@60; Portland, 1.00@ 1.05<sup>\*</sup>; Portsmouth, Va., 1.15<sup>\*</sup>; Portsmouth, N. H., 1.10@ 1.15<sup>\*</sup>; Providence, .90<sup>\*</sup>; Richmond, Va... .70; Ralem, Mass, .100; Sarannah, .80@.85; Washington, .85; Willing-ton, N. C., .70.

ton. N. C., 70. **From Baltimore to:**—Bangor, Me., 1.05@1.10; Bath. 1.10@1.15; Boston, 1.10; Bridgeport, Conn., 95 1.00; Charleston, 80@1.00; Fall River, 95; Galveston, 2.90@3.00; Gardner, Me., 1.40@1.50; New Bedford, .95; Newburyport, 1.30; New Haven, .95@1.00; New London, .95; New York, .90; Portlano, 1.05@1.10; Portsmouth, N. H., 1.10; Providence, .95; Richmond, Va., .70; Salem, Mass., 1.10; Savannah, .80; Somerset, .95; Williams-burgh, N. Y., 90; Wilmington, N. C., 1.00@1.10.

And discharging. 3c. per bridge extra. + A'ongside.

#### MARKETS.

#### NEW YORK, Friday Evening, June 1. Prices of Silver per ounce troy.

lay	Sterling exchange	Lond'n Pence.	N. Y. Cents	May	Sterling exchange	Lond'n Pence.	N. Y Cts.
26 28 29	4.881/2 4.881/2 4.881/2	417% † †	915% 915% 915% 915%	30 31 *	4.881/2 4.881/2	+ 42	9116 9178
		* Jur	ne 2.	+ 41	13-16.		

Foreign Bank Statements.—The governors of the Bank of England at their weekly meeting made no change in its rate for discount, and it remains at 3 per cent. During the week the bank gained £448,000, and the proportion of its reserve to its liabilities was raised from 38.76 to 39.83 per cent, against a decline from 47.57 to 46.44 per cent in the same week of last year, when its rate for discount was 2 per cent. when its rate for discount was 2 per cent. Thursday the bank gained £20,000 bullion on balance. The weekly statement of the Bank of France shows a loss of 19,000,000 francs gold and gained 3,350,000 france silver

Copper.—Another week has passed, during which business has remained very quiet in the copper market. Owing to the policy pursued by the syndicate the cur-rent range of prices is becoming more and more es-tablished and settled, and no fluctuations in prices or rent range of prices is becoming more and more es-tablished and settled, and no fluctuations in prices or other charges in existing conditions have recently taken place worth recording. The only fact of interest which has been noticed during the course of the week leads to confirm the belief that the quantity of copper in the market not absolutely controlled by the combination must be exceedingly limited, and some difficulty has been experienced on the part of sellers for May delivery to provide the copper necessary to complete their contracts. The parties re ferred to not only found themselves short of the re-quisite quantities, but also discovered that the usual facilities for borrowing what they needed do not now exist, as the usual holders either refuse to accommodate them, or assert that they are now unable to do so. This all indicates the large extent to which the total cutput of this country is monopolized by the syndicate. The business transacted on the Metal Exchange since our last report has been very restricted, and quotations remain altogether unaltered. The syndi-cate still continues to buy up all that is offered for

delivery up to the end of July at 16.60. Our closing quotations to-day are: Spot, 16.60; June, 16.60; July, 16.60; August, 16.55. In London the only change of im-portance has been a pretty sharp advance in the price of Chili Bars, three months prompt, which closed last week at £75, and are now quoted up to £78 10s., the syndicate being buyers at the latter price. The object of the parties interested in bringing about this advance may be a desire to produce a steadier market for other descriptions than Chili Bars. According to cable advices just received from Messrs. Henry R. Merton & Co., of London, it is esti-mated that the statistics of visible supplies of copper for the second half of May will show an increase of 1000 tons.

1000 tons.

Our correspondents in Valparaiso write that the our correspondents in Vaparaiso write that the smelters there are experiencing difficulties in fulfilling their previous engagements, and that there is no doubt that the scarcity of laborers and the enormous ad-vance in prices of coal are sadly interfering with the production of copper. The following statistics are supplied by Messrs, Henry R. Merton & Co., of London :

STATISTICS	OF	COPPER,	MAY	15тн,	1888
------------	----	---------	-----	-------	------

1

F

Stocks in Europe.	Tons.
iverpool and Swansea-Chili bars	38.462
" ingots	5
" Ores and reg. (fine).	
ther ores and furnace stuff (fine)	9.550
ondon-Fine foreign (chiefly Australian landing).	4.492
lavre-Chili bars	4.720
and other copper	4,607
	61.836
Advised from Chili.	,
By mail and cable, fine copper	6.000
Afloat from Australia.	
Tine copper	550
	68,386
Against 64 240 tone on 20th Aneil: increase 4 025	11000

The exports of copper from New York during the week were as follows

To Marseilles-	Cop	per.	Lbs.	
By S. S. Alisia C	asks	:20	25,000	\$4.125
To Liverpool-	M	atte.		
By S. S. England	**	5,613	674.553	36.600
To Liverpool- Old Brass	in Tra	ausit.		
By S. S. Scythia (	asks	24	24,930	1.405
To Liverpool- Old Ye	llow M	etal		
By S. S. Chicago	Bdls.	106	12,176	1,449
To Hamburg- Cop	per Bu	llion.		
By 8. S. Rugia	Bars.	5	300	600
To Hamburg- Old Copp	er in Tr	raosit.		
By S. S. Rugia	Casks	48	59,634	5,408

THE INCREASE IN COPPER STOCKS IN EUROPE.

Messrs. James Lewis & Son., who are recognized as bears," under date Liverpool, May 16th, 1888, report 'bears as follows:

"bears," under date Liverpool, May 16ch, 1888, report as follows: "A very uneasy feeling was caused in the copper market duringt he early part of the past fortnight, owing to the sudden collapse of the speculation of the French syndicate in tin, the value of which f.ll in a week from £166 to £79 per ton, a depreciation in the market value of the stock in Eugland and Holland of nearly a million and a half sterling, apart from that on the 4725 tons afloat. "The syndicate agents, however, supported the value of cash Chili bars by offering £80, while other buyers who required them to cover prompts falling due, paid £80 2s. 6d. In the absence of speculative demand, bars with about three months prompt fell to £74 5s. "On the 10th inst. the scarcity of cash warrants caused a sharp advance, and up to £83 5s. was paid for them on the 14th inst. The demand to meet prompt, however, being met by the syndicate agents £82 3s. was accepted yesterday, while to-day up to £83 has been paid. For three months prompt not more than £75 10s. is at present obtainable. "Those English smelters who are now controlled by the French syndicate have practically ceased to do any business the 'free' smelters and manufacturers

the French syndicate have practically ceased to do any business, the 'free' smelters and manufacturers supplying what little demand there is for English copper considerably under the official quotations. Best selected mosts offer at £79 in Birmingham with-out finding buyers out finding buyers.

out inding buyers. "The production of copper by the Rio Tinto Com-pany for the year 1887 was 25,733 tons of 2352 pounds, or 27,064 tons of 2240 pounds fine, against 23,532 tons in 1886. The chairman stated at the meeting on the 11th inst, that the company had en-tered into a contract with the Société des Métaux for the active contract production of the contract with tered into a contract with the Société des Métaux for the entire copper production of the company at the mines in 1888, 1889 and 1890 in excess of what is required to satisfy the already existing contracts A provisional contract had been signed and acted upon since the 1st January, and a definite contract had recently been executed which would enable the com-pany to receive an addition of at least £20 per ton over the average price of about £48 per ton obtained for their copper in 1887 upon the 26,000 tons which they expect to turn out annually during the three years.

years The report of Mason & Barry, Limited, states that "The report of Mason & Barry, Limited, states that the quantity of ore broken and raised at their mine during the year 1887 was 329,128 tons, as against 289,767 tons in 1886. The price upon which the com-pany's contract with the Société des Métaux is based is £65 per ton for copper in the shape of precipitate. The chairman stated that the managing director en-tertains no doubt that the compary's production of copper precipitate for the years 1883, 1889 and 1890 will be continued on the same scale as during the past three years.

Will be commute out three years. "At the annal meeting of the Tharsis C mpany, the chairman stated that the company's production of about 10,500 tons per annum for three years had been sold to the Société des Métaux on the basis of £70 per

ton for best selected copper, or £23 per ton more than had been obtained during 1887. "The production of the Panulcillo Company is re-strict d under their contract with the Société des Métaux to 3000 tons of copper per annum. In 1886 this company smelted 2193 tons of fine copper. "Stocks have increased 4385 tons during the past fortnight, and 27,371 since 1st January. The imports to date this year have been 26,430 tons greater than for the same period last year and the deliveries 9244 tons less.

There are now 9000 tons of Anaconda matte in

"Chilt charters for the fortnight are 900 tons. "Chilt charters for the United States have been 2171 tons fine here, and 250 tons in France, and from Chili 751 tons here and in Swansea, and 584 tons in

France. "The sales of furnace material have been confined to: May 8th, 55 tons matte. Montana, about 60 per cent, at Liverpool, at 14s. 10½d. per unit. May 10th, 100 tons matte, American, about 20 per cent, at Liverpool, at 13s. 6d. per unit. May 11th, 50 tons precipitate, English, about 75 per cent, 14s. 10½d. per unit; 5 tons precipitate, Cuban, about 60 per cent, at Liverpool, at 14s. 3d. per unit. May 16th, 50 tons ore, Peruvian, about 28 per cent, at Liverpool, 14s. 1½d. per unit.

Imports of Copper (including Pyrites and Precipitate to outports) from January 1st, 1888, to date.

Amonica	into	o. poo													*	1		1	1	^	•	• •	1		*	~ 1	11	15
America	into													*		1.4	٠	•			٠		۰.	 ×		٠	. 11,	195
Sunaries	**	6.6				1	Se	31	at	h	Ľ	N	6	l	28	δ.		.,	.,								. 13,	15
**	**	Lond	on	i.																		• •					. 5	63
Chili	66	Fran	ce																								. 5.	81
Am -rica																	2									0	. 3.	95
Mexico	6.6	**		0		0											2	1		1	2			ċ			1	:0
Sundries						۰.	11		1	1	ĩ					•	•			ĉ			1	î	1		ĩ	86
America	66	Italy					1	•	•		•	•	•	•	1		•	•	1	*	•	• •	1		*	•	,	47
America	66	Italy			•	• •		• •					•	,		•	• •	•	•		•				•	•		4

61,822

American in Liverpool and Swansea. France Sundries in Liverpool and Swansea. London krance. 4.494 1 733

Afloat as per mail and cable to date-From Chili

Total visible supply ...... 68,401

crease in statistics of visible supplies up to May 31st will amount to 3500 tons. Lead.—No important change has taken place in this market since our last report. The tone continues very steady, with lttle business doing, however. After having secured some supplies at or near 4c. consumers are now out of the market again, and this has checked the tendency to advance. Speculation is very imited, no doubt, owing to the continued offerings of spot lead which are pre-sed on the market at about 405c apparently on account of some speculative holders. It rather looks as if about present prices are likely to prevail for some time to come. There may, holders. It rather looks as it about present prices are likely to prevail for some time to come. There may, of course, be occasional spurts, but we don't see much prospect of a permanent advance. To day's closing prices are Spot, 4'05c. ; June, 4 05: July, 4'07½c. ; August, 4½c. Messrs, John Wahl & Co., of St. Louis, telegraph to day a follower.

to-day as follows

to-day as follows: Market is strong at 4. Sales are reasonably liberal. Messrs. Everett & Post, of Chicago, telegraph to-day as follows: The market remains about the same, if any thing a shade firmer. There has been considerable more inquiry for both hard and soft lead, in conse-quence of which sellers have been asking a little more, but only a moderate amount of business has been transacted. Sales for the past week will probably foot up 600 tons at 4c.

\*pelter is dull, with little variation in quotations. resent prices are : Domestic, 4:50 ; Foreign, 5.40.

Antimony.—Quiet, with moderate demand. We quote: Cookson's, 13; Hallett's, 101/2.

Chemicals.—The market for the past week pre-sents almost no new features. In most lines sales are slow and dealers complain of dullness, but prices are generally well maintained owing to light stocks. The interruption of Decoration Day, occurring as in occurring as it

does so near the end of the month, affects the volume of business somewhat. Carbonated soda ash 48% continues rather dull. The sales recorded during the week are all in a retail way. The light stock enables holders to realize a high way. The light stock enables holders to realize a light price on small, sales ex store, and it is not possible to buy any thing below 1:30c., ranging from that figure to 1:35 as to quantity, etc. For future delivery goods are obtainable at  $1:25_{12}^{-1}/2_{12}$ , thut we hear of intthe doing. High test is not wanted, and the quotations of 1:15@1:20 are entirely nominal.

