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CONTENTS.

	-			D	1
Mrs. Sophia Braeunlich	AGE		drew Carnegie and	Robert W. Hunt	1
La Grippe and the Editor	. 1	0	n the Iron and Ste	el Market 16	1
La Grippe and the Editor Forty ninth Volume of the ENGINEER	-5	Mr	. Jas. Bowron on	· the Outlook of	1
ING AND MINING JOURNAL	. 1	(TI)	ron Market e Lake Superior Ir	on One Manhatin	1
Development of the Mining and Meta	d d	In	889	17	- 1
lurgical Industries of the Unite States.	1	Th	e Pittsburg Iron M	arket in 1889 18	1
Prosperity in Mining and Metal I	1-	Re	view of the South	ern Coal and Iron	1
Prosperity in Mining and Metal Industries in the World in 1889	1	11 F	ields		
Progress Recorded by the Statistics.	. :	Th	e Coal Trade in 188 thracite Coal Ship	9 18	1
Progress Recorded by the Statistics. Henry R. Towne and the World's Fa Gold Production of Mexico	Ir A	A	Production of Penn	sylvania 19	П
The Copper Industry		Re	view of the Boston	Coal Market in	
The Copper Industry The Course of the Copper Market is	n	1	889	20	
1859		Th	e Pittsburg Coal M e World's Producti	larket in 1889 20	
Total Stock of Copper in this Country The Production of Lake Superior Co	y	Th	etallic and Non-l	ion of Coal 20	1
per Mines, of Arizona, of Montan	D.,	1	Products of the Un	ited States 20	١
per Mines, of Arizona, of Montan of the United States, of the World	!	5 Th	e Coal Stocks in 18	89 20	ij
Imports and Exports of Copper	!	6 Th	e Coal Stocks in 18 c New York and Mining Stock Mark	l San Francisco	. 1
Prices of Copper. The Lake Superior Copper Mines The Copper Mines at Butte	!	6 F1	uctuations in Price	ets in 1889 21	1
The Conner Mines at Rutte		7 1	n San Francisco	29	٠l
The London Copper Market in 1889		7 Bo	ston Mining Stock	Market in 1889 24	
Lead in 1880		9 Th	n San Francisco ston Mining Stock te Gogebic Mining	Stock Market in	.
Production of Lead in the U. S Monthly Prices of Lead in New York		9 D	889 ltimore Mining 8	took Market in	1
United States Imports and Exports	of	Da	.889	25	۱
Lead		9 Pi	ttsburg Stock Mar	ket in 1889 25	5
LeadThe London Lead Market	1	0 St.	Louis Mining Stoo	ek Market in 1889. 26	3
Tin in 1889. The London Tin Market	1		e Denver Mining	Stock Market in	,
Antimony	:: i		uctations in Prices	of Southern Coal	
The London Antimony Market	1	1 8	and Iron Stocks in	1889 27	1
The Nickel Market in 1889	1	1 K	ansas City, Mo. Min	ing Stock Market	. 1
The Production of California Quick silver Mines.	K- 1	1 171	n 1889. uctuations in Pi	rices of Mining	4
The Spelter Market in 1889	i	2 5	Stocks in London in	n 1889 27	7
The London Spelter Market in 1889.	1	2 F1	uctuations in P	rices of Mining	
Russian Mineral Production in 1887	1	2 7	Stock in Paris in 18 ne Chemical and M	89 28	3
Gold Production in Queensland The World's Production of Gold at	1	2 11	889	2	2
Silver	1		e South Carolina	Phosphate Rock	,
The Price of Silver since 1833	1	3	Market in 1889	29	9
Ratio of Silver to Gold each Yes	ar	Se	mi-Annual Revie	w of the Nitrate	
Since 1687 Coinages of Nations	. 1	3 R	of Soda Market eview of the Petro	leum Market for	3
Coinages of Nations	es	J I	1889	30	0
Mints from their Organization	1	4 Th	e Building Materi	al Market in 1889 30 merican Mines in	0
Production of Gold and Silver in the		Di	vidends Paid by A	merican Mines in	
United States from 1792 Imports of Ore and Bullion from	1	4	sessments by Mir	ning Companies in	ı
Mexico for 1889	1				1
Values of Foreign Coin Jan. 1, 1890	1	4 Pe	ersonals, Obituary,	Industrial Notes. 3	2
Mineral Products of the United Stat	es 1	5 M	ontracting Notes ach. and Sup. Wan	ted at Home and	2
1882 to 1887 Review of the Iron Market in 1889	: 1	5 24	Abroad	3	9
				_	-
MINING NEWS: Boston		4	Paris 40	IRON: New York 3	e
Arizona 33 Denver Colorado 33 Pipe Line	., 9	41	Pittsburg 40 San Francisco 40	Louisville 3	6
			St. Louis 40	Philadelphia 30	6
Dakota33 MINING STOCK Michigan33 TABLES:		1	Trust Stocks 40	Pittsburg 36	3
Missouri			MARKETS:	CHEMICALS AND	7
MEETINGS 33 Baltimore Birmingham	. 9		DAL:	MINERALS 3 BUILDING MATE-	ŧ
Dividends 33 Boston	3	9	New York 34 Boston 35	BUILDING MATE- RIAL MARKET. 3	7
ASSESSMENTS 33 Coal Stocks.		19	Buffalo 35	CURRENT PRICES:	
Marray Carana Denver	4	10	Pittsburg 35	Chemicals 4 Minerals 4	
MARKETS: Kansas City London	4	0 F	REIGHTS 35	Rarer Metals 4	
New York34 New York		19 M	ETALS 35	Building Mater 4	0
		. 1		ADVT. INDEX L	V

SOPHIA BRAEUNLICH, who has been connected with the Engineering AND MINING JOURNAL for the past ten years, passing through every department, and who during the last year has taken an active part in the 1887 and 1888

business management, on January 1st was appointed business manager of the Engineering and Mining Journal.

"LA GRIPPE" is no respecter of persons, and has laid up our statistical editor at almost the most critical time. The returns had been obtained, but the lessons the returns teach had not been studied. Our readers must, therefore, charge up to La Grippe some of the work which the editor would willingly have done for them had it been possible.

THE ENGINEERING AND MINING JOURNAL enters its forty-ninth volume with greetings and good wishes to its thousands of readers scattered over all parts of the world. Many of these good friends have been our companions now for nearly a quarter of a century, while many others are added to the list every year. Between the Journal and its readers a kind of personal friendship has grown up, the outgrowth of mutual confidence We have many times experienced in many different and respect. countries warm courtesy and hospitality from persons whom we met for the first time, but who greeted us as an old and tried friend, because we had week after week through years written them, through the columns of the JOURNAL, our thoughts and advice upon many subjects which interested them. They no longer looked upon us as a stranger, but rather as an intimate friend, who possessed their entire confidence, and they referred again and again to some benefit derived from these columns or to some lesson of honesty and justice which they rejoiced to see persistently inculcated by their friend the JOURNAL. Our readers have some advantage of us in that they have the opportunity of judging us by our words and acts, while we can only judge them by the sympathy they show to these words and acts in continuing to read these pages. They say they learn to trust and admire the JOURNAL, while we are grateful for their appreciation. Thus a veritable friendship has sprung up "constant readers" and ourselves, and in no way between our perhaps could this feeling be better shown than in the prompt and courteous manner in which, without exception, all the producers of the chief metals each year furnish us not only with the figures showing their production, but also furnish us confidentially the actual amount of the stocks of metals they hold at the end of the year. Assuredly we may be pardoned for feeling a just pride in this continued proof of confidence on the part of the entire metal industry of this country, and of a constantly increasing number of those engaged in these industries abroad also. We warmly thank those friends for their courtesy, and we take especial pleasure in referring to this as a proof of the feeling of friendship to which we have alluded.

The enormous development of the mining and metallurgical industries in the United States is clearly shown in the statistics given in the follow. ing pages. No such rapid growth was ever before or elsewhere witnessed. and it is all the more remarkable because it has taken place under many drawbacks, of high freights. high cost of supplies, labor, etc., and yet these very disadvantages and difficulties which stood in the way of development rendered improvement in old processes and appliances necessary and stimulated invention in labor-saving devices, until American practice in mining and metallurgy has come to lead the world, and has made possible the magnificent results here chronicled. The rest of the world, and more particularly the countries where these industries are in their infancy, naturally turn to us for that experience, knowledge and skill which is best adapted to secure also the development of their resources. Thus it is that in mining and metallurgy the whole world looks to American experts and mechanics for the newest and best practice, and American engineers are now found in the management of great enterprises in every part of the world, while American manufacturers of mining and metallurgical machinery are extending their business with foreign countries so rapidly that some of them have found it necessary to open branch offices, not only in England and France and other European countries, but even in such distant lands as Chili, Peru and Bolivia, in Japan, and in the Transvaal, South Africa.

It is with justifiable satisfaction that we contemplate the important part the Engineering and Mining Journal has had in promoting this wonderful improvement and growth in the arts of mining and metallurgy, both at home and abroad, and in the extension of American influence and trade in foreign lands.

The year 1889 has been characterized by a general prosperity in the mining and metal industries throughout the world. The wave of prosperity which commenced in this country toward the close of 1887, after a very prolonged period of depression, was checked during the first half of 1889. This was due partly to natural reaction after the sudden improvement of 1888, and partly to the depression and uncertainties following the collapse of the great French copper syndicate. The second half of 1889, and more particularly the last quarter of the year, has been characterized by activity in nearly every department of business, and by a consumption of metals never before equaled in this country. Moreover, the European markets, which in were listless, with prices still declining,

felt the revival of trade and have been even more active, and of our mines and works in the production of coal, iron, steel, copper have risen more rapidly in prices than our home markets. This peculiarity has been frequently remarked, that the waves of prosperity and depression strike the European industries about a year later than they do our own, and in accordance with this rule, the present "good times" are likely to last there some time after we have commenced in order to take the surplus off our own market. to travel the weary, downward path which we inevitably follow We are happy at this after a period of prosperity. to feel that the year 1890 promises to be a prosperous one. There are, so far as we can see, none of the usual symptoms which immediately precede a period of depression. At the present time consumption in nearly every kind of mineral or metal product is extraordinarily active, and the process of stocking up has but just commenced. It may well be that we will experience some lull in this abnormal demand, but there are no accumulations of stocks, no excess of productive capacity over consumption that would be necessary to bring about low prices. We consequently look with confidence for a continuance of business prosperity during the coming year.

The only exception to the general increase of consumption has been in coal. The year 1888 witnessed so extraordinary an increase in the quantity of anthracite marketed that a somewhat lessened output in the year following was to be anticipated in the ordinary course of business: but the winter of 1888-9, and the commencement of the present winter, have been of unexampled mildness, and the consumption of coal for domestic use has been far below the average. The production of anthracite, therefore, fell off no less than 3,000,000 tons, or, say 7½ per cent, as compared with that of 1888. This decline in consumption has not been in manufacturing, but chiefly in domestic use and stocks in dealers' hands, which a year ago were very heavy, but are now light. The actual decline in sales is not, therefore, as unfavorable a feature as at first sight might

THE ups and downs, the periods of prosperity and depression, in the mineral industries measure the commercial activity of the world, and are fairly the jolts and jars which mark the path of a never-ceasing pro-

The consumption of coal, iron, and sulphuric acid may be counted as the exponents of civilization. The increase in this consumption indicates development of industry which involves a betterment in the condition of the wage earners, and improved surroundings for the existence of all classes. It is well, therefore, to study the stream of the world's mineral statistics with the object of determining the drift of progress and the direction in which the activities of the world are solving the great problems of civilization. This thoughtful study of these "dry statistics' opens a vista of the future which is wide enough for the exercise of the most brilliant imagination, and they point infallibly the direction in which the laws should guard the rights of men and limit the abuses of power and

In the following pages we give the instructive records of accomplished facts, the story of unrivaled progress in the development of the mineral industry in this country, and for comparison we include the figures of production of some of the more important minerals and metals in other parts of the world. At the same time we place upon record, in the carefully prepared reviews of the different metals, the influences which have affected production and markets during the past year, so that he who would learn the pregnant lessons these eloquent figures teach may thus trace effects back to their primal causes, and, forecasting the future from the experiences of the past, may be forearmed against those trade and political crises and reactions which to the thoughtful wayfarer on the road of progress seem to come in the most mysterious manner.

The increase in the production and consumption of the chief minerals and metals in the United States in recent years is quite unexampled in the history of the world. This increase has been due to several causes, chief among which, of course, is the fact that this is a new and undeveloped country rapidly filling up with industrious, energetic inhabitants Railroads are built in every direction, opening up to settlement new parts of the country, and greatly lessening the cost of living and producing the minerals and metals by the reduction in transportation rates. This in turn greatly widens the markets for these products and brings their cost within the means of whole classes formerly unable to buy. Thus anthracite coal goes now from Pennsylvania to nearly every portion of the Western States, and is carried at rates one-quarter to one-half cent a ton-mile, which formerly would have been considered impossible. Bituminous coal and coke are carried at equally low charges. Over a great part of the country a rate of a half cent to three-quarter cent a ton-mile has taken the place of two to three cents a ton-mile which was in vogue

The vast improvements made in mechanical appliances and metallurgical processes, due largely to the necessity for economizing high price labor, have effected a notable reduction in cost, and this has further extended of gold in the State of Sinaloa amounts to something.

while our business was active and "booming," have this year the area of consumption, until now, from all these causes, the capacity lead, zinc, nickel, and manufactures of metals, of cotton, wool, etc., exceeds our home consumption, and except in years of unusual demand we must expect the conditions of an overstocked market. The time has come when we look abroad for a market for many of our manufactures,

> MR. HENRY R. TOWNE has addressed to Mayor Grant a forcible letter, arging the postponement to 1893 of the industrial exhibition connected with the quadricentennial celebration of the discovery of America by Columbus, and suggesting that, instead of getting up in a hurry a World's Fair," to commence in May, 1892, more than five months before the season when Columbus actually saw land in the western hemisphere, it would be better and more fitting to commemorate that event upon its precise anniversary, October 12, 1892, by the unvailing or dedication of a permanent memorial, accompanied with a suitable celebration throughout the country, and the formal announcement of the industrial exhibition of the following year.

Mr. Towne's reasons are weighty. The year 1892 will bring the periodical distraction and excitement of a presidential election, making it specially inconvenient for all parties to unite harmoniously, and with the necessary leisure, in the labors and social entertainments incident to the exhibition. But more important than this is the consideration that the summer of 1892 is already too near to permit the thorough organization and execution of a truly worthy plan. Mr. Towne says:

"The newspapers have frequently made use of the word 'hustle' when referring to our ability to accomplish the work of construction with great rapidity. There is no question of our ability to erect by May 1, 1892, or even sooner, all the shedding required; but will mere sheds, however vast or showy, fittingly meet the requirements of the occasion? Shall we deliberately commit ourselves to a programme which involves "hustling' in every detail; hustled plans, hustled architecture, hustled engineering and hustled essays in decorative art; that is, haste in matters wherein haste is synonymous with crudity if not with failure; or shall we adopt a programme which, without violating the sentiment of the event, will afford sufficient time for our architects and engineers to perfect their plans, both of construction and ornamentation, and to produce the best of which they are capable, and thus insure structures of artistic merit and dignity?"

He reminds the Mayor that the first advertisement for competitive designs for the Philadelphia Exhibition of 1876 was issued thirty-seven months before the date of opening. That the Paris Exhibition of 1889 was similarly begun forty-five months beforehand, and that it would be folly to attempt to surpass the former and at least equal the latter with only

twenty-nine months for preparation.

It is, after all, entirely unimportant whether the great industrial display now contemplated shall be opened three hundred and ninety-nine years and seven months (as has been proposed) or four hundred years and seven months (as Mr. Towne proposes) after the day when the great CHRISTOPHER discovered a West Indian island. But it is of the highest importance that the display once open shall be one worthy of the land which on that occasion the great Christopher did not discover, and which, indeed he never saw. R. W. RAYMOND.

GOLD PRODUCTION OF MEXICO.

On the authority of Señor Salas, one of the Mexican Commissioners in charge of the mineral exhibit of the republic at the French Exhibition, the total yearly amount of gold produced by Mexico is valued at about \$3,000,000, of which two-thirds are extracted from gold ores, the balance being produced with silver. The principal gold mines, properly speaking, are in the extreme northwest of Mexico.

The Mulatos Mine, in the State of Sonora, is said to produce about \$500,-000. At the Cerro Colorado, in the State of Chihuahua. the production is at the rate of from \$800,000 to \$1,000,000. {The Pinos Altos Mines and others in the same district, in the State of Chilmahua, produce about \$800,000, of which about one-half is gold. Near Jesus Maria, also in the same State, the aggregate output of the mines is about \$600,000, of which about one-half is gold. In addition to the foregoing, the production of gold in Lower California is beginning to assume some importance, and to our own knowledge there are many other mines nominally silver, which carry one-sixth to one-fourth of gold value in their bullion.

Mr. Salas' estimate in two of the most important cases, viz., the Cerro Colorado and the Pinos Altos, we believe to be quite fairly correct, as the amount of ore is very large, and if in the United States the former mine would be producing more than is stated. From the Pinos Altos Mines proper we should put, from personal knowledge, the annual production of gold at about \$300,000, without taking into account anything outside, of which we have no means of forming an estimate. Moreover, the production

THE COPPER INDUSTRY.

In our review of the copper industry a year ago (Engineering and MINING JOURNAL, 12th January, 1889) we outlined the history of the origin and rise of the great French syndicate, which was then at the summit of its brief though brilliant career, and we fully warned our readers of the inevitable outcome of the corner and the danger menacing the trade through its operations. After calling attention to the enormous increase

consumption increased through the low prices, and the stocks or visible supply of copper were rapidly melting away. Higher prices were inevitable, and a long period of unbroken prosperity seemed to be assured to the copper producers. Towards the close of 1887 the French Societe des Metaux commenced its now historic corner, the course of which up to the close of 1888 was fully described in our review a year ago.

This corner lasted but little more than a year, and its effect upon the trade was highly injurious. Prices of copper were advanced until 17½c. a pound for Lake in New York was reached and £100 to £106 for Chili bars in London in September, 1888. The effect upon consumption of the high prices and the arbitrary control of the markets by the "syndicate" was soon visible in reduced demand for copper. All the old stocks were bought out and some of the large continental works purchased no new copper during the first nine months of the year. Consumers used every expedient to get along without buying copper, and the visible supply increased from 42,301 tons in December, 1887, to 104,000 tons in December, 1888, while there were large stocks in this country and in Spain, which probably brought the entire stock up to 150,000 tons. The natural antipathy of consumers and the public generally to "rings," "trusts," or ' arrayed the press of the world against the syndicate, and helped to bring about its failure by withholding orders until the load of stocks became too heavy to carry. When the crash came in February, 1889, its disastrous financial effects were confined to France, where the failure of the Société des Metaux brought with it that of the great Comptoire d'Escompte bank, and the ruin of many private individuals.

In this country the high prices paid to the producers by the syndicate resulted in a "boom" in the copper stocks, and the large earnings were utilized by several of the companies in making improvements which would enable them to produce at a lower cost when the time of low

Prices did indeed decline suddenly in London to £38 per ton for Chili bars or G. M. Bs. on the announcement of the collapse of the Societe, but in this country an agreement having been entered into between our producers and the syndicate, under which the mines were not to offer their copper to the syndicate during the three months, February, March, April, and this agreement having been loyally lived up to by our producers, even after the failure of the Societe, prices here were maintained at 161c. for Lake until May.

Consumption rapidly increased here and in Europe on the reduction in prices, and have since very steadily absorbed our entire production of copper, except one-half of the production of the Anaconda, which Mr. Haggin exported; though toward the close of the year even that could have found ready sale at home. So great has been the demand that the entire syndicate stock of metal in this country has been sold and has gone into consumption. And in December the market so urgently called for more copper than the lake companies could supply, that several thousand tons of the syndicate's stock of Lake were taken at 14 cents a pound to enable manufacturers to fill their orders.

In all these events we have demonstration of the fact that had it not been for the syndicate corner the consumption of copper in 1888 would have been far greater than it was, while production would have been less and prices would have advanced steadily and without the ill effects of the sudden increase caused by the French syndicate. In all probability the producers during the two years 1888 and 1889 would have averaged fully as high or even better prices than they have actually received. Consumption would have been greater, and manufacturers and consumers would have benefited largely.

THE COURSE OF THE COPPER MARKET IN 1889.

The excitement which largely characterized the copper market for some 18 months previously became even more animated early in the past year, and certainly the stirring events of the year 1889 were not calculated to diminish such excitement. During the period now under calculated to diminish such excitement. During the period now under review has been witnessed the utter break down of one of the most powerful combinations of capital and brains, formed with the object of securing the absolute control of the world's supply of an important commodity, and thereby is again witnessed the oft-repeated failure of attempting to do what is practically an impossibility

through its operations. After calling attention to the enormous increase in production and stocks of copper, we said: "No barrier or dam can permanently withstand the pressure of rapidly accumulating stocks, and the whole copper producing and consuming world must look on with constantly increasing anxiety as the flood rises, and until an equilibrium is established between production and consumption."

"These remarks may appear uncalled for now when the industry is in so exceedingly prosperous a condition, but post-mortem preaching has little practical value, and the well-known beacon that is lighted only after the ship has been wrecked is worse than useless."

The startling statistics which prompted our warning, and perhaps our remarks thereon, brought about the collapse of the great French syndicate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confidence in the ability to cate more promptly than any one expected—confiden

movements, with the evident object of demonstrating that the syndicate were still backed by almost unlimited capital and strength. Only after the final collapse was it discovered at what a cost and to what desperate lengths this policy was continued.

About this time negotiations were resumed with the producing companies throughout the world, with the view of entering into contracts for their entire production for a period of ten years, and at the same time some of the outside companies, who had previously held aloof from the combine, were induced to join with the others, and it is a fact that only about a fortnight before the collapse one of the large smelting works in this city entered into a contract by which they, at the time, secured an advance of about \$250,000 in cash. Subsequent events clearly proved that at this very time the management of the syndicate were then adopting a course of the most daring and reckless character.

Among other incidents it may be mentioned that toward the end of February a comparatively successful "corner" was brought about in the London market for spot Chilli bars and G. M. B. copper, by which the speculators who had ventured to sell short were severely hit, and about that time it was announced that a new company, called the "Compagnie Auxiliaire des Metaux." had been organized to support the syndicate's operations with a capital of forty million francs, of which amount 25 per cent. was immediately paid up by the subscribers, and which had power to issue bonds for forty million francs.

Among the directors of this new company appeared the names of M. Secretan, the head of the Société des Metaux, and also that of the unfortunate M. Danfert, one of the directors of the Comptoir d'Escompte. In the meantime negotiations were proceeding with the producing companies, with the object of bringing about a reduction of 20 per cent. in the output, the result of which negotiations were only partially successful, as the Spanish producers, owing to their special mode of production, were un

These events naturally produced a feeling of great alarm, and on March 18th, on the London Metal Exchange, G. M. B. copper and Chili bars sold at the lowest figure, viz., £35, while about the same time a thousand tons or so of tough copper changed hands from £41 5s. to £43, the sales being made on account of some banks who had made advances on security of the metal. In the meantime the outlook in financial circles had assumed with the graystrant of France falls come. the metal. In the meantime the outlook in financial circles had assumed such an ominous appearance that the government of France felt compelled to interfere, and only by the exercise of great tact and with the assistance and co-operation of the greatest banking houses in France was averted such a serious financial catastrophe as would have shaken credit and confidence to even a much greater degree than had already been done. About this time the annual statistics of the world's supplies were published in London, from which it appeared that while the production in 1887 was only about 225,000 tons (of 2.240 pounds), in 1888 it had increased to 262,000, and it was also shown that at that time the actual stocks of copper had risen to the unprecedented total of 175,000 tons, of which 125,000 tons were included in the statistics of visible sup-

plies, and 50,000 tons were estimated to represent the total quantity piled up in private warchouses in France and America.

Negotiations were now entered into by the liquidators of the Comptor d'Escompte, of the Societe des Metaux, with the producing companies to get relieved from the obligations under the contracts for future deliveries, in which they were only partially successful. Some of the companies including the bulk of the Americans) did release them, but others, under the lead of the Cape Copper Company and the Mason & Barry Company, commenced legal proceedings with results which have not yet been decided. Naturally those few producers who were fortunate enough to hold guarantees from bankers of unquestionable standing have continued all along, and still continue, to get the benefit of the high prices.

When the collapse came the general body of manufacturers and consumers appeared to realize that they were now at last released from the power of the syndicate, and prices having come down to a comparatively low level, they evidently thought their chance had come again. Already, during the last few weeks of the rule of the syndicate, the usual spring demand had come with the volume of orders rather heavier than in the previous year; they were not slow to come into the market for their supplies, and they did buy heavily at the decline. It also soon became evident that they greated a bankers in France, and that they were not filed to the companies of the copper in warehouse (with the exception of some 15,000 to 20,000 tons, was actually in the hands of some of the craft of the strong that the great bulk of the copper in warehouse (with the exception of some 15,000 to 20,000 tons, was actually in the hands of some of the craft of the strong that the great bulk of the copper in warehouse when the contribution of the consumptive demand, it was been carefully considered, as more settly and and steady feeling took pooks to the copper price and the contribution of the copper price and steady feeling took pooks

During all this time, however, the consumers could readily get all they wanted at 16½c., and at the end of February a new pool sale was made at that price for deliveries over the succeeding three months. Under these circumstances, when the great decline took place in the European markets, the American producers found themselves in a very unpleasant and awkward position. In accordance with the accordance kets, the American producers found themselves in a very unpleasant and awkward position. In accordance with the agreement previously alluded to, they had bound themselves to uphold the price of 16½c. for lake copper, and now, as was naturally to be expected, the consumers throughout this country brought to bear on them all the pressure they could command to allow them the benefit of the decline. Here it must be admitted that the Lake companies deserve the highest commendation for the liberal manner in which they met the demands of the consumers. In the first place they agreed to cancel the existing contracts, thus relieving the manufacturers from any obligation to accept deliveries at 16½c., at the same time upholding, however, this price for such quantities as were wanted by the trade.

this action could not fully meet the difficulties Now Now this action could not fully meet the difficulties of the case, and an understanding was subsequently arrived at according to which all copper to be delivered from this time was to be invoiced at 16½c., with the understanding that as soon as certain pending arrangements were confuded the future actual selling price would be definitely fixed, and an allowance would then be made on all the copper invoiced at 16½c. of the difference between that price and the newly fixed price. This mode of procedure was considered necessary in the part of the lake companies so as not to prejudice their legal position in relation to the syndicate

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The period extending from the beginning of April up to the end of October was characterized by a generally steady feeling which was greatly strengthened early in May when the lake companies decided to fix the future selling price at 12 cents per pound, and on this basis to return to consumers the difference of 4½ cents per pound in respect of the deliveries provisionally invoiced at 16½ cents pending this new arrangement. This settlement was generally considered very satisfactory by all parties concerned and had not a little to do with the further revival of confidence of which some signs had already appeared.

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Business in general gradually showed unmistakable signs of renewed activity, and this to a much more marked extent in Europe than in the United States. At the beginning of April even the reports from Europe were decidedly encouraging as regards expanding consumption, and the margin of difference between the value of refined copper and the manufactured goods grew larger than for many years past, clearly indicating that trade in general had again resumed a very profitable basis for all concerned. Somewhat in contrast with this condition of affairs in Europe was the rather lagging tendency of our home market, which was, perhaps, chiefly due to the fact that copper values had not previously dropped down to such a low level as on the other side of the Atlantic, and this naturally made our home consumers hesitate about entering into contracts for large made our home consumers hesitate about entering into contracts for large quantities; and this feeling of hesitation was aggravated by the fact that it was well known that a heavy stock of copper belonging to the French bankers was still lying in warehouse here, and with European prices considerably below the parity of ours, it was only a natural conclusion that sooner or later these accumulated stocks would come on to our market.

All the while protracted negotiations were passing between the European

sooner or later these accumulated stocks would come on to our market. All the while protracted negotiations were passing between the European holders of the warehoused copper and the producing companies, with the object of arriving at some mutually satisfactory arrangement regarding its disposal; but owing to the conflicting interests it soon became clear that any such arrangement was almost an absolute impossibility. The most serious obstacle was that the foreign holders of the warehoused copper insisted that it should be sold for consumption in this country, while the home producers naturally exerted all the arguments and influence in their power to get it exported.

Early in September a crisis was reached when the representatives of the foreign bankers made a sale of 2,000 tons of lake copper to various consumers in this country at 11½c., and this actionwas taken just at the moment when a more hopeful feeling was apparent, and consumers were more disposed to buy. Hereupon the lake companies, who had really made

found their stocks exhausted, and early in November they were compelled to raise their price to 11½c.

Almost simultaneously with this inovement on this side an important rise set in again in the European market, originated and initiated by certain fortunate speculators in iron who seized the opportunity to employ the profits which they had realized in iron to buy up copper, and from our special London reports it will be seen that these operations had the effect of raising the prices of Chili bars and G. M. B. copper, which had for a long time stood at prices ranging from £43 spot and £42 three months to considerably higher figures

long time stood at prices ranging from £43 spot and £42 three months to considerably higher figures.