Caustic soda, 48 per cent, continues very firm and the demand is good, though we hear of no very large sales. The very light spot stocks force prices up and nothing is offering below 1.30c. Goods to arrive and for shipment are obtainable from 1.23@1.25 accord-ing to quantity, seller, etc. Caustic soda, 60 per cent, is entirely without anima-tion. The onotations are more or less nominal, 2.45@

Caustic soua, of per cent, is entirely without anima-tion. The quotations are more or less nominal, 2'45@ 2'55 being the range. Seventy per cent caustic is a trifle more active, and we note considerable business in a jobbing way, though prices still continue depressed; 2'25@2'30 is realized on small lots, and 2'22½ quoted on larger quantities; 74 per cent is not wanted to any extent and the quota-tion of '2'21/i setting nominal

74 per cent is not wanted to any extent and the quota-tion of  $2^{\circ}221_{3}^{\circ}$  is entirely nominal. Refined alkali, 36 per cent, continues to be a drug in the market, there being no demand whatever. The quotations of  $1^{\circ}12\frac{1}{3}$ @1.15 are entirely nominal; 48 per cent goods are in some demand, though it can hardly be called active, still prices are well main-tained, and the volume of business done is fair:  $1^{\circ}22\frac{1}{3}$ 

tained, and the volume of business done is fair: 1.222, @1.25c, is realized for spot goods and arrivals; 58 per cent alkali is also in some demand, though only in a jobbing way. We contune to quote 1.12½. Bleaching powder is still very dull, owing to causes we have previously stated, viz., over-stock in Boston and heavy pressure to sell in that quarter. It is im-possible for New York dealers to compete with Boston at present figures. The stock here is rather light, and dealers continue to maintain their old prices of  $1.87\frac{1}{2}$ @1.95, as to brand, etc. The acid market continues in the same position as for some time past—there is little fluctuation in prices and a very fair demand.

and a very fair demand.

Sulphuric acid 66° is in moderate demand, though The price continues at 90c. @\$1 per cwt, for large lots and \$1.05@\$1.15 for smaller quantities. Chamber acid is in fair demand, with no change in quotations

tions. Acetic acid is a little dull just at present and there seems to be a disposition on the part of manufacturers to cut under the present price, but no quotable change has as yet taken place. Oxalic acid is dull and the market weak. We heat of little business dong outside of abbing and any to sum

We hear

has as yet taken place. Oxalic acid is dull and the rrarket weak. We hear of little business done outside of jobbing orders to sup-ply consumers' immediate wants;  $6\frac{1}{\sqrt{607}}$  continues as the quoted price, but we hear of dealers accepting less on larger orders. The fertilizing chemical market has not materially changed since last week. The amount of business done is fair, but no particular features. Prices are most cases well maintained, owing to light stock. For the more important articles we quote as follows: Dried blood, high grade, \$2.90@\$2.25; low grade, \$2.15. Azotine. \$2.16@\$2.20 per unt. Tankage, high grade, \$21.50@\$22.50 per ton; low grade, \$19@\$20 per ton. Refuse bone black, \$16@\$17 per ton. Ground steamed bone, \$25@\$27 per ton. Fish scrap, f. o. b. factory, \$25 per ton. Sulphate of ammonia, \$3.20@ \$3.25 per cwt. Kainit continues very firm, with light spot stocks; \$11 per ton is demanded for goods ex store, and noth-ing is obtainable in futures below \$8.50, ranging from this figure to \$9.50, according to time of delivery, quantity, etc.

this figure to \$5.50, according to time of derivery, quantity, etc. Muriate of potash is firm and the demand very good. We continue our quotations of last week:  $1.77\frac{1}{2}$ @1:80 for goods on the spot,  $1.77\frac{1}{2}$  for steamer ship-ments and 1.75 for future sail shipments. Double manure salt is firm but rather dull, the

quotations varying from 1.10@1.15, as to holder,

boto matter same is in in our factor duty, the quotations varying from 1'10@1'15, as to holder, High grade sulphate of potash is selling well, and the price is steadily maintained at 2.25, on basis of 90 per cent sulphate of potash. Nitrate of soda is very firm, and has advanced a little in price. Nothing is obtainable on the spot be-low 2.05, and most holders demand 2'10 for goods ex store. Futures are in active demand, and nothing is offering below 2c, at present. Brimstone is very firm, and a considerable volume of business has been noted during the week. The price has risen, owing to high freight rates from Sicily and advance in price there. Holders demand  $\frac{$23}{2}$ \$24 per ton for goods on the spot, and futures are in brisk demand at  $\frac{$21@$22}{2}$ . So far as we can learn nothing for future delivery is obtainable below this tigure. tigure.

Arsenic is very firm in sympathy with the home market and a fair amount of business has been done, though prices have not advanced any, and we con-tinue to quote  $3\frac{1}{4}@3\frac{1}{2}c$ .

In answer to inquiry by correspondents we may say the use of cadmium is limited, at pre-ent, to making the cadmium salts and fine yellow artist colors. There would be considerable use for this if the price were materially reduced. We would then have a certain trade for it. Phosphorus, besides for matches, is used mostly for making phosphoric acid and all phosphate salts, and very large quantities of it are used.

salts, and very large quantities of it are used. The Meriden Borax Company, Harmony Borax Company and the California Chemical Company, all offshoots of the business of William T. Coleman & Co., to the failure of which we referred in our issue of May 12th, and which three compenies assigned to A. L. Tubbs, filed statements of their assets and liabilities at the County Recorder's office at San Francisco. The summary of the financial condition of the three companies is creditable, in that the assets of each far exceed the liabilities. The combined assets of the three corporations aggregate \$1,598,543,70, while the combined liabilities amount to only \$547,316 17, or a little more than one-third the value of the assets. The excess of the combined assets over the combined liab-bilities is \$1,051,227,53.

#### IRON MARKET REVIEW.

NEW YORK, Friday Evening, June 1. A feeling of utter indifference seems to have taken possession of both buyers and sellers in the iron mar-ket. On surveying the situation from both standpoints, we are tempted to inquire, in the language of Rip Van Winkle: "Has all the family got the same com-plaint?"

plant?" Some of the most experienced iron merchants declare that they can hardly remember such a time of stagna-tion. Prices are weak all around, and consumers generally do not appear to believe that bottom has been reached. The recent reductions of prices of pig-iron have not had any perceptible effect in quickening the demand. the demand.

While sellers are a little more active than buyers, and the pig-iron market is being well "drummed," yet it can not be said that any but weak manufacturers

yet it can not be said that any but weak manufacturers or holders of iron who are anxious to get cash, are really pressing their irons for sale. The general opinion among those best informed is that the present state of affairs is likely to continue for some months. Of course nothing but an increased demand can change the situation. On what is to bring this about, nobody seems willing to hazard an opinion. Alto-gether the situation is one of extreme duliness, with no near prospect of relief. Scotch irons continue weak, and quotations practi-cally unchanged.

Scotch irons continue weak, and quotations practi-cally unchanged. Bessemer pig is likewise very dull indeed, and quo-tations are purely nominal in the absence of demand. Some small sales are reported of No. 3 Cornwall at \$13.50 at furnace. Steel rails have been very quiet, with only a few meal sales mentioned. Recent reports of considerable

Steel rais nave been very quiet, with only a few small sales mentioned. Recent reports of considerable sales by Western mills have not been verified. Old rails are unchanged, with parcels in strong hands held above the market. A sale of about 1000 tons is reported at prices between \$20 and \$20,50.

#### Louisville.

[Reported by HALL BROTHERS & Co.]

[Reported by HALL BROTHERS & Co.] Flat, stale, and unprofitable, are fit words to char-acterize the tore of the market. Notwithstanding stocks are being reduced, reported transactions of the past week, though small, show a further weakening in prices by some furnaces, and that, too, by those who claim to have sold so largely ahead. The imminence of the dispute on the scale of wages makes matters all the more unsatisfactory, and is doubtless having its effect on the market, but the prices now are almost as low as the lowest figures reached during the de-pression in the summer of 1886. All grades of coke iron are in better supply, occasioned by the blowing in of new furnaces, and buyers are now able to ob-talu with more certainty prompt deliveries for early requirements. Some negotiations are now pending on large lots of iron for special purposes, but this char-acter of iron, too, is in sympathy with the general run of metals, and prices are exceedingly low and drooping. Quotations, which are for cash, f. o. b. cars at Louisville, will be found in our weekly register of prices. of prices.

#### Philadelphia.

May 31

[From our Special Correspondent.]

Iron our special correspondent.] Iron can not be sold this week except at a shading from the lowest prices named. The factors controlling the situation are these : Demand is not urgent, offer-ings are light, considerable poor iron is offered, and but little that passes as choice. Stronger than these is the impression that the prices will go lower. Hand to mouth buying in the aggregate is considerable, but not enough to impart steadiness to values or strengthen confidence confidence.

confidence. Brokers to-day were despondent over the undecided conditions and aspects. Mill owners are making no provision for the future and founders have not ac-cepted some very liberal offers made by pig-iron com-panies. Until it is demonstrated that Southern iron can be and will be pushed into Northern markets below present asking prices there will be no material reduccan be and will be pushed into Northern markets below present asking prices, there will be no material reduc-tions. Brokers report improving prospects for foreign iron. Foreign makers and exporters have been figur-ing over probable business in the event of tariff reduc-tions. No change in quotations. Exceptionally low prices have been taken for a few orders of muck bars. The nail trade is without discernable change. Sheet

Ine nan trade is without discernable Change. Sheet iron manufacturers report a steady demand for small lots. Bar iron orders are coming in with more regu-larity, but orders are light and mill owners look upon the market us uncertain. Solicitors for summer trade have found room for a good deal of business, but they are one unknown by with the argument that business. have found room for a good deal of business, but they are everywhere met with the argument that prices have not yet touched bottom. A few good car iron orders are helping along and the easier movement in plate iron continues. A large amount of work for gas holders is out and also for cast pipe. Wr ught pipes are dull and the market can go no lower for the

In the function of the market can go no nover for the present. In bridge and building iron there is a steady run of small orders, enough to keep mills busy at regular prices. In the merchant steel mills a portion of the capacity has been thrown off and it will not start up until early in July. Meanwhile some extensive steel orders will be placed, it is expected. No change has taken place in the steel rail demand or quotations, and the only bint thrown out is of a fresh allotment to a little more than over the anticipated for by a good mary, but there are very few sales to record. Holders feel assured that when work at the mills improves, they can dispose of all the available supplies of rails at existing prices. Scrap is dull ex

#### Pittsburg.

[From our Special Correspondent ]

May 31.

[From our Special Correspondent ] The market since our last has undergone very little change. Appearances certainly indicate that prices must be very near the bottom. Just how long this condition of affairs will continue is what we would all like to find out. Under the circumstances, there is only one, thing that can be done—wait. Well, we have all been waiting for some time for an im-provement in the iron trade, which has failed to materialize. The iron scale is being arrang-ed, and it is hoped that there will be a satisfactory arrangement made in regard to the scale. Developments during the week have not been of an satisfactory arrangement made in regard to the scale. Developments during the week have not been of an important character. A feeling of doubt and uncer-tainty continues, and seems likely to do so for some time to come. There is a variety of  $r \sim w$  irons that finds its way to this market, some of an inferior kind being offered at prices below quoted rates, the own-ers being anxious to realize without reve ard to first crst. City furnaces and established brands are selling at rates current at date of last report. Holders of that description do not seem disposed to sell below their prices. As a matter of course, consumers are buying sparingly, so that the natural shrinkage in consump-tion is intensified by the determination not only to buy as little as possible, but to carry as little stock as pos-sible. Of course, there will be an end to this kind of

sible. Of course, there will be an end to this kind of thing some time, and however much it may be desired, there is too much reason to fear that it is still a long way in the distance unless something unforeseen occurs to give matters a new turn for the better. Iron Ore.—We can report the following sales: 2000 tons Lake Superior Champion No. 1, on docks at lake ports, \$5.85 per ton, cash; 5000 tons Colby No. 1 Lake Superior, on docks at Lake ports, \$4.50 per ton, cash.

Labor troubles are being adjusted slowly. The out-look for an early settlement between capital and labor looks favorable. Quotations will be found in our weekly register of

pric

The following sales describe the market fully:

		Coal and Coke Smelted Lake Ore.	
000	Tons	Bessemer	16.25 cash.
500	Tons	Grav Forge	14.50 cash
500	Tons	Bessemer	16 35 ca.b.
500	Tons	Grav Forge	14.35 cash.
300	Tors	Gray Forge	14 50 cash
275	Toos	Gray Mil	15 044 000.
200	Tune	No 1 Mill	14 60 cash.
2C0	Tons	No. 2 Foundry	16.00 cash.
100	Tops	No 1 Foundry, all ore	17.00 cash
75	Tops	White and Mottled	14.25 ca-h.
50	Tons	Silvery	16.0 J Cash.
		Coke, Native Ore.	
500	Toos	Gray Forge	14 75 cash.
300	LOUR	Gray Forze	14.7.5 C . Sb.
200	l'on«	No. 1 Foundry	16 75 C489.
75	Tons	Grav Forge	15,00 Cas's
25	TOD	No. 1 Foundry	16.75 cash
25	Tons	No. 2 Foundry	15.75 cash.
	-	Steel Stabs and Billets.	
500	Tons	Billets delivered	28.70 cash
200	T ns	Billets delivered	28. in cash.
500	TODS	Nall Siaos	27.50 cash.
000	TODS	Nall Slaos	27 bu cash.
301	TOUS	Sheet Bluen S.	28.80 Cash.
=00	Terre	Muck Bar.	00 **
200	Tons	Neutral	26 75 Cash,
200	TODS	Neutral	20.1.0 Cash
000	TODS	Neutral	20.05 Casp.
200	1008	Neutral.	20.20 Casb.
250	Tone	Pail Fode	19.00 ongh
330	TODS	Stall Wing Dada	18.00 C380.
200	Tone	Amonican E.rog	40.00 anab
000	TOUS	Alucticau rives	44.00 casu.
800	Tons	American T's	99.00 each
000	TOUS	Savan Vatavial	22.00 cash.
150	Tone	Cast Soran ause	19 50 anah
200	Tore	No 1W Seren not	10.00 cash
150	Tons	Wenght Tuennes not	13 -0 ug. h
100	Lona	t ast Ropings gross	19.00 ca-0.
50	Tool	No. no Rules stud gross	17.00 cash,
00	TOR	a bordh nouter creel' \$1088	IT.UU Cash.

#### FINANCIAL.

FINANCIAL. New YORK, Friday Evening, June 1. The business in mining stocks continues to decline, and this merket is apparently in sympathy with other markets, which are dull and featureless. The prices, in consequence, show a downward tendency. Pymouth Consolidated shows no change, and re-mains steady at 110m \$936(\$0.50. We have re-ceived no further news from the mine. Taylor Plumas was dealt in only last Saturday at 1c. Bodie Consolidated and Bulwer were neglected all week. A few sales of the former was made to-day at \$3, and of the latter at from 73c, to 80c. Holywood shows an advance of a few cents, from 29c, to 32c. Amador was active, and is steady at from \$2.15 to \$2.30. Midle Bar rangeared on the list, after a long absence, at \$1.75. The sales of Homestake are about the same each week, and the price remains firm at from \$10.50 to \$10. Cleveland tin is resting for the present. Briten and the price the steady at the price.

present. Barcelona again attracted attention, and the price

Barceiona again attracted attention, and the price went from 72@92c. There was nothing doing in the Tuscaroras. Sales were made of Navajo at \$2, and North Belle Isle at \$3,40 in the beginning of the week. The interest in Sutro Tunnel has vanished for the present. The stock sold at 12@14c. Consolidated California & Virginia continues on the downward grade, and went to \$9.75 to-day. The other Com-

cept for choice, and there are standing orders at fixed stocks were almost entirely neglected, notwithstand-prices for all that can be had. ing that many of these companies are producing 1 rgely, and are on the best way to begin and continue some 35 shares of Ontario sold at \$30. Horn-Silver

Shows no sales. Silver King declined from \$5@\$4.50; selling to-day at \$4.75. San Sebastian shows an advance from 88c. to 94c.,

Some 2000 shares changing hands. Rappahannock was more active, and advanced from 11 to 14c.

11 to 14c. Security has gone down to 4c., the price predicted for this stock by the ENGINEERING AND MINING JOURNAL Byear ago, when the "boomers" were deal-ing it out at from \$6 to \$9. Silver Cl ff shows a few sales at 7 and 9c. Sil-ver Cord, one at 50c. Monitor, one at 13c. Robin-son Consolidated, one at 70c. Little Pittsburg, a few at from 13 to 15c. Little Chief at 24 to 25c. Leadville at 28 to 30c. Iron Silver shows one trans, action of 100 shares at \$3,90 per share. Duukin was

dealt in at 75c. Breece at 13c., and Bassick at from 12 to 16c. The decline of El Cristo shown last week has con-

tinued, and the price this week has goue from \$2 to \$1.50, at which figure it sold to day.

\$1.50, at which figure it sold to day. The dealings in Shoshone amounted to 6800 shares, and the price declined from 14@11c. Proustike also showed a declining tendency, the price going from \$1.20@\$1.00, ruling to-day at from \$1.05@\$1.15. Castle Creek was only dealt in in the b ginning of the week, at 9@7c. Holyoke shows one sale at 4c. Wastimes

#### Meetings.

The annual and special meetings of the following companies will be beld on the dates given: Amygdaloid Mining Company, of Lake Superior, No. 629 Walnut street, room 7, Philadelphia, Pa., June 16th, at twelvreet, room 7, Philadelphia, Pa., Boulder & Buffalo Hunter Consolidated Mining Company, Hallack's Block, Denver, Colo., June 11th.

Cariboo Minning Company, Salt Lake City, Utah Territory, June 30th, at eight o'clock P.M.

IAPORTATIONS AT NEW	YORK D	URING 2 DAYS ENDING MA	Y 25, Al	ND FROM JAN 1 TO SAM	E DATE.
Week.	Year.	Week.	Year.	Old Bolls Te	k. Year.
American Metal Co., Lt.	236	Bae n & Co.	1008.	Baldwin B os.	18. Tons.
Frieden. ville Zinc Co	23	Carey & Moen	300	Bowening & Archibald	100
Lewisohn Bros	75	Uana & Co 501	1.066	rossman & Bro. W. H	1 005
Osgood, F	42	Downing & Co., R. F	137	Frankfort M	100
Total	409	Galpin, S. A	1,86+	Geisenheimer & Co	. 100
Corres. date 1887 759	1.783	Augiil, Chas	33	Neumark & Gross	1.512
Zinc Sheets. Tons.	Tous.	Jacobus, E. Y	12	Stels n & to., Geo. W	230
H. Lematche's Sons 2 Navior & Co.	25	Leog. J. S	17	waitam & co	300
		Luodbe g, Gustaf	120	Total.	4 952
Nickel, Lbs.	Lbs.	Montgomery & Co	48	Street Iron. Tou	33 90. 14 6. Tons
McCoy & S 12,500	124,866	Muder, Schall & Co	150	Coddington & Co	712
Total 12 500	124,866	Navior & Shieman	8,611	Wagner, W.F	40
Antimony. Casks.	Casks.	N. Y. Barb Wire Co	20	Whitney & Co	5
Total	1,373	Page, Ne well & Co	152	Total	761
Corres. date 1887	1,839	Piiditco, F. S	11	Corr. s date 1887	24 935
Pic Lend. Tops.	Tons.	Posser Thos	25	Serap-Iron. Top	s. Tons.
Hendricks Bros		Sauderson & So	67	Burg ss & Co	172
Total	100	Shel on & 'o., G. W	11	Crossman, W. H. & Co	47
Tons.	Tona	Wals hid C. A	35	Gerhardt, P. T.	565
Abbott & Co , Jere	3.448	Whitt-more & o	1,350	Muller, -chall & Co	15
Am rican Merel (0 Birdweli & French	311/2	Wolff & Co., R. H	1,747	Purdon & W	321
Cruok-S & R Co	\$1	Total 701	26,067	Trowbridge & Co , D	. 75
Dickerson, Van Dusen	10	Corres. date 1887 2.667	52.928	Ward & Co., J. E	100
Mu let Schall & Co	805	Forgings, otc. lous.	Tons.	Total	. 1:98
Naylor & Co	662	Abbott & co , Jere	1,014	Corres date 1887 2	98 11.036
Schwarer Bros	7	Bowker, C F	145	Abbott & 'o., Jere	us. 100s. 3
Thomson & Co., D	119	B ue- & Cook	7	Lunberg, G	16
Tutal	5.659	Carter, G. T	273	Milne & Co	10
Corres. date 1887 605	4.9 9	Cohn, M	72	Naylor & Co	25
Tim Plates. Boxes	. Box-s	Crocks R & Co	511	Page, Newell & Co Sanderson & Son	. 2%
Bruce & Cook 5,045	40.331	Crousbey, H	236		
Byrne, Jam s 2,510	13,582	Dana & Co R F	100	Total	296 Tone
Condington & Co., T B.	65.68.1	Henderson Bros	30	Abuilt & Co., Jere	205
Corberre Fellows & S.	783	Holt, H. N	6	Arkell, Jas	28
Cort & Co., N. L 2,010 C ns. Fruit Jar Co	849	Uugill. Chas	69	Dana & Co	251
Crooks & Co , Robert. 739	27.214	Lalarce & G. Mfg. Co., 22	159	Geiser heimer & Co	178
De Mill & Co., H. R 2.137	104.553	Leng J S	15	Navior & Co.	3, 80
Uo'ly, T. G. F	112	Lattl-john, Jas	40	Perkins, C. L	2,443
Lelance & Gro jean	18	Mersick & Co.	124	Pierson & Co	1.9 a
Lombard, Ayres & Co. 674	5,478	Montgomery & Co	11	Total	168 19,001
Merchant & Co 1,025	4 975	Moore's fou & Co	25	Corres. date 1887 2,	294 38,3.57
Noreword & Co., G	12,18	Manas, J. & Sou	10	De Flores, R	100 2,917
Nay or & Co	8 899	Naylor & Co 17	2,194	Earnshaw. A	4.670
Pheip-, D dge & Co	183,297	Ogden & Wallace 35	101	Joinst n & Co	:00
Potts W. A., Son & Co	573	Pheips, Donge & Co	3	Naylor & Co 1.	000 3.716
shepard & Co., Sidney, 784	53.1.9	Pierson & Co	271	wright, chas. L. & Co	
Stroud & Co	34:	Pildach, F. S	133	Total 1,	100 14,944
Thomsen & C., A A., 2.562	61.514	Prosser, Thomas	1.000	Corres. date 1887 2,	010 10,105
Warr-u & Co	1.06.	Roetling's Sons, J. A	98	EXPORTS	
Whitemore & Co. H	27.854	Saboerson & Son	40	Copper, Ponnas	Peneda.
Wolff & Rees ng	14,507	Strouse & Co 18	25	Abbott & Lo	4,461,927
Wright & Sons, Peter	165	Uni n Bridge Co	2007	Eecker, & Co., H	1.250
Total 18.262	763,172	Wagner, W. F	418	Bringpt.Copper Co	112,000
Corres. date 188773.267	740,009 Tone	Walschid C A	2,479	Bereld, Emil	224,034
Abboti & Co. Jere	600	Wallace, W H & Co	15	Isniay, J. Liuce	115,000
Baldwin Bros. & Co	2 24 4	Whitney & Co	27	Levisota & Co	4 171 504
Cricker Bris	4.420	Wolff, R H	98	Lowal, F. A	2,691,:93
Crucks & Co , B	700	Wight's Sons & Co	20	Mendel, S	1 10
Dowing & Co 100	51	Total	11.352	Neumark & Gross	12(,143
Drum'nd. McCall & Co. 10	20	Corr. 8. date 1887 200	35.405	Orf. rd Co	. 349, 81
Heiderson bros	975	Abbott & Co., Jere	1.456	Pielns, Di dge	231,64
Holt, H N	50	Abrel Bros	3	Pupe's Soi 8	. 1,282,130
Mune & Co., James	300	Downing & Co.	13	1000 & Co	
Naylor	450	Jacobus, E. Y.	11	Tetal 82.85	0 19,+91,528
Pielsen & Co	15	Lundlerg Gustaf	119	Conner Matte	4,791,200
Sterson & Co., G. W 440	9,280	Milne & Co., A.	95	Albett & Co	. 366,860
Waibaum W. H.	1 000	N ylor & Co	25	Amer Metal Co.,	469.7:0
Williamson & Co., Jas	1,800	Philip, C M	20	Lewisobn Bros	1,0: 4,4>0
Total	22.789	Wallace & Co., W. H	12	Nichols & 10	25 294 056
Steel & fron Hods. Tons.	Tuns.	W1600, J. G		with s, rerbune	
Abbott & Co., Jere	4,967	Totals	1.931	Tetal	28,601,82
American Screw Co	728	Corres. date 1887 279	0,780	Corres, unite 1887.	Tolocola

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## THE ENGINEERING AND MINING JOURNAL

STOCK MARKET QUOTATIONS.

# WEEKLY REGISTER OF CURRENT QUOTATIONS. CHEMICALS. 24°, % b. 634 26°, % b. 934 Ammonia-Sul., per 100 lbs. 3 00@3 50 Caro, per lb. 734 Muriate, per lb. 74 Arsenic - White, powdered, % lb.34@34 Wurle, gla-s. 10<sup>--</sup> valuent (1--) per 10 55 Minea 2 lu sueets according to size, 1st 2 quality 2 b 25@\$600 Phosphate Rock -S Carolina, per to 16, 0, 0 Cu arteston 580 Groud, f. 0, b, New York, 900@ 9.50 Canashan Apatue, lump, t. 0, b, at 3 shioping port, per unit 65 Phosphorus-Per 1b 65 Phosphorus-Per 1b 507 Canashan Apatue, lump, t. 0, b, at 30@41 shioping port, per unit 520 Austrate age -Ceysloh, per 1b 30@41 Bromage -Cysnide, per 1b 30@41 Bromate, per 1b 37 Cait rat-, per 1b 154@155 Caustic, per 1b 75 Jouide 2.70@2.73 Murate, per 100 fbs 1.714@155 Caustic, per 1b 10 Yelow Prussiate, per 1b 19 Red Prussate, per 1b 19 Red Prussate, per 1b 14 Quartz -Ground, pe ton 55 Salt actes Oper ons, p. unit, s 14 Quartz -Ground, pe ton 50 Salt cluerped,

# Sulphur -Roll, per lb..... 134

- 50 65 51/2 6 41/2 31/4

Aluminum-

 Shot, P. D.
 6
 6
 7c.