From this point commences what may be described as the third period of this eventful year. Consumers had already seen that the producers were unable to deliver as quickly as they required. The foreign holders had apparently learnt caution from their past experience, and had during all this time kept entirely off the market. When the lake companies advanced their price to 11½c., orders came in at such an unprecedented rate that much larger quantities were contracted for than producers were able to deliver, and a few days later the selling price was again raised to 12c. The strong buying continued, and without showing any weakness prices advanced quickly, and at the end of November 14c. was reached, and the greatest anxiety existed to secure as much copper as was offered. Every-

advanced quickly, and at the end of November 14c. was reached, and the greatest anxiety existed to secure as much copper as was offered. Everybody now recognized the fact that trade generally was in a much more healthy condition than for a long time past, and although some conservative people feared that the rise might prove to be more rapid than desirable, yet it was generally admitted that the improvement was the result of legitimate trade and expanding consumption.

Manufacturers found themselves able to realize good profits on their productions, and under such circumstances did not object to pay a higher price for their raw material, and the producing companies became so pressed for deliveries that they were compelled again to advance their selling price to 14½@14½ for lake copper and to 12½@18 for casting kinds, without being able even then to meet the demand; and whilst only three months ago everybody denounced the foreigners for interfering with the home markets, it was regarded as quite a relief when early in December they again sold 2,000 tons of lake copper at 14c., at which price they could easily have placed a much larger quantity. At this figure, however, they refused to continue selling, and it is understood that within the last eight days or so they have sold from 500 to 1,000 tons more at 14½c, and later smaller quantities at 14½c., which may be regarded as the closing

they refused to continue selling, and it is understood that within the last eight days or so they have sold from 500 to 1.000 tons more at 14½c, and later smaller quantities at 14½c,, which may be regarded as the closing price for lake copper. Casting copper has not quite kept pace with the rise in lake and stands at the end of the year at 12½@13, while good rolling copper is quoted 13½@14.

Regarding the prospects in general they must be described as decidedly encouraging. It may be that consumption may not continue at its present enormous rate, but everything indicates a prosperous year for 1890. Some increase in production is probable from Montana and Michigan, but no anxiety need be felt in this respect, as the larger demand will absorb any likely increase. Neither need we now fear the spectre of the warehoused stocks, which exerted such a depressing influence on the market in the early part of 1889. Assuming that there is still piled up in warehouse in New York some twenty thousand tons, it must not be forgotten that hardly one of the smelting works have any stocks whatever, and our more interested readers will be quite aware of the fact that often during the past ten years the Calumet and Hecla Company alone have held about as large a stock as that which is now held of lake copper by the foreign bankers in warehouse.

Altogether the indications favor a continuance of prices quite as high, if not higher, than those now ruling for the next year, and this prospect is certainly not diminished by the reports of a serious fire in the Anaconda mine, as to which reliable information cannot at present be obtained, but which must result in some reduction of output.

The copper stocks which, on Jan, 1, 1889, we reported at 78,000,000.

which must result in some reduction of output.

The copper stocks which, on Jan. 1, 1889, we reported at 78,000,000 pounds we have lowered in our report to 75,000,000 by the omission of certain lots in ore and "mineral." These stocks have steadily declined, and at present the

Total Stock of Copper in this Country is about 65,000,-000 Pounds.

While a very large part of this is held by the banks which took over

the stocks of the old syndicate, yet quite an important quantity of this old stock is sold for export, and is only awaiting shipment.

Never before in the history of the trade have the mining companies had such light stocks, and were it not for the Syndicate's accumulation the country would to-day be absolutely bare of copper, and a copper famine would be threatened.

The manufacture of electrolytic copper steadily increases, and in 1889 amounted to no less than 21,000,000 pounds, as compared with 17,000,000 pounds in 1888. The coming year will still further increase the present production.

THE PRODUCTION	18	LAKE	SUPERIOR	COPPER	MI
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Mines.	1881.	1882.	1883.	1884.	1835.	1886,
Calumet & Heela	31,360,781	32,053,539	33,125,045	40,473,585	47,247,990	50,518,229
Quincy	5,506,848	5,665,796	6,012,239	5.650,436	5,848,530	5,888,51
Oseeola	4,179,976	4,176,782	4.256,409	4.247.630	1.945,208	3,560,786
Franklin	2,677,932	3,264,120	3,488,708	3,748 652	4.007.105	4,264,29
Allouez	1,473,007	1,683,557	1.751,376	1.928.174	2,170,476	1,725,46
Atlantie	2,528,009	2,631,708	2,682,197	3,163,585	3,582,633	3,503,670
Pewabie	1,876,244	1,482,666	1,171,847	227,834		0,000,010
Central	1,418,465	1,353,597	1,268,556	1,446,747	2,157,408	2,512,880
Grand Portage	26,264	757,598	735,598	255,860		2,022,000
Conglomerate	386,091	734,249	222,117	1,198,691		
Mass	467,684	737,440	659,474	481,396	365,000	200,000
Copper Falls	669,121	587,500	804,000	891,168	1,168,000	1,400,00
Phœnix	409.357	537,177	512,291	631,004	344.355	100.06
Haneock	571,897	540.575	484,906	562,636	203,037	150.00
Huron	254,515	364,579	720.213	1,927,660	2,252,484	1,992,69
Ridge	235,606	102,936	60,155	74,030	63,390	158,27
St. Clair	135,493	87,126	135,225	139,407		
Cliff	79,382	66,053	10.374	28,225		22,34
WolverIne		25,623	699,622	751,763	328,610	3,12
Nonesuch	119,061	26,450		23, 67	28,484	
sle Royal	47 308	35,477		16,074		
Minong	15,397	21, 80	3.582			
National		17,060	26,006	87 368	162,252	184,70
Mlnesota	24,227	10.672	6,2 6	1,144	12,608	
Belt		5,6'5	16,402	130.851	27,433	7,300
Sbeldon & Colum	10.031	3,299	10,200	9.828	~,,,,	
Adventure	7,500	429		4 333	4,000	1.00
Peningula			849,400	1,225,981		
Tamarack			7,435	1,000,001	181.669	3,646,51
Ogima	16,776	4,207	3,000	1,106	12,000	0, 20, 2
Other mices!		,	.,			
and tributers (61,935	159,419		21,167	35,500	51,000
Total	54,548,909	57,155,980	59,702,404	69,353,402	72,148,172	79.890.79

COPPER PRODUCTION OF LAKE SUPERIOR MINES.

	1887.	1888.	1889.	1887.	1888.	1889.
Cal. & Hee.	46,016,123	50,295,720		Huron1,484,103	2,370.857	2,214,212
Quincy	5,603,691	6 367,809	6 311 000	Ridge 84,902	50,924	28,000
Osecola	3,574,972	4,131,320	4,454.152	Wolverine 2,300		
Franklin	3.915 838	3,655,751		Tamarack 7,396,529	11,411,325	10.614,149
Allouez	885.010	314,198		Kearsarge 21,237	829.135	1,929,127
Atlantie		3,974,972	3.700 000	Evergreen	41,000	28,773
Central		1,817,023	1,275,000	Tributers 50,000	50,000	50,000
Mass		71 090	76 675			
Cop. Falls	560,000	1,199,950	720,000	Total 75,471,890	86,584,124	86,139,048
National	494,497					, , , , , , , , , , , , , , , , , , , ,

COPPER PRODUCTION OF ARIZONA.

	1884.	1885.	1886.	1887.	1888.	1889.
Copper Queen	7,700,000	6,721,535	3,800,000	5,945 550	9,004,771 2,920,748	9,024,000 2,208,000
Old Dominion	7,400,000				4,870,000 7,133,188	6,003,220 7,690,000
Detroit	2,940,000 3,680,000		2,135,000	4,404,321 272,124	5,233,415 3,200.000	4,326,000 2,100,000
Other mines	1,254,345	1,007,301			154,171	438,780
	26,734,345	22,706,366	16,000,000	17,790,000	32,516,293	31,600,000

COPPER PRODUCTION OF MONTANA.

	1884.	1885.	1886.	1887.	1888.	1889.
Anaeonda Parrott	23,000,000 9,300,000		33,267,864 10,000,000		63,245,473 10,750,000	61,647,000 9,500,000
Boston-Montana Clark's Colusa	6,600,000	7,500,000 10,000,000	2,000,000 7,000,000	1,500,000 7,100,000	18,273,667	26,681,764
Butte Reduction Works Colorado Sm. & Mg. Co.		2,500,000 1,200,000				1,700,000 2,964,000
Butte & Boston	1,593,054		1,643,621		521,295	1,300,000 407,236
	43,093,054	67,798,864	57,611,485	78,700,000	98,500,000	104,200,000

COPPER PRODUCTION OF THE UNITED STATES.

				,		
	1882.	1883.	1884.	1885.	1886.	1887.
	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.
Lake Superior	56,982,765	59,702,404				75,471,890
Arizona	17.984,415	23.874,963				17,720,462
Montana	9,058,284	24,664,346				78,699,677
New Mexico	869,489	823,511				283,664
Callfornia	826,695	1,600,862	876,166	496,028	430,210	1,600,000
Colorado	1,494,000	1,152,652		1,146,460		2,012,027
Utah	605,880	341,885		166,199	500,000	2,500,000
Wyoming	100,000					
Nevada	350,000	288,077				
Idaho			46,667			
Middle States	294,695	324,706		190,000		
New England	1,555,000	612,124				200,000
Southern States	400,000			40,199		
Lead refiners	125,000	782,880	950,870	910,144	1,282,496	2,432,804
Dom. prod'ct'n	90,646,232	115,526,053	144.946.653	165,875,766	156,735,381	180.920.524
Imported ores	1,000,000			6,056,841	4,500,000	3,750,000
Total prod'ct'n	91,646,232	117.151.798	147.805.407	170.962,607	161,235,381	184,670,524
Stocks, Jan. 1st			30,000,000			40,000,000
Av'l'ble supply		1 - 1	177,805,407	200.962,607	196,235,381	224,670,524

COPPER PRODUCTION BY STATES.

	1888.		1889
	Pounds.	Pounds.	Long Tons.
Lake Superior	86,584,124	86,000,000	38,393
Arizona	31,497,300	32,000,000	14,286
Montana	97,897,968	105,000,000	46,875
New Mexico	1,631,271	3,400,000	1,518
California	1,570,021	1,700,000	759
Colorado	3,300,000	3,000,000	1,339
Utah	2,131,047	2,400,000	1,071
All other sources	3,241,725	3,000,000	1,339
Domestic production	227,853,456	236,500,000	105,580
From imported ores	5,000,000	5,100,000	2,277
Total production	232,853,456	241,600,000	107,857
Stocks, beginning of year	40,000,000	75,000,000	33,482
Available supply	272,853,456	316,600,000	141,337
Deducts exports in ore, matte,			
ingots	78,000,000	82,000,000	36,607
Consumption	119,853,456	169,600,000	75,714
Stocks on hand and of year,	75,000,000	65,000,000	29,016

THE PRINCIPAL FOREIGN COPPER PRODUCERS.* The copper production of the world, 1879 to 1887 inclusive.

COUNTRIES.	1887.	1886.	1885.	1884.	1883.	1882.	1881.	1880.	1879.
EUROPE. Great Britaln Spain and Por-	Long tons, a1,500	Long tons. a 1,471	Long tons. 2,773	Long tons. 3,350	Long tons. 2,620	Long tons, 3,464	Long tons. 3,875	Long tons. 3,662	Long tons. 3,462
tugal: Rio Tinto	a28,500 a11,000	24,700 11,000	23,484 a11,500	21,564 a10,800	20.472 9,800	17,389 9,000	16,666 10,203	16,215 9,151	13,751 11,324
Mason &	~7.000	7,000	a7,000	a7,500	8,000	8,000	8,170	0.000	
Barry Sevilla	a7,000 a2,300 a856	2,135 1,258	1,800 1,665	2,000 a2,300	2,026 2,357	1,885	1,340	6,603 1,705 1,000	1,360
Other mines.		3,560	2,424	2,251	1,000	1,700 800	1,410 800	800	770
Germany: Mansfeld OtherGerm'n	13,025 a1,850	12,595 1,870	12,450 a2,800	12,582 a2,200	12,634 3,568	11,536 3,552	10,999 1,743	9,800 1,000	8,400
Austria	a700	550	585	670	572	474	474	500	600 258
Hungary	a5(0	500	504	614	661	661	800	900	1.0.8
Sweden	a500 1,450	2,220	2,5 6 0	9 706	732 2,630	798 2,590	995	1,074	800
Norway Italy	a2,500	900	835	2,706 1,325	1,600	1,400	2,640 1,480	2,426 1,380	2,412
Russia	5,000	4,875	a5,100	4,700	3,500	3.537	3,411	3,154	3 081
Total Europe	81,086	75,234	76,255	75,224	72,172	66,786	65,006	59,370	53,866
United States Canada	78,571 1,400	69,971 1,440	74.053 2,500	63,555 236	51,574 1,055	40,467 500	32,000 500	27,000 5 0	23,000
Newfoundland: Bett's Cove Mexico:	1,180	1,125	778	668	1,053	1,500	1,718	1,500	1,500
Boleo Co Other Mexi-	1,950					1			
can	100	850	375	. 291	489	401	333	400	400
T'l N. America	83,201	73,386	77,706	64,750	54,171	42,868	34,551	28,950	24,950
SOUTH AMERICA. Chili Bolivia:	29,750	35,025	38,500	41,648	41,099	42,909	37,989	42,916	49,318
Corocora Peru	a1,300	1,100 75	a1,500 229	å1,500 362	1,680 395	3,259 440	2,655 615	2,000 600	2,000
Venezuela: N. Quebrada. Argentine Rep.	2,900 170	3,708 180	4,111 233	4,600 159	4,018 293	3,700 800	2,823 307	1,800 300	1,597
T'l S. America	33,570	40,088	44,573	48,269	47,485	51,108	44,389	47,616	53,818
AFRICA.	150	110	250	260	600	600	600	500	500
Cape of Good Hope	7,250	6,015	5,450	5,000	5,975	5,716	3,467	4,739	4,326
Tetal Africa	7,400	6,125	5,700	5,260	6,575	6,316	4,067	5,239	4,828
Japan	a11,000	10,000	a10,000	a10,000	7,600	4,800	3,900	3,900	3,900
Total Asia.	11,000	10,000	10,000	10,000	7,600	4,800	3,900	3,900	3,900
AUSTRALIA	7,700	9,700	11,400	14,100	12,271	8,512	10,000	9,700	9,500
Total produe	223.957	214.533	224,218	216,338	200,274	180,390	161,913	154,775	150,859
Stocks: Chili	-								

*Compiled by Henry R. Merton & Co., London.

THE	PRINCIPAL	COPPER	SUPPLIES	OF	THE	WORLD.

	THE PRING	APAL CUPPER SUPPLIES	OF I	IE WORLD.	
	1888.		1888.		1888.
1	Countries. Tons,	Countries. T	ons.		Tons.
	Algiers 50		2,500	Tharsis	*11,500
	Argentine Rep 150	Japan*	11,000	Mason & Barry	*7,000
	Australia 7,450			Sevilla	1,700
	Austria 1,010		2,566	Portugueza	*900
	Bolivia-Coro-coro 1,450		200	Other mines	
	Canada *2,250			U. S. of America:	.,
	Chili		1.300	Lake Superior	38,772
		Tilt Cove	750	Montana	
	C. of Good Hope:	Norway:	-	Arizona	
	Cape Copper Co 5,800	Vigenaes	1,020	Other States	
	Namagua Cop. Co 1,700	Other Norwegian	550	Venezuela:	0,002
'	England *1,500	Peru	250	New Quebrada	4.000
	Germany:	Russia	4,700	Tron & door a date in the	2,000
	Mansfeld *13,380		*900	Total production	261.859
	Other German *1,850			Total production.	-01,002
	TIME COMPT SAS	Rio Tinto *	32,000		
	Average of prices on the	st of each (Chili Bars	£82.7	s. 6d.)	
	Average of prices on the	G M Ra	76		42 3s.

*Estimated. = †In English tons of fine copper. tCompiled by Henry R. Merton & Co., London.

plies, and 50,000 tons were estimated to represent the total quantity piled up in private warchonses in France and America.

Negotiations were now entered into by the liquidators of the Comptoir d'Escompte, of the Societe des Metaux, with the producing companies, to get relieved from the obligations under the contracts for future deliveries, in which they were only partially successful. Some of the companies (including the bulk of the Americans) did release them, but others, under the lead of the Cape Copper Company and the Mason & Barry Company, Limited, commenced legal proceedings with results which have not yet been decided. Naturally those few producers who were fortunate enough to hold guarantees from bankers of unquestionable standing have continued all along, and still continue, to get the benefit of the high prices. When the collapse came the general body of manufacturers and consumers appeared to realize that they were now at last released from the power of the syndicate, and prices having come down to a comparatively ow level, they evidently thought their chance had come again. Already, during the last few weeks of the rule of the syndicate, the usual spring demand had come with the volume of orders rather heavier than in the previous year; they were not slow to come into the market for their supplies, and they did buy heavily at the decline. It also soon became evident that ting great bulk of the copper in warehouse (with the exception of some 15,000 to 20,000 tons, was actually in the hands of some of the demand had come with the volume of orders rather heavier than in the previous year; they were not slow to come into the market for their supplies, and they did buy heavily at the decline. It also soon became evident that the great bulk of the copper in warehouse (with the exception of some 15,000 to 20,000 tons, was actually in the hands of some of the wealthiest bankers in France, and that they were not likely to throw it recklessly on the market. Consequently, after the first feeling of excitement had passed away, and everything tending to influence values had been carefully considered, a more settled and steady feeling took possession of the market, and by the end of March the London price for Chilibars and G. M. B. copper had rallied to £40.

In the New York market lake copper opened in January at 17½c., and gradually settled down until the end of February, when the quotation stood at 16½. These prices, however, were simply nominal, and only used in connection with settlements on the Metal Exchange, and, as owing to the policy adopted by the syndicate of only dealing with the actual consumers, no lake copper remained in the hands of speculative operators. The speculative business had practically died out before the break came.

break came

break came.

During all this time, however, the consumers could readily get all they wanted at 16½c., and at the end of February a new pool sale was made at that price for deliveries over the succeeding three months. Under these circumstances, when the great decline took place in the European markets, the American producers found themselves in a very unpleasant and awkward position. In accordance with the agreement previously alluded to, they had bound themselves to uphold the price of 16½c, for lake copper, and now, as was naturally to be expected, the consumers throughout this country brought to bear on them all the pressure they could command to allow them the benefit of the decline. Here it must be admitted that the Lake companies deserve the highest commendation for the liberal manner in which they met the demands of the consumers. In the first place they agreed to cancel the existing contracts, thus relieving the manufacturers from any obligation to accept deliveries at 16½c., at the same time upholding, however, this price for such quantities as were wanted by the trade.

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of the lake companies so as not to prejudice their legal position in relation to the syndicate.

The period extending from the beginning of April up to the end of October was characterized by a generally steady feeling which was greatly strengthened early in May when the lake companies decided to fix the future selling price at 12 cents per pound, and on this basis to return to consumers the difference of 4½ cents pending this new arrangement. This settlement was generally considered very satisfactory by all parties concerned and had not a little to do with the further revival of confidence of which some signs had already appeared.

Business in general gradually showed unmistakable signs of renewed activity, and this to a much more marked extent in Europe than in the United States. At the beginning of April even the reports from Europe were decidedly encouraging as regards expanding consumption, and the margin of difference between the value of refined copper and the manufactured goods grew larger than for many years past, clearly indicating that trade in general had again resumed a very profitable basis for all concerned. Somewhat in contrast with this condition of affairs in Europe was the rather lagging tendency of our home market, which was, perhaps, chiefly due to the fact that copper values had not previously dropped down to such a low level as on the other side of the Atlantic, and this naturally made our home consumers hesitate about entering into contracts for large quantities; and this feeling of hesitation was aggravated by the fact that it was well known that a heavy stock of copper belonging to the French bankers was still lying in warehouse here, and with European prices considerably below the parity of ours, it was only a natural conclusion that sooner or later these accumulated stocks would come on to our market.

All the while protracted negotiations were passing between the European holders of the warehoused copper and the producing companies, with

sooner or later these accumulated stocks would come on to our market. All the while protracted negotiations were passing between the European holders of the warehoused copper and the producing companies, with the object of arriving at some mutually satisfactory arrangement regarding its disposal; but owing to the conflicting interests it soon became clear that any such arrangement was almost an absolute impossibility. The most serious obstacle was that the foreign holders of the warehoused copper insisted that it should be sold for consumption in this country, while the home producers naturally exerted all the arguments and influence in their power to get it exported.

Early in September a crisis was reached when the representatives of the foreign bankers made a sale of 2,000 tons of lake copper to various consumers in this country at 11½c., and this actionwas taken just at the moment when a more hopeful feeling was apparent, and consumers were more disposed to buy. Hereupon the lake companies, who had really made

cate collapsed until they regained their freedom in the disposal of their

During the period that lake copper was selling at 12c. casting copper had fallen to an abnormally low level, and at the beginning of August the quotation for such brands stood at 10½ to 10½, or a difference of more than 1½c. per pound in comparison with lake. This comparatively low price naturally led to a great increase in the demand for this class of copper, naturally led to a great increase in the demand for this class of copper, and under the influence of this by the end of August the price was up again to 10½c., with only moderate supplies available at that figure. When the lake price was reduced to 11c. the price for casting kinds could naturally not be sustained, and the quotation gave way again to 10c., at which point the feeling became firm again, and prices a little above the 10c. point could be made. In a little time, however, the lake companies found their stocks exhausted, and early in November they were compelled to raise their price to 111c.

found their stocks exhausted, and early in November they were compelled to raise their price to 11½c.

Almost simultaneously with this inovement on this side an important rise set in again in the European market, originated and initiated by certain fortunate speculators in iron who seized the opportunity to employ the profits which they had realized in iron to buy up copper, and from our special London reports it will be seen that these operations had the effect of raising the prices of Chili bars and G. M. B. copper, which had for a long time stood at prices ranging from £43 spot and £42 three months to considerably higher figures.

long time stood at prices ranging from £43 spot and £42 three months to considerably higher figures.

From this point commences what may be described as the third period of this eventful year. Consumers had already seen that the producers were unable to deliver as quickly as they required. The foreign holders had apparently learnt caution from their past experience, and had during all this time kept entirely off the market. When the lake companies advanced their price to 11½c., orders came in at such an unprecedented rate that much larger quantities were contracted for than producers were able to deliver, and a few days later the selling price was again raised to 12c. The strong buying continued, and without showing any weakness prices advanced quickly, and at the end of November 14c. was reached, and the greatest anxiety existed to secure as much copper as was offered. Every-

advanced quickly, and at the end of November 14c. was reached, and the greatest anxiety existed to secure as much copper as was offered. Everybody now recognized the fact that trade generally was in a much more healthy condition than for a long time past, and although some conservative people feared that the rise might prove to be more rapid than desirable, yet it was generally admitted that the improvement was the result of legitimate trade and expanding consumption.

Manufacturers found themselves able to realize good profits on their productions, and under such circumstances did not object to pay a higher price for their raw material, and the producing companies became so pressed for deliveries that they were compelled again to advance their selling price to 14½@14½ for lake copper and to 12½@13 for casting kinds, without being able even then to meet the demand; and whilst only three months ago everybody denounced the foreigners for interfering with the home markets, it was regarded as quite a relief when early in December they again sold 2,000 tons of lake copper at 14c., at which price they could easily have placed a much larger quantity. At this figure, however, they refused to continue selling, and it is understood that within the last eight days or so they have sold from 500 to 1,000 tons more at 14½c, and later smaller quantities at 14½c., which may be regarded as the closing

they refused to continue selling, and it is understood that within the last eight days or so they have sold from 500 to 1.000 tons more at 14½c, and later smaller quantities at 14½c,, which may be regarded as the closing price for lake copper. Casting copper has not quite kept pace with the rise in lake and stands at the end of the year at 12½@13, while good rolling copper is quoted 18½@14.

Regarding the prospects in general they must be described as decidedly encouraging. It may be that consumption may not continue at its present enormous rate, but everything indicates a prosperous year for 1890. Some increase in production is probable from Montana and Michigan, but no anxiety need be felt in this respect, as the larger demand will absorb any likely increase. Neither need we now fear the spectre of the warehoused stocks, which exerted such a depressing influence on the market in the early part of 1889. Assuming that there is still piled up in warehouse in New York some twenty thousand tons, it must not be forgotten that hardly one of the smelting works have any stocks whatever, and our more interested readers will be quite aware of the fact that often during the past ten years the Calumet and Hecla Company alone have held about as large a stock as that which is now held of lake copper by the foreign bankers in warehouse.

Altogether the indications favor a continuance of prices quite as high, if not higher, than those now ruling for the next year, and this prospect is certainly not diminished by the reports of a serious fire in the Anaconda mine, as to which reliable information cannot at present be obtained, but which must result in some reduction of output.

The conper stocks which on Jan 1, 1889 we reported at 78,000,000.

which must result in some reduction of output.

The copper stocks which, on Jan. 1, 1889, we reported at 78,000,000 pounds we have lowered in our report to 75,000,000 by the omission of certain lots in ore and "mineral." These stocks have steadily declined, and at present the

Total Stock of Copper in this Country is about 65,000,-000 Pounds.

While a very large part of this is held by the banks which took over

the stocks of the old syndicate, yet quite an important quantity of this old stock is sold for export, and is only awaiting shipment.

Never before in the history of the trade have the mining companies had such light stocks, and were it not for the Syndicate's accumulation the country would to-day be absolutely bare of copper, and a copper famine would be threatened.

The manufacture of electrolytic copper steadily increases, and in 1889 amounted to no less than 21,000,0000 pounds, as compared with 17,000,000 pounds in 1888. The coming year will still further increase the present production.

THE	PRODUCTION	6 10	LAKT	SHIPSCHILLS	COPPER	317

MINES.	1881.	1882.	1883.	1884.	1885.	1886.
Calumet & Heela	31,360,781	32,053,539	33,125,045	40,473,585	47,247,990	50,518,222
Quiney	5,506,848	5,665,796	6,012,239	5.650,436	5,848,530	5,888,517
Osceola	4,179,976	4,176,782	4,256,409	4,247,630	1,945,208	3,560,786
Franklin	2,677,932	3,264,120	3,488,708	3,748 652	4,007,105	4,264,297
Allouez	1,473,007	1,683,557	1,751,376	1.928,174	2,170,476	1,725,463
Atiantie	2,528,009	2,631,708	2,682,197	3,163,585	3,582,633	3,503,670
Pewabie	1,876,244	1,482,666	1,171,847	227,834		0,000,010
Central	1,418,465	1,353,597	1,268,556	1.446.747	2,157,408	2,512,886
Grand Portage	26,264	757,598	735,598	255,860		2,012,000
Conglomerate	386,091	734,249	222,117	1,198,691		
Mass	467,684	737,440	659,474	481,396	365,000	200,000
Copper Falls	669,121	587,500	804,000	891,168	1.168,000	1.400.000
Phoenix	409.357	537,177	512,291	631,004	344.355	100.060
Haneoek	571.897	540.575	484,906	562,636	203,037	150,000
Huron	254,515	364.579	720.213	1,927,660	2,252,484	1,992,693
Ridge	235,606	102,936	60,155	74,030	63,390	158,279
St. Clair	135,493	87,126	135,225	139,407	00,000	100,414
Cliff	79,382	66,053	10.374	28,225		22.34
Wolverine	10,000	25,623	699,622	751,763	328,610	3,12
Nonesuch	119,061	26,450	000,000	23, 67	28,484	0,146
Isle Royal	47 308	35,477		16,074		
Minong	15,397	21. 80	3,582	10,014		********
National		17,060	26,006	87 368	162,252	184,700
Minesota	24,227	10.672	6,2 6	1,144	12,608	
Belt		5,6'5	16,402	130 851	27,433	7,300
Sheldon & Colum	10.031	3,299		9,828	~1,200	
Adventure	7,500	429		4 333	4.000	1.000
Peningula		2.49	849,400	1,225,981		
Tamaraek			7,435		181,669	3.646.517
Ogima	16,776	4 (30)		1.100		0,040,01
Other mines!	10,770	4,207	3,000	1,106	12,000	
and tributers	61,935	159,419		21,167	35,500	51,000
Total	54,548,909	57.155.980	59,702,404	69,353,202	72,148,172	79.890.798

COPPER PRODUCTION OF LAKE SUPERIOR MINES.

	1887.	1888,	1889.	1887.	1888.	1889.
Cal. & Hee.	46,016,123	50,295,720	48.640 029	Huron1.484,103	2,370.857	2,214,212
Quiney	5,603,691	6 367,809		Ridge 84,902	50,924	28,000
	3,574,972	4,131,320	4,454.152	Wolverine 2,300		
Franklin	3.915 838	3,655,751		Tamaraek 7,396,529	11,411,325	10.614,149
Allouez	885.010	314,198		Kearsarge 21.237	829.185	1,929,127
	3,641,865	3,974,972		Evergreen	41,000	28,773
Central	2,199,133	1,817,023		Tributers 50,000	50,000	50,000
		71 090	76 675			
Cop. Falls	560,000	1,199,950	720,000	Total 75,471,890	86,584,124	86,139,048
National	494, 497					

COPPER PRODUCTION OF ARIZONA.

	1884.	1885.	1886.	1887.	1888.	1889.
Copper Queen Holbrook & Cave	7,700,000	6,721,535	3,800,000	5,945 550	9,004,771 2,920,748	9,024,000 2,208.000
Old Dominion	7,400,000	4,688,610		1,441,770 5,714,000	4,870,000	6,003,220 7,600,000
Arizona Copper	2,940,000	3,456,000		4,404,321	5,233,415	4,326,000
United Verde Other mines	3,680,000 1,254,345			272,124	3,200,000 154,171	2,100,000 438,780
	26,734,345	22,706,366	16,000,000	17,790,000	32,516,293	31,600,000

COPPER PRODUCTION OF MONTANA.