 Iin Plates
 148. 6d

 Tin sp.t.
 £85 10s

 Bunca pigs, P.
 200

 Zinc 200

 Vomestic spelter, P. D.
 455 d 65c

 Silesian ton.
 £17 ds

 Shet, American, P. D.
 64 65c

 Antimouy --Hallet's, per lb. 10% 0. 043

 Carkeu's, per lb.
 64 ds

 Quicksilver --Per lb.
 66 3c

 Lundon, P flask.
 £76 £7

200	teel Billets.	66	20,	.00	
20.00.02	teel Nail Slabs, teel Wire Aods, teel Halls –	55	30 0		11.00
	Light ""	and		50@	36.5
	Bridge Plate, at mil Angles, at mill	n		10@	2·1c.
	Steel Angles, at mi Beams and Channe	li els, on	wharf	20@ ,3.3c.	300 bas
2	Tank and Snip, on Boiler Shell, on wi	whar harf	<b>f</b>	2·3 2·75	@? @?
1	" Fire-Boz, or	n wha	rt	33/4	@4
	Refined tank, on v Boiler shell, "	wharf.			le. le.
1	Boiler flange, " Extra flange, " Bar Iron -			40	
	Refined	••••••	. 1.90	2.1c. 22c.	bas
	Merchant Steel American tool	-		. 81/20	@10
	Crucible machiner	ry		5 6	60 41
	Cast-Iron Pipe	ery	******	2.20	02-1
	Wrought from Butt-Weided, Pla	Pip in an	e-10	00@9 minal ed, 57	532. ly- 1⁄2 p
	cent disc : Galy Lap-Welded, Plai	n and	Tarre	ent di d, 67	MG P
	Boiler Tubes - H Rail Fastening	Per cei	at disc		dela
	Angle Fish-bars . Bolts and <q. nut<="" th=""><th>8</th><th>18</th><th>1.9c.</th><th>der</th></q.>	8	18	1.9c.	der
	Wrought Scrap Foreign, ex store			00@	
	Cast Scrap Old Car Wheel	iset	18	5.50 <b>0</b>	16 19
1	Old Rails-Pees -Doul	ales	2	0.00@ 1.00@	20
	Nails-In car-load	liots.		190@	1.9
	Nails-In car-load -From stor	e		1 9C@ 2·0u@	1.9
	Nails—In car-load —From stor Louisvi Hot Blast In	l lots. e lle l ons-	Price	190@ 200@	1.93
	Nails-In car-load -From stor Louisvi Hot Blast In So. Joke, No. 1 " " No. 2 " " No. 2	l lots. e ille l ons-	Price	1 90@ 2.00@ 8. 7.00@ 3 00@ 5 00@	\$179 2-10 \$17 16
	Nails-In carload -From stor Louisvi Hot Blast II So. Coke, No. 1 " " No. 212 Mahoang Valley ( Mahoang Valley ( Mature)	Lake	Price 	1 9C@ 2 0U@ 8 . 7 .00@ 3 00@ 5 00@ 8.75@	\$17 \$17 16 15
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " No. 23. " No. 24. Mastoring Valley ( Mixture) So. Charcoal, No. " No. 24. Mixture) So. Charcoal No.	Lake	Price 	1 90@ 2.00@ 5.00@ 5.00@ 8.75@ 8.00@ 7.00@ 0.00@	\$17 \$17 16 15 19 19 19
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 2 " " No. 2 " No. 2 Matoning Valley ( Mixture) So. Charcoal, No. Missouri Charcoal Forge Irons Neutral Coke	Lake	Price 	1 90@ 2.00@ 8.00@ 3 00@ 5 00@ 8.00@ 8.00@ 9.00@ 9.00@ 4 00@	\$17 \$17 16 15 19 19 18 200 19 514
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 22. " " No. 24. " " " No. 24. " No. 24.	Lake Lake No. 2 d Ma	Price 	1 90@ 2.00@ 5.00@ 5.00@ 8.75@ 8.00@ 8.75@ 9.00@ 9.00@ 4.00@ 3.50@ 9.75@ 1.75@	\$17 \$17 \$12 \$17 \$16 \$17 \$16 \$13 \$19 \$19 \$19 \$19 \$19 \$19 \$19 \$19
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1	Lake Lake No. 1 No. 2 d Ma d br u ands)	Price 	1 90@ 2'00@ 5'00@ 5'00@ 5'00@ 8.75@ 8.75@ 9.00@ 4'00@ 2.75@ 9.00@ 4'00@ 2.75@ 0'10@ 1.100@ 8'50@	\$17 \$17 \$17 \$16 \$17 \$16 \$15 \$19 \$20 \$19 \$20 \$19 \$20 \$19 \$19 \$19 \$19 \$19 \$19 \$19 \$19
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 2% " " No. 2% Maxtore) So. Charcoal, No. " No Missouri Charcoal Forge Irons Neutrat (°oke Co d Short Mottled Car W heel an Southern (standar (other br Lake Supeior Pittsb	l lots. e ons- Lake 12 No. 1 No. 2 Ma d bra a bra a bra ands)	Price 	1 90 @ 2 00 @ 3 00 @ 3 00 @ 3 00 @ 3 00 @ 8 00 @ 8 00 @ 8 00 @ 9 00 00 00 00 00 000 0000000000	\$1793 \$17 16 15 19 19 19 19 19 19 19 19 19 19 19 19 19
5. E3 45	Nails—In carload —From stor Louisvi Hot Blast In So. Coke or Bliu Mixture) So. Charcoal, No. """No 24 Mixture) So. Charcoal, No. """No 24 No 24	Lake 12 No. 1 No. 2 d Ma i bra ands) urg mino	Price 	1 90 (2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$1793 \$17 16 15 19 19 19 19 19 19 19 19 19 19
	Nails—In carload —From stor Louisvi Hot Blast Ir So. Coke or Bitu Mixture) So. Charcoal, No. 2. ""No. 2. "No. 2. "Car Wheelan Souther: "Coke or Bitu Foundry No. 2 Gray Forge No. 2. "Gray Forge No. 2.	Liots. e e 	Price	1 96 @ 2 0 0 @ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 2% " " No. 2% Mixture! So. Charcoal, No. " " No. 2% Mixture! So. Charcoal, No. " " No. 2% Mixture! So. Charcoal, No. " " No. 2% Notice! Cod Short Mottled Coke or Bliu Fordery No. 1  Foundry No. 2 Gray Forge No. 3 " " No. 4%	Lake Lake Lake Lake Lake Lake Lake Lake	Price 	1 96 (2 2 00 (6 1 2 2 0 0 (6 1 2 2 0 0 (6 1 2 2 0 0 (6 1 2 2 0 0 (6 1 1 2 2 0 0 0 (6 1 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	\$179. \$179. \$179. \$199. \$160. \$199. \$1
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 2. " Charcoal Pig	Lake Lake Lake Lake Lake Lake Lake Lake	Price	1 96 (2 2 0 0 (4 1 0 0 (5 1 0	
	Nails—In carload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 24 " "	Liots. a. Lie I ons- Lake 1. 2. No. 1 No. 2 d. MLa ands) urg mino	Price	1 96 (2 2 - 0.0 (2 ) 5 - (2 - 0.0 (2 ) 5 - (2 - 0.0 (2 ) 5 - (0 - 0.0 (2 ) (2 ) 5 - (0 - 0.0 (2 ) (2 ) (2 ) 5 - (0 - 0.0 (2 ) (2 ) (2 ) (2 ) 5 - (0 - 0.0 (2 ) (2 ) (2 ) (2 ) (2 ) (2 ) (2 ) (2	
	Nails—In caload —From stor From stor Louisvi Hot Blast in So. Coke, No. 1 " " No. 24. " No. 24. No. 24. Code or Bitu Foundry No. 2 Charcoal Pig Foundry No. 2 Charcoal Pig Foundry No. 2 Cod-Blast 20 p. c. Spegel	Lake Lake Lake 1. 2. No. 1 No. 2 No. 1 No. 2 Mo. 1 No. 2 Mo. 1 No. 2	Price	1 96.20 8. 2 0000 8. 3 0000 8. 00000 8. 00000 8. 00000 8. 00000 9. 0000 9. 0000 9. 0000 9. 0000 9. 0000 9. 0000 14. 25 14. 25 15. 26 15. 26 1	
2. c 2. 1. c. c	Nails—In ca.load —From stor From stor Louisvi Hot Blast Ir So. Coke, No. 1 " " No. 2." " No. 2." Maxorey J So. Charcoal, No. " " No. 2." Missouri Charcoal Forge Irons Neutral 'Oke Co d Short Mottled Car Wheel an Southerr (Standar Gray Forge No. 2 Gray Forge No. 3. " No. 4. White —Gray Forge No. 3. " No. 4. White Coke or Bitu Foundry No. 2 Gray Forge No. 3. " No. 4. White —Sessemer Cold-Blast Ward-Blast Ward-Blast Ward-Blast No. 4. White —Soundry No. 4. White —Soundry No. 5. Steel Slabs Steel Slabs Steel Slabs	Lake Lake Lake Lake Lake Lake Lake Lake	Price 	1 96 2 00 ( 8	
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	Nails—In caload —From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 2. " No. 4. White Sessemer. Charceal Pig Foundry No. 2. Col.Blast. 20 p. c. Spaegel. " Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Slabs Steel Reits	Liots. a. Lake Lake 1. 2. No. 1 No. 1 No. 2 d. Maa d brac ands) urg maine	Price 	$\begin{array}{c} 1962\\ 1962\\ 2200\%\\ \mathbf{s}_{\bullet}\\ \mathbf{s}_{\bullet}\\ 0000\\ 3000\\ \mathbf{s}_{\bullet}\\ 0000\\ \mathbf{s}_{\bullet}\\ 0000\\ \mathbf{s}_{\bullet}\\ 0000\\ \mathbf{s}_{\bullet}\\ 0000\\ \mathbf{s}_{\bullet}\\ \mathbf{s}_$	
	Nails—In caload —From stor From stor Louisvi Hot Blast In So. Coke, No. 1 """No. 2. ""No. 2. Mixture! So. Charcoal, No. """No. 2. Mixture! So. Charcoal, No. """No. Missouri Charcoal Forge Irons. Nottled Cot Short Mottled. Car Wheelan Southern (standar ""No. 2. Pittsb Coke or Bliu Foundry No. 2 Gray Forge No. 3. ""No. 2. White Mottled. Silvery Bessemer. Charcoal Pig Foundry No. 2 Gray Forge No. 3. ""No. 2. Steel Blooms Steel Blooms Steel Blooms Steel Bloom Eads Steel Sloom Eads Steel Bloom Eads	l lots. e lile I ons- Lake 1. 2. No. 1 No. 2 d. Maa d brac ands) urg mino	Price	1 962 2 000 5 000 5 000 6 000 6 000 6 000 1	
2. c	Nails—In caload —From stor From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 24. " No. 24. No. 24. Coke or Bitu Foundry No. 2 Gray Forge No. 3. " No. 4. Motice Silvery Charcoal Pig Foundry No. 1 Foundry No. 2 Col-Blast. No. 4. Not. 1 Steel Stabe. Steel Biooms Steel Rails No. 1 W. Scrap No. 2 W. Scrap Steel Rails " Tight sections Bar Iron nomina Nails	Lake Lake Lake Lake Lake Lake Lake Lake	Price 	$\begin{array}{c} 1 \ 9 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \ 0$	
2. c. 1. c. c. c. 1. 1. s. c. c. c. c. 11 1. 1. 44	Nails—In caload —From stor From stor Louisvi Hot Blast In So. Coke, No. 1 " " No. 24 Matoring Valley ( Mixture) So. Charcoal, No. " " No. Missouri Charcoal, No. " " No. Missouri Charcoal " " No. Missouri Charcoal " " No. Motiled Cod Short Mottled Coke or Bliu Foundry No. 1 Foundry No. 2 Gray Forge No. 3. Gray Forge No. 3. Gray Forge No. 4. White Mottled Sessemer. Charcoal Pig Foundry No. 2. Gouder No. 1. Foundry No. 2. Gray Forge No. 3. Steel Bloom Eads Steel Rais No. 1 W. Scrap. Steel Rais " light sections Bar Iron., nomina Nals Steel Nails Two per cent of * At works.	Liots. a. Liet I Lake 1. 2. No. 1 No. 1 No. 2 - d. Maa ands) urg maine - - - - - - - - - - - - -	Price 	1 962 2000 8. 22 000 8. 000 8. 000 8. 000 0. 000 8. 000 0. 000 1. 000	

# STOCK MARKET QCOTATIONS. Baltimore, Md. Company: Bid: Asked. Atlantic Coal....\$1.45 \$\$175 Atlantic Coal....\$1.45 \$\$175 Atlantic Coal....\$1.45 \$\$175 Coal Asked. Atlantic Coal....\$1.45 \$\$176 Balt. & N. C. .... \$\$250 4000 4000 \$\$100 during the week ending May 31st. Birming gaam, Als. Compart. Bid. Asked. Ala. Conv. C... 45 Bir. Mir.& Wfg. 190 (195) Bir. Fur. & Mg. 25 Broken Arrow 74 Corona C. & C. 19 Decat. L. Imp. 27% En terprise 35 Mir. Vo..... 35 Jagger Town 35 ley C & C.co. 11 Mg. ..... 5 No Bus. Crk., .... C. & Mg. .... 5 Stoss I. & S... 75 Sheffield C & I. 65 Tenn. V. & J. Co. 234 YondstockS& 54 65 WondstockS& 54 54 Birmingham, Als. ю, De. ic. .00 er Sheffield C & L 65 67 724g Tenn.C. & J. Co. 231g 271g Will iam son 90 102 210% WondstockS&I 54 65 6 36 36 Will saw week ending May 20th. Pittsburg, Pa. Compare 30 36 36 Convent. H. L. Closing. 100 Coinsg. 100 30.00< er 35% v'd 50 50 5c. 0c. .50 50 9.25 9.00 8.C0 9.50 9.50 4.50 4.00 3.25 18 -1 00 1 50 9.50 8.50 12.00 1 85 5000 1 85 5000 1 85 200 19.50 10 (0 18 50 50 (18 50 50 (18 50 50 (18 50 50 (18 50 50 (18 50 50 (18 50 50 (19 50 50 (19 50 50 (19 50 50 (19 50) 50 (19 50

7 50 1	GEFICIU. Nev AGA. OU.	AUE.
9 50	Gold Hill, N. C 28. 6d.	1s. 6d.
2 30	Liaho	178,
0.00	fler, Cal	178. 6d.
0.30	Josephine, Cal £116	\$76
8.00	Kohinour Colo 28	28
8,50	Lady Franklin N. Mey fis.	49
12.00	Mason & Barry Portugal £1114	21116
HE 00	Montana Lt Mont £186	£116
1 89	Now California Colo fa	58
Junt	Now Emma & Iltah 4e Rd	3a 6d
51.90	New Donney Hill N C 90 Rd	90. 94.
	New Boover Hill, M. C. 48 Od.	10 34
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	Philshurg Collan Nev oos.	£19.18
	Plumas Eureas, Car & 10-10	Stabe
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06.81	Richmond Con., Nev 2478	0.
18 20	Ruby&Dundernerk, Nev da.	20
16 20	Kussell Gold, N. C 44.	411
20 00	Nerra Buties, Cal 278	442
nom	Stanly, N. C 21	2.92
20 00	Tolima, Colombia, S.A. 221	31.72
27.00	Union Gold, Colo 48.	38, 00,
24 50	U S. Placer, Colo 294	298
20 00	Viola Lt., Idaho 208.	238.
20.50	Paris."	May Ic.
	Boleo 610	000
1.95	Er Callao 92.00	82 50
	Golden River 440	440
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ake Superior 2	1.50@ 22.50
Pittsburg Price	8.
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ray Forge No. 3.	14.50@14.73
" No. 4.	14.25@11.50
Thite	14 25@ 14.50
ottled	14.50@ 14.7
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Real Playme Fords	18.00@
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Id Iron Kalls	23 10 @ 23.5
IG Steel KHIS	20 00(0)20.5

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## THE ENGINEERING AND MINING JOURNAL.