	1884.	1885.	1886.	1887.	1888.	1889.
Anaconda Parrott. Boston—Montana. Ciark's Colusa Butte Reduction Works Colorado Sm. & Mg. Co. Butte & Boston	6,600,000 600,000 2,000,000	9,809,000 7,500,000 10,000,000 2,500,000 1,200,000	7,000,000 1,700,000 2,000,000	10,000,000 1,500,000 7,100,000 1,565,000	10 750,000 18,273,667 700,000 3,521,565	61,647,000 9.500,000 26,681,764 1,700,000 2,964,000 1,300,000
All others			1,643,621		521,295	407,236
	43,093,054	67,798,864	57,611,485	78,700,000	98,500,000	104,200,000

COPPER PRODUCTION OF THE UNITED STATES.

	1882.	1883.	1884.	1885.	1886.	1887.
	. Pound .	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.
Lake Superior	56,982,765	59,702,404	69,353,202	72,148,172	79.890,798	75,471,890
Arizona	17.984,415	23.874.963				17,720,462
Montana	9,058,284	24,664,346				78,699,677
New Mexico	869,489	823,511	59,450			283,664
California	826,695	1,600,862	876.166	496,028		1,600,000
Colorado	1,494,000	1.152,652	2,013,125			2,012,027
Utah	605,880		265,526			2,500,000
Wyoming	100,000					
Nevada	350,000	288,077	100,000	8,871	50,000	
Idaho			46,667	40,381		
Middle States	294,695	324,706	232,114			
New England	1,555,000	612,124	904,423			200,000
Southern States	400,000			40,199		
Lead refiners	125,000	782,880		910,144		2,432,804
Dom. prod'ct'n	90.646.232	115,526,053	144.946.653	165.875.766	156,735,381	180,920,524
Imported ores		1,625,742		6,056,841		3,750,000
Total prod'ct'n	91.646.232	117 151 795	147 805 407	170.962,607	161,235,381	184,670,524
Stocks, Jan. 1st			30,000,000	30,000,000		40,000,000
Av'l'ble supply			177.805.407	200,962,607	196,235,381	224,670,524

COPPER PRODUCTION BY STATES.

		1888.		1889
		Pounds.	Pounds.	Long Tons.
Lake Superi	or	86,584,124	86,000,000	38,393
Arizona		31,497,300	32,000,000	14,286
Montana		97,897,968	105,000,000	46,875
New Mexico	A	1,631,271	3,400,000	1,518
California		1,570,021	1,700,000	759
Colorado		3,300,000	3,000,000	1,339
Utah		2,131,047	2,400,000	1,071
All other sou	irees	3,241,725	3,000,000	1,339
Domes	tie production	227,853,456	236,500,000	105,580
From i	mported ores	5,000,000	5,100,000	2,277
Total produ	ction	232,853,456	241,600,000	107,857
Stocks, begi	nning of year	40,000,000	75,000,000	33,482
	orts in ore, matte,	272,853,456	316,600,000	141,337
	orts in ore, matte,	78,000,000	82,000,000	36,607
Consumption	n	119,853,456	169,600,000	75,714
Stocks on ha	and and of year	75,000,000	65,000,000	29,016

THE PRINCIPAL FOREIGN COPPER PRODUCERS.* The copper production of the world, 1879 to 1887 inclusive.

COUNTRIES.	1887.	1886.	1885.	1884.	1883.	1882.	1881.	1880.	1879.
EUROPE.	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.	Long tons.
Great Britain Spain and Por- tugal:	a1,500	a 1,471	2,773	3,350	2,620	3,464	3,875	3,662	3,462
Rio Tinto	$a28,500 \\ a11,000$	24,700	23,484 a11,500	21,564 a10,800	20.472 9,800	17,389 9,000	16,666 10,203	16,215 9,151	13,751 11,324
Mason & Barry	a7,000	7,000	a7,000	a7.500	8,000	8,000	8,170	6,603	4,602
Sevilla	a2,300	2,135	1,800	2,000	2,026	1,885	1,340	1,705	1,360
Portugueza	a856	1,258	1,665	a2,300	2,357	1,700	1,410	1,000	770
Other mines.	a4,400	3,560	2,424	2,251	1,000	800	800	800	800
Mansfeld	13,025	12,595	12,450	12,582	12,634	11,536	10,999	9,800	8,400
OtherGerm'n	a1,850	1,870	a2,800	a2,200	3,568	3,552	1,743	1,000	600
Austria	a700	550	585	670 614	572	474	474	500	255
Hungary Sweden	a500	500 6∪0	504 775	662	661 732	661 798	800 995	900 1,074	1,0.9
Norway	1,450	2.220	2,560	2,706	2,630	2,590	2,640	2,426	2,412
Italy	a2.500	900	835	1,325	1.600	1,400	1,480	1,380	1,140
Russia	5,000	4,875	a5,100	4,700	3,500	3.537	3,411	3,154	3 081
Total Europe NORTH AMERICA	81,086	75,234	76,255	75,224	72,172	66,786	65,006	59,370	53,866
United States Canada	73,571	69,971 1,440	74.053 2,500	63,555 236	51,574 1,055	40,467 500	32,000	27,000 5 0	23,000 50
Newfoundland: Bett's Cove	1,180	1,125	778	668	1,053	1,500	1,718	1,500	1,500
Mexico: Boleo Co	1,950								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Other Mexi- can	100	850	375	291	489	401	333	400	400
T'l N. America SOUTH AMERICA.	83,201	73,386	77,706	64,750	54,171	42,868	34,551	28,950	24,950
Chili	29,:50	35,025	38,500	41,648	41,099	42,909	37,989	42,916	49,318
Corocora Peru	a1,300	1,100 75	a1,500 229	a1,500 362	1,680 395	3,259 440	2,655 615	2,000 600	2,000
Venezuela:	50	0.000	4 3 1 3	4 000	4.010	0.000	0.000		
N. Quebrada. Argentine Rep.	2,900	3,708 180	4,111	4,600 159	4,018 293	3,700 800	2,823 307	1,800 300	1,5 97 300
T'l S. America	33,570	40,088	44,573	48,269	47,485	51,108	44,389	47,616	53,815
Algiers Cape of Good	150	110	250	260	600	600	600	500	500
Hope	7,250	6,015	5,450	5,000	5,975	5,716	3,467	4,739	4,326
Tetal Africa	7,400	6,125	5,700	5,260	6,575	6,316	4,067	5,239	4,828
Japan	a11,000	10,000	a10,000	a10,000	7,600	4,800	3,900	3,900	3,900
Total Asia.	11,000	10,000	10,000	10,000	7,600	4,800	3,900	3,900	3,900
Australia	7,700	9,700	11,400	14.100	12,271	8,512	10,000	9,700	9,500
Total produc	223,957	214,533	224,218	216,338	200,274	180,390	161,913	154,775	150,859
Stocks: Chili	42,301	61,741	55,939	45,880	49,878	49,696	58,149	62,855	57,837

a Estimated. *Compiled by Henry R. Merton & Co., London.

THE PRINCIPAL COPPER SUPPLIES OF THE WORLD.;

	1888.	1	1888.	1	1888.
Countries.	Tons,	Countries.	Tons.	Countries.	Tons.
Algiers		Italy		Tharsis	
Argentine Rep		Japan			
Australia		Mexico:		Sevilla	1,700
Austria	1,010	Boleo Co			*900
Bolivia-Coro-coro	1.450	Other Mexican	200	Other mines	*7,200
Canada	*2,250	Newfoundland:		U. S. of America:	
Chili		Betts Cove	1.300	Lake Superior	38,772
CHILL	02,020	Tilt Cove	750		
C. of Good Hope:		Norway:		Arizona	
Cape Copper Co		Vigsnaes	1.020	Other States	
Namaqua Cop. Co	1.700	Other Vergerien	550	Venezuela:	0,002
England				New Quebrada	4,000
		T OT M	4 700	New Quebrada	*,000
Germany:		Russia	4,700		
Mansfeld	*13,380	Sweden	*900	Total production	261,852
Other German	*1.850	Spain and Por.uga			
YY	959	Pio Tinto	*32,000		
Avorage of prices	n the 1s	et of each Chili Bar	s. £82 7	s. 6d.)	040 0-
month		G.M.Bs.	76		35.
шонен		(0.24.25		,	

*Estimated. * In English tons of fine copper. Compiled by Henry R. Merton & Co., London.

		U	NITED STA	TES COPP	ER IMPORT	rs.			
	Bars, in	gots and	Old, fit remanu	only for facture.	Fine cop	per con- n ores.	Regulus and black		
	Quantity	Value.	Quantity	Value.	Quantity	Value.	Quantity	Value.	
	Pounds.		Pounds.		Pounds		Pounds.		
1867	1,635,953	\$287,831	569,732	\$81,930		\$936,271			
1868	61,394	6,935	318,705	42,652	3,496,994				
1869	13,212	2,143	290,780	34,820	24,960,604	448,487			
1870	5,157	418	255,386	31,931	1.936.875				
1871	3,316	491	369,634	45,672	411,315	42,453	489	\$60	
1872	2,638,589								
1873							1,444,239		
1874	713,935		733,326	137.087		70,633	28,880	5,397	
1875	58,475								
1876	5,281	788	239,987			68,922			
1877	230	30				9,756	1,874	260	
1878			198,749						
1879	2,515								
1880			695,255				2,201,394	337,163	
1881					1,077,217				
1882	6,200				1,473,109	147,416			
			330,495			113,349			
1884	(b) 542						2,036	204	
1885					3,665,729		285,322	20,807	
1886									
1887									
1888									
1889						411.158			

COPI	ER EXPOR	TED FROM	I THE UNITE	D STATES.		
Fiscal years ending June 30.	Tons of		Pigs, bars, and o		Value of manu- factured.	Total value.
June 30.	Quantity	Value.	Quantity.	Value.	ractureu.	varue.
	Pounds.		Pounds.			
.867	87,731	\$317,791	*4,637,867	\$303,048	\$171,062	\$791,90
1868	92,612	442,921	1,350,896	327,287	152,201	922,40
1869	121,418	237,424	1,134,360	233,932	121,342	592,69
1870	*19,198	537,505	2,214,658	385,815	118,926	1,042,24
1871		727,213		133,020		915,43
872		101,752		64,844		287,73
873		170,365		10,423		259.07
874		110,450		123,457	233,301	467.20
875	*51,305	729,578		1.042,536		1,815,26
876		84,471	14,304,160	3,098,395		3,526,41
877		109,451	13,461,553	2,718,213		3,023,39
878	32,947	169,020		2,102,455		2,488,92
879		102,152		2,751,153		2,933,20
880		55,763		667,242		849,21
881		51,499		786,860		876,39
1882	25,936	89,515		565,295		
883		943,771	8,221,363	1,293,947		2,348,00
884		2,930,895		2,527,829		5,595,85
885	432,300	4,739,601	44,731,858	5,339,887	107,536	
886		3,068,879		2,493,898	108,971	5,671,74
1887		1,693,879		1,947,900	85,623	3,727,40
1888		5,064,687	25,318,725	3.712,727	100,071	8,877,48
1889	761 240	7 518 958	14 355 961	9 160 733	188 991	9 867 91

Evidently errors in quantities

							_		
AVERAGE	PRICE	PER	POUND	OF	LAKE	COPPER	AT	NEW	YORK.

Year.	Jan. cts.	Feb.	Mar.	Apr. cts.	May.	June. ets.	July. ets.	Aug. ets.	Sept.	Oct. ets.	Nov.	Dec. cts.	Year.
1860	23¾	23%	233%	233/4	227/8	221/8	215%	211/2	2156	2134	2076	20	221/
1861	1916	1914	1916	193%	1916	1816	17%	1836	2156 1958	2134 2018	20% $21%$ $31%$	2434	101
862	2716	261/2	24	2214	211/8	9176	2312	2414	25%	2978	3156	31	191
863	33	36	34	3016	3014	21% 30¼	3016	30	3158	3384	3634	3856	327
864	4016	4156	42	4314	4312	4614	5934	5114	50	3336	48	4914	461
865	484	45	391/4	3412	32	4616 2916	291/8	5114 3118	31%	3216	3916	4288	361
866 .	40	3634	1216	2914	29%	3216	3:14	30%	311/8	30%	2834	2734	313
867	281/6	2712	2534	24	241/8	2414	25	26	2634	2434	2278	9:05%	9 1
868	221/2	2314	9314	2334	241/8	235%	2334	2416	2376	2316	2314	225% 241% 2134	235
869 .	25	2612	231/2 258/8	2358	24	2276	22	2212	2378	9986	2214	9134	238
870	21%	20%	1934	1918	19	2276 1934	2086	2016	211/8	2286 2134	2214	2214	238 209
871	9012	21%	211/2	2112	211/4	2187	20%	2016	233%	9312	9412	261/8	225
872	2216 2794	26%	33	1114	3612	3312	3314	3314	3318	231 <u>%</u> 321 <u>%</u>	3184	3214	33
873.	3414	345%	341/4	3314	311/8	2187 3314 2914	2734	2758	26	2314	241/8 318/8 221/8 2 3/4	2414	29
874	2434	245%	243%	2476	2484	2486	2176	20	211/8	2134	2 3%	2314	231
875.	2214	2014	:11/2	247/8 211/2	2434 2116 2178	2436 2234	217/8	23	2314	2318	23	23%	221
876	2318	2.54	20	22	2176	20	1934	19	20	2034	2014	1934	21
877.	1914	1914	1914	1936	1918	191/6	19	1816	18	1772	$\frac{2014}{1758}$	1756	185
878	1716	1714	17	1678	1616	1614	161/8	1616	16	1778 1534	155%	15%	161
879	1534	1512	1534	1578	16	161/8	16	161%	1616	1916	2116	2114	171
880	23	241/8	2314	2134	19	1816	181/2	19	1834	$19\frac{1}{2}$ $18\frac{1}{4}$	1834	19	171 201 181
881	191/4	1914	1918	187/8	181 <u>6</u> 181 <u>8</u> 157 <u>8</u>	17	1614	16%	1716	1818	1816	1934	181
882	2014	191/2	19	1878	181%	181/8	1818	1818	1816	181%	18	18	181
883	18	1734	171/4	15%	15%	1512	15	15	151%	1518	15	147/8	181 157
884	147%	1478	1478	141/2	1414	141%	14	137/8	131%	13	123/4	115%	1:37
885	1114	111%	10.78	11	111/2	113%	111/8	111%	111%	11	11	1114	111
886	1136	11%	11%	113%	1016	10	10	10	101%	1134	12	12	11
887	1156	11	1016	1014	10	10	16%	1016	1016	1016	1256	17	
888	1614	16%	161/6	1656	1636	1616	1634	1634	1714	1616	1616	161/6	111
889	1714	167/8	1014	1616	1284	12	12	12	11	11	1286	14%	138

PRICES OF CHILL BARS IN POUNDS STERLING PER TON OF 2240 LBS

	St'ks Tons	Jan €	F'b £	M'r £	Apl €	May £	Jun £	July £	Aug	Sep £	Oct £	N'v £	D'c £	Yr. £
866	29,388	95		88	86	80	83	79	74	83	80	75	721/6	827
867	32,084	70	76	74	71	71	73	7016	68	7316	6816	68	6916	713
868	33,500		691/6	71	731/6	7716	77	75	681/6			69	69	71
869						7012	68	6716	68		6716		66%	691
870	43,365					6734	6714	6816			631/2		6234	658
871	40,092						6714	6814	683/	6712	6816	68	76	67
872	36,497			8316		101				91	8316	86	841/4	927
873			8716		91	881/2			811/6					85
874	36,868				75	74	74	78	76		80		8316	781
O/1	36,316		83	82	80	83	83	82	79		8216		8716	821
875	36,962			7616		791/6	7716	7416						76
876													81	
877					701/2	6834	69	69			651/2			70
878	48,399				63	62	641/2			611/4	00		631/2	623
879	57,837	58	56	5434		56	55	56			58%		581/2	58
880		6594	731/4	7094		60	5614	60			611/4		661/2	631
881	58,149				61	59	59	581/2	59	59	621/4		67	611
882	49,696				6414	631/4	631/2			6734		69	661/4	67
883	49,878	65	65	65	6434	627/8	63%	64	635%	64	63	6114	591/2	631
884	45,880	561/2	55%	537/8	561/2	56	541%	55	537/8	5416	525%	511/4	4714	533
885	55,939	48%	4756	4614	4416	445%	4476	441/4	431/4	4176	39%	4116	4136	44
886					4184	4016	397/8				4116	4056	3914	401
887	42,301	3876	3934	3916	39%	3914	40	40	4016		4414			45
888	104, 105	85	7716	7876	801/8	801/8		81			100			82

THE LAKE SUPERIOR COPPER MINES.

The Calumet & Hecla, like most other mines of the district, is no doubt producing all that it can at present. The last fire left the older mine badly crippled, three only of the eight working-shafts of that section being now used for regular hoisting purposes. Repairing of at least two others is being actively pushed, and probably in the next few months these can be counted on to increase the out-turn of mineral.

Between South Hecla, where, from three shafts, much of the late product has been obtained, and the mine proper several shafts are being sunk. None of these as yet contribute anything toward the returns. Of them, No. 8 is down in rich ground, and as soon as surface equipment is provided can be put into use. The others will come into service later, and some of them possibly at a comparatively early date.

How much copper can the mine turn out? is a question that no outsider can answer. There is no lack of resources, and when the new shafts are all in good ground and equipped, and those in the old mine repaired, it is easy to see that producing capacity depends only on reduction facilities.

Of the 18 stamps in the two mills of the company, it is said that 14, sometimes 15, are at work, so that at least two more can be counted on for regular duty. Getting the old shafts into service will materially help the production, because the rock obtainable from them is richer than much got from the South Hecla. It is questionable, however, if copper can be got from them cheaper, for the easy-working ground and the extra width of conglomerate in the south mine must nearly, if not quite, offset the better rock from the older and deeper shafts.

The lower yield of ingot from mineral smelted this year means only

width of conglomerate in the south mine must nearly, if not quite, offset the better rock from the older and deeper shafts.

The lower yield of ingot from mineral smelted this year means only that the company considers it advantageous to save and smelt more low-grade mineral, obtained from tailings, than formerly. The regular grades can vary but little, but the further the process of saving is extended the more low-grade stuff goes to the smelter, the tendency, of course, being to a lower average for all the mineral obtained.

Important additions to machinery and general equipment, it is said, are contemplated. These, presumably, are in the direction of economy, and should eventually repay the necessary expenditures. Under any circumstances the mine must soon be fully equipped. The repairs underground, since the fire, have been excessive and costly, and the sinking of several new shafts calls for large sums of money. After a time many of these extras can be cut off. The mine will be in better condition than ever before, and profits for division should undoubtedly be comparatively larger.

before, and profits for division should undoubtedly be comparatively larger.

The Tamarack mine, without improvement in quality of rock, cannot expect to exceed late products very much until No. 2 shaft is in active operation. The bottom of the mine is the twelfth level, about 2,800 feet deep perpendicular, and No. 2 shaft is now reported sinking to that level. Cross-cuts to the conglomerate are being run, and as soon as possible, no doubt, stoping will be commenced. The surface equipment for No. 2 is nearing completion and appears to be equal to requirements. Hoisting-engines are attached directly to drum-shaft, drum 30 feet diameter, so that a good rate of speed for delivering rock is assured. Two stamps are being added to the mill. To judge then from appearances, in the early summer of 1890 this mine will again move forward as an important producer. With two shafts regularly hoisting, the product should not be less than 10,000 tons of copper annually. The other shafts, Nos. 3 and 4, are being sunk regularly, and when the full outfit of machinery is erected will no doubt be sunk fast.

The Quincy has in it a good many possibilities. Year after year the

The Quincy has in it a good many possibilities. Year after year the mine has worked on and done well, the product of this year showing that its resources have not yet been overtaxed. The limited stamping power of the mine, up to the present, has necessarily compelled the management to select and work the more productive portions of the lode. The mine is said to be looking much as usual in the lower levels, reports indicating that the posthory ground just now is the most productive. This most

is said to be looking much as usual in the lower levels, reports indicating that the northern ground just now is the most productive. This means nothing special, for sometimes one end, sometimes the other, is best, but always in good ground at some point.

The Quincy has built a new mill, with two stamps now about ready to run, with space enough for three. Capacity, as at present, probably about 100 tons daily, in excess of old mill. Under existing circumstances it seems unfortunate that the other stamp was not also erected, but it is questionable if their hoisting facilities are sufficient to deliver more rock than can be treated by the new mill as it is.

The Quincy can no doubt increase its production to some extent, and, if the future continues as bright as the present, will probably do so; there will also be opportunity, never before afforded, to handle lower grade rock cheaply, and of this the mine is supposed to be in condition to supply any reasonable quantity.

will also be opportunity, never before afforded, to nanule lower grade rock cheaply, and of this the mine is supposed to be in condition to supply any reasonable quantity.

This year at the Franklin has been its best, the product for 1889 being the largest it has ever made being more than 2,600 tons. This for a mine pronounced, worked-out, by detractors, is at least rather remarkable. The East Lode has helped the Franklin, and rich ground encountered in vicinity of No. 5 shaft enables the management to make such a good showing. The mine shows well at present; it shortens as they sink, but has a good length of ground northward. Should the copper continue to make in that direction, it will be a long time before the mine closes. No increase of production should be looked for in the next year, the mine presenting no new features.

The Pewabic has been idle for years. The mine, as developed, is no doubt poor, but has 160 acres of land, in which comparatively little work has been done, contiguous to both the Quincy and Franklin mines, and undercutting both. A poor block of ground, in either of the mines named, is not a new feature, and would not be a disturbing feature, except temporarily; and as both of them are worked below the bottom of Pewabic, both are able to judge of the idle mine's chances.

If not in the interest of the Quincy, yet in the interest of Quincy parties, objections were made to the re-organization of the Pewabic. The Supreme Court of the United States decides on this soon. If against the majority of the owners, then, presumably, the property will be sold. It seems to be taken for granted that Quincy wants the 160 acres, and will try hard to get it if the chance offers.

The Osceola has improved of late, the yield of copper for the year being

seems to be taken for granted that Quincy wants the foo acres, and the try hard to get it if the chance offers.

The Osceola has improved of late, the yield of copper for the year being equal to any former one. The south end of the mine is found more productive as depth is reached, and the explorations at Opechee, where the shaft is down to the fourteenth level, are very promising. The year's work has

added several hundred feet to the working length of the mine, and this in itself is important. Production is likely to be increased in the coming year, for preparations are making to equip Opechee shaft with permanent hoisting-plant, rock-house, etc.

Atlantic keeps steady. During the year, for a short time, the mill was not kept quite up to its full capacity. It is remarkable that such steady returns should be kept up from a mine that has no rich ground, and it is quite clear that but for its strict supervision, profitable results could not have followed in ordinary times. A new hoisting plant of the most approved character is being built, and is expected to be the most economical in working of anything in the region. Production cannot be materially increased without additional stamping facilities.

The Huron is looking about as usual. The lode worked here is wide and quite bunchy, and only a more extensive scale of operations can decide at what price copper can be produced. Liberal openings, ample equipment and handling of twice as much rock as in the past would be giving the Huron a fair chance. With copper at a good price the mine is all right, but in spite of good management, if worked on a restricted scale, it cannot be profitable when copper gets below 11 cents. It rests with the owners of the mine to determine the extent of production. To get materially more copper there must be more equipment.

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The Allouez, a year ago, had just re-entered the lists as a producer. The mill is now again idle. There is, of course, much difference of opinion, locally, as to the management's wisdom in shutting down. With copper at 12 cents, operations can be carried on, so that the ruling price would afford a fair profit. The management has shown elsewhere what it can do with mines, so it is safe to conclude that the Allouez does not suffer from inattention. The future of the mine cannot be spoken of with certainty, and only a small force is now employed on opening work. Starting the mill again before spring may not be regarded as judicious, but if the outlook is then satisfactory, no doubt active operations will be resumed. To meet a low price for copper, the mine must be worked more extensively, and, if possible, be made to produce more largely. The management, however, must know its capacity.

Kearsarge is still a fair producer, and for the quantity of rock it mines, does well. The weak point here is that below the fifth level no very extensive blocks of stoping ground have been found. The shaft is down to tenth level. The openings are said to be not unpromising, and may at any time show rich ground, but in the interval it is not easy to predict the future. The experience of the deeper mines runs in favor of Kearsarge. Most of them have had poor streaks and got below them into good ground again. The Kearsarge is trying to solve the problem by pushing its shaft down. No increase in product can be looked for under ordinary circumstances.

The Central mine is one of the oldest and deepest in the region. During

pushing its shaft down. No increase in product can be looked for under-ordinary circumstances.

The Central mine is one of the oldest and deepest in the region. During the summer of this year production was for some months curtailed, to admit of enlarging and retimbering the hoisting shaft. Hoisting facilities are now the best and admit of going deeper easily. Cross-cutting is going on at the mine in search of other productive veins. This work is most commendable, and may at any time be successful. There is no special news from the mine. news from the mine.

Copper Falls Mine, like the Allouez, stopped stamping when the copper situation seemed critical. A small force is now employed in opening. Resuming production is a question which will be governed by the price

of copper.

Conglomerate Mine, of Kewaunee County, is now known as the Lac La Belle Mine. The company owns a very large territory, ample equipment, machinery and dwellings, for a great mine. Nothing is heard

ment, machinery and dwellings, for a great mine. Nothing is heard about resuming work, but it would be strange if the company continued inactive. Beside the conglomerate, there is a very promising amygdaloid, and one or more fissure-veins which deserve attention.

Two mines in Houghton County not producing, and yet deserving of notice, are the Centennial mine and the Tamarack, Jr. Both are looking for copper in the Calumet lode. The Centennial, immediately adjoining the Calumet mine, owns the outcrop of the conglomerate for a mile in length, and active sinking is being done on the course of the lode with satisfactory results to the management. Some surface explorations made recently at the north end of the property show very rich rock.

Tamarack, Jr., is sinking a perpendicular shaft to strike the Calumet conglomerate, at a depth of 2,500 feet, and is now down over 1,400 feet. The objective point should be reached in less than a year, according to reported rate of sinking. In the district, the company's prospects are considered good.

THE COPPER MINES AT BUTTE.

The fire in the Anaconda Mine may be an important factor in the production of copper by that company in the year 1890. It is thought by mining experts to be more serious than is generally believed by the public. The country rock surrounding this property is a metamorphic granite, and the hill has been pretty thoroughly tunneled in different directions for the purpose of exploration. It is thought that the fire in the mine will be fed by air admitted through the crevices, and that it will be very difficult to extinguish it. The mine is still closed, and will probably not be opened for some time. It is hoped that the apprehensions referred to may not be realized.

prices of copper by purchasing from time to time. Under the sway of this powerful combination, the legitimate trade had been almost paralysed; consumption was at its lowest ebb, being fed mainly by hand to mouth purchases, and having recourse, as far as possible, to supplies of old metals—already vastly depleted; while in many cases, where other metals, such as steel, were to any extent applicable, they were eagerly substituted for the abnormally costly article, copper.

The syndicate price of G. M. Bs., for prompt delivery, at the close of 1888 was £77 10s. and £78 for three months' prompts, which was also the average price for the month of December.

average price for the month of December.

Manufactured orders were few and far between and eagerly competed for, the trade in this and in refined sorts being in a languishing condition, while the visible supplies of copper in and affoat to Europe were steadily on the increase—the addition for January alone amounting to 5,423 tons.

on the increase—the addition for January alone amounting to 5,423 tons, and bringing the total up to 109,328 tons.

Early in January, after the syndicate had been buying anything that offered in spot G. M. Bs. at £77 5s. and considerable quantities of forward at £78, a marked scarcity of the former caused an advance to £78 10s., when the Syndicate, in pursuance of its tactics, relieved the pressure by selling at this price, thus inducing a relapse to its own buying price, viz., £77 5s.

The history of the next few weeks is a history of perpetual oscillations, caused by the apparently capricious action of the syndicate, which alternately supported the market by its presence and depressed it by its assence as a buyer. For example, in the week ending 26th January, after bidding £78 for spot G. M. Bs.—which price it had been paying for forward—it suddenly withdrew its support and three months fell rapidly to £75.

to £75.

The failure of a slight demand for spot warrants to elicit any considerable offers furnished a passing indication of the extent to which the Syndicate had succeeded in absorbing the supply. The closing week of January saw spot G. M. Bs. recede (during a spell of inactivity on the part of the syndicate) to £73, and an immediate advance to £77 10s, on the resumption of buying by its representatives. The total weekly turnover at this time was quite inconsiderable.

February was not distinguished by any radical alteration, the business in G. M. Bs. being still on a limited scale, and prices still depending mainly on the syndicate's buying. During the month up to £80 was paid for spot G. M. Bs., a little outside buying having reinforced that of the syndicate. All the year in sellers' option had previously been done down to £61 10s., and was offered later 10s, lower still. Three months declined to £66 10s., subsequently recovering to £68. Refined copper, though still stagnant, was in slightly better demand.