JUNE 2, 1888.

-	DI	VIDEN	D-PA	ING M	NON-DIVIDEND-PAYING MINES.											
	NAME AND LOCATION OF COMPANY.	CAPITAL STOCK.	No. IF	Total	BESSMENTS.	Total Date and amon	at	NAME AND LOCATION OF COMPANY.	CAPITAL STOCK.	No. Par	ASSESSMENTS. Total Date & am't					
1 20	Adams, S. L Colo. Atice, S. C Mont	\$1,500,000 10.000,000 1,500,000	150,000	10 25 5		555,000 Jan. 1887 14 750,000 Sept 1886 .00 95,000 Sept 1886 .00	14	Agassiz Cons., s. L., Colo. A 2 Allouez, C	2,500,000	50,000 \$50 80,000 25 80,000 100	\$577.000 Feb 1884					
456	Amy & Silversmith,s. Mon. Atlantic, C	1,000,000	341,419 40,000 100,000 1	25 \$280,000 00 345,000	Apl. 1875 \$1. July 1885	247,530 Aug 1887 .12 0 420,000 Feb. 1888 1,50 0 40,000 Feb. 1888 20	*	4 Alta, s	10,080,000 400,000 1,250,000	100,800 100 200,000 2 125,000 10	2,191,200 May 1888 .60 300,000 Jun 1877 .60					
785	Aurora, i Mich. Bassick, G. S Colo. Belle Isle, S Nev.	2,000,000 10,000,000 10,000,000	100,000 100,000 1 100,000 1	20 .00 * .00 145.000	Feb 1887	155,000 Oct 1887 1.87 400,000 Mar. 1884 1.00 300,000 Dec. 1879 .25	1	7 Anglo-Montana, Lt. Mon. 8 Appalachian, Lt., G. N. C. 9 Aspen Mg. & S., S. L. Colo	600,000 1,500,000 2,000,000	120,000 5 300,000 5 200,000 10	·····					
10 11 12	Believue Idaho, S. L. Idah. Big B'nd Hydraulic, G. Dak	10,400,000 1,250,000 1,000,000 2,000,000	104,000 1 125,000 200,000	10 2,668,000 10 57,500 5 *	Mar. 1888	5 15,397,200 Api 1876 1 00 5 187,5 J0 Ian 1857 .10 253,000 Aug 1887 .03 00 Mor 1889 .00	1111	10 Barcelona, G Nev. 11 Bechtel Con., G Cal., 1 12 Belmont, S Nev., Nev.,	5,000,000 0,000,000 5,000,000	200,000 25 100,000 100 50,000 100	173,500 Jan. 1883 .10 735.000 Apl 1886 .10					
13	Black Bear, G. S Cal. Bonanza Developm't C & M Bonanza F's Cons. Cal.	10,000,000 3,000,000	100,000 1	00 450,000 10 *	Feb. 1888	0 1,295,0 0 Apl. 1885 .50 . 135,000 Oct. 1882 .15 . 185,000 Feb. 1885 .20	1	14 Big Pittsburg, 8. L Colo. 2 15 Bi-Metallic, 8 Mon.	5,000,000	100,800 100 200,000 100 200,000 25 900,000 10	2,004,190 Jan. 1888 .50					
17 18 19	Boston & Mont, G Mont Breece, S	2,500,000 5,000,000 500,000	250,000 200,000 50,000	10 * 25 * 10	****	520,000 Jun 1836 .15 2,009 Feb. 1880 .01 127,000 July 1887 .05	1	17 Boston Con., e Cal., J Boston & Mont., C.s Mon. B Bremen, s	2,500,000 5,00,000	100,000 100 100,000 25 500,000 10	170,000 Nov 1883 .25					
10 81 88	Buiwer, G Cal Caledonia, G Dak. Calumet & Hecla, C. Mich	10,000,000 10,000,000 2,500, 00	100,000 100,000 100,000	10 80,000 00 505,000 25 1,200,000	May 1888 .1 May 1885 .1	0 175,006 Jan. 1884 .10 5 40,000 Feb. 1886 .10 . 29,850,000 Apl. 1888 5.00	20 00 00	20 Brunswick, G Cal. 21 Bullion, G. S Nev. 1 22 Bye and Bye Ariz.	2,000 000 0,000,000 1,000,000	400,000 5 100,000 100 100,000 10	3,957,000 Aug. 1887 .50					
23 24 35	Carbonate Hill, S. L., Colo. Caribou Con., S Colo. Castle Creek, G Idah.	<b>2,000,000</b> <b>1,500,000</b> 100.000	200,00 150,000 100,000	10 * 10 *	**** ***** ****	80,006 Apl. 1884 .05 50,000 Mch 1880 .10 51,000 Oct. 1883 .03	0000	23 Calaveras, G Cal 24 Carisa, G Wy 25 Carupano, G. S. L. C. Ven.	500,000 500,000 200,000	500,009 1 100,000 5 100,000 2	· · · · · · · · · · · · · · · · · · ·					
27 28	Central, C Mich Christy, S Utah Christy, S	500,000 10,000,000	20.000 100,000 200.000	25 100,000 00	Sept 1861	6 1,860,000 Feb. 1888 2.00 10,000 Jun 1885 .10 16,000 Jun 1885 .10	2000	28 Charles Dickens, 0.8. Idau.	2,000,000 1,250,000	250,000 2 200,000 10 250,000 5 150,000 5						
30 31 32	Colorado Central, S.L. Colo. Confidence, S. L Nev Cous Cal. & Va., 9 8 Nev.	2.750,000	275,000 24,96') 216,000 1	10 * 287,440	Apl. 1.6.7 .5	310.000 Jun 1888 .05 0 49.920 May 1888 2.00 0 1.792.800 May 1888 50	39	30 Chollar, 8 Nev., 1 31 Cinnamon Mt., 6.s Colo. 32 Cleveland, T., Dak	1,203,000	112,000 100 150,000 5 500,000 2	1,208,000 Dec. 1887 .50					
33 34 35	Contention, 8 Ariz. Crescent, 8. L. G Utah	600,00k 12,50 J,000 15,000,000	100,000 250,000 600,000	5 * 50 25		108,000 Nov. 1688 02 12,587,000 Dec. 1884 .25 210,000 Aug. 1886 .05	33	33 Constock, G. S Nev. 34 Con. Imperial, G. S. Nev. 35 Con. Pacific, G Cal.	5,000,000 6,000,000 6,000,000	100,000 100 50,000 100 60,000 100	30 000 Mar. 1887 .15 1,175,000 Sept 1887 .25 177,000 Sept 1887 .10					
36 37 38	Crown Point, G. S. Nev. Daly, S. L. Utah Deadwood-Terra, G. Dak.	10,000,000 3,000,000 5,000,000	100,000 1	00 2,775,000 20	Apl. 1888	0 11.588.000 Jan. 1875 2.00 600,000 May 1888 .50 11,000,000 Nov 1887 .10	3	36 Cons Silver, s Mo 97 **Cop.Queen Cons,C. Ariz 98 Courtlandt	2,500,000 1,400 00 500,000	250,000 10 140,000 10 50,000 10						
40 41	Deroec B. Grav, e. S. Gal., Dunkin, S. L Colo. Eclipse	5,000,000 100,000	200 000	25 * 1	Dec. 1881	0 130,000 Apl 1887 .10 330,000 Apl 1888 .15 20,006 Nov 1887 .10	344	41 Croweil. G. N. C. N. C.	500,000 500,000	100,000 100 100,000 100 500,000 1	105,000 Feb. 1888 .20					
43 44 5	Empire Lt., G Mont dureka Con., G. S. L. Nev. Evening Star, S. L Jolo.	500,000 5,000,000 500,000	100,000 50,000 50,000	5 00 600,000	July 1886 1.0	7 :500 Oct. 1887 .37 0 4,918 500 Jun. 1888 .25 1,400,000 Nov 1883 .50	4	43 Dandy, s Colo. 44 Dardanelles, G Cal 45 Decatur, s	\$,000,000 1,000,000 1,500,000	500,000 <b>10</b> 100,000 <b>10</b> 300,000 5	*****					
46 47 48	Excelsior, G	10,000,000 10,000,000 1,000,000	100,000 1 100 000 1 40,000	00 560,000 00 200,000 25 220,000	Sept 1845 1.0 Nov 1878 1.0 Jun. 1871	0 875,000 Oct. 1880 .25 0 1,125,000 Dec. 1883 .20 640,000 Jan. 1888 1.00	44	16Denver City, s. LColo.47Denver Gold, GColo.43Duranzo. GColo.	5,000,000 300,000 500,000	500,000 10 60,000 5 500,000 1	*					
18 50 51	Freeland, G. S. C Colo. Fresuo Enterprise, G Cal Garfield Lt., G. S Nev	5,000,000 5,000,000 500,000	200,000 100,000 100,000	50 50 5	Mch 1883	0 110,000 July 1886 .10 0 110,000 July 1882 .10 60,000 Mar. 1387 .12	1 5	49 Eastern Dev.Co., Lt. N. S. 50 El Cristo, G. S U.S.C 51 El Dorado, G Cal.	1,000,000 1,000,000 1,000,000	150 000 10 500,000 2 250,000 4	990.000 Mar. 1886 1.00					
53 54 55	Gouid & Curry, G. S. Nev. Grand Central, S Ariz.	10,800,000	108,000 1	00 5,251,000 10 570,000	Mar. 1888	120,000 Jec. 1870 10.00 625,000 Dec. 1882 .25 6 495 000 Mar. 1884 .25	55	53 Eureka Tunnel, S. L. Nev.	10,000,000	100,000 100 100,000 100 100,000 100	770 000 Eab 1999 90					
56 57 58	Granite, S Colo. Granite Mountain, S. Mont Green Mountain, G Cal	125,000 10,000,000 1,250,000	125,000 400,000 125,000	1 25 10		6,250 48v 1883 .01 4,400,000 Api. 1888 .50 212,000 Nov. 1841 .07	5	56 Found Treasure. G.S. Nev., 1 57 Gogebic I. Syn., I Wis. Gold Cup, s Colo.	0,000,000 5,600,000 500,000	100,000 100 200,000 25 500,000 1	12,000 Jan. 1882 .06					
69 60 61	Hale & Norcross, G. S Nev Hall-Anderson, G N. S decia Con., S. G. L. C. Mont	11,200,000 150,000 1,500,000	112,000 1 150,000 30,000	00 5,086,000 1 50	July 1887	0 1.654.000 May 1888 .50 7.000 4at. 1882 .05 1,152 500 May 1888 .50	5	59 Golden Era, s Mon. 60 Gold Placer, G Colo. 61 Gold Rock, G Cal.	2 000,000 5,000,000 1,000,000	200,000 10 200,000 25 500,000 2	229,314 Dec. 1885 .26					
61 61	Holmes, 8	8,315,000 10,000,000 200,000	063,000 100,000 200,000	300,000	Sept 1885	0 75,000 Api. 1886 .25 27 000 Feb. 1888 .10	666	62 Groublaw, g	1 000,000 1 000,000	100,000 100 120,000 100 80,000 10	**************************************					
63 67 61	donorine, s. L Utah Hope, s	500,000 1,000,000 10,000,00	250,000 100,000 400,000	2 25,000 10 * 25 *	Jun. 1888	125,000 Sept 1887 .06 238,252 apt 1888 .25 4,000,000 Nov 1884 .50	6	66 Gregory-Bobtail, G. Colo. 67 Gregory Con., G Mon. 64 Hariem M.& M.Co.G. (Cal.	850,000 3,000,000 1,000,00	550,000 1 300,000 10 200,000 5	* * * * * * * * * * * * * * * * * * *					
60 70 71	Idano, G Cal. Ideal, S. L. Colo. Illinois, S	310,000 1,500,000 100,000	3,100 1 50,000 100,000	00 10 1 *	•••••	4.846.75 May 1888 15.00 15.000 Oct. 1886 .05 25.000 Jan 1887 .25	677	69 Head Cent. & Tr.a.o Ariz. 1 70 Hector, G	1,500,000 500,000	100,000 300,000 25,000 25	**************************************					