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The week ending 2d March witnessed a more decisive relapse, £75 being quickly reached for spot cash, £61 for three months, and £55 for all the year in seller's option. Rumors had for some time past been current of financial difficulties besetting the syndicate, and although upheld by some of the leading French financial houses, it was generally contended that there could be but one issue to the strain of so gigantic an undertaking as the attempt to control the copper supply of the world, involving such an enormous lock-up of capital as it must do until the monopoly had been rendered complete and consumers forced into universal buying at the syndicate's artificial prices, and the approach of that issue was assumed to be merely a matter of time. The above relapse in prices proved to be the immediate forerunner of the crisis—the beginning of the end—for in the following week the tragic fate of the Director-General of the Comptoir & Escompte of Paris, which institution had been the backbone of the combination led by the Société des Metaux, taken in conjunction with the ensuing disclosures, announced to the trade and to the world the Collapse of the syndicate's finances. The same week saw a drop in price to £57, and £49 10s, the remainder of the year. Various schemes were now broached, but not consummated, for supporting the crumbling edifice and for safeguarding the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate in the supporting the combined interests of the syndicate. year. Various schemes were now broached, but not consummated, for supporting the crumbling edifice and for safeguarding the combined interests of the syndicate and the Spanish and American mines, by preventing a rush of metal on to the market. Meanwhile the price had further receded to £50 for spot and £49 for forward, and in the week ending March 23d the inability of the Comptoir to take up warrants then maturing demonstrated the completeness of the ruin of the gigantic combination which had been formed in defiance of the economic law of supply and demand. The immediate result was the fall in G. O. Bs. to £35 per ton, the lowest price ever known. Between this figure and £41 lbs. spot cash a large speculative business was transacted, while consumptive demand came in with a rush.

As might be expected, however, in the confusion created by the crash.

came in with a rush.

As might be expected, however, in the confusion created by the crash, and the uncertainty as to the ultimate disposal of the accumulated holdings of the late syndicate, comparatively little copper was liberated, and the relative scarcity of refined copper made itself felt for a considerable period, until, in fact, the various smelting works had had time to turn round and bring their output into something like proportion to the reawakened demand. G. M. Bs. and G. O. Bs. were more freely dealt in, but at constantly varying prices, the anarchy in the trade preventing anything like a decided growth of confidence. In the last week of March the value ranged between £42 10s. and £39 7s. 6d. spot cash; tough ingots being held for £46 to £48, best selected for £48 to £50. and strong sheets £52 to £53. April opened under similar conditions, the value moving within the

difficult to extinguish it. The mine is still closed, and will probably not be opened for some time. It is hoped that the apprehensions referred to may not be realized.

No material increase in the production of the Boston & Montana is looked for until the new plant is in operation, which is hardly expected before the close of 1890.

The Butte & Boston have a small plant in operation, but it cannot be classed among the large producers as yet.

The Parrot production will probably be about the same in 1890 as in 1889.

Altogether it is not considered probable that the copper output of Butte for 1890 will be much, if at all, in excess of that for 1889.

The London Copper Market in 1889.

(From Our Special Correspondent.)

The year 1889 opened without essential change of phase, the French syndicate still dominating the market and pursuing its baneful policy of extending its monopoly and maintaining the artificial and exorbitant to make the for 1895 and 184 to £36, and strong sheets £32 to £38.

April opened under similar conditions, the value moving within the same range, but declining in the second week to £38 spot cash, and the following week to £36 in 5s. die \$250, and strong sheets £32 to £30.

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bringing the total visible supply in and afloat to Europe up to 126,701 tons, as shown in Messrs. Henry R. Merton & Co.'s report, dated April 18; but the second fortnight showed a decrease (due mainly to augmented deliveries) of 2,254 tons, and this process of depleting the visible supply has made unbroken progress since then. May was distinguished by unprecedentedly large deliveries, the total being 13,864 tons, and by a gradnal advance in prices, in harmony with the general activity in all consuming circles, refiners and manufacturers being everywhere in full operation, while in the speculative market, although inquiry was more or less spasmodic, the value, stimulated by general firmness and by the scarcity of prompt warrants, rose from £37 15s. to £42, the highest point touched since March, closing, however, lower at £40 17s. 6d., and for three months, £40 12s. 6d.

During June, the value of cash G, M, Bs., after rising to £41 15s., moved

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Dnring June, the value of cash G. M. Bs., after rising to £41 15s., moved mainly between that figure and £41, the chief exception being a sudden but momentary relapse in the last week to £40 5s. spot cash and £39 15s. three months. From Chili reports came of restricted production, owing to the lower value of copper, and charters began to show a falling off. From India came an active demand for sheets and yellow metal, a good business taking place at \$50, £50 10s. and £4 7s. 8d. respectively. Transactions in furnace material were materially hampered by the negotiations between mine owners and warranteurs which were still hanging fire.

July opened with spot G. M. Bs. still scarce at £41 10s., but the huge French stocks still formed the bugbear of the market and exercised a deterrent effect upon buyers, although hitherto the holders had acted with a wise restraint, apparently biding their time, i.e., awaiting a period of higher prices before parting with any considerable quantities. After giving way to £40 15s, there was a rapid rally to a point a trifle higher than the highest touched, the closing figures being £42 2s. 6d. spot cash and £41 7s. 6d. three months. The visible snpply had been steadily decreasing and the enormous deliveries of this month, nearly equaling those of May and amounting to 13.289 tons, brought the total decrease since mid-April up to 16,760 tons, a fact which spoke volumes for the revival in consumption. in consumption.

in consumption.

The first week of August brought with it a rapid spurt in prices, caused by the forced covering-in of bear sales, £43, £43 10s, and £44 10s, being successively paid for spot G. M. B.'s, while forward was dealt in up to £42. These topmost figures were, like the cause which produced them, only transitory, but the market remained firm at between £43@£43 15s, spot cash for the remainder of the month, with three months about 25s, lower, the market having derived some measure of support from the announcement of a combination on the part of the Lake companies for an all-round augmentation in price, and also from the extensive deliveries, viz. 13,923 tons for the month, beating any previous monthly record. It must be borne in mind that these figures take no account of large quantities of refined and other copper, which go direct into consumption, i. e., without the intervention of public warehonses.

September was characterized in the main by more or less lethargy, the historic strike of the London Dock laborers throwing the whole machinery of delivery out of gear and seriously interfering with business generally, while the collapse of the Lake "pool," referred to above, accentuated the depression. The demand for bars being almost nil, there was a retrogression from £43 7s. 6d. to £42 10s. The chief inquiry for refined sorts came from the Continent, and was for forward delivery. Furnace material had by this time become much more readily available, demand, in fact largeing behind supply

gression from \$43.7s. 6d. to £42.10s. The chief inquiry for refined sorts came from the Continent, and was for forward delivery. Furnace material had by this time become much more readily available, demand, in fact, lagging behind supply.

The first three weeks of October passed off quietly, the salient feature being the lessening difference between the value of spot and forward, the latter advancing in consequence of a disposition to buy ahead. Toward the close of this month, however, a new and outside influence began to affect the copper market. This was the merging of the advance in Scotch pig iron (which had by the beginning of October reached 52s., as compared with 42s. 6d. late in June) into a regular "boom," which in about six weeks rushed prices up to 64s. The contagion of speculation spread from iron to copper, and G. M. B.'s sprang, as the result of large buying orders chiefly for German & Scotch account, in the last week of the month from £42 15s.@£44 7s. 6d., three months, and £44 5s., the turnover on the last day alone amounting to 1,300 tons. The animation was by no means confined to the speculative market; for, consumers—who had hitherto been working on comparatively low stocks—were stimulated into vigorous buying when they saw prices during this and the following month steadily advancing without calling forth any large quantities of copper, and very extensive sales of refined sorts, as also of furnace material, were made for consumptive account, both home and Continental.

November saw the continuation of the new movement, the speculative market being, however, alternately depressed by realizations and stimulated by hear-covering as well as by a few firesh speculation and stimulated by hear-covering as well as by a few firesh speculation and stimulated by hear-covering as well as by a few firesh speculation and stimulated by hear-covering as well as by a few firesh speculation and stimulated by hear-covering as well as by a few firesh speculation and stimulated by hear-covering as well as the fi

November saw the continuation of the new movement, the speculative market being, however, alternately depressed by realizations and stimulated by bear-covering as well as by a few fresh speculative purchases, and prices were impelled up to £48 spot and £47 15s. three months. This advance was followed by a drop of about £2, caused by the sale of a considerable quantity of copper for account of a firm of French importers who had failed some time previously and by the cessation of speculative buying. This copper was instantly snapped up, however, and the market recovered instantaneously. By the end of the first week in December the advance culminated in the payment of £50 5s. for spot G. M. B.'s, refined copper, of which large quantities had been placed, had grown scarce, and consumption being brisk everywhere, the price of tough ingots had risen to £56 to £57, best selected to £57 10s. to £58 10s., strong sheets £65 to £66, India sheets £60 to £62 and yellow metal squares to £6d, a large business having been done with India in the last two articles. At the time of writing (December 17) the position shows no material change, the immediate future of the speculative market depending mainly on the operations of speculators whose prompts fall due between this and February, "bear" covering causing an advance and realizations a decline. In the market for consumption, and indeed generally, things are quieting down in anticipation of the fast approaching holidays, neither producers nor consumers caring to operate to any xtent until after the turn of the year. Cash G. M. B's. stand at £49 10s., ewhile tough ingots are unchanged at £56 to £57; best selected, £57 to £58; strong sheets, £65, and India sheets. £60.

These £gures do not take account of the invisible or private stocks in France, the United States, Japan, etc.

			NOVEMB	ER 30TH.	
Stocks in England and France.	Oet. 31, 1889. Tons.	1889. Tons	1888. Tons.	1887. Tons.	1886. Tons.
Liverpool and Swansea, Chili bars	24,230 188	22,887 99	27,285	33,149	42,144 20
ulus (fine)Liverpool and Swansea, other stuff (fine	. 420	81			257
and English copper	. 29,647 . 5,858	27,963 5,493	17,748 4,741	1,209 1,928	4,253 6,849
Chili bars	. 30,675	30,623 8,738	28,891 10,405	375 155	977 789
	99,940	95,884	89,070	36,821	55,280
Advised from Chili by mail and cable fine copper	. 2,550	3,600	4,800	7,290	6,600
eable, fine copper		500	1,950	1,100	900
	103,540	99,984	95,820	45,121	62,780
Afloat from Liverpool to continent, Chil- bars			2,086		
	103,540	99,984	97,906	45,121	62,780
Price of Chili bars, per ton	£ s. d. 44 2 6 44 2 6	£ s. d. 50 2 6 50 2 6	£ d. 77 10 77 10	£ d. 66 15 68	£ d. 39 15 44

COMPARATIVE STATEMENT.

	l and hereto stralia.		B. and/or warehouse	for the	Eng	orts i land a nce fr	and	Australia	England	nd and
	Stock in England and France and afloat thereto from Chili and Australia.	Price of bars.	Price of G. M. B. a tough cake in war or at works.	Charters from Chill for month.	North America.	Spain and Portugal (exclud pyrites.	Other countries.	Shipments from Au to London.	Total supplies in Eland France.	Deliveries in England France.
30th November, 1889. 31st October, 1889. 30th September, 1889. 31st August, 1889. 31st July, 1889. 30th June, 1889. 30th April, 1889. 31st May, 1889. 32th February, 1889. 31st January, 1889. 31st January, 1889. 31st January, 1889.	103.540 105,699 105,985 108,116 111,689 117,420 124,447 124.876	44 2 6 43 10 42 41 10 41 37 15 39 5 78 77 10	£ 8. d 50 2 6 44 2 6 43 10 42 41 10 41 37 15 39 5 77 10 77 10		3,060 3,292 3,199 3,575 3,774 500 1,239 1,712 2,662 3,372 2,778	Tons 1,610 4,386 1,526 2,154 2,158 1,377 2,278 815 1,590 1,217 1,209 2,164	Tons 1,889 2,133 2,145 3,763 1,584 1,481 1,720 2,803 2,433 2,720 3,079 2,738	600 600 350 500 700 600 650 650	Tons 9,859 9,859 9,120 11,792 9,716 4,758 6,837 8,080 11,135 10,009 9,716 11,390	Tons 13,413 13,890 9,430 13,923 13,288 10,483 13,864 8,509 4,399 1,357 4,290 5,190

* Compiled by Henry R. Merton & Co.

London, 16th December, 1889.

The Chili charters for the second fortnight of November were 900 tons, and the otal supplies during that period were 3,565 tons.

The deliveries in England and France during the same time were 4,393 tons, and he figures now compare as follows:

Total quantity of copper in Europe	Tons. 98,246	30th Nov. Tons. 95,884	15th Dec., 1889. Tons. 94,606
and Australia		4,100	4,550
	102,146	99,984	99,156
Decrease for the second fortnight "" first "since 31st March, 1889	December		

lapse the total stocks visible and invisible were in round figures 180,000 tons, which includes the 118,000 tons given in Messrs. Henry R. Merton & Co.'s statistics for end of February. Since then the invisible stocks have, it is estimated, decreased by 28,000 to 30,000 tons, and the visible supply, as shown above, by about 25,000 tons. Taking the lowest figures, in place of 180,000 tons total stocks, visible and invisible in April last, there are now only about 127,000 tons, of which about 30,000 are private stocks. A large proportion of these lie in America.

Messrs. James Lewis & Son, of Liverpool, report that in view of the recent sales of the late syndicate's stock of copper, of the total quantity of copper held by the syndicate at the time of its collapse, viz.: 179,000 tons, about 69,000 tons have now been sold, leaving a balance of 110,000 tons, of which 94,500 tons appear in the public stocks in England and France, having 15,500 tons additional still held by the successors of the syndicate in France, the United States, &c., privately. By the successors we mean the four banks or banking houses who are carrying the late syndicate's stock.

It is stated that the syndicate have recently disposed of further 6,000 tons lying in this country and France.

The feeling is decidedly strong, and we look for higher prices ere long.

The following are the Board of Trade returns:

IMPORTS, -JANUARY TO NOVEMBER 30.

	11 months of 1889.	11 months of 1888.	11 months of 1887.
Pyrites	14,844 18,712 26,868 27,783	14,181 17,204 18,534 30,903 41,666	13,308 12,215 12,439 26,095 27,040
Totals	123,383	122,488	91,097
Exports of copper, wrought and unwrought and unwrought months ending Nov. 30, 1889	ight, from Gr	θ	8,319 tous. 9,148 tons.

LEAD IN 1889

The lead industry has participated in a quiet way in the general prosperity. It has neither "boomed" wildly, nor has it suffered heavy de-

perty. It has heither boomed whilly, nor has it suffered heavy depressions.

The lead production of the country has been reported by every refiner, and, with the exception of a few very small concerns, every soft lead producer in the country. The total amount of refined and soft lead produced was 190,000 tons, of 2,000 pounds each, a large increase over the production in 1888, though the lead made from Mexican ores was fully 6,000 or 7,000 tons less than in the previous year.

While our aggregate is obtained from the direct returns of all the refining and soft lead producers, it has not been possible to distribute this output with absolute accuracy among the several States. It is quite possible that Colorado or some other State may be credited with somewhat less or more than its proper amount, but the total figures, 190,000 tons, can be relied on as substantially correct.

We are indebted to the courtesy of the Director of the Mint for the imports of eleven months of all lead, copper, gold and silver brought in through the Rio Grande ports of entry, Nogales, El Paso and Laredo. A certain amount of Mexican ores came in through other ports also, and of these we have no record, but it is probable that the total amount of lead that came in in Mexican silver ores in 1889 did not exceed 22,000 tons of 2,000 pounds.

2,000 pounds.

The stocks of lead on hand are much lighter than a year ago, and consist chiefly of the inheritance from the old Corwith "corner," which is estimated as follows: At New York, 8,000 tons; Chicago, 7,000 tons; St. Louis, 900 tons

Outside of this, stocks are very light everywhere. A few of the smelters of base bullion have not returned their stocks, but we can still estimate with substantial accuracy the stock of lead in hands of smelters in transit, and at the chief markets as 25,000 tons.

The consumption of lead has been enormous, especially in the last half

ore, have increased little, if any, owing chiefly to comparatively high rates of freight on ores and concentrates, but this is undoubtedly the future home of the lead production of this country, and these States will continue to increase in importance every year.

future home of the lead production of this country, and these States will continue to increase in importance every year.

The free entry of Mexican silver-lead fluxing ores has been much lighter this year than last. The official returns for eleven months from Laredo, El Paso and Nogales—the frontier ports of entry—which have been courteously furnished us by the government, show that the actual imports of lead were 35,950,830 tons of 2,000 pounds, and of copper 246,732 pounds, adding for December about the amount received in November, and the total is 38,450,830 tons lead and 266,732 pounds copper. It is true, however, that some Mexican products enter through this port and through some other ports, so that 21,000 tons of lead, or nearly 8,000 tons less, entered from this source during the year than in the preceding year. This deficiency has been more than balanced by the steadily increasing make of our own works, which have increased 11,000 tons.

The large consumption demand and lightstocks held by consumers have steadied the market under conditions that might well have been expected

The large consumption demand and lightstocks held by consumers have steadied the market under conditions that might well have been expected to cause much more violent fluctuations than actually occurred.

Early in the year the baneful effects of the Corwith corner were felt, and it was constantly feared that the stocks of lead left by that operation would come on the market; but the legal entanglements which surrounded them sufficed to retard or prevent, their sale, and a portion of that lead is still in store and unavailable.

The question of reversing the traceurs, ruling, which established the

The question of reversing the treasury ruling, which established the classification for duty purposes that a mixed or complex ore is held to be an ore of the metal having the largest market value, and under which not a little Mexican lead came in free of duty in silver ores was agitated, and it was early stated with great persistency that this ruling would be reversed and the Mexican supply be cut off. Such instructions were indeed issued by the Secretary of the Treasury as did for a time seriously lessen the entry of lead ores for treatment in this country. The effect of this was slightly and temporarily to advance the price of lead here and to diminish the price paid for "dry" silver ores, which required the bringing in of such lead ores to flux them, our home supply being insufficient. After a long and careful review of the subject the Secretary of the Treasury decided not to reverse the established rulings, and, though some arbitrary methods of valuing ores at the frontier were, and still are, enforced, the current of ore from Mexico again increased in volume toward the close of the year.

The policy of thus diverting from this country the raw material, which

toward the close of the year.

The policy of thus diverting from this country the raw material, which would contribute towards building up our metallurgical industry, and would create here a metallurgical centre for the treatment of the ores of other countries, and which would, as a consequence, greatly increase our exports of manufactured goods to those countries, has seemed to us short sighted and ill advised. Its mere suggestion and the possibility of Congress enacting such laws as will prevent the free entry of those ores has already started foreign projects for building up a formidable rival metallurgical industry in Mexico, and has induced the European (chiefly the German) smelters and refiners to take steps to secure the trade which we reject.

The consumption of lead for pipes used in protecting underground electric wires has assumed an enormous expansion, and the year closes with the smelters in full operation, and the markets practically bare of the

with regard to the general question of production and consumption, it would appear that these two factors now nearly balance each other, and we have reason to believe 'that of the heavy stocks accumulated during the reckless speculation of the previous year not more than 10,000 tons are lct. Part of this is still the subject of litigation, and part is strongly held for higher prices.

From all this it is clear that the position of the metal is sound. However, as we have previously stated, the efforts put forth to raise values from time to time only met with a moderate amount of success, and the highest point touched during the year was a little above 4c., and only on two occasions was the 4c. limit reached. It was found impossible to sustain that figure for any "length of time because of the heavy offerings

which always followed an advance in quotations and which naturally in-

duced consumers to hold off.

which always followed an advance in quotations and which naturally induced consumers to hold off.

January opened with the quotations standing at 3.85 to 3.90, and prices afterward gradually settled down to 3.65 in the middle of February, at which point they remained for a little time, and afterward fluctuated between 3.70 and 3.77½, receding again in April until 3.60 was touched, and this was the lowest quotation during the whole year. About this time the first information appeared that the Treasury were about to institute an inquiry on the Mexican ore question, and thereupon prices quickly advanced to 3.95, but quotations gave way as rapidly again to 3.70.

Subsequently, when this ore question assumed a more definite shape, the tendency became firm again, and 4c. was reached. The second half of the year thus commenced with the quotation at 4c. in July, whilst in August prices were down again to 3.80, and in the beginning of September up again to 4.05, and even 4.10 paid, after which values rapidly gave way again to 3.75 in October, and since then the quotations have ruled between 3.80 and 3.90. On the whole, the demand for consumption has been very satisfactory, and it is understood that manufacturers of pipes, etc., have been doing an enormous business. The consumption for pipes, sheets, etc., has been fully as large as in the year 1888.

It will be remembered that in 1887 a combination was formed under the name of the National Lead Trust Company, of some snielting works and also several of the most important white lead manufactures in this country to uphold selling prices and bring to an end the ruinous competition which had hitherto existed in this important industry. We understand that this combination has so far worked very satisfactorily to its members, and that prices have been sustained at a profitable level with at the same time a large output.

and that prices have been sustained at a profitable level with at the same time a large output.

Of foreign lead only about 200 tons have been imported during the year, and there can be no doubt that the whole of this quantity was subsequently exported again in a manufactured condition. The stock of

PRODUCTION OF LEAD IN THE UNITED STATES. Mo., Kan Ili., and Wis. Idaho nd Mon-tana. Arizona and Cal. Other States. Total pro-duction. Utah. 22,381 56 312 818 667 897 6,369 23,074 35,674 40,547 55,000 42,540 52,080 59,640 64,070 91,060 92,780 97,825 117,085 132,890 143,957 139,897 1,9412 135,629 160,700 5,103 31,768 15,123 11,982 3,127 5,858 4,171 2,802 8,942 10,285 2,600 6,256 24.699 26.421 31.152 26,770 28,130 27,690 30,770 29,015 21.600 19,676 1876. 1877. 1878. 1879. 1880. 1881. 1882. 1883. 1884. 19,724 31,063 22,805 16,659 12,826 8,590 6,000 4,000 21,000 14,000 15,000 24,000 29,000 28,000 26,000 24,000 22,000 11,000 14,500 3,200 **4,300** 70,557 63,165 3,500 3,400 3,400 2,400 1,500 17,000 27,000 34,875 30,000

* Including 28,636 tons from Mexico.
* Including 19,000 tons imported in Mexican ores

AVERAGE MONTHLY PRICES OF LEAD IN NEW YORK, IN CENTS PER POUND.

Year.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1870 1871 1873: 1874: 1875: 1876: 1877: 1878: 1879: 1880 1881 1882: 1883: 1883: 1884:	6 25 6 22 5 95 6 32 5 95 6 10 5 93 6 12 4 17 4 25 5 80 4 65 5 05 4 65 5 05 4 65	6·21 6·22 5 93 6·45 6·12 5·87 6·17 6·30 3 75 4 50 4 95 5 10 4 55 3 90 3 65	6:15 6:17 5:93 6:37 6:18 5:68 6:45 6:62 3:75 5:60 4:75 5:00 4:57 5:00 4:12 3:65	6·20 6·15 6·07 6·07 5·83 6·26 6·37 4·60 4·95 4·95 4·53	6·22 6·14 6·30 5·87 5·92 6·0 5·77 3·37 3·00 4·82 4·47 4·72 4·47 3·63 3·63	6·22 6·13 6·33 5·81 5·82 6·37 5·63 3·46 4·62 4·37 4·72 4·42 4·37 3·75	6 25 6 12 6 50 6 571 5 97 6 27 5 50 3 43 4 70 4 70 5 02 4 35 3 62 4 00	6:35 6:06 6:45 6:12 5:72 5:91 6:32 5:02 4:02 4:65 4:85 5:02 4:25	6:33 6:40 6:40 6:50 5:87 5:78 6:12 4:85 5:16 5:05 4:31 3:65 4:25	6:31 5:93 6:59 6:59 6:59 5:62 5:62 5:62 5:62 5:76 4:76 5:01 5:01 5:01 5:01 5:01 4:22 4:76 5:01 4:22 4:20	6·30 5·95 6·55 6·25 6·25 6·37 5·76 5·75 4·62 3·77 4·80 5·97 4·80 5·97 4·80 5·95	6:30 5:87 6:51 6:05 6:26 5:90 5:67 4:55 5:55 4:50 5:42 4:62 3:62 4:62 3:62 4:55	6 25 6 08 6 30 6 32 6 01 5 85 6 13 5 49 3 61 4 14 5 04 4 81 4 91 4 32 3 74 3 95
1885. 1886.	3.65	3.65	3 65 4 90	3.65	3.65	3.75	4.00	4 75	4.65	4 20	4.10	4:55	3.95
1887.	4.31	4.37	4.32	4.27	4.25	4'65	4.55	4.58	4.20	4.25	4.40	5.12	4.20
1888.	4.90	4.95	5:15	4.75	4°25 3°78	3.86	3.88	4.45 3.86	2.00 2.00	3.86	3.67	3.75	3.93
1889.	4.84	3.43	3.45	3.68	0.10	3 80	3 00	3 00	1 00	0 00	0 02	0 08	0 90

UNITED STATES IMPORTS AND EXPORTS OF LEAD.

			In	aports.					
Fiscal years ending June 30	Pigs ar	d bars.	Sheets	, pipe shot.	Old and	l scrap.	Not specified.	Total imports.	Total exp'ts.
	Pounds.	Value.	Pounds	Value.	Pounds	Value.	sbe		
1867	65,322,923	\$2,812,668	185,825	\$9,560	1,256,233	\$53,202	\$6,247	\$2,881,677	\$32,859 71,329 17.240
1868	63,254,677	,668,915		7.229	2,465,575	101,586	6,843	2,784,573	71,329
1869	87,865,471			15,531	2,983,272 3,756,785	101,586 123,068 150,379	18,885	3,810,965	17.240
	85,895,724	3,530,837	141,681	6.879	3,756,785	150,379	10,620	3,698,715	28,31
	91,496,715	3,721,096		4,209	2,289,688	94,467	8,740	3,828,512	79,880
	73,086,657	2,929,623	12,518	859	4,257,778	171,324	21,616	3,123,422	48.13
1873	72,423,641	3,233,011	105	12	3,545,098	151,756	21,553	3,406,332	13,39
1874	46,205,104				395,516	13,897	37,833	2,283 547	302,04
	32,770,712				382,150	13,964	26,098	1,599,079	429,300
	14,329,366				265,860	9,534	28,310	719,976	102,720
877	14,583,845	671,482			249,645	8,383	2,303	682,168	49,83
1878	6,717,052	294,233			106,342	3,756	1,076	299,065	314,90
1879	1,216,500	42,983			42,283	1,153	1,139	45,275	280,77
1880	6,723,706	246,015			213,063	5,262	425	251,702	
1881	4,322,068	189,129			123,018	2,729	1,605	163,463	39,710
1882	6,079,304				220,702	5,949	3,048	211.500	
1883	4,037,867				1,094,133	31,724	8,126	169,958	43,10
1884	3,072,738	85,395			160,356	4,830	2,005	92,860	135,150
1885	5,862,474	143,103			4,866	106	1,429	166,855	123,46
1886				1,023		667	1,698	298,243	114,09
1887	11,148,211				35,081	1,452	360	345,171	141.15
1888	7,035,625	189,989				3,529	13,441	208,227	129,558
1889		71,449	43,251	1,793	73,522	2,015	5,498	80,702	199,802
		1					= OVAN		

foreign lead in warehouse in this city amounts only to about 400 tons, part of which is at the present time the subject of litigation in the courts.

Messrs. John Wahl & Co., of St. Louis, give us the production of pig lead in the States of Missouri and Kansas for the year 1889 as 30,700 tons (2,000 pounds), but we have received direct returns of a large amount than this. Possibly Messrs. John Wahl & Co. do not take account of Missouri and Kansas ore smelted at the large refining works. This would account for the difference between our returns.

THE LONDON LEAD MARKET IN 1889.

(From Our Special Correspondent.)

The new year opened with an improvement in the tone of this market, and prices, supported by a moderate trade and some speculative inquiry, quickly advanced from £12 17s. 6d. to £13 5s., alternating during the remainder of the month between £12 17s. 6d. and £13. During February mainder of the month between £12 17s. 6d. and £13. During February the tendency, owing rather to absence of demand than to pressure of sales, was easier, £12 15s. being the top and £12 10s. the bottom limit; while March markets, with the exception of a temporary rally to £12 17s. 6d., passed off at a still lower range of values, mostly between £12 7s. 6d. and £12 10s. To this period of depression succeeded a firmer feeling in April, and transactions were soon recorded at £12 11s. 3d. up to £12 15s.; but as the month neared its end an increase in the quantities offered determined a relanse to £12 10s.

The ensuing month opened flat, but the tone gradually gained strength, and in the latter half a good business took place in soft foreign and refined sorts, up to £12 15s. being paid for the former.

By the close of May, however, this spurt had died away, leaving the market dull and featureless, and throughout June the lethargy deepened, the value gradually declining to £12 5s. to £12 7s. 6d., but recovering in the course of July, under the spur of a fair consumptive demand to £12 8s. 9d. for actual business. The continuance of this inquiry during the portion of August resulted in sales of soft foreign up to £12 15s., English being held for £13

In September, deliveries against previous orders, as well as the passing of fresh contracts, were seriously hampered by the memorable strike of the London dock laborers, the various wharves being blocked by the numerous arrivals in the Thames. £12 13s. 9d. was then given for an isolated parcel, but at the close of the month £12 10s. was accepted.

After a brief spell of firmness and better demand early in October, the largely increased Australian shipments caused a temporary drop of 3s. 9d. At this period, lead was drawn under the influence of the strong speculative movement originating in the iron market, and entered upon a

9d. At this period, lead was drawn under the influence of the strong speculative movement originating in the iron market, and entered upon a vigorous upward movement, which progressed steadily through the whole of November, and culminated in the first week of the present month (December), when £14 17s. 6d. was paid for a parcel of soft foreign in warehouse. Although in the main due to the attention devoted to the article by speculators, the natural influences of vigorous consumption, of the inquiry thus evoked and of the general revival of all industrial branches throughout the country, contributed largely to the improvement described. Manufacturers have been working throughout up to their full capacity, and are still full of orders; in fact, this branch seems to be in a very prosperous condition.

perous condition.