72 73 74	Independence, s Nev Indian Queen, S Nev Iron Hill, s Dak.	10,000,000 250,000 2,500,000	100,000	2 10 101,250	Mar. 1888 .07	225,000 Sept 1879 .23 868,750 July 1853 .03 6 156,250 Nov. 1887 .07	1 777	72 Hortense, s	2,000,000 1,000,000 2,000,000	$\begin{array}{cccc} 100,000 & 2 \\ 200,000 & 10 \\ 40,000 & 25 \\ 200,000 & 25 \end{array}$	280,000 May 1387 3 00					
76 77 78	Jackson, G. B	5,000,000 2,000,000 2,000,000	50.000 t 4 t 00 250.000	00 10,000 5 *	Nov 1880	45,000 Oct. 1886 .10 207,000 Api 1888 .00 1,205,000 F = 1.885 .50	7777	76 tronton, I	1,000,000 1,250,000 10,000,000	40.000 25 50,000 25 100,000 100	*****					
79 80 81	Jumbo, G Colo. dentuce	2,000,000 3,000, 00 2,000,000	200,000 30,000 200,00	10 00 342,000 10 *	Nov 1881	35,000 Oct. 1887 .02 1,350,000 Dec. 1886 .10 610,000 Sept 1882 .30	1 2 2 2 2 2	79 Julia Cons., G. S Nev Su Kcarsarge, C Mich Laclede	11,000,000 1 250,000 2,000,000	110,000 50,000 200,000 10	1,650,000 Apl. 1887 .10 190,000 Oct. 1887 1.00					
82 83 84	Lendville Cons. R.L.L. Colo Lexington, G. S Jont Little Chief, S. L Joio.	4,000,000 4,000,000 10,000,00	400,000 40,000 1 200,000	10 00 50 *	*****	423,000 Apt 1887 .05 565,000 Jan 1885 2.00 780,000 Jeh 1885 .10	20 20 20 20 20 20 20 20 20 20 20 20 20 2	82 Lacrosse, G	5,000,000 2,000,000 5,000,000	100,000 10 500,000 10 200,000 10	· · · · · · · · · · · · · · · · · · ·					
80 87 55	Manhattan, 8	5,000,000 5,000,000 500,000 10,000,00	50,000 1	00 239,000	Dec 1887 1.	437,500 Feb 1886 .25 15,000 Jan. 1886 .25 140,000 Dec. 1886 .25	1000	So Mammoth Bar., G. Cal 87 May Belle, G. Cal May flower Gravel Cal	10,000,000 10,000,000 10,000,000	100,000 100 100,000 100 100,000 100	50,000 Dec. 1 101 84,000 Mar. 1 84 825,000 ApJ, 1888 .25					
89 90 91	Mary Murphy, G. S Colo. Minnesota, C dicu Mono, G	350,000 1,000,00 5,000,000	3,500 1 40,000 5 1,000 1	00 * 25 420,000 00 616,000	Api 1886 1 Sept 1887	122,500 Feb. 1888 5.00 1,520,000 dar. 1876 12,500 Mar. 1866 .23	. 9	90 Medora, G Dak. 90 Mexican, 3.8 Nev. 91 Middle Bar G Cal.	250,000 10,000,000 400,000	250,000 1 100,000 100 200,000 2	2,700,760 Jan, 1888 .36					
92 93 94	Montana, Lt. G. S Mont Morning Star, S. L Colo. Moulton, S. G Mont	3,300,00k 1,000,00k 2,000,000	100,000 100,000 100,000	5 * ····	· · · · · · · · · · · · · · · · · · ·	2,0,0,96 Api. 1858 .25 775,000 dar. 1848 .25 380,000 Dec. 1887 .07	99	9. dunitor, G	1,000,000	200,000 5 100,000 1 300,000 10	* ···· · · · · · · · · · · · · · · · ·					
96 97	At, Diablo, 8 Nev Napa, Q	5,000,000 700,000	50,000 1 100,000 1	00 137,500	Jun. 1880 2.	00 9),000 May 1888 .20 290,000 Jan. 1883 .10 250,000 Feb. 1883 .20	999	96 Neath, G	1,000,000	100,000 10 100,000 10 100,000 100	130,000 Dec. 1887 .80					
90 100	Northern Belle, S Nev. North Belle Isle, S Nev.	300,000 5,0 /0,000 10,000,000	120,000 30,000 100,000	2% 4 00 425,000 00 250,000	Jan. 1884 8.	30,000 Dec. 1855 .06 0 2,400,000 Apl. 1853 50 23.000 day 1858 .50	10 10	94 New Pittsburg, s. L Colo 100 North Standard, G. Cal. 101 Noonday Cal.	2,000,000 10,000,000 600,000	200,000 10 100,000 100 60,000 10	* 20,000 Nov 203,000 Dec. 1851 .10					
02 03	Ontario, S. L	15,000,000 10,000,000 1,500,000	150,000 100,000 60,000	00 90 25 4,059,440	Aug 1857	9,200,000 day 1888 .50 0 1,595,800 July 1882 1.00 117,000 Dec. 1887 .00	10 10 10	102 Oneida Chief, G Cai. 103 Oriental & Miller, s. Nev., 104 Osceola, G Nev.,	500,000 10,000,000 5,000,000	125,000 4 400,005 10 50,00 25	* *************************					
	Oxford, G	135,000	125,000 100,000	1 62,000	Apl 1888	34,500 Jun. 1888 10 34,500 Jun. 1888 10 150,000 Apl 1887 10 154,000 Jan 1888 10	10	105 Fark, 3	2,000,000	200,000 100 100,000 10 100,000 10	185,000 Nov. 1886 .10 345,000 Apt. 1888 .25					
109	Peacock, S. G. C N.A. Pleasant Valley, G. S. Cal Plutus, G. S. C. L Colo.	2,000,000 10,000,000 2,000,000	200,000 1 200,000 1	10 00 10,000	Mar. 1984	0,000 Nov. 1886 80,000 Dec. 1882 .00 20,000 Feb. 1886 .10	10	109 Phoenix Ariz 110 Phoenix, G. s Ark. 111 Phoenix Lead, S. L. Colo.	500,000 5,000,000 100,000	500,000 100 200,000 1 100,000 25	* ****** ***** ****** ****** ** ********					
13	riymouth Con., G Cai Prussian, S. L Colo. Quick-liver, pref., Q. Cal	5,000,000 1,500,000 4,300,000	100,000 100,000 43,000	50 * 10 ·····	····· ···· ···	2,280,000 Feb. 1888 .44 132 000 Jan 1853 .16 1,353,192 Apr 1888 2.0		112 Pilgrim, G Cal., 113 Potosi, s Nev., 114 Proustite, s	600,000 11,200.000 250,000	$\begin{array}{cccc} 300,000 & 1 \\ 112,000 & 2 \\ 250,000 & 100 \\ 100 \end{array}$	1,293,600 Nov. 1887 .50					
10	Guincy, C	1,000,000 1,850,000	57,000 40,000 54,000 20,000	25 200,000 25 210 030	Dec. 1862	4,770,000 Feb. 1888 4.00 4,312,587 Jun. 1887 1.22		11. Puncy	3,000,000 250,000 500,000	130,000 1 300,000 10 250,000 10 500,000 1	······································					
19 20 21	Rising Sun, s Dak Robinson Con., s. L Colo. Robert E. Lee, s. L Colo	750,000 10,000,000 10,000,000	150,000 200,000 500,000	20 * 50 *		52,000 Jay 1881 .0 585,000 Mar. 1880 .0 100,000 Dec. 1882 .5	14 11 12 12	119 dopes, G. s	2,000,000 1,500,000 10,000,000	80,000 300,000 100,000 5	103,200 July 1887 .50 188,157 Mar. 1887 .25					
23	Rooks, G	500,000 11,20 ),000 1,000,000	50,600 112,000 100,000	10 100 6,324,000	Sept 1887	61,000 Apr 1585 .4 50 4,460,000 July 1869 8.0 50,000 July 1864		122 San Sebastian, G San S 143 santiago, G U.S C 124 Security, s Colo.	1,600,000 400,000 10,000,000	3.0,000 5 1,200,000 2 1,000,000 10	*					
120	sierra Buttes, G Cal., sierra Grande, S N. M.	150,000 8,225,000 2,500,000	122,500	10	·····	7,000 ADI 1883 .0 1,492,557 Apl. 1883 .1 860,000 Sept 1884 .1	12	125) Silver Queen, C Ariz. 127) South Bulwer, G Cal	2,000,000 5,000,000 10,0,000	200,000 10 200,000 25 100,000 100 100,000 100	100,000 May 1881 .25 105 000 Jan, 1883 .05					
131	sliver Cord, 9. S. L. Colo. sliver King, S. Ariz. sliverton, 6 S. L. Colo.	5,000,00 10,000,00 2,000,000	500,000 100,000 200,000			220,000 Nov. 1888 .2 		129 South Pacific Cal 130 Stanislaus, 6 Cal 131 State Line, s Nev.	500,000 2,000,000 253,000	100,000 5 200,000 10 250,000 1						
182 183 194	Small Hopes Cons., 8. Colo. Smuggler, 1. L. Colo. Socorro, c. N. 1.	5,000,000 600,000 250,000	250,000 60,000 2,5 10	20 * 10		3,112,500 Dec. 1887 2 66,700 Aug. 1863 2 4,000 Jicn 1882 0		134 St. Kevin, G. S Colo. 133 St. Louis & Mer., S. Mex. 134 St. Louis & St. Elmo Colo.	100,000 5,000,000 2,000,000	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	#					
185	spring valley, 0 Cal standard, 6. s Cal stormont, s	200,000 10 000,00 500,0 4	201,000	1 50,000 1 25,000	Oct. 1886 Oct. 1884	25 50.000 Jan 1881 2 25 8,595,000 Jun. 1888 .0 155,000 Nov. 1881 .0		135 St. L. & St. Felipe, G 8. Mex. 136 St. L. & Sonora, G.S. Mex. 137 St. Louis-Yavapai Ariz.	1,500,000	150,000 10 150,000 10 300,000 10	••••••         ••••••         ••••••         ••••••           ••••••         ••••••         ••••••         ••••••           ••••••         ••••••         ••••••         ••••••           ••••••         ••••••         ••••••         ••••••					
139 141 141	Sarinam, G	8,000,000 600,000 10,000 000	60,000 60,000	5 10 88 794		9,000 Api, 1885 .0 15 48,308 Sept. 1885 .0		139 Sauivan, G. S. L de 140 Satro Tunnel	500,000 20,000,000 1,000,000	0 100.000 5 2,000 000 10 200.000 10	125,00 Dec. 1882 .25 10,000 Feb. 1888 .08					
142 143 144	Tamarack, C Mich. I'ip Top, 8 Ariz. Iombstone, 6.8. L. Ariz.	1,000,000 10,000,000 12,500,000	40,000 100,0 /G 500,000	2 520,000 25 250,000	Api 1835 3. Sept 1888	0( 120,000 Apl. 1888 3.0 25 100,000 Nov. 1881 .2 1,250,000 Apl. 1882 .1		142 Floga Cons. G Cal 143 Tornado Cons. G E. Nev 144 Tortilita, G. s Ariz	10,000,000 100,000 1,000,000	0 100,000 10 0 100,000 1 0 100,000 2						
140	Valencia, M	8,000,000 150,000 750,000	300,000 1,600 150,000	10 * 100 *	· · · · · · · · · · · · · · · · · · ·	97,500 Feb. 1884 .2 		140 Fuscarora, S Nev. 146 Union Con., G S Nev. 147 Utah, S Nev. 149 Washington Nev.	10,000,000	0 100,000 100 0 100,000 100 0 100,000 100	2,185,000 Nov 1887 .50 9 96,000 May 1888 .95					
149	Yankee Girl Colo. Yeilow Jacket, G. s. Nev	2,500,000 12,000,000	200,000 250,000 120,013	10 10 5.448 000	Dec 1835	140,000 Apl. 1882 1,275,000 July 1887 75 2,184,000 Aug 1871 1.		149 West Granite Mt., s. Mon. 150 Zelaya, G. S C. A.	5,000,00 600,00	0 500,000 1 0 300,000	8					

G. Gold. 3. Silver. L. Lead C. Copper. \* Non-assessable. \* This company, as the Western, up to Dec. 10th, 1881, paid \$1,400,000. Non-assessable for three years. i The Deadwood preriously paid \$275,000 n eleven dividends, and the Terra \$75,000. Previous to the consolidation in Aug., 1881, the California had paid \$1,350,000 in dividends, and the Con. Virginia. \$42,390,000, Previous to the consolidation of the Copper Queen with the Atlanta, Aug., 18°5, the Copper Queen had paid \$1,350,000 in dividends.

## THE ENGINEERING AND MINING JOURNAL.

## NEW YORK MINING STOCKS QUOTATIONS.

#### DIVIDEND-PAYING MINES.

#### NON-DIVIDEND-PAYING MINES

				-													-											
NAME AND LOCATION	Ma	y 26.	May	28.	May	29. 1	*May	90. 1	May	81. 1	June	1.	1	NAME 2	AND LOCA-	May	26	May	28 1	Mav	29. 1	*May	30.	May	111.1	Jun	1 .	
OF COMPANY.	H	1 L.	H.	L.	H. 1	Le.	H.	L	H. I	L	H	L	FALES	TION OF	COMPANY	13	T	IT	T	H	T	77		anay .		o u u		RATER
Adams, Colo														A 34 - 57			-		- 44.	11.	Les .	H.	La	н.	6	H.	Les 1	O'A Mine
Alice, Moi t									****	****	*** **		** *****	Alta, Ne	Cal	1° 60	0.16	Ta and		170	inaul			*****		Acres .		50
Argen'a, Nev										******	****		*******	Amauor	Flag Colo	4.4	2 10	3.20	****	2.20	2,20		****	2.25	****	2.80	2.25	8,800
Bassick, Colo									.16	.12		****	600	Harceio	DR. DRV			738		100	** 22	***	** *	****	** 00	100	00	000
Belcher, Nev						*** * *								Bechtel	Con., Cal							****	****	.00	.00		.00	1,000
B Le Isle, Nev.	****				**	***			1.8.0					Bulas	Picher.Nev.	4 45						*****		***			****	100
B die Colo											2.25		300	Brunsw	ick, Cal			.19	.18					.18				4.0
Breece, Colo			.30	*****		****	*****	*****			***	***	201	Bullion,	Nev	2.10										8.00		4.0
Latedonia, Dak						****					.80	.76	1,000	Carupai	io, venes					4					***			
Chollar, Nev	4.00									******			900	Cashie	COIO	1 ****		07							****		*****	
Ch ysolite, Colo		1		1	****					****			200	Control	Arig Arig			.07	*****	****	*** ÷			****				-900
Colorado Cent'i,Colu.								1			****	****	*******	(levela)	nd. Dak	*****		48.0.8.8	****	**			***	*****			*****	
Cons.Cal. & Va., Nev.	11.00		11.18		10.75	10.63					10.38	9 75	660	Confide	nce. Nev.			••	****		** **			***		*** *		
Crown Point, Nev	6 00												100	Con. 1m	perial. Nev						******							*******
Leadwood, Dak											1.75		10	Con Pa	cific				****	*****				*****	** **	** **		*******
Dunkin, Colo.					.75	1						1	100	Denver	City, Colo,											1	** ***	
Eareka Cons., Nev		· acer												Eastern	Oregon							***			*****	e	* * * * * * *	
Fa ter de smet, Das			1											El Crist	u. U. S. Col.	2.00	1.70			1.80			******	1.75	1.66	1 60	1.50	4 1 400
Freeland, Colo														Excelsi	or, Colo													1 1,200
G an & Curry, Nev					2.00								25	Excheq	uer, Nev													
Grand Frize, Mev							****							i ound	Treas'e, Nev.													
Grien Moraross Ner	2 20		*****		1 19 20		****							Hector,	Cai													**** ****
Halvoke Idaho	1 1 10	1			1.00	*****			1			0000	200	Hollyw	ood, Cal	30	.29	.31		.32	.81			.31		.32	.31	4.000
TT HUNDER HAR	****		11.00		11 00	10 20	****		1.19				100	buron,	MICh													
H .Silver Ilt.			11.00		11.00	10.00			11.00				180	Julia, M	iev	.60		.6								.50		800
Inon Hill Dak								****						Kinget	næ Pemb'ke													
Lon Silver, Colo					3 00	******			******	1		****	100	KOSSUL	a, Nev			.20		.20								500
I. adville C., Colo,			30	.29	0.00	*****					- *		8.0	Lacio Ba	MF, COIO			1		*****								
f. the Chief, Colo	1				24	*****		*****	95	1 114		****	1 600	Lee ba	sin, Coio													
I. tle Pittsburg. Colo									16	22	19	****	1,000	Middle	Don Col			1		**		*****						
martin White, Nev							*** **						200	Monito	Dar, Galo	-24		.40	1.41	.11	****	****	****	. 11	.43	.44	.43	3,000
Mono, Cal								1						Ort'nt'	Mil'r Nor			.13		*****					*****			500
Mouiton, Mont		1						1		**. **				Phoanis	Lond Covo			· ·	****					***				
Mount Diablo, Nev.,				1	3.75			1					100	Phoenis	of Ark			***				** **	**	****		**		
.avajo, Nev			2 00										500	Potost	Nev									****				
orth Belle Isle, Nev			340										100	Prousti	te. Idaho	1 2	1 1 12	1 20	1 15	1 00	1 1 15		****	1 3 3 4	1 00	1	1	
0 tario, Ut			30.00						30.00				35	Kappa	hann'k. Va	1	3	19	11	13	4.10		****	1.10	1.00	1.10	1.00	8,900
O hir, Nev	8.10												100	San Sel	hastian.S'ns	9	.85	1		100	00		**	01	.10	1.10	00'	9,500
Plymouth, Cal	9 54										9.38		20	Santias	o. U. S. Col.		-		****	.00	04		****	.01		.09	.96	2,000
Qui Ksilver Pref., Cal			35.00										\$50	Scorpic	n. Nev				*****	****		****	*****	*****	*****			
" Com., Cal														+Securi	ty, Colo			07	04	****		****				1		1 100
Robinson Cons., Colo.					.70								100	shosbo	ne. Idaho	14	4	.13	.19	12				12	11	.00	****	1,100
Sa age, Nev			4.40										100	Sliver	Cliff, Colo			1				****	****	.09	17	00	***	1,000
Sia Nevada, Nev	1.1.1								******		3.50	340	600	Silver	Cord, Colo			.50										4 000
Silve King, Aliz	000		0.00						4.50		4.75		310	Silver l	Mg. of L. V				1									3,000
S all Hopes, Colo						****								Silver (	ueen, Aris.													
St ni d. Cal														S LEO 1	unnel, Nev			.14	.12	.14						14		4 200
No i m Tograf No.	*****						****			****				aylor	Plumas,Cal	.0.	1					1		1			1	2,000
10.1 W Jacket, Nev			*****	1		****		****					******	Tioga,	Cal												1	1,000
					*****	****	****	****	****		****			Tornad	o, Nev.													
		100			*****		****	1 44	****			1		Union	CONS. Nev	1			1							1	1	1
*Decoratio	n Day	7. 4De	ealt in	n at th	e Nev	V Yorl	K Sto	ock Es	. II	nliste	d Sec	uritie	a Divi	lend sher	es antd 8 79	8 N.	un dis	idun d	aham	a antid	58 0	Full PER	otal b	Lour Sr.	oult a	0		
	-				-									A PARTY OF LATTER		A. 744	ANT-CEL A	menu	antere	DIOS S	1 00,0	Unio I	Graph T	ACM II	T	0,180.		

#### BOSTON MINING STOCK QUOTATIONS.

NAME OF COMPANY.	May 25.	May	20.	May 2	28. 1	lay 29.	May	80.	May 31.	SALES.	1	NAME OF COMPANY	r. Ma	y 25.	May 26.	May 28.	May 29.	May 30.	May 31.	SALES
Atlantic, Mich Bodie, Cal									18.00 17.5	190		Allouez, Mich	1.7	5	1.25	1.18	1.18		1.18	1,100
Bonanza Developm't	1.63	1.63		1.69	1.50 1	63			1.63	. 800	11	Aztec, Mich							.20	600
Boston & Mont., Mont	******										. 11	Bos.& Mont., Mon	t. 45.0	0 44.00		46.00 44.00	48.00 46.50		47.00 46.60	2.007
Calumet & Hecla Mich	21516	248	45	94314	·····	30			.30	800		Bowman								
Catalna, Colo,	.20	.21		49.078		20 28072			240 240	1 804	11	Brunswick, Cal	2	0	.20	*** ** ****	29			620
Central. Mich				20.25						1,000	11	Cual. N. Mex			.09	.09		******		2,500
Chrysolite, Colo			*****									El Cristo, U.S. Co	1						* * * * * * * * * * * * *	*******
Con. Cal & va , Nev.	· · · · · · · · · · · · · · · · · · ·	# 75		271		00 mm1					- 11	Everett	2	5		20				-440
Enterprise	010		******	4478 .		00.778			.88	1,000	' 11	Hauover, Mich								
Eureka, Nev								*****	******		· 11	Humpolat, Mich.					.10	***** ****		100
Franklin, Mich	14 88	14.75		15.00 1	4.73 15	.00 14.75			14.88 14 6	3 92	5	Huron, Mich	4.5	5	4 50	4.25	4.25		4.95	
Freeland, Celo				*****	*****						. 11	Kearsarge. Mich				1 6.75 6 5	0 6.73 6.50		6,751 6,50	240
Honorine Utah	1.00		00					** * * * *			: 11	Mesnard, Mich								
Little chief, Colo				******						100	1	National, Mich	* ****		**** *****	2.25			8.00	.200
Little Pittsburg, Colo.											11	Rannahannock, V	8		14				10	
Martin White, Nev											: 11	Royal, Mich			. 62					1,000
Nap , Cal	01.00	1.63		1 75						20		Security, Colo		.07		08	.07		.07	3 700
Pawabic Mich	21.00	\$1.00		31.00		** * ***			22.00 21	15	5	Sampson, Utah								
Quincy, Mich	72.00	710	*****	71.00	70.50 70	50 70 00			2.10	5.8		South Side, Mich.	** **							
Ridge, Mich											: 1	Sutro Tunnel, Ne	W		*******	************		*******		
Slerra Nev, Nev											. 1	Taylor Plumas, C	al .						******* * * **	
Standard Col											. 1	Washington Mich	h							
Tamarack. Mich	1 60	*****	***	1 63	*** ***	165 1 6		****	165 164	12 11	à l	winthrop, Mich.,								
				- 001						101 440			ande e						aluta and a set	
	*1	sx-div.	aend		Bostol	i: Divid	end sh	ares	sold, 6,520	. No	n-d	lividend shares sol	d, 19,9	67.	<b>Total Bos</b>	ton, 19,787.				

COAL STOCKS.

Den

Non-dividend shares sold, 13,267.

#### San Francisco Mining Stock Quotations.

May 26.

1.15

....

4.15

3.75

10.87%

CLOSING QUOTATIONS.

May 29.

1.10

.50 3.95 2.00 .55 3.50 4 35 10.37%

4.85 7.00 3.60 2.10 7.371 3.75 1.00

2.05 3.75 3.05 6.87% 3.35 3.95

3.70

3.25 1.20 4.80

May 31.

1.00

.... 3.80 2.30 .60 3.30

10 00

 $\begin{array}{c} 5.00\\ 5.50\\ 3.75\\ 2.15\\ 7.00\\ 8.60\\ 1.40\\ 3.75\\ 1.95\\ 3.80\\ 3.30\\ 3.15\\ 3.80\\ 3.15\\ 3.80\\ \end{array}$ 

3.55

3.10 110 4.65

May 30.\*

\* . . .

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...

...

•••

•••

•••

...

...

... ..

May 28.

1.00

.50 3.80 2.25

3.30

10.50

 10.87%
 10.87%

 5 623/4
 4.90

 4 10
 3.50

 2.40
 2.35

 7.123/4
 7.123/4

 4.15
 3.60

 3.90
 3.85

 3.45
 3.25

 7.633/4
 7.00

 3.90
 3.45

3 80

3.20 1.20 4.55

....

May 25.

COMPANY,

NAME OF	val.of	May	26.	May	28.	May	29.	May	30.	May	31.	Jun	61.	Sales.
COMPANY.	sh'rs.	Н.	L.	H	L.	Н.	L.	H.	L.	H.	L.	H.	L.	
Barchy Coal		+16		+16		<b>†16</b>				11616				
Buck Mt. Coal		**		*4		*1				*4				
Ches. & O. KR	100													
Chie & Ind. Coal RR	100													
Do. pref	100					88								100
Concellsville Gas Coai		+301/4	*50	150%	+50	+501	*50			150%	*50			
Col. & Hocsing Coal	100													
Col., C. & I	100			3416		34	33%					3316		400
Consol Coal	100			21										50
Del. & H. C	100	110	10016	109%	109%	109%				10856	108%	10816	10814	1.220
D., L. & W. RR	50	1:29	1284	12×36	127%	1:2856	128%			128%	12796	12814	12716	38.576
Hocking Valley	100			19										640
Hunt. & Broad Top				1 1/2	16									262
D. pref		39%		3916		3934				3916				249
Lehigh U. & N	50	4952		4986		49%				4884				266
Lehigh Valley RR	50	5.26	5284	52%	5284	52%	5234			5276				1 080
L. & W. C. &. I. Co														2,000
Mahoning Coal RR	100						1							**********
Marshall Con. Coal.	100		1	1114	1186					*****		****		900
Maryland Coal	100			A . 72	1478						******	*** **	** *	200
Montauk Coal	50										******			**********
Morris & Essex	100						1			**** *	*****			
New Central Coal	100				**.**		*****				*****			
N. J. C. RR	50	8 14		8012	60	8214	8984		*****	8914	*****	'89'	0.27/	9.000
N. Y. & S. Coal	100	0-78	****	0.478	04	.0074	0.74	** **		0.075		0.0	-04%	3,000
N. Y., Susa, & Western	100			95/	" ei/	914	9		** ***	******	******		******	
Do, pref	100			0012	072	074	0			20	******	·	** ***	010
N. Y. & Perry C. & I	100			2074	*****				*****	40	******	40		320
Norfolk & Western P P	100	** ***				** **		*****	*****	307	*****		*****	
Do pref	100	477	409/	4012	1012	100	101/		*** **	401/			40.00	200
Penn ( oal	50	21 -	4098	40%	40%	-20%8	3074		******	1028		40	2094	4,200
Pann Gas Coal	00			100		******			*****	*****	******	*****	*****	**** ** ***
Penn RP	50	=oi?	100	00		1000	' noi	*****	*****	POL	1012	*****	*****	187
Ph & P DD ss	50	02/2	0298	0 14	0138	0298	02%		** ***	2279	00%	10012	TOTAL	3,813
Tennessee C & T Co	100	03	00%	0099	08%	0J1/4	0998			0038	0178	CU34	59%	310,222
Westmonoland theat	100	20	20%	2614	25					+	** .	** . *		10,040
Whitehoast Evolution	100			*07		+67		*****		*07 .		****	*****	
Wyom ng Vall y Cool			*****											******** **
y dill y Coal	123. 1			1 A . A .				4.4.44						
		and the second se			11 A . A		and the second second	And successive in the local	the second s	the second s		and the second second		

\*Hid †Asked. \*Of the sales of this stock, 60,437 were in Philadelphia, and 249,785 in New York. Total sales, 367,083. 17 En Ard

\* Decoration Day,

South and the state of .