At the close of the first week in December there were symptoms of a slight relaxation of the strong tendency, buyers evincing less inclination to operate, and sellers, on the other hand, being abundant. The price relapeed to £13 17s. 6d., improving, however (on the withdrawal of sellers and the appearance of more inclination to buy), to £14@£14 2s. 6d., soft Spanish, to £14 10s. (nominal) for English, which are the figures at date of writing.

The following are the figures of the Board of Trade returns for the

The following are the figures of the Board of Trade returns for the

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	1889.	1888.	1887.
Imports		124,468	103,011
Exports	49,292	43,843	40,844

TIN IN 1889.

THE COURSE OF THE MARKET.

The fluctuations in values of this metal during the past year have been of a remarkably moderate character, the difference between the highest and lowest point touched having only been a little over 2c. per pound, and these lowest and highest limits were only continued for a very few days. Early in the year it was reported that the production in the East would show a considerable increase over the preceding year, and as these reports did not originate with speculators, but came from parties of well known conservative opinions, they naturally gained a good deal of credence.

known conservative opinions, they naturally gained a good deal of credence.

Subsequent events proved, however, that while some increase in production was taking place in certain quarters (and during the last few months the supplies from the Straits were rather larger than expected), it was not of such a character or to such an extent as to materially influence the markets, and in fact the increased output was found to be more than counterbalanced by the increased consumptive demand which affected in along with most other metals. This increase in the consumption of tin is mainly to be attributed to the general activity in business throughout the whole of Europe and also in this country, but no doubt partly also to the fact that the French government early this spring carried a resolution prohibiting adulteration in the manufacture of tin foil. At the end of the year we find, at any rate, that the statistics of visible supplies show a small decrease, as the total stocks in Holland, England and the United States together with the quantity afloat amounted on November 30th, 1889, to 13,303 tons; end of November, 1888, to 13,705 tons; end of November, 1887, to 14,609 tons.

It is greatly to be regretted that up to the present time the production of this metal in this country can hardly be regarded as having commenced. True, encouraging reports as to the progress of affairs have from time to time been made public with regard to the prospects and operations going on at the Harney Peak mines, and these reports have even led to a rather heated discussion in various English newspapers, but nothing more than this appears to have been accomplished as yet. The work done in Virginia and North Carolina has, however, been yet. The work done in Virginia and North Carolina has, however, been yet.

of Dr. Ledoux, of this city, and under his supervision, prospecting operations have been going on for some time past, and have already resulted in proving the actual existence of tin in paying quantities; and it is to be hoped that ere long the necessary capital will be attracted into this

in proving the actual existence of tin in paying quantities; and it is to be hoped that ere long the necessary capital will be attracted into this channel.

The comparatively steady condition of the market during the year in this country no doubt had the effect of increasing the consumption of the metal for all suitable purposes. January commenced with quotations standing at 22½ spot and 22½@\$ futures, and thereafter values gradually settled down with very slight fluctuations, until at the end of April prices stood at 20½ spot and 20½ futures, and by the month of July the lowest point of the year was reached, with quotations marked at 19½ for both spot and futures. During the first six months of the year the quotations for spot tin usually ruled a fraction lower than for futures, but as the second half advanced this state of things was completely reversed. In August values commenced to improve again, and at the end of that month the quotations were: spot, 20½; futures, 20½. About this time a very important movement took place in spot tin prices, which rose within a few days to 21½, and by the middle of September touched 21½@22, while deliveries for two or three months ahead could readily be bought at 20½. This unusual condition of affairs resulted from the serious trade disputes and strikes in London, in which the dock companies and their men were concerned, and which led to an almost total interruption of shipments from the London docks for from four to six weeks. As the greater portion of the tin coming to this country is shipped from the east via London, and transhipped at the latter port to the United States or actually bought for shipment from London, it is obvious that the regularity of our supplies is greatly dependent on things working in a smooth condition in London. In the early part of the year importers were loud in their complaints that the metal could not be brought over to leave even a moderate margin of profit to them, and in consequence of this discouragement the stocks had dropped down to a lo

as only a natural consequence.

It also became known that some parties were in the unfortunate posi-

It also became known that some parties were in the unfortunate position of having oversold themselves, and thereupon an attempt was made to bring about a "corner" in September tin. The "bears," however, proved themselves too smart to be caught in this manner, and they covered themselves by buying what they could here, and also by rushing supplies over via Liverpool, and by their activity in carrying out these operations there is no doubt they escaped very serious losses. When the London strikes came to an end values began to give way again, and by the beginning of October spot tin had relapsed to 20½, with the quotation for futures standing at about 20½.

It soon became evident that the shipments arriving from Europe were inadequate to meet the demand for the fall trade, which was much heavier than for some years previous, and thereupon prices gradually stiffened again until the highest point was touched in the beginning of November, when 22½c, was readily paid for spot and near deliveries. This high level of values naturally attracted larger supplies from the other side, and while for quite a fortnight prices were firmly sustained at about 22c, they subsequently eased off a little, and at the end of November the quotations stood at 21½c, spot and 21½c, futures. During the whole period when the above named comparatively high prices were being paid for spot tin, later deliveries could be bought at from ½c, to ¾c, below the spot price, which emphatically demonstrated the extreme scarcity of supplies existing in the parket for a long time. In December importations became larger tin, later deliveries could be bought at from 4c. to 4c. below the spot price, which emphatically demonstrated the extreme scarcity of supplies existing in the market for a long time. In December importations became larger, and a good many parcels having in the meantime got into the hands of rather weak speculators prices commenced to slowly decline again until, at the close of the year, 21½ to 21½ was reached for both spot and futures. As for the past few weeks the Loudon market has ruled above the parity of values on this side, it is not likely that for the next few months arrivals will be large and consequently a searcity of each supplies may be again. will be large, and consequently a scarcity of spot supplies may be again experienced early in the new year.

PRICES OF STRAITS TIN IN NEW YORK.

Year.	Jan.	Feb.	Mar.	Apl.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
1885 1886 1887 1888	205/8 22:30 36 95	20.70 221/6 36.95	20.80 22.55 36.70	20.85 221/2 32.95	21 · 30 22 · 95 21 · 95	231/4	228/6 221/4 23:35 191/4 197/6	2034	23½ 22.95	221/4 251/8 23:35	22.40 31.05 22.70	221/4 361/8 22 · 10	195% 21 65 24 85 36 20 21 80

THE LONDON TIN MARKET IN 1889.

(From Our Special Correspondent.)

After declining toward the close of 1888 to £96 15s. spot cash, there was a gradual recovery in the value of Straits tin during the final week until £100 5s. spot cash to £101 3 months was reached; but the publication of the statistics for December, showing an increase of over 1,200 tons in the European supplies, spot and afloat, exerted a depressing influence, under which the new year opened, and the value rapidly receded to £97 17s. 6d. The course of the market during the greater part of the month of January was steadily downward, the lowest points tonched in the fourth week being £96 15s. spot, English tin following the movement, and being held at this time for £99 10s. common ingots, whilst Australian fetched a premium of 5s. to 10s. over Straits. The Banca sale on January 31st realizing the satisfactory average price of 58½ ft., the effect on our market was seen in a more active tone, resulting in sales up to £98 12s. 6d. spot Straits. Statistics for the month showed a further slight increase.

February was relieved by no feature of interest, the business passing being of a restricted nature and prices experiencing a further relapse in the absence of any stimulus in the shape of improved demand. The third week witnessed the turning point in the downward move, the value rising—after £93 12s. 6d. had been taken for spot—to £95 17s. 6d. at the close, notwithstanding the addition of 1,200 tons to the statistics Toward the close of March the utter collapse of the Copper Syndicate caused tin (which had in the earlier part of the month been steady at a range of £94 5s. to £95) to drop suddenly to £92 10s.; but this was at once succeeded by a rally to £94, Australian and 3 months Straits being £1 higher and English standing £2 10s. higher. April, under the influence of the first reduction in European supplies during the present year, opened firm, with an advance to £95 2s. 6d., but

this stimulus, drawn from statistics, was but short-lived, and the price

this stimulus, drawn from statistics, was but short-lived, and the price gave way to £91 17s. 6d., and, after a momentary rally, still further to £89 15s. Early in May the heavy shipments from the Straits Settlements to an already overstocked market induced great eagerness to sell, and a further decline to £89 5s. was the immediate consequence. After recovering to £93 2s. 6d. and relapsing to £91 12s. 5d., the month closed with sharp cash at £92. The figures for May showed an improvement of 1,040 tons, but the effect on the market was next to nil, and after a very irregular course during the first three weeks of June, with fluctuations between £91 15s. and £90 7s. 6d., there occurred in the closing week a rapid fall to £87 17s. 6d., followed by a partial rally.

July variations moved between £88 and £90 10s. for spot, with forward at a premium of 7s. 6d. to 10s., excepting for a brief interval toward the end of the month when forward was at a discount. The perpetual ebb and flow of the market and the apparent lack of confidence in its near future exhibited by speculators, combined with the inactivity of consumptive demand, sufficiently accounts for the absence of any feature of interest. August brought with it no tangible change in the aspect of things, the course of the article being shifty and transactions comparatively unimportant. After receding to £88 12s. 6d., the value twice rose to £91 10s. on the first occasion, owing to shipments from the Straits turning out 1,000 tons less than anticipated, and in the second instance, in consequence of a trifle more animation in the demand.

The dock laborers' strike in September, and the consequent delay in shipments, caused an acute squeeze in America, where £90 trails values ran high. In consequence of the support derived from the demand thus created, September values ranged in the main above those of August, £98 10s. being the lowest and £91 15s. the topmost limit. The market continued, however, to be at the mercy of every slight variation in the demand, receding tained. In the last week of this month the excitement bred of the speculation, which, originating in the pig-iron market, spread to most other metals, exerted for a brief space a powerful influence also on tin, which sprang at a bound from £92 7s. 6d. to £98 10s. and £99 spot cash, the volume of speculative business done being very considerable. This extraneous influence, however, soon lost its hold on tin. copper offering greater attractions to speculators, and tin quickly fell to £96 15s., and early in November to £95 17s. 6d., when the coincidence of a demand for spot tin, with apprehensions of a serious recurrence of strikes among lightermen and dock laborers, impelled the value up to £98 spot cash, America being still the leading buyer. Three months Straits was obtainable at a discount of 5s. An improvement of 7s. 6d. was succeeded by a drop of nearly £3 in the week ending November 16th, the subsequent range being from £95 10s. to £96 15s.

During the first fortnight of December the scarcity of spot tin twice caused an advance to from £98 2s. 6d. to £98 5s., three months tin being neglected, and the difference between the value of the two positions increasing considerably. The present prices are, for spot. £97 10s. to £97 15s., and for forward £96 to £96 2s. 6d. From the Straits we hear of increased production, but this is not expected to affect shipments, at least

creased production, but this is not expected to affect shipments, at least till after Christmas.

The following figures, showing the visible supply of tin in London, Holland, and the United States of America, including quantity affoat, is taken from Messrs.

Henry R. Morten &					m	
1889.	Tons.	Prices.			Tons.	Prices.
	# CMO	£ s.			10.000	£ 8.
January 1		100 00		1	13,903	89 10
February 1	16,042	97 10	Septem	ber 1	14,939	91 5
March 1		95 00		1	14,944	89 10
April 1	15,263	93 15	Noveml	oer 1	14,480	97 00
May 1	15,767	89 15	Decemb	er 1	14,802	96 5
June 1		92 00		7 1, 1890		
July 1	14,598	89 10				
•			77			00 1000
					ending Jan.	
			1889.	1888.	1887.	1886.
			tons.	tons.	tons.	tons.
Shipments from Str		on	16,957	19,400	16,581	11,773
	stralia "		5,617	6,623	5,742	6,370
	aits to Amer	ica	7,925	3,320	5,095	5,211
	stralia "		600	400	1,175	1,225
Deliveries of tin in	London		18,245	18,181	14,144	16,173
	BOA	RD OF TH	RADE RETU	TRNS.		
T					andina Non	90.
Imports, 11 months	ending Nov.	30:		, 11 months	ending Nov	
		Tons.				Tons.
From Straits sett						
" Australia				h		5,009
" Other count	tries	. 1,569				24.004
						21,004
		27,236				

ANTIMONY.

THE COURSE OF THE MARKET.

Although at the beginning of the present year prices for this metal stood at what was regarded as a fairly high level, with Cookson's brand quoted at 13 cents, and Hallett's at 11 cents, the tendency of values has continued during the whole of the year in a decidedly upward direction. In the first four months of the year prices slowly and steadily advanced, until at the end of April Cookson's stood at 13½ cents and Hallett's at 12 cents.

cents.

After that date the market assumed a remarkably strong appearance, and After that date the market assumed a remarkably strong appearance, and prices advanced with great rapidity, owing to two important causes, the first being the continued extreme scarcity of suitable ores, which seriously hampered smelters and rendered it exceedingly difficult for them to secure their necessary supplies of raw material, and in the second place, about the middle of the year the German and French governments gave out very large orders for the metal. Thereupon a continued and important advance in values set in, the result almost exclusively of orders for bona fide trade purposes, as speculative operations are believed to have had little or no influence on the enormous increase in quotations. By the end of June prices stood at 16½c. for Cookson's and 15c. for Hallett's; end of Au-

gust, 18½c. for Cookson's and 16½c. for Hallett's; end of October, 20½c. Cookson's and 18½c. Hallett's; while the beginning of December witnessed quotations at the highest point during the whole year, viz., 32c. to 33c. for Cookson's and 21c. to 21½c. for Hallett's. The phenomenal advance in Cookson's was mainly due to the absolute exhaustion of stocks; but some shipments having subsequently arrived, the quotation declined again to 26c. to 27c., at which it now stands. Notwithstanding this great advance in prices, the demand on the part of the consumers has continued satisfactorily all along, and as it may be naturally concluded that no consumer is now buying more than he actually requires for current use, and orders continue to along, and as it may be naturally concluded that no consumer is now buying more than he actually requires for current use, and orders continue to come in very steadily, while the English producers are reported to be sold out for some months to came, it does not appear probable that prices will soon give way. Some new discoveries of antimony ore have recently been made in this country, but up to the present the production of star antimony is quite insignificant.

THE LONDON ANTIMONY MARKET IN 1889. (From Our Special Correspondent.)

(From Our Special Correspondent.)

The course of this metal, which during 1888 fluctuated between £50 and £38 and which at the opening of the present year, at £44 to £45, has been distinguished from that of all other metals by the extent and uninterrupted progress of the advance in its value, and which must be mainly ascribed to the great scarcity of raw materia!, which has made itself felt and to an improved demand, America especially having absorbed large quantities. At the end of January the price was £45 to £47, first hands asking £50; by the end of February nothing was obtainable under £48 to £50, while from end March to early May £49 was the lowest limit. The pace of the advance then gathered momentum, £57 to £60 being reached by the end of the latter month, and the subsequent monthly stages being £62 to £63 by end of June; £63 to £65 end July; £66 to £67 end August; £67 10s. to £64 10s. end September; £70 to £72 end October, and £74 to £75 end November, the last-named price ruling also during the first week of December. At the date of writing (December 16th) the value is £75 to £76. Notwithstanding this striking increase in the value, there has been no falling off in demand; on the other hand, production tends rather to decline, the scarcity of ores and crude having increased.

No statistics of this metal are available.

THE NICKEL MARKET IN 1889.

This article has excited more attention this year than formerly, demand having grown more important in consequence of the increasing application of nickel to various purposes, such as alloying with steel, the breaking strain of which it is said to greatly augment.

The price remains stationary at 2s. per pound in England, but during the last few months the article was scarely obtainable at all.

The most important event of the year has been the development of the great. Sudbury copper-nickel mines which are quite capable of supplying the world's present demand for this metal. It seems to us that the time cannot be far distant when some less expensive method of separating copper and nickel will be found that will permit of nickel being sold at about half its present price. Then the uses of the metal will increase rapidly. rapidly.

THE PRODUCTION OF CALIFORNIA QUICKSILVER MINES.

Special Report to the Engineering and Mining, Journal by J. B. RANDOL.

The following table shows the production of the several mines for six

Mines.	1884.	1885.	1886.	1887.	1888.	1889.
New Almaden	20,000	21,400	18,000	20,000	18,000	13,100
Ætna	2,931	1,309	3,478	2,694	950	10,200
Napa Consolidated	1,376	2,197	1.769	2,880	4,065	4,500
Great Western	3,292	3,469	1,949	1,446	625	550
Sulphur Bank	890	1,296	1,449	1,890	2,164	2,150
New Idria	1,025	1.144	1,406	1,490	1,320	1,000
Great Eastern	332	446	735	689	1,151	1,350
Redington	881	385	409	673	126	800
Guadalupe	1,179	35				
Bradford Consolidated				1,543	3,848	1,700
Various	7	392	786	455	992	500
Total flasks	31,913	32,073	29,981	33,760	33,250	25,650*
Lowest price per flask	\$26.00	\$28.50	\$32.00	\$36.50	\$37:00	\$40.00
Highest price per flask	35.00	32.00	39.00	48.00	48.00	50.00
Average per flask	30.50	30.25	35.50	42.25	42.50	45 00

Total value at average price, \$975,000, \$970,000, \$1,060,000, \$1,425,000, \$1,415,000, \$1,154,000,

*The total production for 1889 is a near approximation.

The monthly production and highest and lowest prices prevailing during the past year have been as follows:

	Monthy production.	Highest price	Lowest
Month.	Flask.	per flask.	per flask
January	2,270	\$43.00	\$41.50
February		42.00	41.50
March		41.50	40.00
April		41.00	40.00
May	1.840	45.00	41.00
June		50.00	46.50
July		47.50	46.00
August		47.50	46.00
September		47.50	46.00
October	2,440	47.00	46.50
November	2,460	48.00	46.00
December		48.00	47.00

*December product estimated.

*December product estimated.

The total production for 1889, 25,650 flasks, compared with the previous year, shows a decrease of 7,600 flasks, and is the smallest quantity in any year since 1873, when the production was 27,642 flasks.

New Almaden's production shows a loss of 4,900 flasks, and is its lowest yield since 1874, when its production was 9,054 flasks.

Napa Consolidated retains its position of second highest producer, and increased its output to 4,500 flasks, a gain of 435 flasks.

Actna was dropped off the list. Bradford, the third in rank last year,

produced only 1,700 flasks, a loss of 2,148 flasks. Great Western produced 550 flasks, a loss of 75 flasks. Sulphur Bank also shows a slight decrease, 2,150 against 2,164. New Idria had a like misfortune, 1,000 against 1,320. Great Eastern, an unimportant increase, 1,350 against 1,320. Redington, in a last expiring effort, turned out 800 against 128. And various odds and ends of mines gathered 500 against 992 in 1888.

This decrease all along the line (except Napa Consolidated) emphasizes the poverty of the mines; the higher price of quicksilver has failed to arrest the decline in production, and the future outlook is far from hopeful.

Still higher prices must prevail in 1890; and this industry must be protected by a liberal duty—at least ten cents per pound—otherwise we may look for a further decline in production, to a point where the output will be insufficient to pay costs; and then—extinction.

The quotations for Spanish quicksilven London, as shown by Messrs.

Pothershills prices protein and the process of the process

The quotations for spanish quicksiver in London, as shown by messis. Rothschild's prices monthly, were as follows:

January, £9 10s.; February, £8, £7 10s., £8, £8 10s.; March, £7 10s., £7 15s.; April, £7 12s. 6d., £7 15s., £8; May, £8 5s., £8 10s.; June, £8 15s., £9, £9 5s.; July, £9 10s., £9 15s.; August, no change; September, no change; October, £9, £9 5s.; November, £9 10s., £9 15s.; December, £9 15s.

THE SPELTER INDUSTRY IN 1889.

The total production of spelter in the United States in 1889 was 59,500 tons of 2,000 pounds.

We have great pleasure in acknowledging the courtesy shown us by nearly every producer of spelter in this country. Our returns are therefore nearly full and accurate, except the necessary estimates for December, or a portion of that month.

The market has been in a very healthy condition during the whole of the year and the orly time relieve there were any indications of

The market has been in a very healthy condition during the whole of the year, and the only time when there were any indications of weakness in prices was early in the spring, when large quantities of ore were being mined and put on the market. In January, the quotation stood at 5 to 5½ delivered in New York, from which point a gradual decline took place until 4.62 to 4.60 was touched in April; but from that time (with the exception of an occasional slight relapse) values have steadily advenced. By the beginning of June prices had again come up to 5c., and at the end of that month the quotation stood at 5.15 to 5.20 and we close the year at the highest point, viz., 5.40 to 5.45.

Consumption has steadily increased, and the greater part of such increase may be attributed to the great activity in the galvanizing trade, which has been in a very prosperous condition throughout the whole of the year. So large has been the demand, that on several occasions during the year some of the galvanizing works have been compelled to shut down for a time for want of the necessary supplies of metal. Without doubt

THE WORLD'S PRODUCTION OF ZINC, IN TONS OF 2,240 LBS.

	United States.	Belgium.	Silesia.	Great Britain.	France& Spain.	Poland.	Austria.	Total.
1880	20,749	98,830	64,450	*22,000	15,000	*4.000	*2.520	227,558
1881		110,989	66,497	24,419	*18,358	*4,000	4.270	258,533
1882		119,193	68,811	25,581	18,075	4,400	5,094	271,302
1883	32,921	123,891	70,405	28,661	14,671	3,733	4,672	278,954
1884	34,414	130,522	76,116	29,259	15,341	4,164	4,470	294,286
1885		129,754	79,623	23,099	14,847	5,019	3,890	292,571
1886		129,020	81,630	20,730	15,305	4,145	3,760	292,662
1887	44,947	130,995	81,375	19,319	16,028	3,580	3,566	299,810
1888		133,245	83,375	26,633	16,140	3,785	3,827	316,927

AVERAGE MONTHLY PRICES OF SPELTER IN NEW YORK, IN CENTS PER POUND,

Year.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oet.	Nov.	Dec.	Year.
1875	6 56	6.46	6.32	6.75			7:30						
1876			7.681/2				7.18%					6.431/2	
			6.4376				5.74%					5 621/6	
					4.81							4.31	
			4.4916		4.371								5 0334
					5 81				4.931/2				
					5.837								5 2414
					5.431/6								4.4919
					4 6216			4.57					4 4414
1885		4 3272			4.1276								4.34%
1886		4.4216				4.3716			4.3216				
1887			4.4716				4.5716						4.6216
		5.35						4.75	4.9716				
1889				4.6716	4.75	4.9716	5.10	5.20	5.1716	5.10	5.20	5.40	5.021/4

IMPORTS AND EXPORTS OF ZINC.

		Imp	orts.					Expor	ts.	
Fiscal year ending	Blocks	or pigs.	Shee	ets.	Total	Ore or oxide		Plates, pig		Tota Value
June 30	Pounds.	Value.	Pounds.	Value.	imp'ts.	Cwt.	Value	Pounds	Value	exp'ta
867	5,752,611	\$256,366	5,142,417	\$311,767	\$569,968	3,676	\$32,041	312,227	\$30,587	\$62,62
868			3,557,448	203,883		8,344	74,706	1,022,699	68,214	142,92
869		590,332	8,306,723	478,646	1,071,061		65,411			65,41
870	9,221,121	415,497	9,542,687	509,860						
1871	11.159.040	508,355				9,621	48,292	76,380	7,823	56,11
	11,802,247		10,704,944		1,175,077	3,686	20,880	62,919	5,726	26,60
1873	6,339,897		11,122,143		1,103,918	234	2,304			
874			6,016,835	424,504						
875	2,034,252	101,766	7,320,713			3,083	20,659			
876	947,322	56,082	4,611,360			10,178				
877	1,266,894		1,341,333	81,815	147.561	6.428	34 468	1,419,922	115,122	150,70
	1,270,184	57,753	1,255,620		132,026	16,050	83,831	2,545,320	216,580	300,9
	1,419,791		1.111,225			10,660		2,132,949		
880			4,069,310					1,368,302		
881			2,727,324				16,405	1,491,786	132,805	149,3
882	18,408,391	736,964				10,904	13,736	1,489,552	124,638	138,3
	17,067,211	655,503	3,309,239			3,045			70,981	83,2
884	5,869,738	208,852	952,253	36,120	249,767	4,780	16,685			
.885		113,268			180,103		22,824			
886	3,616,462		1,037,951	38,359	164,822		24,951			
887	7,432,490				275,319	1.209	44.152	363,199		
.888	4,880,730	171,421	651,672		203,909	4,704	15,976		3,231	34.5
889	3,059,242	114,839	1,006,823	42,144	171,454	10,752	25,354	79,867	4,872	54,0

an increase in demand has also to be attributed to the requirements for brass making, and the manufacture of sheets was also very good up to the last six weeks or so, when the prices for the manufactured article did not respond to the advance in raw material.

Although spelter prices in this country may now be regarded as at a moderately high level, they are still comparatively much lower than values now ruling in Europe, where this metal has been exceedingly scarce for some months past, and the London quotations have lately stood at about the parity of 5.12 to 5.15 delivered in London. Owing to the existat about the parity of 5.12 to 5.15 delivered in London. Owing to the existing import duty of 1½c. per lb. on foreign spelter brought into the United States, importations (which some years ago were on rather a large scale) have now almost entirely ceased, and the total quantity of foreign spelter, imported during the past year, only amounted to about 800 tons, the whole of which was undoubtedly exported again in a manufactured state, by which means the duty originally paid would be returned again as "drawback." Unless all signs prove deceptive, the consumptive demand for spelter is likely to increase still further.

PRODUCTION OF SPELTER IN THE UNITED STATES, 1882 TO 1887, INCLUSIVE, BY STATES

Year.	Illinois,	Kansas.	Missouri.	Eastern and Southern States.
1882	18,201	7.366	2,500	5,698
1883	16,792	9,010	5,730	5,340
1884	17,594	7,859	5,230	7,861
1885	19,427	8,502	4,677	8,082
1886		8,932	5,870	6,762
1887		11,955	8,660	7,446
1888		10,442	13,465	9,561
1889	24,000	11,000	12,500	12,000

THE LONDON SPELTER MARKET IN 1889.

(From Our Special Correspondent.)

At the close of 1888, the value of good ordinary brands of spelter was £18 2s. 6d. but at the commencement of the present year the confirmation of the prolongation of the convention among Silesian, Belgian and English producers for the restriction of output for a period of \$\frac{3}{4}\$ years from June, 1889, caused a transitory advance in price to £18 10s. The latter half of January witnessed the commencement of a retrograde movement which continued, broken only by trifling variations, throughout February and March, only touching its lowest limit in the first week of April, when the value stood at £16 15s. to £17. This proved to be also the lowest limit of the year. It was followed by a firmer tone, the market being upheld by a moderate but steady demands which improved materially after the smash of the copper syndicate, resulting in the cheapening of the principal ingredient of brass and yellow metal, and brought about a revival of these two important industries, the demand proceeding from which forms one of the main supports of the spelter market.

During April and early May the price of G.O.Bs. ranged between \$\frac{17}{120} \frac{21}{120} \fr

During April and early May the price of G.O.Bs. ranged between £17 17s. 6d. and £17 12s. 6d., but toward the close of May the extensive coal strikes in Germany and the consequent apprehensions of a scarcity

17s. 6d. and £17 12s. 6d., but toward the close of May the extensive coal strikes in Germany and the consequent apprehensions of a scarcity of metal gave an impulse to demand and induced an advance to £18 2s. 6d., sheet zinc and yellow metal being simultaneously in good request. After a very slight relapse early in June, the upward movement entered upon a period of vigorous development, stimulated by the steadiness of demand and especially by the comparative dearth of spot stuff, producers having in several cases sold for some months ahead.

Each week in July, August, and first half of September was marked by a fresh stage in the advance, the value having by mid-September reached £22 5s. to £22 10s. These higher prices had, however, ultimately the effect of appreciably restricting transactions, which were confined mainly to the covering by consumers of their immediate wants. By the end of September prices had given way to the extent of £1 per ton. The October range was mainly between £22 2s. 6d. and £21 15s., but in the last of that month a strong dealers' inquiry impelled values up to £22 10s. to 12s. 6d., and despite the dullness in galvanizing circles, the advance continued during November, being reinforced by good buying on the part of brass founders and sheet zino makers. At the end of November G.O.Bs. stood at £23 to £23 5s., and in the following week the high limit of £23 10s. to £23 12s. 6d. was attained, an advance of 39 per cent. upon the lowest price of the year, or 63 per cent., upon the lowest point of 1888, viz., £14 10s. The advance has continued in the interval, some stimulus being drawn from the fact that galvanizers have at length begun to purchase. Though the chief cause is traceable to the scarcity of the article, which is now held for £24 to £24 5s. ordinaries, and £24 5s. to £24 10s specials.

The Board of Trade returns for the eleven months, January to November are as follows:

are as follows:				
	1889.	1888.	1887.	
Imports (raw spelter)	50,147	54,787	48,835	
Exports (raw and manufactured)	6,232	5,427	9,271	

RUSSIAN MINERAL PRODUCTION IN 1887, SPECIALLY REPORTED TO THE ENGINEER-ING AND MINING JOURNAL BY THE COURTESY OF MR. W. ABEGG.