4.115

3.50 ....

25. Alpha.... Alta.... Belta.... Con.C... Chollar.... Con.C... Crown Pt... 575 Eureka C... 9.6242 Gould & C. 4.10 Grd. Prize. Hale & N. 76'32 Mexican.... 1.50 Mt. Diablo N. Beile I... Storpion .... Sierra Nev 4.25 Surorpion .... 2.35 1.30 Yellow Jkt. 7.3744 \*.Decoration Day.

JUNE 2, 1888.

Eagle Hiver Copper Company, Room 55, Mason building, Boston, Mass. June 20th, at ten o'clock A.M. Special meeting for the purpose of changing the by-laws, to remove the office from Boston to New York, and to elect Board of Trustees

Holbrook & Cave Mining Company. No. 102 Broadway, Room 7, New York City, June 11th, at twelve o'clock noon.

Weive o'clock hoon. Pitt-burg & Lake Superior Iron Company; Office of the Westinghouse Machine Company, corner of Twenty-fifth and Liberty streets, Pittsburg, Pa., June 16th, at two o'clock PM. Special meeting for the purpose of empowering the Board of Directors to sell and convey certain portions of the real and personal property of the company. Oncidentian Mining Company of California No 200

Quicksilver Mining Company. of California, No. 20 Nassau street, New York City, June 20th, at one o'clock P M.

Salem Mining Company, of Michigan. Room 55, No. 70 Kilby street, Boston, Mass., June 29th, at two o'clock P.M.

Silver Age Mining and Milling Company. Idaho Springs, Colo., June 7th, at eleven o'clock A.M. Special meeting to act upon a proposition to increase the capital stock from \$1.500,000 to \$2,000,000 and to authorize the issue of firty thousand shares of stock of the par value of ten dollars.

United Gas Improvement Company. No. 383 Wal-nut street, Philadelphia, Pa., June 4th, at twelvo o'clock noon.

#### Dividends.

Charleston Mining and Manufacturing Company, of South Carolua, has declared a quarterly dividend of two dollars and a balf per share, payable June 1st, at No. 132 Walnut street, Philadelphia, Pa.

Delaware & Hudson Canal Company has declared a quarterly dividend of one and one half per cent, pay-able June 15th, at No. 21 Cortlandt street, New York City.

Ohio Valley Gas Company has declared a quarterly dividend of two and one half per cent, payable at Pittsburg.

Pattsburg & Chicago Gas Coal Company will pay the interest coupons due June 1st upon presentation at the Masonic Bank, Pittsburg.

Seattle Coal and Iron Company, of Seattle, Washing-ton Territory, will pay coupons on first mortgage bonds due June 1st on and after that date at the Man-hattan Trust Co., No. 10 Wall street, New York City.

hattan Trust Co., No. 10 Wall street, New York City. \* The United States Finance, Development and Trust Company has declated its first dividend of two and one half cent, payable June 15th, at No. 35 Wall street, New York City.

Assessments.

COMPANY.	No.	Whe	en ed.	D'l'nq't in office.	Day of sale.	Am'nt per share,
Alta. Nev	37	May	12	June12	July 9	.50
Arpold, Ariz	4	May	1	June 4	June 26	.75
Baltimore, Nev	1	Aor	16	May 21	June 8	.25
Big Hole Pl., Utah	3	May	7	*J'e12	Aug 15	.01
Bulwer Cons., Cal	4	May	3	June 7	July 5	.20
Crown Point, Nev	49	Apr.	13	May 16	June 6	.50
Eclipse, Dak				May 30	June15	.001/4
Florence, Dak	?	May	10	June17	luy 2	.001/4
Golden Reward. Dak	2	1		June 8	June 25	.0 14
Hom-ward B'd, Dak.	5	Mac.	24	May 26	June21	.001
Himalaya, Utah	3	Apr	26	May 26	June26	.005
Justice, Nev	46	May	5	June11	July 2	.25
K. of the West, Ida.	3	Apr.	21	May 24	June16	.15
Last Chance, Nev	10	May	7	May 8	June30	.10
Mayflower Cal	41	Apr.	9	May 10	June 4	.25
Navaj), Nev	19	Apr.	12	May 17	June 7	.30
New La Piata, Dak	2	May	7	June 7	June25	.001
Peradise Valley, Nev.	5	Apr.	21	1ay :9	lune18	.15
Quincy Dak	3	Mar.	. 3	+May "	+.1uo-9	.021/2
Rochester Utsh		May	15	June16	July 2	.05
Sc rpion, Nev	23	Mey	25	June22	Jury 16	.10
Siver Bar, Dak.,		Apr.	16	May 14	Ju e 9	005
Snanish, Cal	2	Jao	- 4	Mar. 10	Jua · 2	.04
Utah, Nev	4	May	4	June 8	June26	.2.5
Wilkinson, Dak	1	·		May 2.	Jupe16	.01

\* One half cent a share is delivquent if unpaid June 12th, od the other if unpaid July 12th. † Delivquent day and day of sale postponed to these and the pates.

#### Pipe Line Certificates.

Messrs. Watson & Gibson, brokers, 49 Broadway,

Mesers. Watson & Gib-on, brokers, 49 Broadway, report as follows for the week: Oil, which for a long time held in the neighborhood of 86@87c., has finally given away, breaking three cents on Thursday and five on Friday, closing last night at 77%c. There have been no buying orders in the market, and we have steadily advised our clients that any attempt to sell would cause a sharp break. The chief causes are increasing development work in the Pennsylvania field, increasing fears of the utiliza-tion of Ohio oil, increasing danger to the market in Europe for American oil from Russian competition, and the indisposition of the public to buy oil held by a and the indisposition of the public to buy oil held by a clique of producers under a shut-down agreement. We believe the market will go lower.

CONSOL	IDATED STO	OCK AND I	TROLEU	M EXCH	NGE.
May 26 28 29	Opening. 86%c. 1534 83%	Highest. 8714c. 8614 86	Lowest. 85%c. 85 85%	Closing 85%c. 8*5% 85%	Sales. 275.000 56 ,000 234,000
*30 31		8:5% 82%		8256 7798	1,656,000

		S	NEW YO	ORK STOCK	EXCHANC	3 IE.	
May	26 28 29	0	871/4c. 8 3/4 8:58	Highest. 87%c. 86 85%	Lowest. 85%c. 85 85%	Closing. 861/8c. 85%	Sales. 113,000 257.000 121,000
June	31 1		851% 82	851 <u>/</u> 83	825% 775%	82% 7734	538 000 1,103 000
	100 - 84	I and	an In has	- In			0.001 000

\* Decoration Day.

#### Boston Mining Stocks. May 31. [From our Special Correspondent.]

There has been a very fair amount of business the past week in copper stocks, considering the prevailing duliness in the general stock market and the occur-rence of a holiday. The favorable report from the Calumet & Hecla mine has had a tendency to stiffen up the price, and nearly all the sales have been at \$2455/a@\$246. There was also quite an active de-mand for Boston & Montana, and the stock advanced from \$44 to \$48 on good sales; but orders seem to have been filled, and the price has receded to \$465/a. The talk is for \$60 in the near future for this stock, and it is not thought au improbability, in view of the present outlook. Quincy was a little heavy; just why, no one seems to know. The sales have been light, but there seemed to be no sustaining orders, and a little pressure to sell caused a drop from \$72 to \$70. Franklin bolds steadily at \$14% to \$15, with sales of about 600 shares. There has been a very fair amount of business the

frankin bolds steadily at \$14% to \$15, with sales f about 600 shares. Osceola firm at \$21 to \$21½. Atlantic advarced from \$17½ to \$18. Kearsarge sold up to \$6% and closed at 6½. A small sale of Central at \$20% to \$21½ is of

Kearsarge sold up to \$6% and closed at 6%. A small sale of Central at \$20% to \$21% is noted. Tamarack sold from \$160 to \$165, reacting to \$164%. Tamarack, Jr., subscription closed May 15th. Every right was taken, and more were wanted. The first payment of \$3 is due the 1st of June, and a negotiable receipt will be given for the money. Bonanza seems to have subsided; only 100 shares sold at \$1% for the week. There has been very little doing in silver stocks, ex-cept at the Mming Exchange, and business there is confined to a few specialties. Dunkin sold at \$00, declined to 75c., with last sales at 77%. Security has been quite active, holders being anxious to unload the stuff at the most they can get, in view of the near approach of assessment day. Sales reported at 6@8. These prices for a stock which sold within two years at over \$\$ per share, fully confirms the exposure and advice of the ENGINEERING AND MINING JOURNAL when it was brought out. In balance of list there is no special featu. The Boston News Bureau says the Boston & Mon-tana Company has bonded three properties to the south of it, through which a tunnel costing already some \$50,000 has been built, running roward the Montana property. It is uiderstood the bond is for \$100,000, for which the company has paid \$5000, and is bid now \$50,000. If further developments warrant its acceptance, the property will be purchased by sale of bonds now in the treasury. By means of this tunnel the cost of produ tion could be greatly les-sened, as all work would be underground, the ore going directly through the tunnel to the mill. Mr. Lewisohn and one of the French sy\_dicate have gone abroad together, it is bileved for the purpose of interesting the French public in the stock. Dispatches from Boston on the 1st inst. give the fol-lowing prices: Calumet & Hecla, \$245 ; B.ston & Montana, \$46.50 ; Franklin, \$15 ; Osceola, \$20 ; Tamarack, \$163 bid, \$168 asked. **Pitteburg Stocks.** 

#### Pittsburg Stocks.

The Pittsburg stock market has been dull and weak for the last few days. Philadelphia Company, which advanced to \$51 a few months ago, is now at \$46. Chartiers Valley, which, it was lately predicted, would soon reach par.

Sales. 113,000 257,000 121,000 538 000 1,102 000	or \$100, is still at \$1, with no signs of an immediate advance. Wheeling Gas bas, however, more than held its own since January 1st, and is quoted at \$26. Pine Run is weaker at \$90; La Noris Mining, which rose to \$6.37 a year ago, is now at \$2. Doubtless, our remarks concerning this company have hastened the decline. Yankee Girl Mining is quoted at \$7.75.
---	--

#### St. Louis Mining Stocks.

A Mining Stock Exchange has been organized at St. Louis, which will shortly begin business. The mem-bership is restricted to brokers in St. Louis. The initiation fee is \$250; annual dues \$100.

Name of company.	Opening.	H.	L.	Closing.
Adams, Colo	4.00	4.00	3.50	4 00
Auge 501 , Mont	1 00	1.00	.80	.>0
Black Oak, Cal	.50	.50	.28	.3:34
Bi-Metallic, Mont	******			
(alibou Idabo	.48%	.50	.4716	.50
Central Silver, Ariz				
Clevel and. Colo	.13	.13	.10	.10
Concepcion, M.x	.25	.25	.2:34	.2.84
Dinero, M-x	.18%	.20	.1716	:0
Golden Era, Mont	.95	.95	.8114	9 14
Gordon	.1016	.1016	.68	. 68
Gra ite Mt., Mont				
Hope, Most				
I X L, Colo				******
Jumbo, Colo	.25	.25	2016	.9914
Joniper, Idabo	.50	.50	.45	43
Mascutte volo	.72%	.50	2716	3114
Mexican Imp., Mex		20	1712	1512
Neath, Colo	1.20	1 25	1.10	1.10
Pat Murphy, Colo	7:16	.9216	7114	85
Peacock, N. Mex	1712	1716	1614	1614
Phi luos			120/4	
Pilot	.10	10	0716	1/ml
Queen of the West.Col	4884	50	4716	4712
hedro, Colo				.1172
Reus, Mont	2.16	.2216	20	20
San Francisco, Mont.	1.60	1.60	1.25	1 40
San Pedre, Auz	45	4716	3714	971/
Small Hopes, Culo	1.05	1.20	1.05	1 10
Silver \ge	.55	6216	5:18/	801/
West Gratite, Mont	5.416	5.14	4 14	4112
Rid and caled anion	a data in a bi		.* 74	.21.74

ed prices during the week ending May 29th

# USEFUL BOOKS.

#### Engineering and Mechanics.

Practical Workshop Companion for Tin, Sheet-Iron and Copperplate Workers, Blinn. 05

Deinginlag of Foonamer in the Design	-41.07
rinciples of Economy in the Design	
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mann.	1.50
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ing Students, Irving P. Church, C. E. 1886.	2.0
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Wo ff.	3.0
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Addmood	

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31	Y	DR.	E.	D.	PETERS.

A record of practical experience, with directions how to build furnaces and how to overcome the various metallurgical difficulties met with in copper smelting. Figures of cost from actual work, both of building all sorts of furnaces and of runni `g them

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Chapter. I Distribution of the Ores of Copper. II. Description of the Ores of Copper. III. Methods of Copper Assating. IV. The Roasting of Copper Ores in Lump Fe V. Stall-Rousling. VI. Kin-Roasting. VI. Kin-Roasting.	orm.		Chapter VIII. Chemistry of the Calcining Process. IX. Emelting of Copper X. Biast-Furnaces of Brick. XI. Biast-Furnace Smelt ng. XII Reveroerators Furnaces. XIII. Traumont of Gold and Silver-Bearing Copper Ores. XIV. Bessemerizing Copper Mattes.

- XI. Blast-Furnace Smell ng. XII. Reververat re Furnaces. XIII. Treatment of Gold and Silver-Bearing Copper Ores. XIV. Bessemerizing Copper Mattes.

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