Cilogrammes . 34,857.44 . 15,378.44 . 4,407.86
. 4.407.86
Metrie tons 2,204 pounds) 990 4,992 10 3,625
4 992
. 10
3,625
Flasks of 76% pounds

Gold Production in Queensland.—The production of gold in Queensland for the nine months ended September 30th amounted to 557,570 ounces, against 481,643 ounces for the whole year 1888. Rockhampton, in which district the famous Mount Morgan mine is situated, headed the list with 272,336 ounces; Charters Tower contributing 104,270 ounces; Gympie, 87,326 ounces; Croydon, 42,164 ounces; Etheridge, 13,394 ounces; Ravenswood, 11,499 ounces; Eidsvold, 10,892 ounces; other fields, below 10,000 ounces. 10,000 ounces

THE WORLD'S PRODUCTION OF GOLD AND SILVER.
[Kilogram of gold, \$664.60. Kilogram of silver, \$41.56, At coining rate in United States silver dollars. 1 kilog. = Troy ounces.]

		18	385.			18	886.			1	887.			18	388.	
Countries.	(Gold.	sil	ver.		Gold.	Sil	ver.		Gold.	Sil	ver.	(Fold.	Sil	ver.
Un, States. Australasia. Mexico. Russia. Germanyo AusHung. Sweden. Norway. Italy Spain Turkey. France. Gt. Britain. Canada. Arg. Rep. Combia. Bolivia Chili. Brazil. Venezuela Peru Cen. Am. St Japan. Africa. China.	1,774 47 6 195 c 10 1,679 c 118 c 3,762 e 109 c 500 1,204 7,033 226 q 226 265 m 2,083	Dollars 31,800,000 a27,439,000 867,000 24,500,000 116,000 1,179,000 78,000 78,000 2,500,000 72,000 332,000 0,000 4,674,000 150,000 176,000	Kilos. 1,241,578 25,220 772,670 772,670 24,567 52,748 2,238 2,338 614,333 c1,323 c1,323 c1,323 c1,323 c1,322 c2,40,616 c210,000 c2,640 47,840 48,422 23,085 m1,274	Dollars. 51,600,000 1,048,000 32,112,000 616,000 1,212,200 96,000 229,000 1,406,350 229,000 55,000 212,000 316,000 316,000 478,000 478,000 10,000,000 110,000 300 110,000 350,000 350,000 353,000	52,663 39,761 924 30,872 1,065 b1,774 67 195 10 2,002 30 3,762 109 b1,502 j 170 q 226	Dollars. 35,000,000 a 26,425,000 614,000 20,518,000 1,179,000 45,000 7,000 1,330,442 20,000 2,500,000 72,000 332,000 3333,000 150,000 133,000 150,000	Kitos. 1,227,141 29,403 794,033 794,033 794,033 192,767 25,650 b 52,748 3,081 b 7,200 33,839 p 51,502 1,323 46,789 10,124 5,030 1,444 9,625 g 240,616 210,000 h 141 j 96,246 q 8,222 32,242 m 3,165	Dollars. 51,000,000 1,222,000 33,000,000 528,100 1,006,000 2,192,200 128,000 1,406,350 2,194,400 55,000 1,944,550 420,750 60,000 400,000 10,000,000 8,727,600 350,000 1,340,000 1,340,000 1,340,000	**E	Dollars. 33,000,000 27,327,600 24,400 20,092,000 1,496,000 1,247,450 55,550 129,600 7,000 3,000 3,000,000 3,000,000 3,000,000	Kilos. 1,283,855 6,422 904,000 904,000 93,522 23,929 5,528 5,7200 c 33,839 p 51,502 c 1,323 64,314 9,964 10,865 240,616 g 240,616 g 240,616 g 240,616 g 132,065 h 141 49,750 q 8,422 h 141 49,750 q 8,422 h 141 49,750 q 8,422 h 143	Dollars, 53,337,000 266,900 37,570,000 562,000 994,599 2,218,900 242,250 299,000 1,406,350 30,000 414,100 30,000 10,000,000 8,537,350 35,000 1,332,655 17,960	Kilos. 49,917 k41,119 1,465 32,052 1,810 c 10 220 k 2,061 47 2,257 331 1,424 158 q 226 1 564 6,771 o 12,552 1,608	Dollars 33,175,000 27,327,600 374,000 21,302,000 1,203,000 1,247,450 36,000 7,000 146,000 1,369,700 31,000 1,590,000 1,591,400 220,000 944,000 155,000 155,000 155,000 94,000,000 9,000,000 9,000,000	Kilos. 1,424,326 r 120,308 g95,500 14,523 23,412 k 53,391 4,648 51,200 34,280 51,502 c 1,323 k 54,314 6,723 k 10,885 10,226 28,874 264,678 k 205,422	Dollars. 59,195,00 5,000,00 41,373,00 973,40 2,218,90 193,00 2299,00 1,424,00 2,257,30 279,40 251,00 425,00 1,200,000 11,000,00 8,537,35
Total	163,162	108,435,600	2,849,995	118,445,150	159,741	106,163,877	2,902,471	120,626,800	160,933	106,954,900	3,021,585	125,576,710	159,490	105,994,150	3,427,265	142,437,15

a G. W. Griffin, United States Consul at Sydney, reports the gold production of Australasia for 1886 at \$25,883,884, and for 1885 at \$27,361,603.

b Estimate of the Burcau of the Mint, based upon the production for 1885.
c Estimate same as officially communicated for 1886.
d Estimate of Dr. Soetbeer for 1883.
Estimate of the Burcau of the Mint, based upon the production for 1883.
Based upon official statistics of exports and colnage for 1887.
b Exports of gold and silver through the custom-house at Ri de Janeiro.
i Production of the two millions of "El Callao Mining Company."
j Estimate of the Burcau of the Mint, based upon the e-ports of bullion and ore officially reported for 1886.
k Estimated same as officially communicated for 1887.
l Production of government mines for 1887 and private mines for 1886.
m Imports into United Kingdom from West and South Africa. extracted from board of trade returns by A. Sauerbeck, F.S.S.
n The product credited Germany is for silver the product of the mines of Germany, including the value of some gold in the ore. The full value of the gold product of the German smelting works is credited, although nearly all of it was obtained from imported ores and copper matte, for the reason that such gold occurs in desultory quantities, and it is believed was not reported to this Burcau by exporting countries.
o imports of gold into Great Britain and British India from China.
p Estimated same as officially communicated for 1888.
q Rough estimate.
r Unofficial reports.

THE PRICE OF SILVER SINCE 1833.

The following table shows that in the past year the lowest price of bar silver in London was $41\frac{15}{16}$, being within $\frac{5}{16}$ of the lowest price on record, viz., $41\frac{5}{8}$, which was the lowest point reached in 1888. The highest price of the year, $44\frac{1}{8}$, was touched at the beginning of December, and was within $\frac{3}{16}$ of the highest price of 1888, $44\frac{9}{16}$, yet the true average taken by days was a little below that of the previous year, being $42\frac{3}{8}$, against $42\frac{7}{8}$. The value of a fine ounce in the United States at the average quotation, 93043, was therefore the lowest on record. We are indebted to the Director of the Mint for the five following tables:

PRICE OF BAR SILVER IN LONDON PER OUNCE BRITISH STANDARD, 925 FINE, AND THE EQUIVALENT PER OUNCE, 1000 FINE, IN UNITED STATES GOLD COIN,

Calendar year.	Low- est quota tion.	High- est quota- tion.	Average quotation.	Value of a fine ounce at average quota- tion.	Calendar dar year.	Low- est quota- tion.	est	Average quotation.	Value of a fine ounce at average quota- tion.
	Pence	Pence		Dollars.				Pence	Dollars.
833	583/4	59%	5913	1.297	1862	61	$62\frac{1}{8}$	61,7	1.346
.834	593/4	603/4	5915	1.313	1863	61	61%	61%	1.345
835	591/4	60	5911	1.308	1864	60%	$62\frac{1}{2}$	61%	1.345
.836	59%	60%	60	1.315	1865	601/9	61%	6116	1.338
1837	59	60%	5918	1.305	1866	60%	624	611/8	1.339
1838	591/2	691/8	591/	1.304	1867	60%	611/4	60,8	1,328
1839	60	60%	60%	1.323	1868	601/8	611/8	601/2	1.326
840	601/8	60%	60%	1.323	1869	60	61	60,7	1.325
1841	59%	60%	6016	1.316	1870	601/4	603/4	6018	1.328
1842	5914	60	59.0	1.303	1871	60^{3}_{16}	61	601%	1.326
1843	59	59%	5913	1.297	1872	591/4	611/8	60,5	1.322
1844	591/4	5934	591/2	1.304	1873	57%	5915	5914	1.298
1845	581/8	591/8	5914	1.298	1874	5714	591/2	5816	1.278
1846	59	601/8	59.5	1.30	1875	551/2	57%	5678	1.246
1847	581/8	60%	5916 5911	1.308	1876	46%	581/2	52%	1.156
1848	581/2	60	591/2	1.304	1877	5314	581/4	5413	1.201
1849	591/2	60	5934	1.309	1878	491/2	551/4	5219	1.152
1850	591/2	611/2	6116	1.316	1879	4878	$53\frac{3}{4}$	5114	1.123
1851	60	61%	61	1.337	1880	51%	521/8	5214	1.145
1852	591/8	611/8	601/2	1.326	1881	50%	521/8	5115	1.138
1853	60%	61%	611/2	1.348	1882	50	52%	5115 5113	1.136
1854	601/8	611/8	611/2	1.348	1883	50-	51 3	50%	1.11
855	60	61%	61 5	1.344	1884	491/2	51%	5034	1.113
856	601/2	6214	61 5	1.344	1885	46%	50	4818	1.064
1857	61	62%	61%	1.353	1886	42	47	45%	0.9946
1858	60%	61%	61 5	1.344	1887	4314	471/8	44%	0.978
859	6134	62%	6216	1.36	1888	41%	4418	421/8	0.9398
1860	611/4	62%	61	1.352	1889	4118	44%	42%	0.9304
861	601/8	61%	6013	1.333	1890	3119	32/8	14/8	0.000

RATIO OF SILVER TO GOLD EACH YEAR SINCE 1687.

[Note.—From 1687 to 1832 the ratios are taken from Dr. A. Soetbeer; from 1833 to 1878 from Pixley and Abell's tables, and from 1878 to 1888 from daily cablegrams from London to the Bureau of the Mint.]

Year.	Ratio.	Year.	Ratio.	Year.	Ratio.	Year.	Ratio.	Year.	Ratio.	Year.	Ratio.
1687	14.94	1721	15.05	1755	14.68	1789	14.75	1823	15.84	1857	
1688	14.94	1722	15.17	1756	14.94	1790	15.04	1824	15.82	1858	15.38
1689	15.02	1723		1757	14.87	1791	15.05	1825	15.70	1859	15.19
1690	15.02	1724		1758	14.08 14.94 14.87 14.85 14.15 14.14 14.54 15.27 14.99 14.70 14.83	1792	15.17	1826 1827 1828 1829	15.76	1860	15.29
1691	14.98	1725.	15.11	1759	14.15	1793	15.00	1827.	15.74 15.78	1861	15.50
1692	14.92	1726	15.15	1760	14.14	1794	15.37	1828	15.78	1862	15.35
1693	14.83	1727	15 24	1761.	14.54	1795	15.55	1829	15.78	1863	15.37
1694	14.87	1728	15.11	1762	15 27	1796	15.65	1830	15.82 15.72	1864	15.37
1695	15.02	1729	14.92	1763	14.99	1797	15.41	1831	10.72	1865	15.44
1696	15.00	1730	14.81	1764	14.70	1798	15.59	1832	15.73	1866	15.43
1697	15.20	1731	14.94	1765	14.83	1799.	15.74	1833	15.93	1867	15.57
1698	15.07	1732	15.09	1766	14.80			1834	15.73	1868	15.59
1699	14.94	1733	15.18	1767	14.85	1801	15.46	1835	15.80	1869	15.60
1700	14.81	1734	15.39	1768	14.80	1802	15.26	1836	15.72	1870	15.57
1701	15.07	1735	15.41	1769	14.72	1803	15.41	1837	15.83	1871	15.57
1702	15.52	1736	15.18	1770	14.62	1804	15.41	1838	15.85	1872	15.63
1703	15.17	1737	15.02	1771	14.66	1805	15.79	1839	15.62	1873	15.92
1704	15.22	1738	14.91.	1772	14.52	1806	15.52	1840	15.62	1874	16.17
1705	15.11	1739	14.91	1773 1774	44.62	1807	15.43	1841		1875	16.59
1706	15.27	1740.	14.92	1774	14.62	1808	16.08	1842	15.87	1176	17.88
1707	15.44	1741	14.92	1775	14 72	1809	15.96	1843	15.93	1877	17.22
1708	15.41	1742	14.85	1776	14.55	1810	15.77	1844	15.85	1878	
1709	15.31	1743	14.85	1777	14.64	1811	15.53	1845	15.92	1879	18.40
1710	15.22	1744	14.87	1778	14.68	1812		1846	15 90	1880	18.05
1711	15.29	1745	14.98	1779		1813	16.25	1847	15.80	1881	18.16
1712	15.31	1746	15.13	1780	14.72	1814	15.04	1848	15.85	1882	18.19
1713.	15.24	1747	15.26	1781	14.78	1815		1849	15.78	1883	
1714	15.13	1748	15 11	1782	14.42	1816	15.28	1850	15.70	1884	18.57
1715	15.11	1749	14.80	1783	14.42 14.48 14.70	1817	15.11	1851	15.46	1885	19,41
1716	15.09	1750	14.55	1784	14.70	1818 .	15.35	1852	15.59	1886	20.78
1716 1717	15.13	1751	14.39	1785	14.92	1819		1853	15.33	1887	21.13
1718	15.11	1752	14.54	1786	14.96	1820	15.62	1854		1888	21.99
1719	15.09	1753	14.54	1787	14.92	1821	15.95	1855	15.38	1889	22.06
1720	15.04	1754	14.48	1788	14.65	1822	15.80	1856	15.38	1890	

COINAGES OF NATIONS-CALENDAR YEARS

	188	36.	188	37.	188	38.
Countries.	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Inited States	\$28,945,542	\$32,086,709	\$23,972,383	\$35,191 081	\$31,380,808	\$33,025,60
lexico		26,991,804		26,844,031	300,480	26,658,96
reat Britain		2.031.194		4,142,136		3,681,88
		-, -, -	24,127,267		24,415,230	
ustralia		27,121,414	4,249	44 149 013	22,210,200	\$51,112,33
ndia*			3,230	25,000		947 15
anada	4 455 800	229,000	4 700 000	1 710 749	106,949	1 110 2
rance	4,455,733		4.760,960			
ochin-China		3,215,771	270,000 163,831 28,135,270	3,120,410		1,100,5
Ionaco	289,500			** ********		
Belgium		921,768		583,632		
taly		1,795,364		6,253,200	469,750	
witzerland	965,000	501,800		270,200	16,984	
pain	2,369,765	5.057.506		11.389.414		4,436,8
ortugal	179,626	299.765	270,000	960.120	102,600	1.533.6
etherlands	217,647	200,100	163 831	76.380	143.051	
	8,506,210	1 153 063	28,135,270	715 343	34 340 722	989 1
ermany	2,684,139	1,100,000	2,669,750	5 556 305	2,747,633	5 516 1
us. ·Hungaryt.		2,002,200	2,000,100	90 400	24121,000	59.6
orway	539,484		914 990	56 000		16.7
weden	982,188		314,800	00,004		20,4
enmark		13,624	314,830 20,109,276		20 400 404	02,4
lussiat	14,761,717	1,304,101	20,109,276	1,551,710	20,460,491	1,163,1
urkey	3,652,000	880,000			66,000	74,4
iam				2,216,065		
gynt		3,204,151	246.354	2,159,690	257,154	8,4
anan	900.145	9.086.077	827,420	10,279,555	\$974,336	§10,222,1
losti	000,210	144,750		500,000		
Last 2	37 910	966 080	25, 360	333,000	42,170	122.3
munting Don	1 099 670	200,000	9 173 370		8.316.325	
rgentine rep	1,000,010	500 005	0,110,010	1 695 000	0,010,010	3 258 0
eru	00.005	1 954 990		663 060		600.4
olombia	20,900	1,334,820		000,000	660 500	979 0
enezuela		1,280,343			000,000	212,0
uatemala		27,387			00,000	009 5
razil	20,653	30,373			20,082	909,0
Ionduras				71,978		
ongo				19,300		
licaraona				400,000		
urkey. iam. igypt. apan tayti. hili. rigentine Rep. eru. olombia. enezuela tuatemala. rrazil ionduras. ongo.				177 000		944.0
mondon)						473,1
Lang IZ				400,000		1,105,0
ments		140 000		200,000		2,200,0
osta Rica		148,030		1 769 451		1 762 4
Solivia				1,700,901		1,100.2

TOTAL COINAGE OF THE UNITED STATES MINTS FROM THEIR ORGANIZATION.

Calendar year.	Gold.	Silver.	Minor coins.	Total.	Calendar year. Gold.	Silver. \$2,332,450 00	Minor coins. \$23,833.90	Total. \$4,185,991.40
1793	\$71,485.00	\$370,683 80	\$11,373.00	\$453,541.80	1842\$1,829,507 50 18438,108,797.50	3.834.750 00	24,283.20	11.967.830.70
1796	77,960.00	77.118 50	10.324.40	165,402.90		2,235,550 00	23 987 52	7.687.207.52
1797	128 190 00	14,550 45	9.510 34	152,250 79		1,873,200 00	38,948.04	5,668,595 54
1798	205,610 00	330,291 00	9,797.00		1846 4 034,177 50	2,558.580.00	41,208 00	6,633,965 50
1799	213,285.00	423,515.00	9.106 68	645,906.68		2.374,450.00	61,836.00	22,638,611 69
1800	317.760.00	224,296 00	29,279.40	571,335 40		2.040,050.00	64,157.99	5,879,720.49
1801	422,570.00	74,758.00	13.628 37	510,956 37		2,114,950.00	41,984.32	11,164,695 82
1802	423,310 00	58,343.00	34,422.83	516,075.83		1,866,100 00	44,467.50	33,892,306 00
1803	258,377.50	87,118.00	25,203.03	370,698 53	1851 62,614,492 50	774,397.00	99,635.43	63,488.524.93
1804	258,642 50	100,340 50	12,844 94	371,827.94		999,410.00	50,630.94	57,896,228.44
1805	170 367 50	149,388.50	13,483 48	333,239 48		9,077,571 00	67.059 78	48,522,539.78
1806	324,505 00	471.319 00	5,260.00	801,084.00		8,619,270.00	42,638.35	34.577,870.85
1807	437,495 00	597,448.75	9,652.21	1,044,595.96		3,501,245.00	16,030,79	32,905,243.79
1808	284,665 00	684,300.00	13,090.00	982,055,00	1856	5,142,240.00	27,106,78	42,027,115.28
	169,375 00	707.376.00	8,001.53	884,752 53		5,478,760.00	178,010.46	37,870,810,46
1809	501,435 00	638,773 50	15,660.00	1.155.868 50	185822,938,413 50	8,495,370.00	246,000.00	31,679,783.50
1811	497,905.00	608,340 00	2,495 95		185914,780 570 00	3,284,450 00	364,000.00	18,429,020.00
	290,435.00	814.029.50	10,755 00	1 115 219 50	186023,473,654 00	2,259,360,00	205,660.00	25,938,704.00
1812	477,140.00	620,951.50	4,180.00		186183,395,530 00	3,783,740.00	101,000 00	87,280,270.00
	77,270.00	561,687.50	3,578 30		186220,875,997 50	1,252,516 50	280,750,00	22, 09,264.00
1814		17,308 00	0,010 00	20 483 00	1863	809,267 80	498,400 00	23,753,149.80
1815	3,175.00	28,575.75	28,209 82	56 785 57	1864	609,917.10	926,687.14	21,618,019.24
1817		607,783.50	39,484.00	647 267 50	1865 28,295 107.50	691,005.00	968,552,86	29,954,665.36
	242,940.00	1,070,454 50	31,670.00	1.345.064.50	1866	982,409 25	1,042,960 00	33,461,314.25
1818	251.615.00	1.140.000 00	26,710 00	1 425 325 00	1867 23,828,625 00	908,876.25	1,819,910.00	26,557,411.25
1820		501.680.70	44.075.50	1 864 786 20	1868 19,371,387 50	1,074,343.00	1.697.150.00	22,142,880.50
1821	189,325 00	825,762.45	3,890.00	1.018 977 45	1869 17,582,987 50	1,266,143.00	963,000.00	19,812,130.50
1822	88,980.00	805,806.50	20,723.39		1870	1.378.255.50	350,325 00	24,927,368.00
1823	72,425.00	895,550.00	20,120.00	967,975.00	1871	3,104,038.30	99,890,00	24,236,613.30
	93,200.00	1,752,477 00	12.620.00	1.858.297 00	187221,812,645 00	2,504.488 50	369,380 00	24,686,513.50
1834	156,385 00	1,564,583 00	14,926 00	1 735 894 .00	1873 57,022,747.50	4,024,747.60	379,455.00	61,426,950,10
1826	92,245 00	2,002,090.00	16.344.25	2,110,679 25		6,851,776.70	342,475 00	42,448,881.70
1827	131,565 00	2,869,200 00	23,577.32	3.0/4.342.32	187532,951,940 00	15,347,893.00	246,970 00	48,546,803.00
1828	140,145 00	1,575,600 00	25,636.24	1.741.381 24	187646,579,452.50	24,503,307.50	210,800,00	71,293,560.00
1829	295,717 50	1,994,578.00	16,580.00	2,306,875,50	1877	28,393,045.50	8,525,00	72,401,434.50
1830	643,105,00	2,495,400 00	17,115.00		187849,786,052 00	28,518,850.00	58,186,50	78,363,088.50
1831	714,270.00	3,175,600,00	33,603.60		1879 39,080,080.00	27,569,776.00	165,003.00	66,814,859.00
1832	798,435.00	2,579,000.00	23,620.00	3,401,055,00	1880 62,308,279.00	127 411,693.75	391,395.95	90,111,368.70
1833.	978,550.00	2,759,000 00	28,160,00	3.765.710.00	1881	27,940,163.75	428,151 75	125,219,205,50
1834.		3,415,002.00	19,151.00	7 388 423 00	1882 65,887,685 00	27.973.132.00	960,400 00	94,821,217,00
1835		3,443,003,00	39,489.00	5 668 667 00	1883 29,241,990.00	29,246,968.45	1.604,770,41	60,093,728.86
1836		3,606,100.00	23,100.00	7 764 900 00	188423,991,756,50	28,534,866.15	796,483.78	53,323,106,43
1837		2,093,010 00	55.583 00	3.299.898.00	1885 27,773,012 50	28,962,176,20	191,622 04	56,926,810.74
1838		2,333,243.40	63.702.00	4 206 710 40	1886 28,945,542.00	32,086,709.90	343,186 10	61,375,438.00
1839		2,209,778 20	31.286.61	3 617 912 31	1887 23,972,383.00	35,191,081.40	1,215,686 26	60,379,150.66
1840		1,726 703.00	24.627.00	3 426 812 50	188831,380,808 00	33,025,606,45	912,200.78	65,318,615,23
1841		1.132,750.00	15.973 67	2.240.581 .17		0-,0-3,000.20		0-,0,010,20
1091	1,031,637.30	1.102,700.00	10,010 01	2,220,001.11				

PRODUCTION OF GOLD AND SILVER IN THE UNITED STATES FROM 1792.

[The estimate from 1792 to 1873, inclusive, is by R. W. Raymond, Commissioner, and since by the Director of the U. S. Mint. Silver values are at the coinage rate of \$1.29°29 per fine oz.; gold value, \$20.67 per fine Troy oz.

Years,	Troy ounces.	Gold.	Troy ounces.	Silver.	Total.
1792 to 1834		\$14,000,000		Insignifi-	}\$14,000,000
1834 to 1844		7,500,000		\$250,000	7,750,000
1845		1,008,327		50,000	1,058,324
1846		1,139,357		50,000	1,189,35
1847		889,085		50,000	939,085
1848		10,000,000		50,000	10,050,000
1849		40,000,000		50,000	40,050,000
1850		50,000,000		50,000	50,050,000
1851		55,000,000		50,000	55,050,000
1852		60,000,000		50,000	60,050,000
1853		65,000,000		50,000	65,050,000
1854		60,000,000		50,000	60,050,200
1855		55,000,000		50,000	55,050,000
1856		55,000,000		50,000	55,050,000
1857		55,000,000		50,000	55,050,000
1858		50,000,000		500,000	50,500,000
1859		50,000,000	** * * ****	100,000	50,100,000
1860	********	46,000,000		150,000	46,150,000
1861		43,000,000	*******	2,000,000	45,000,000
1862		39,200,000	*********	4,500,000	43,700,000
1863	********	40,000,000		8,500,000	48,500 000
1864	********	46,100,000		11,000,000	57,100,000
1865		53,225,000	*******	11,250,000	64,475,000
1866		53,500,000		10,000,000	63,500,000
1867	********	51,725,000	**********	13,500,000	65,225,000
1868		48,000,000	********	12,000 000	60,000,000
1869		49,500,000		12,000,000	61.500,000
1870		50,000,000		16,000,000	66,000,000
1871		43,500,000		23,000,000	66,500,000
1872		36,000,000	*********	28,750,000	64,750,000
1873		36,000,000		35,750,000	71,750,000
1874	*******	33,500,000		37,300,000	70,800,000
1875		33,400,000		31,700,000	65,100,000
1876		39,900,000	*******	38,800,000	78,700,000
1877		46,900,000		39,800,000	86,700,000
1878	2,476,800	51,200,000	34,960,000	45,200,000	96,400,000
1879	1,881,787	38,900,000	31,550,000	40,800,000	79,700,000
1880	1,741,500	36,000,000	30,320,000	39,200,000	75,200,000
1881	1,678,612	34,700,000	33,260,000	43,000,000	77,700,000
1882	1,572,187	32,500,000	36,200,000	46,800,000	79,300,000
1883	1,451,250	30,000,000	35,730,000	46,200,000	76,200,000
1884	1,489,950	30,800,000	37,800,000	48,800,000	79,600,000
1885	1,538,325	31,800,000	39,910,000	51,600,000	83,400,000
1886	1,693,125	35,000,000	39,440,000	51,000,000	86,000,000
1887	1,596,375	33,000,000	41,260,000	53,350,000	86,350,000
1888	1,604,841	33,175,000	45,780,000	59,195,000	92,370,000
Total		1,806,061,769		862,645,000	2,668,706,769

IMPORTS OF ORE AND BULLION FROM MEXICO THROUGH THE PORTS OF LAREDO, EL PASO, AND NOGALES, IN THE YEAR 1889 (11 MONTHS OFFICIAL RETURNS, DECEMBER ESTIMATED).

	Laredo.	El Paso.	Nogales.	December. (Estim't'd)	Total.
Ore, total in pounds Lead in ore, quantity " value Copper in ore, quantity " value Silver in ore " bullion and coin Gold in bullion and coin	\$49,087 \$49,360 813,361 590,943	119,773,528 28,963,249 \$656,587 213,572 \$11.045 2,710,032 11,231,771 461,255	7,919.280 1,042,162 \$25,103 33,160 \$1,434 557,962 712,764 247,765	11,500,000 2,500,000 \$60,000 20,000 \$6,000 370,000 1,000,000 50,000	172,809,035 38,450,830 \$790,777 266,732 \$67,836 4,451,355 13,535,476

VALUES OF FOREIGN COINS, JANUARY 1, 1890.

Country.	Standard.	Monetary unit.	Value in U. S. gold.	Values of coins.
Argentine }	Double	Peso	\$0.965	Gold: argentine (\$4.894) and 34 argentine. Silver: peso and divisons.
Austria	Single silver	Florin	.345	Gold: 4 florins (\$1.929) 8 florins (\$3.858), ducat (\$2.287), and ducats (\$9.158). Silver: 1, and florins.
-		Franc	.193	Gold: 10 and 20 francs. Silver:
Bolivia Brazil	Single silver Single gold	Boliviano Milrels of 1,000 } reis.	.698 .546	Silver: boliviano and divisions. Gold: 5,10 and 20 milreis. Silver 14, 1 and 2 milreis.
Brit. America.	Single gold	Dollar	1.00	
Chili	Double	Peso	.912	Gold: escudo (\$1.824), doubloor (\$4,561), and condor (\$9.123) Silver: peso and divisions.
		Peso	.926	peso.
Ecuador	Single silver	Crown	.268	Gold: 10 and 20 crowns. Gold: condor (\$9.647) and double condor. Silver: sucre and divi- sions.
Egypt	Single gold	Pound (100) plasters).	4.943	Gold: pound (100 piasters), 5 piasters, 20 plasters, 10 piasters and 5 piasters. Silver: 1, 2, 5 10 and 20 piasters.
		Franc	.193	and 5 plasters. Silver: 1, 2, 5 10 and 20 plasters. Gold: 5, 10, 20, 50 and 100 francs Silver: 5 francs. Gold: 5, 10 and 20 marks.
Germany Great Britain.	Single gold Single gold	Mark Pound sterling.	.238 4.8661/2	Gold: sovereign (pound sterling
		Drachma	.193	and 1/4 sovereign. Gold: 5,10,20,50 and 100 drachmas Silver: 5 drachmas.
Guatemala	Single silver Double	Peso Gourde	.698 .965	Silver: peso and divisions. Silver: gourde.
Honduras India	Single silver Single silver	Rupee of 16	.698 .332	Silver: gourde. Silver: divisions of peso. Gold: mohur (\$7,105). Silver
Italy	-		.193	rupee and divisions. Gold: 5, 10, 20, 50 and 100 liras Silver: 5 llras. Gold: 1, 2, 5, 10 and 20 yen.
Japan	Double*	Yen Gold Silver.	.997	Gold: 1, 2, 5, 10 and 20 yen. Silver: yen.
Mexico	Single gold Single silver	Dollar Dollar	1.00 .758	Gold: dollar (\$0.983), 214, 5, 10 and 20 dollars. Silver: dollar (0
Netherlands	Double	Florin	.402	peso) and divisions. Gold: 10 florins. Silver: 1/4, and 21/4 florins.
Norway	Single gold.	Peso Crown	.698	Silver: peso and divisions. Gold: 10 and 20 crowns.
Portugal	Single silver	Milreis	.698 1.08	Silver: sol and divisions, Gold: 1, 2, 5 and 10 milreis.
Russia	Single silver	Sol	.558	Gold: imperial (\$7.718), and 1 imperial (\$3,860). Silver: 14.1
		Peseta of 100 centimes	.193	and 1 rouble Gold: 25 pesetas, Silver: 5 pe setas.
Sweden Switzerland	Single gold Double	CrownFranc	.268	Gold: 10 and 20 crowns, Gold: 5, 10, 20, 50 and 100 france
Tripoli	Single silver	Mahbub	.629	Silver: 5 francs. Mahbub of 20 piasters.
Turkey	Single gold	Piasters	.044	Mahbub of 20 piasters. Gold: 25, 50, 100, 250 and 500 plas Gold: condor (\$9.647) and double
Venezuela,	Single sllver	Bollvar	.140	condor. Silver: peso. Gold: 5, 10, 20, 50 and 100 bolivar Silver: 5 bollvars.

^{*} Gold the nominal standard; silver practically the standard, † Coined since January 1, 1866. Old half-Imperial = \$3,986.

MINERAL PRODUCTS OF THE UNITED STATES, 1882 TO 1887.

	.8	82.	18	383.	18	884.	18	885.	18	886.	18	87.
	Quantity.	Value. Dollars.	Quancity.	Value. Dollars.	Quantity.	Value. Dollars,	Quantity.	Value. Dollars.	Quantity.	Value. Dollars.	Quantity.	Value. Dollars.
Metallic. Pig-iron, spot valuelong tons		106,336,429	4,595,510	91,910,300	4 097.868	73,761,624	4,044,505	64,712,400	5,683,329	95, 195,760	6 417 148	121,925,80
Silver, colning valuetroy oz.	36,197,695 1,572,186			46 200,000						51,000,000	41,269,240	53.441,30
Copper (value, New York)lbs.	91,646,232	32,500,000 16,038,091	1,451,249 117,151,795	30,000,000 18,064,807	1.489,949 147,805,407		1,538,376			35.000,000 16,527,651	1,596,500 184,670,524	33,100,00 21.052,44
Lead " " short tons	132,890	12,624,550	143 957	12,322,719	139.897	10,537,042	129,412	10,469,431	135,629	12,667,749	160,700	
Zinc " " " " … Quicksilver (at San Francisco) flasks	33 765 52,732	3,646,620 1,487,042	36,872 46,725	3,311,106 1,253,632	38,544 31,913	3,422.707 936,327	40,688 32,073	3,539.856 979,189	42,641 29,981	3.752,408 1.060,000	50,340	4,782 30
Nickel (at New York)	281,616	309.777	58,800	52,920			277,904	191,753	214,992		33,825 205,556	1.423.00
Antimony (at San Fran.) short tons	60	12,000	60	12,000	60	12,000	50	10,000	35	7,000	75	
Platinum (crude, at N. Y.)troy oz.	200	600	200	600 875			250 3,400		50		448	1.88
Aluminum (at New York) "			1,000	8/0	1,800	1,350	3,400	2,550		27,000		74,90
Total metallic products		219,755,109		203,128,859		186,426,074		181,569,365		215,364,825		250,419,28
Non-metallic (Spot Values). Bituminous coallong tons	60,861,190	76,076,487	68,531,500	82,237,800	73,730,539	77,417,066	64,840,668	82,347,648	65,810,676	78,481,056	mo 4mo 000	
Anthracite	31,358,264	70,556,094	34,336,469				34,228,548		34,853,077	76,119,120	78,470,857 37,578,747	98.004 65 84,552,18
Petroleumbarrels	30,053,500	23,704,698	23,400,229	25,740,252	24,089,758	20,476,294	21,842,041	19,193,694	28,110,115	20.028.457	28, 49,597	18.856 60
Lime	31,000,000	21,700,000 21,000,000	32,000,000	19,200.000		18.500,000	40,000,000	19,000,000	42,500,000	21,250,000 19,000,000	46,750,000	23.375,00
altbarrels	6,412,373	4,340,140	6.192,231	4,211,042		4,197,734	7,038,653	4 825,345	7.707.081	4,736,585	7.831.962	25,000,00 4,193,84
Cement"	3,250,000	3,672,750	4.190,000	4,293,500	4,000,000	3,720,000	4,150,000	3,492.500	4,500.000	3,990,000	6,692,744	5.186.87
limestone for iron fluxlong tons	3,850,000	2,310,000	3,814,273	1 907,136 2,270 280		1,709,965 2,374,784	3,356,956 437,856		4,717,163	2,830,237 1,872,936	5,377.000	3,226,20
Phospha'e rock	332,077 1,080,090	1,992,462 540,000	378,380 972,000	486,000	431,779 875,000	437,500	875,000	437.500	430.549 800,000	400,000	480,558 600,000	1,836,81 300,00
Boraxlbs.	4.236,291	338,903	6,500,000	585,000	7,000,000	490,00	8,000,000	480,000	9,778,290	488,915	11,000,000	550,00
Mica	100,000	250,000	114.000	285,000	147,410	368,525	92,000 3,950	161,000 43,575	40.000		70,500	142,25
Ocherlong tons	7,000 20,000	105,000 80,000	7,000 27,000	84,000 108,000	7.000 25,000	84,000 100,000	15,000	75.000	15,800 10,000	285,000 50 000	20,000	
Precious stones		75,000		74,050		82,975		69,900		79,056	15,000	75,00 88,60
fold ouartz jewelry		75,000		115,000		140,000		140 000		40,000		75,00
Pyriteslong tons	12,000 3,500	72,000 52,500	25,000 8,000	137,500 120,000	35,000 10,000	175,000 120,000	49,000 23,258	220.500 190,281	55,000 30,193	247,500 277,636	52,500	210,00
Chrome iron ore"	2,500	50,000	3,000	60,000	2,000	35,000	2,700	40.000	2.000	30,000	34,524	333,84 40,00
Asbestosshort tons	1,200	36,000	1,000	30,000	1,000	30,000	300	9,000	200	6,000	150	4,50
Praphite	425,000 11,653	34,000 32,046	575,000 1,096	46,000 2,795	2,000	5,100	327,883 68,723	26,231 65,373	415,525	33,242 36,878	416,000	34,00
Blate pigmentlong tens	2,000	24,000	2,000	24,000	2,000	20,000	1,975	24,687	3,000	30,000	18,340 2,000	18.77
Sulphurshort tons	600	21,000	1,000	27,000	500		715	17,875	2,500		3.000	100,00
Sorundum"	3,000 500	10,500 80,000	3,000 550	100,000	3,000	10,500 108,000	3,000	108,000	3,500 645	14,000 116,190	4,000	16,000
Feldsparlong tons	14,000	70,000	14.100	71,112	10,900	55,112	13,600	68,000	14,900	74,500	10,200	108,000 56,10
Zinc-white short tons	10,000	700.000	12,000	840.000	13,000	910,000	15,000	1,050,000	18,000	1,440,000	18,000	1.440,00
Brominebs.	250,000	75,000	301,100 7,529,423	72 264 1,119,603	281,100 10,215,328	67,464 1,459,143	310,000 9,148,401	89.900 1,312,845	428,334 8,950,317	141,350 1,284,070	199 087	61,71
Mineral watersgallocs sold		215,000	1,0-0,420	475,000	10,210,020	1,460,000	0,110,101	4,854,200	0,000,011	9.847.150	8,259,609	1,261,473 15,838,50
ypsum short tons							90,405	405.000	95,250	428 625	95,000	425,00
Clintlong tons	25,000	100.000	25,000	100.000	30,000	120 000	30,000 5,000	120 000 22,500	30,000 5,000	120,000 22,500	32,000	185,00
l'iuorsparsbort tons Novaculitelbs.	4,000	20,000	4,000	20,000	4,000	20,000	1.000,000	15,000	1.160.000	15,000	5,000	20,00
Rutilelbs.	500	1,800	550	2,000	600	2,000	600	2,000	600		1.200,000	3,000
		228,410,380		242,111,889		220,050,674		240,114,544		243,963,063		285,864,94
Total non-metallic products Total metallic products		219,755.109		203, 128, 859				181.599,365		215,364.825		250,419,28
Unspecified mineral products, est		€ 8,000,000		8,000,000				7,000,000		6,000,000		6 000,000
Grand total		450 105 400		452 040 740		419 470 740		459 712 000		465 227 840		547,284,22
Granu coust		450,105,489	!	400,240,748		413,476,748		4:8,713,909		20.1,047.000		,,

Metallic	Products	of	the	United	States.

	18	99		188	19
Quan		Value.	1	Quantity.	Value.
Pig iron, spot value	#80	910F 000 000	Quicksilver, at San		1 410 105
long tons 6,489 Silver.coining value	,138	\$107,000,000	Francisco, flasks Nickel, at Philadel-	33,250	1,413,125
troy ozs 45,783,	632	59,195,000	phia, lbs	195,182	115,518
Gold, coining value, troy ozs 1,604	097	33,175,000	Aluminun, at Phila- delphia, lbs	19,000	65,000
Copper value at	341	33,113,000	Antimony, at San		05,000
New York, lbs231,270	,622	33,833,954	Francisco, tons of		20.000
Lead, value at New York, tons of 2,000			2,000 lbs	100	20,000
lbs 180	555	15,924,951	New York, troy		
Zinc, at New York, tons of 2,000 lbs 55	,903	5,500,855	0Z8	500	2,000
10118 01 2,000 108 33	,000	0,000,000	Total		\$256,245,403

Non-metallic	mineral pro	ducts of the United Ste	ates.	
Bituminous coal,		Pyrites, long tons	54,331	167,658
tons of 2,240 lbs 91,106,998	\$122,497,341	Flint, long tons	30,000	175,000
Anthracite, tons of	W100,101,011	Mica, pounds	48,000	70,000
2,240 lbs 41,624,610	89,020,483	Corundum, sh. tons	589	91,620
Building stone	25,500,000	Sulphur, short tons.		
Lime, barrels 49,087,000		Precious stones		64,850
Petroleum, barrels 27,346,018		Gold-quartz, souve-		01,000
Natural Gas		nirs, jewelery		75,000
Cement, barrels 6,253, 95		Crude barytes, long		10,000
Salt, barrels 8,055,881			20,000	110,000
Limestone for iron	2,011,201	Bromine, pounds	307,386	95,290
flux, tons of 2,240		Foldenen long tone	8,700	50,000
	2,719,000	Feldspar, long tons. Chromo iron ore,	0,100	30,000
Phosphate rock. 5,438,000	2,713,000		1,500	20,000
	1 051 679	long tons		
		Graphite, pounds	400,000	33,000
Zinc-white, sh tons 20,000	1,600,000	Fluorspar, sh. tons	6,000	30,000
Mineral waters, gal-	1 800 000	Slate ground, long	2 500	25 000
lons sold 9,628,568		tons	2,500	25,000
Borax, pounds 7,589,000		Cobalt oxide, lbs	12,266	18,441
Gypsum, short tons. 96,000	430,000	Novaculite, lbs	1,500,000	18,000
Manganese ore, long		Asphaltum, sh. tons	53,800	331,500
tons 25,500	255,000	Asbestos, short tons	100	3,000
Mineral paints, long		Rutile, pounds	1,000	3,000
tons 24,000	380,000			
New Jersey marls,				\$328,914,528
short tons 600,000	300,000			
	Rés	umé.		
Metals	\$256,245,403	Mineral products uns	pecified	6,500,000
Mineral substances	328,914,518	~		
		Grand total		9,501 6,50 031

REVIEW OF THE IRON MARKET IN 1889.

Grand total...... \$591,659,931

While during the early part of 1889 there were periods of uninterrupted and even increasing depression in the iron trade, the year, on the whole, must be regarded as probably the most prosperous since 1879, though the year 1888 was also a satisfactory one almost to its close.

Not until the increased consumption, owing, no doubt, in a measure, to the low prices ruling, began to make itself felt, did signs of improvement appear. Shortly after the 1st of June greater activity in all departments became observable, and since then a review of the trade is simply a narration of a continued gain in strength and advance in prices. The year closes with a basis of substantial prosperity in light stocks, firm prices

and a liberal demand, all of which affords a most encouraging outlook for the future.

MONTHLY AVERAGE PRICES. NEW YORK MARKET.

PER TON OF 2,240 LBs.	January.	February.	March.	April.	May.	June.	July.	August.	Septemb'r.	Oetober.	Novemb'r.	December.	Average.	Variation.
P.g Iron:											-0.50			
No. 1 Foundry	18.00	17.50	17.50	17.25	16.50	17.00	17.00	17 50	17.50	18.00	19,50	17.50	17.60	3.00
No. 2 Foundry	17.00	16.50	16.50	16.25	15,50	16.00	16.00	16.50	16.50	17.00	17.50	18,50	16.65	3.00
Forge	16.00	15.50	15.50	15.50	15.25	15.50	15.50	15.50	16.00	16.50	16.75	17.50	15.91	2.25
Bessemer	16.50	16.50	16.00	16.00	16.00	16.00	17.00	18.00	18.50	19.50	21.50	23,75	18.93	7.75
Scotch Pig:														
Coltness	20,50	20.50	20.50	20.50	21.00	21.50	21.75	22.00	23.00	25.00	26.50	27.00	22.48	
Spiegel, 20%	27.50	28.25	28.25	28.25	28.25	28.00	28.25	30.00	32.00	33.00	35.00	36.00	30.31	8.50
Ferro-manga-														
nese, 80%	54.50	55.00	56,50	57.00	57.25	59.00	59,50	61.50	80.00	85.00	90.00	95,00	63.35	40.50
Steel rails	27.00	27.00	27.00	27.00	26.75	27.50	28.00	28.00	29.00	32.00	33.00	35.00	28,93	8.25
Old iron Tee												1		
rails	23.00	23,50	23.00	23.00	23.00	22.50	23,00	23.00	23.50	24.50	25.50	27.00	23.70	4.50
			-		i			1						

Pig Iron.—The year opened with a light demand. Consumers bought from hand to mouth and could not be induced to anticipate future requirements. The possibilities of production, as demonstrated by the experience of the two preceding years, had created an impression in trade circles that only an extraordinary demand could bring about a scarcity; while, in reality, as the Engineering AND Mining Journal has frequently stated, the surplus supply in the entire country rarely exceeds a few weeks' consumption.

With the then existing feeling, however, producers and sellers had little control of the market. The nominal opening prices were \$18 for No. 1 X foundry, \$17 for No. 2 X. and \$16 for gray forge. That these quotations were nominal was generally understood and in February the Thomas Iron Company was forced by Southern competition to lower its prices for gray forge to \$15.25. In March an improvement appeared in the Western market, but the demand in the East did not respond. In May the Thomas Company openly acknowledged the weaknes of the market by reducing its prices a dollar and a half a ton to \$16.40 for No. 1 X foundry. It was generally understood at the time that this announcement was intended to force a reduction in railroad freights on ore, coal and iron and also as a notice to the Southern furnaces that their lowest prices would be met here. The company accepted very few orders at these prices.

An improved demand for consumption of finished iron, due partly to the need of extensive repairs after the great floods in May, contributed to a feeling of greater firmness in the market.

A marked feature of the year has been the increasing prominence and influence of Southern furnaces. Southern irons, so long despised by Northern makers, have gradually erept up in price, practically to a parity with the Northern product. A significant tendency of the Southern industry is toward the concentration of the various producing interests of that section of the country in a few hands. During the year several of the great Sou

and Steel Company, the Tennessee Coal, Iron and Railroad Company, and the De Bardleben Coal and Iron Company.

Early in the year the Pig Iron Storage Warrant Company was started, and was at first supposed to aim at controlling the iron markets of the country. The scheme did not meet with a very favorable reception, and its avowed objects, which were to encourage speculation in pig Iron by the warrant system and to assist financially furnaces of limited resources, were not developed to any important degree. Late official statements show that the amount of iron in the Company's yards is approximately 35,000 tons.

The trade in the West has been prosperous nearly throughout the year,

The trade in the West has been prosperous nearly thronghout the year, being characterized by a large consumptive demand, relatively high prices and miniterrupted activity since March.

The market for Bessemer iron during the past five months has been particularly strong, and this article has undergone a much more pronounced advance in value than have foundry and forge irons.

Little or no progress has apparently been made by the basic process during 1889, but the thorough discussion it has received and the extremely forgonable results attained in Fugure, make it highly, probable that basic

favorable results attained in Europe make it highly probable that basic steel will in the near future be an important item in our statistics.

In regard to transportation rates, Pennsylvania furnaces continue to be placed at a disadvantage as compared with their Southern competitors.

According to the latest statistics, there are now about 330 furnaces in blast with an aggregate weekly capacity of 171,000 tons against about the same number of furnaces producing 155,000 tons weekly on the 31st of December, 1888. This shows clearly the tendency to increase the capacity of furnaces, which has been a marked feature of modern blast

furnace practice. Scotch I on -

furnace practice.

Scotch 1 on.—The year has witnessed such an advance in price in the foreign market that our relations with Scotch producers have become nominal. Importations during the year aggregate about 150,000 tons, as compared with 197,237 in 1888. The American demand was simply to satisfy the prejudices of the steadily lessening number of founders who still believe in the unequalled softening qualities of the Scotch product. Prices for the most part have been nominal, and those of the leading Scotch brands are given in the accompanying table of average monthly prices:

American brands of so-called "Scotch" irons continue to gain in favor among foundrymen. They have sold at an average price of \$20

Structural Iron and Steel.—There was an unusually large consumption of iron and steel shapes of all kinds during 1889, and since the production of steel rails was very light, the advance in value in Bessemer pig iron was due solely to the increased use of steel for structural purposes. Never before has this use of steel been so large and so varied, and as the advantages steel offers over iron become more generally appreciated, its consumption is destined to attain still wider extension. It is noteworthy, however, that while in 1888 the prices of iron and steel shapes were practically the same, the increased consumption of steel in 1889 advanced its price and iron lagged behind. Toward the latter part of the year, therefore, this disparity in prices to a certain extent checked the demand for steel.

Architectural work absorbed a very large amount of iron and steel in 1889, the tendency in all principal cities being toward improving the appearance, durability and fireproof qualities of all large buildings.

The placing of large government contracts for steel plates, forgings, etc., for the new war ships, for guns and armor, materially increased the activity of the year, and will continue for years to come to be an important Structural Iron and Steel .- There was an unusually large con-

activity of the year, and will continue for years to come to be an important outlet for our product.

In the East, while the Bar Iron Association succeeded in advancing its

In the East, while the Bar Iron Association succeeded in advancing its prices for refined iron from 1.8 cents per pound in January to 2 cents in December, the activity of other lines of material was not reflected in the bar iron market. This one advance was not possible until the last month of the year, and even then it was made with some difficulty.

The tendency of prices during the year was a gradually advancing one, as is clearly shown by the following statement of ruling prices on wharf. New York, in January and December respectively. Bridge plate advanced from 2c. in January to 2.3c. in December, iron angles, from 2c. to 2.35c.; iron tees, from 2.50c. to 2.80c.; steel angles, from 2.25c. to 2.75c.; beams and channels, from 2.8c. to 3.1c. Steel plates, tank and ship, from 2.37½c. to 2.75c.; shell, from 2.8c. to 3c.; flange, from 3.1c. to 3.25c.; fire box, from 3.75c. to 4c.; iron plates, common tank, from 2.15c. to 2.35c.; refined, from 2.35c. to 2.45c.; shell, from 2.45c. to 2.6c.; flange, from 3.45c. to 3.6c.

to 3.6c. Merchant Steel.-The collapse of the combination of manufacturers Merchant Steel.—The collapse of the combination of manufacturers in Jannary occasioned much demoralization in the trade early in the year, and prices were heavily cut; but since midsnmmer consumption has been sufficiently large to advance prices naturally to a firmer basis. Even with unrestricted competition, there seems to be a healthier feeling in the trade than there was during the continuance of the combination, when a well-defined suspicion became prevalent that all its members were not adhering to their agreements. hering to their agreements.

Steel Rails.—The production of steel rails in 1889 was about 1,350,000

Steel Rails.—The production of steel rails in 1889 was about 1,350,000 tons, or about as large as in 1888, though only about two-thirds as large as in 1887. Nevertheless the mills, which are acting together under a "Board of Control," were able to advance prices from \$25,50 or \$26 per ton in June, the lowest price for the year, to \$35 a ton in December. Until June the market went from bad to worse, the general dullness occasioning cutting of prices on all sides. Competition was naturally sharp, and many of the mills booked orders for forward deliveries at the low prices then ruling.

The consolidation of the North Chicago, Union, and Joliet companies, which was consummated in May, was probably the most important event of the year, and by it competition in the Northwest was, to a great extent, removed. Without this consolidation it is very doubtful if the recorded advance in prices would have been possible. The increased consumption of other steel products naturally strengthened this market in the latter part of the year. There were few new railroad enterprises during the year, and the bulk of the rails purchased was for renewals. The new mileage during 1889 is estimated at 5,000 miles, as compared with 7,284 in 1888.

Speigeleisen.—As will be seen by reference to our table of prices, ferro-manganese nearly doubled in value during the year. The unprecedentedly large demand which brought this about was, of course, due to the increased requirements of steel makers together with the inability of home producers to supply these demands and the great scarcity of manganese ores, both in this country and in Europe, the foreign production being absorbed by the "boom" in iron and steel in England on the Continent. land and on the Continent.

Old Rails.—The market for old iron rails during the year was not subject to its usual spasmodic fluctuations. The tendency of values during the year was steadily upward, although for the first six months the market shared the dullness prevailing in all branches of trade. In January, old tee rails sold at \$23, and a few months later at \$22, but from that time on the advance continued uninterruptedly until December, when they became so scarce that holders were able to decline \$27 and \$27.50 for round

Among our iron manufacturers none occupies a higher position or exercises greater influence than Mr. Andrew Carnegie, whose great Edgar Thompson and Homestead works at Pittsburg in a great measure control the markets for steel rails and steel for structural purposes. We have, therefore, great pleasure in giving herewith the views which Mr. Carnegie has sent the Engineering and Mining Journal on the iron and steel market and its prospects for the coming year. We add also the views of several other eminent masters in the industry.

MR. ANDREW CARNEGIE'S VIEWS ON THE IRON AND STEEL MARKET.

The explanation of the great increase, both in production and in value of iron and steel products in the United States during 1889, is to be found in the fact that prices have advanced so much in Europe as to prevent the foreign producers from seeking a market in this country. American producers and manufacturers have therefore been called upon to supply

the foreign producers from seeking a market in this country. American producers and manufacturers have therefore been called upon to supply the entire wants of the country, having for the first time undisputed possession of the home market. Europe has sometimes been able to send to America more than 1,000,000 tons of iron ore and 300,000 to 500,000 tons of finished iron and steel in a year. These imports are now cut off, and our own manufacturers are called upon to supply them. I fear that the strain upon American producers for some time to come will be great, and that prices will materially advance.

The production of Lake Superior iron ore in the United States during 1889 was nearly 2,000,000 tons greater than in any previous year, and next season we are likely to see another million tons added to the extraordinary product in 1889. The production of piz iron has also been greater than ever before, amounting to nearly 8,000,000 tons. In another year the United States will probably be ahead of Great Britain in the production of pig iron, although the high prices ruling upon the other side will stimulate Great Britain's production to its utmost capacity. Even if Great Britain does turn out more pig iron than we do, it must not be forgotten that America consumes all the pig iron it manufactures, while Great Britain exports much. America is by far the greatest consumer of pig iron in the world. We also stand first in the manufacture of iron and steel. For instance, we make about two tons of steel rails for every ton made in England. An idea of our extraordinary progress in steel manufacture may be gleaned from the fact that in 1872 America for the first time made 100,000 tons of steel. Fifteen years later she made more than thirty times that amount. Moreover, the prices of steel products to-day are substantially the same in New York as in London.

The independence of America in the iron trade during 1889 has brought about a revival of the tariff discussion. It has been pointed ont that, as

are substantially the same in New York as in London.

The independence of America in the iron trade during 1889 has brought about a revival of the tariff discussion. It has been pointed out that, as the sale of foreign products has been prohibited in this country by the high prices ruling abroad, there is no necessity for a tariff on iron and steel. Doubtless a reduction of the tariff would be advisable, were it not for the certainty of a reaction in prices on the other side, and rather than restrict production, which would increase the cost, the foreign manufacturer will do as he always has done, make America the dumping ground for his surplus.

Much has been said about the injury that is being inflicted upon the

restrict production, which would increase the cost, the foreign manufacturer will do as he always has done. make America the dumping ground for his surplus.

Much has been said about the injury that is being inflicted upon the Pennsylvania districts by the remarkable development of the iron trade in the South. The South as yet makes only foundry iron, and this certainly competes with the furnaces of Eastern Pennsylvania, which have been placed at a disadvantage on account of the excessive rates of railway freights; but it is likely that these rates will be reduced, as the railroads find the traffic growing less under their exorbitant charges. However, under the most favorable circumstances, I do not look for an increase in the iron product of Eastern Pennsylvania. The iron and steel industry must move westward as population moves. Pittsburg may still be termed its center, but that district is held in the grasp of a great railway monopoly, while the remarkably low races with which Chicago is favored are giving that city prominence as an iron and steel manufacturing point; and nnless Pittsburg can free itself from the grasp of the Pennsylvania Railroad, I look to see Chicago the future center of the iron and steel industry of the country. The South cannot compete with Chicago, Pittsburg or any other northern producing district except Eastern Pennsylvania under present conditions. Eventually, however, the basic process may enable the South to eliminate the phosphorus from its ores, and it may thus become a competitor in the steel industry of this country. As it is, the South is not entirely destitute of ore suitable for steel making. In the Cranberry mines of North Carolina and in some Virginia deposits low-phosphorus ores are found, and we have recently purchased in Pittsburg 2,000 tons of pig iron from Alabama which will make steel, if the lot is equal to the sample we have analyzed.

In conclusion, I look forward to a prosperous year for the iron trade in all sections of the country; in fact, so long as the sur

It is probable that reaction in prices will be upon us before many of these new projects are ready to manufacture. So far as 1890 is concerned, however, a highly profitable year seems insured, New York, December 27th, 1889.

In response to your inquiry as to my views relative to the outlook for the steel and iron industries of the country, permit me to say that I believe a tide of prosperity has set in which will last, at least, through 1892. Of course, there are many conditions of affairs which can arise calculated to upset all calculations. Putting aside the anticipation of any of these uncontrollable and inconceivable events, I cannot anticipate other than a period of the greatest activity and prosperity. The iron and steel producers of the country seem to be fully alive to the danger of inflation; in my experience I have never known a time when the temptation to advance prices has been met with so great a degree of conservatism. A notable feature of the existing status is the fact that, while the production of all kinds of both raw and manufactured materials is large, it is going into the hands of the consumers, and practically none of it held for speculative purposes. At the same time there is not an undue extension of railroads or other enterprises which consume these products. Thousands of tons of iron and

the same time there is not an undue extension of railroads or other enterprises which consume these products. Thousands of tons of iron and steel now enter into constructions in which formerly other materials were used. The failure of the so-called fire-proof structures of the past has been so great that a complete revolution has taken place, and to-day the building demand for metal is one of the most important factors.

The railway practice of the present requires many per cent. of increase in the strength and weight of all its rolling stock and permanent way. Locomotives weigh more tons, and the cars drawn by them require greater weight of parts; the rails over which they pass must be increased in section, and the bridges carrying them constructed of heavier members. The heavier section of the rails alone is an important element in the disposal of the increased production of the rail mills. Instead of 60 pounds per yard approaching the standard section, 75 pounds per yard now more nearly occupies that position.

proaching the standard section, 75 pounds per yard now more nearly occupies that position.

While various points of our country may be disputing as to which shall be favored with the site of the World's Fair of 1892, there is no question about that fair being held in this country during that year. Let it be located where it may, it will certainly be an important factor in sustaining the present industrial activity. Personally, I believe the best good of the greatest number points to Chicago as being the proper location for this fair. Should it be held there it will mean not only the demand for an immense amount of structural material for the exposition buildings, but also the erection of one or more elevated railroads of considerable length. Moreover, the impetus which it will give to the already active spirit of municipal improvement existing in this city, will lead to the construction of viaducts requiring tons of metal. Holding the fair at an interior point will increase the great activity of the West. Northwest, and Southwest, which, while it may bring a reaction, will certainly prolong the present prosperous conditions of affairs until well into 1893. into 1893.

I have not the slightest claims to the mantle of a prophet, and may be far from right in my anticipations, but the above presents my firm

THE ROOKERY, CHICAGO, December 26th , 1889.

THE VIEWS OF MR. JAS. BOWRON—THE TENNESSEE COAL, IRON & R. R. CO.-ON THE IRON TRADE.

Your favor of the 16th inst., addressed to our vice-president, is referred

to the undersigned for answer.

Your favor of the 16th inst., addressed to our vice-president, is referred to the undersigned for answer.

I think the present position of the iron trade is unique, and that the year of 1890 will be one of very great prosperity on both sides of the Atlantic. There is no large stock of iron in the world available for present use, except that in the warrant yards at Glasgow. The large consumption of iron by the pipe lines, for oil and gas, and the increasing use of iron for structural purposes, has led to the present healthy condition of trade in the United States, without much assistance in the way of consumption by the railroads. The cessation of rate wars, and consequent very large improvement in net earnings of railroads has greatly increased their ability to spend money in iron bridges, side tracks, locomotives and cars, and at the same time has added confidence to the market for railroad bords. The railroads of the West and South especially are gorged with traffic beyond their ability to handle it, and I look for not only increased construction of short local railroad lines in 1890, but also unusually heavy orders for rolling stock and track material. The ship building trade is for this moment in a condition of the highest possible prosperity, both here and in England, the government requirements in both countries having added largely to the strength of the situation. The movement to substitute steel sleepers for wooden cross-ties is gaining strength, and the same substitution of iron for wood is being noted in the construction of cars, and also in the timbering of mines. It may not be too far fetched to consider the probabilities of railroad construction in China India and Africa. The probabilities of railroad construction in China India and Africa. for wood is being noted in the construction of cars, and also in the timbering of mines. It may not be too far fetched to consider the probabilities of railroad construction in China, India and Africa. The prejudice of the Chinese nation seems to have been overcome, and it is manifest that railroads alone can effectually insure the success in Africa of European enterprise. There is a cloud on the future which is growing with some rapidity, but it will not affect the year 1890. Furnace plants are being projected in numerous places, more especially in the South, for the express purpose of buying the surrounding land by the acre and selling it by the foot, and a time will come when these in their struggle for existence, will make the trade unprofitable, at least as to the production of pig iron, until they have been absorbed or have demonstrated their right to live a separate existence.

NASHVILLE, Tenn., December 19th, 1889.

THE LAKE SUPERIOR IRON ORE MARKET IN 1889.

From our Special Correspondent at Cleveland. The close of the year 1888 witnessed a slight improvement in the prices of iron ore, on account of the early closing of navigation and an anticipated scarcity. Prices advanced from twenty-five to fifty cents a ton in some few instances. This better feeling, however, entirely disappeared

pated scarcity. Prices advanced from twenty-five to fifty cents a ton in some few instances. This better feeling, however, entirely disappeared in the first two months of 1889.

No sales for future delivery were made in January, the furnace men persistently holding off, and in some instances, it is stated, they resold some ore that they had on hand, at lower prices than they themselves bought in order to bear the market for their next year's purchases. This proceeding and the continued decline in the price for pig and finished iron had its effect on the iron ore market. Ore men, realizing that their position was becoming less advan-

MR. ROBERT W. HUNT ON THE OUTLOOK FOR THE IRON AND STEEL INDUSTRY.

In response to your inquiry as to my views relative to the outlook for the steel and iron industries of the country, permit me to say that I believe a tide of prosperity has set in which will last, at least, through 1892. Of course, there are many conditions of affairs which can arise calculated to upset all calculations. Putting aside the anticipation of any of these uncontrollable and inconceivable events, I cannot anticipate other than a period of the greatest activity and prosperity. The iron and steel pro-

Marquette, and \$1.10 from Escanaba.

This condition of affairs continued throughout February.

In March, the first transactions were made by the United Chicago Mills, now consolidated into the Illinois Steel Company. As soon as the ore men saw a chance of placing their product, each one was afraid that his competitor would get ahead of him; accordingly, they flocked into Chicago to play into the hands of the shrewd purchasers of the Illinois Steel Company. Large blocks of ore were then contracted for at prices a little less than those which prevailed during the previous year for delivery on cars at the mine. About a month previous to this, however, some very large sales had been made by one of the largest iron ore firms of Cleveland to two large Eastern consumers, and also to one or two of the largest Pittsburg furnace companies.

one or two of the largest Pittsburg furnace companies.

In this instance the ore men had the upper hand, for if the purchasers had waited two months longer they could have gotten their ore at 25 cents a ton less. The Gogebic Bessemer ore men refused to sell to the Chicago purchasers, as well as to Pennsylvania and Ohio consumers, at prices that their neighbors were accepting. They held firm at \$5.25 for their product, but did not sell.

In April sales became more general. Bessemer ores were in large demand, and non-Bessemers also commenced to go off at about the same prices that prevailed during the previous season. Large charters for Lake freights were made in this month at \$1,25 from the head of Lake Superior, \$1.15 from Marquette. \$1 from Escanaba, the contracts running throughout the season of navigation.

out the season of navigation.

The large sales of the season for lower Lake delivery were made during April and May, and at these prices:

Republic and Champion and Minnesota Bessemer at \$5.50.

Lake Angeline hard and Lake Superior Iron Company's Section 16, which run 66' per cent. in iron and not over '02 in phosphorus, sold at \$6.25.

Shortly after the Republic closed out most of their ore at \$5.50 they immediately advanced the price to \$5.75, and the rest of their sales during this season were made at not less than this last price.

Norrie, the biggest producer of the Gogebic Range, sold all their ore this month at \$4.50.

Chapiu sold at \$4.50 to \$4.75.

this month at \$4.50.

Chapin sold at \$4.50 to \$4.75.

Cleveland No. 1 and Lake Superior No. 1. Red Specular, \$5.

Second-grade Red Speculars, running from 62 to 63 per cent., \$4.50; non-Bessemer hematites, running 60 per cent. in iron, such as Florence,

Dunn, and Iron River, sold at \$3.75.

Market continued to remain quiet throughout May and June, and during these two months the Ashland and Aurora reduced their price to \$5, and sold up without difficulty. Current lake freights were \$1.25 from the head of Lake Superior, \$1.10 to \$1.15 from Marquette, and 90 cents from Escanaba.

In the month of July a change came over the condition of affairs. In the month of July a change came over the condition of affairs. Ore men began to figure up, and found that most of their estimated product had been sold. They accordingly stiffened up for what still remained unsold. Lake freights were also firmer. It was estimated at this time that the 1889 output of ore would be in the neighborhood of 6,000,000

At the close of August, we find that the Champion, the Lake Superior,

At the close of August, we find that the Champion, the Lake Superior, the Republic, the Minnesota district ores, the Pittsburg & Lake Angeline, the Gogebic Bessemers, and all the low grade Bessemers of the Menominee Range, which had sold at \$3.75, were now out of the market. Shipments continued unusually heavy; the prices remained firm.

In September lake freights commenced to advance to \$1.40 from the head of Lake Superior, \$1.20 from Marquette, \$1.05 from Escanaba. The demand for Bessemers commenced to increase. The ore men carefully figured up how much ore there was still unsold, and found that it only amounted to between three hundred and fifty and four hundred thousand tons. This fact becoming known, prices became stronger, and in many instances advanced.

amounted to between three hundred and fifty and four hundred thousand tons. This fact becoming known, prices became stronger, and in many instances advanced.

October witnessed, as a trade paper said at that time, "an unaccountable demand for Lake Superior ores, particularly Bessemers." Lake freights continued to advance during this month until they reached \$1.90 from the head of Lake Superior, \$1.50 from Marquette, \$1.25 from Escanaba. This advance checked somewhat the shipments, so that during November lake freights declined to \$1.50, \$1.25 and \$1.10. Shrewd furnace-men during October commenced to buy all the ores that were unsold, even though they did not need any more before the opening of navigation, 1890, knowing that the price would inevitably advance. This month also witnessed the commencing of large purchases for delivery during 1890. The Illinois Steel Company was the first to commence to buy, and the ore men snapped at the hook without hesitation. The Illinois Steel Company bought freely all the good Bessemers they could get, commencing at 25 cents advance over last year's price, and did not stop until they had paid as high as 55 cents advance, all f. o. b. cars at the mine. The market for steel continued to advance throughout the country, and the opinion becoming general that the year 1890 would be most prosperous for the iron and steel trades, prices on ore also advanced, and in November the furnace companies of Western Pennsylvania and Ohio purchased all of the ore that Lake Superior mines expected to produce in 1890 that was suitable for Bessemer purposes. So great was the demand for this grade that ores running as high as .08 in phosphorus got the same advance over the previous year's prices as those which analyzed from .02 to .05 in phosphorus. These sales were made at from \$1 to \$1.25 advance, to be delivered at Lake Erie ports.

When the first week in December arrived, it was impossible to get outstions on 10.000 tons of "Bessemer" ore. This buving was unprece-

When the first week in December arrived, it was impossible to get quotations on 10,000 tons of "Bessemer" ore. This buying was unprecedented, the earliest sales of any previous year for the ensuing season's delivery having been made not earlier than December. After the "Bessemer" ores were all sold out, the demand set in during the first part of December for strictly "non-Bessemer" grades. These ores have sold at an advance of from 75c. to \$1. The year closes with a most confident feeling in the iron ore trade. A great amount of vessel tonnage has

been contracted for at \$1.35 from the head of Lake Superior, \$1.25 from

been contracted for at \$1.35 from the head of Lake Superior, \$1.25 from Marquette, and \$1.10 from Escanaba. These figures, however, cannot now be duplicated, and among ore dealers there is considerable uneasiness as to the future course of lake freights.

Estimates of the increased ore production vary between one and two million tons. The new tonnage in the course of construction this winter is 30 per cent. less than it was last winter. A largely increased business in coal is expected next season, as well as in lumber and grain, and no one would be snrprised to see lake freights go to at least \$1.25 from Escanaba, \$1.50 from Marquette, \$1.75 to \$1.85 from head of Lake Superior. In the face of these probabilities the non-Bessemer ore dealers are not anxious to sell their product, at certainly less than 75 cents advance over last year's price. The probabilities are great that the price of non-In the face of these probabilities the non-Bessemer ore dealers are not anxious to sell their product, at certainly less than 75 cents advance over last year's price. The probabilities are great that the price of non-Bessemers will soon advance at least 25 cents over the price now quoted. It is generally conceded this year that the furnace men have scored a point on the iron-ore men, for whereas the price of Bessemer pig has advanced from forty to fifty per cent., the Bessemer ores have been sold at an advance of not over twenty to twenty-five per cent. Present prices on the leading ores are now for Republic, of which there is a few thousand tons left for "fix" purposes, \$7; Champion, Pittsburg & Lake Angeline, Gogebic Bessemers, Menominee Range Bessemers, including Chapin, are all sold up, and consequently not quoted; Lake Superior and Cleveland No. 1 red specular, \$6; Cleveland Scotch and Cliffs Shaft, \$5.50; Chapin has all been sold at \$5.50; Dunn, Florence, etc., are held at from \$4.50 to \$4.75.

It is now estimated that the output for 1890 will be from 8,000,000 to 8,250,000 gross tons, or, in other words, from 1,200,000 to 1,450,000 tons over last year's ontput. The following figures will show how easily even this outside estimate can be taken care of: According to the statistics published in the American Manufacturer, the output of furnaces in blast on December 1st, 1889, was 20 per cent. greater than the average output of all such furnaces during the year ending November 30th, 1889. During this same year there were shipped in round numbers from Lake Erie ports 4,500,000 gross tons of Lake Superior iron ore. Twenty per cent. increase on this to correspond with the increased capacity of the furnaces (and this does not take in the great probability of the present capacity being greatly increased during the ensuing year by the addition of the Carnegie furnaces, the McKeesport furnaces, and the improvements being made in many others) would make the increased demand this year over

00,000 gross tons.

Conservative judges estimate that the increased demand this year over last from Eastern furnaces will amount to over 500,000 gross tons. This, it seems to the writer, is an under-estimate, considering the fact that importations now are almost impossible. The increased demand from Illinois, Wisconsin and Michigan furnaces will be at least in the neighbornois, Wisconsin and Michigan furnaces will be at least in the neighborhood of 500,000 gross tons. According to the above estimate, next year will demand an increased production of 1,900,000 tons of Lake Superior iron_ore. It is possible, though donbtful, that Lake Superior mines can produce this increased amount. It is more doubtful if the tonnage on the Great Lakes will carry this at anything less than exorbitant rates. It is still more doubtful whether the docks of Lake Eric can handle this increased amount, unless the railroads almost double the supply of cars that they need in this trade last year. they used in this trade last year.

THE PITTSBURG IRON MARKET IN 1889. (From our Special Correspondent.) Salar of nir iron in Ditteluwer for the work

Sales of pig from in Pittsburg for the	year were as ton	ows:	
	•	1888.	1889.
		Tons.	Tons.
First half		. 370,706	524,527
Second half		739,155	1,398,523
Total		1,109,861	1,923,050
PITTSBURG CASH PRICE OF BE	SSEMER AND GRAY	FORGE.	
	1887.	1888.	1889.
Jan., Bessemer		9.00	\$16.65
" Gray Forge	20.50	6.50	15.50
Feb., Bessemer	20,50	18.50	16.50
" Gray Forge	20,00	6.25	14.50
March, Bessemer	23.00	8.25	16.75
" Gray Forge	19.50	6.00	14.50
April, Bessemer	22.00	18.25	16.50
" Gray Forge	19.50	5,50	14.25
May, Bessemer	22.00	7.00	16.65
" Gray Forge	19.00	5.00	14.00
June, Bessemer		7.00	16.00
" Gray Forge	18.25	4.30	14.00
July, Bessemer	21.00	7.00	16.65
" Gray Forge	18.50	4.25	14.00
August, Bessemer	21.50	7.25	16.85
" Gray Forge	18.50	4.25	14.50
Sept., Bessemer	20.75	8.00	18.00
" Gray Forge	18.00	6.25	15.65
Oct., Bessemer	20.50	8.00	19.00
" Gray Forge	18.00	6.50	16.25
Nov., Bessemer	20.50	8.00	21.50
" Gray Forge	17.75	6.00	16.75
Dec., Bessemer		7.25	24,00
" Grav Force	16 75	5.50	19.00

REVIEW OF THE SOUTHERN COAL AND IRON FIELDS.

Special Report by Dr. Wm. B. Phillips, M. E.

It can no longer be doubted that a great and permanent current of interest and of money is setting southward. Scarcely a week or a day passes in which is not chronicled the beginning of some large enterprise or the improvement of an old one in the South. New railroads are being projected and constructed; new mines are being opened, and old one projected and constructed; new mines are 'being opened, and old ones extended, new furnaces are being built; and, what was perhaps to have been anticipated, new issues are being forced upon the attention of the public. The South is no longer almost wholly agricultural, but has advanced with no uncertain step into the arena of diversified industry. To show what has been done let us examine briefly into the matter. The following table presents a bird's-eye-view of the coal and iron industries of the States of Virginia, Kentucky, Tennessee, Alabama, and Georgia, from 1880, to and including 1888. The statistics for 1889 are not yet to hand. The year that has just closed has been a memorable one in the history of the iron and coal trades of the South in general, and of Alabama in particular. and of Alabama in particular.

Whatever doubts may have existed as to the permanency of the great industries begun in this part of the world have been dissipated by the hard logic of facts. There remain, however, a few who still view the nard togic of facts. There remain, however, a few who still view the situation with something of suspicion. In spite of the wonderful strides which the nation has made within the past few years, in spite of the evidences, multiplied upon every hand, of the enormous increase of taxable property in many of the Southern districts, in spite of rolling mills, blast furnaces, and railroads, they are still, like Oliver Twist, crying for "More." Such people have their places in the world; they serve, perhaps, as the great fly-wheel to the engine of material progress, and as such serve a most important purpose. most important purpose.

PRODUCTION OF COAL AND PIG-IRON IN TONS.

	Virginia.		Virginia. Kentucky.		Tennessee.		Alaba	ma.	Georgia.	
	Coal.	Iron.	Coal.	Iron.	Coal.	Iron.	Coal.	Iron.	Coal.	Iron.
1880.	100,000	29,934	1,000,000	57.708	641.000	70,873	340,000	77,190	100,000	27.32
1881.	100,000	83,711	1,100,000	45,973	750,000	87,406	375,000	98,081	150,000	37,40
1882.	100,000	87,731	1,300,000	66,522	850,000	137,602	800,000	112,765	175,000	42,440
1883.	225,000	152,907	1,650,000	54,629	1,000,000	133,963	1,400,000	172,465	200,000	45.36
1884.	300,000	157,483	1,550,000	45,052	1,200,000	134,597	2,000,000	189,664	200,000	42,65
1885.	567,000	163,782	1,700,000	37,553	1,000,000	161,199	2,225,000	227,438	133,929	32,92
1886.	684,951	151,250	1,550.000	54,844	1,714,290	199,166	1,800,000	283,859	223,000	46,49
1887.	825,263	175,715	1,933,185	41,907	1,900,000	250,344	1,950,000	292,762	313,715	40,94
1888	1,073,000	197,396	2,401,132	56,790	1,967,297	267,931	2,900,000	449,492	230,000	39,39

Most people will agree that this is a most remarkable growth in these two industries, and most people will agree also that it presages yet greater changes. Aside from mere production of coal and pig iron, there has not been during the year just passed any very important event in these industries, except the shipment to Pennsylvania of several thousand tons of Bessemer pig by the Talladega Iron and Steel Company, of Talladega Ala

thousand tons of Bessemer pig by the Talladega Iron and Steel Company, of Talladega, Ala.

Using the brown ores of the Irona belt in Talladega County, this company has been able to make Bessemer pig on a commercial scale, and to ship it to the steel works North. This is the first shipment of such metal from Alabama and may mean more than appears on the surface. It has been shown time and again that the ordinary pig made here is suited for the manufacture of steel only by one of the basic processes. The Talladega Company has shown that Bessemer metal can be made from Alabama ores, and it follows naturally that if one company can make it so can another.

can another.

It is said that a steel plant will be built at Chattanooga, and one at Fort

Payne.

The Henderson Steel Company, of this city, is still at work on its basic open hearth furnace, and before long we may be permitted to see for ourselves what can be done.

The Venderbilt Steel and Iron Company is preparing to erect a blast

selves what can be done.

The Vanderbilt Steel and Iron Company is preparing to erect a blast furnace at East Birmingham, with C. A. Meissner as Vice-President and General Manager.

A new iron and steel company has been organized at Greensboro, N. C., with sufficient backing to carry it through to success.

A new charcoal furnace is to be built at once at Middlesbrough, Ky., with J. A. Jardine, formerly of the Katahdin Furnace, as Superintendent.

tendent. It matters little in which direction we turn our eyes, it is the same

It matters little in which direction we turn our eyes, it is the same story—an ever growing interest in the manufacture of iron and steel. Some of the companies organized may not get to work for some time, others may not get to work at all, but some will succeed, and their success will induce others to make the attempt.

There is now a healthy feeling in the coal trade in spite of the unusually mild winter. We have had no winter at all so far, and if Nature is to make good her usual average a good time awaits the coal men in January, February and March. The total production in Alabama for 1889 will, I think, not fall short of 3,500,000 tons, if, indeed, it does not exceed this amount.

amount.

The plans for exporting coal to Cuba may now be said to be fairly under way, and some interest is now shown in importing Cuban ores for the manufacture of acid Bessemer metal.

The production of pig-iron in Alabama for 1888 of 449,492 tons promises to be largely exceeded. By the end of 1890 Alabama should produce considerably over 500,000 tons. It may be that the figures for 1889 will closely approximate this amount. Considered as a whole the Southern field is now in better shape than ever before. The spirit of progress has come to stay, for it has met with a welcome such as was accorded 'befo' de wah' to everybody who came in the spirit of peace.

Birmingham, Ala., January 1, 1890.

THE COAL TRADE IN 1889.

ANTHRACITE.

We have to review a year in the coal trade which has been distinctly disappointing. Overproduction and mild weather have worked together to prevent the usual seasonable improvement in the trade, and business has steadily lacked the "briskness" which accompanies a normal winter temperature. With this much said, a more cheerful view of the course of the market may be taken, and we may fairly state that on the whole the dullness has not been as bad as it has been represented. The year preceding 1889 was one of abnormal consumption and unusual conditions generally; hence by comparison 1889 has suffered more than would have been otherwise the case. Notwithstanding the mild weather, it is probably true that, with the exception of 1888, as much coal was consumed in 1889 as in any other year in our history. The significance of this may be still better appreciated when it is remembered that the continued high temperature we have experienced more than offsets the natural increase in consumption arising from the growth of the country. We have to review a year in the coal trade which has been distinctly

we have experienced more than onsets the natural increase in consumption arising from the growth of the country.

A noteworthy tendency of the year was the inclination of buyers to allow stocks to accumulate in first hands, as will be seen by the table of tide-water stocks published below. Consumers, as a rule, rather over bought in 1888, and this, together with the elemency of the weather, made them indisposed to anticipate their requirements to any extent, a

"hand-to-mouth" policy being steadily pursued. Coal was thus frequently blocked at tide-water, and some of the wholesalers more than once got caught with a large number of cargoes afloat, which, in order to sell, were obliged to be disposed of below circular rates.

The falling off in the domestic demand naturally caused producers to turn their attention to the smaller or steam sizes. These sizes, of course, come into sharp competition with bituminous coal, and to counterbalance the growth of the trade in the latter in recent years, the anthracite sales agents at the opening of the season decided to omit pea and buckwheat from the schedule, leaving their producers entirely free in every way possible to compete with the bituminous product. This naturally stimulated the demand for the smaller anthracite sizes, but in producing these sizes the miners were forced to add to their accumulation of stove, egg, chestnut, etc., and here again we find another cause for the depression in the domestic coals.

In fact, overproduction was the cause of considerable demoralization

domestic coals.

In fact, overproduction was the cause of considerable demoralization throughout the year. Various agreements as to reduction of output were made, but every month production exceeded the amount allotted. That all interested were not living up to their agreements was evident early in the year, when statistics of production began to be withheld and the official statistician suspended the publication of the usual detailed statement of the tonnages of the several companies. Naturally, the most unfavorable construction was put upon this attempt to keep the statement of what each company was doing secret, and a feeling was aroused that the market was flooded with coal, an impression which could not be authoritatively corrected, owing to this unfortunate official secrecy. Prices varied little during the year. But three official circulars were issued. They were as follows:

Sizes.

Opening, April 1. June 1.

Sizes. Stove	Opening, April 1.	June 1. \$4.30	July 1. \$4.40
Chestnut	3,90	4.00	4.15
Egg	3.90	4.00	4.15
Broken	3.75	3.85	3.90

Actual selling prices on the whole have not varied much from 15 to 25 cents below the first circular. Prices were, therefore, unsatisfactory. It was the original intention to advance circular prices on September 1st to \$4.65 (the closing price in 1888), but too much coal and too little cold on that date forced the conviction that such an advance, under the circumstances, would have been purely nominal, and the idea was, therefore, abandoned

stances, would have been purely nominal, and the idea was, therefore, abandoned.

We have stated that overproduction was largely responsible for the depression in the trade. It is interesting to note the difference between the percentage of tonnage allotted each company early in the year on the basis of the average production of the three months of August, September and October, 1888, and the actual percentage of the tonnage of 1889, of the average the letter way be accurately estimated:

so far as the latter may be accurately estimated:

·	Allotted	Actual
	per eent.	per cent.
Reading	21.41	20.21
New Jersey Central	15.24	17:10
Lehigh Valley	17.14	21.10
D., L. & Western	18 03	14.91
Delaware & Hudson	10.97	10 63
Pennsylvania Railroad	10.80	9.27
Pennsylvania Coal Company		3.75
Erie		2.68
Totals	100.00	*****

We have also prepared an interesting statement, showing the tonnage by months in 1888 and 1889, and likewise the stocks at tidewater at the end of each month:

	1888		1889	
	Output.	Stocks.	Output.	Stocks.
January	3,255,692	95,168	2,622,529	807.314
February		232,501	2,097,662	837,216
March		465,709	2,103,062	898,783
April		733,314	2.274,199	964,628
May		812,425	3,016,531	962 066
June		741.958	3,033,216	833,764
July		586,469	3,627,523	788,069
August		396,752	3,625,683	795,747
September		370.811	3,186,883	877.237
October		359,133	3,711,870	704.909
November		569,233	3,372,814	771.334
		652,156	3,200,000	800,000
December	4,100,040	002.100	3,200,000	000,000
Total (gross tons)	38,145,718		35,871,972	

* Estimated.

In conclusion and as to the future it is worthy of note that supplies in consumers' hands throughout the country, in consequence of the policy they have pursued, are light, that a severe restrictive policy is now in force, and that by the law of average temperatures, a period of cold weather must be at hand.

The activity in the iron trade and the scarcity of coke also promises a slight increase in furnace consumption, which of late years has fallen off so largely that the condition of the iron trade has had comparatively little effect on the demand for anthracite.

The following tables show the production of anthracite to date both by companies and regions, which have been specially prepared for the Engineering and Mining Journal, and which have an especial interest at the present time.

at the present time.

PROPORTIONAL SHIPMENTS OF ANTHRACITE BY THE SEVERAL COAL ROADS.

Tons of 2,940 pounds.

	1889.		1888.		1887		1886.	
	Ship- ments, Tons.	Per cent.	Ship- ments, Tons.	Per cent.	Ship- ments, Tons.	Per	Ship- ments, Tons	Per cent.
Phil. & Reading Cent of N. J Lehigh Valley D. L. & W D. & H Penn. R. R. Pa Coal	7,284,632 6,173,419 7,497,830 5,295,240 3,777,880 3,293,127 1,333,925 951,824	16.10 21.11 14.91 10.63 09.27 03.75	6,592,716 6,996,192 4,486,188 4,54,441 1,624,433	15.05 17.28 18.34 11.81 11.93 04.25	5,784,451 6,220 793 4,018,2 80 3,816,149 1,6 3,456	14.00 16.69 17.91 11.68 1.01 04.62	6,184,456 5,172,023 3,480,687 3,478,885 1,396,179	15 58 19 24 16 09 10 83 10 82 04 83
Total shipments Consumption at mines	35,567,327 2,130,439		38,145,718 2,288,743		34,641,018 2,078,461		32,136,362 1,928,181	
Total production	37,637,766		40,434,461		36,719 479		34,064,543	

							-			-			1		-
		1835			1884			1883			1882			1881	
ROADS.	me	nts.	Per	me	ip- nts.	Per	me	nip ents. ons.	Per	me	nip- ents.	Per	me	nip- ents.	Per cent.
Read. RR) Cent. N	6,10 4,9 3,3 3,3 1,50	80,780 7,445 87,834 01,874 03,685 00,686 51,226	19:35 15:76 10:44 10:74 4:71	5,98 5,20 3,86 3,16 1,38	33,920 35,254 94,262 32,680 39,287 97,946 33,546	19 3 16 9 10 9 10 3 4 5	6,2 5,0 3,5 2,7 3 1,5	32,401 71,773 79,123 12,972 73,419 41,14 53,194	38·49 19·7 15·9 11·0 8·7 4·8 1·2	4,2 5,9 7 4,6 7 3,2 2 2 3 5 1,4	00,113 11,052 38,740 38,717 03,168 32,974 59,821 30,511	14.46 20.38 15.98	3 4,0 5,7 3 4,3 3,2 1 2,2 1 1,4	40,383 85,423 21,869 88,969 11,406 11,363 75,380 65,230	14:80 20:07 15:40
Total ship- ments. C'nsumption at mines = 6 per ce t of shipm'ts		23,530 7,411			66,995 15,420			93,627 07,587			20,098 17,208			00,016 10,001	
fotal pro- duction	38,50	0,941		32,60	2,415		33,7	07,615		30,80	87,302		30,2	10,017	
			1880.			1879.			1878.			1877.		1873 to 1876.	1868 to 1872.
ROADS.		Shi		Per cent.	Shi		Per cent.	Shi . mer		Per cent.	Shi		Per cent.	Per cent.	Per cent.
Reading RR. Cent. N. J Lehigh Valle D., L. & W D. & H Pa. RR. Pa. Coal Co Erle.	y	3,476 4,294 3,550 2,674 1,861 1,138	1,141 1,533 0,848 1,704 1,032	25:31 14:80 18:75 15:15 11:41 7:95 4:90 1.75	3.82 4,403 3,837 3,014 1,682 1,427	558 957 407 117 106	28.47 14.63 16.86 14.79 11.53 6.43 5.46 1.83	3,408 2,180 2,046 1,369	1,979 3,319 3,672 3,235	29°(3 12 87 19°33 12°39 11°63 7°74 5°49 1°58	2,83' 4,51 2,08! 1,91! 1,530		10.03	13·41 20·04 12·26	

ANTHRACITE COAL SHIPMENTS AND TOTAL PRODUCTION OF PENNSYLVANIA.

17,605,261

26,142,689

20,847,681

23,437,242

	Wyoming	REGION.	Lенівн	REGION.	SCHUYLKIL	L REGION.	Total shipm'nts
YEARS.	Shipm'nts	Pro- duction.	Shipm'nts	Pro- duction.	Shipm'n ts	Pro- duction.	Gross tons.
Before	1820	10,000		3,000		5,000	
1820		800	365	665		500	365
1821		1,000	1,073 2,240	1,473 2,740	1 400	800	1,073
1823		1,200 1,300	5,823	6,523	1,480 1,128	1,000 1,200	3,720 6,951
1823 1824		1,700	9,541 28,393 31,280 32,074	10.441	1.567	1,500	11,108
1825		2,000	28,393	29,493 32,780 34,274 33,233	6,500 16,767 31,360	7,006	34,893
1826		2,700	31,280	32,780	16,767	7,006 19,335	48,047
1827		4,000	32,074	34,274	31,360	32,893	63,434
1828		6,200	30.404	33,233	47,284	52,481 87,293 104,584	77,516
1829	7,000	16,800	25,110 41,750	29,110 46,850	79,973 89,984	104 584	.112,083 174,734
1830	43,000	58,200 78,300	40,966	47 166	81.854	104 854	176 820
1831 1832	54,000	121 700	70,000	47,166 82,700 132,100 128,874	209.271	104,854 243,771 298,333	176,820 363,271 487,749 376,636
1833	84,000	121,700 161,777 53,008	70,000 123,001	132,100	209,271 252,971	298,333	487,749
1834	43,700	53,008	106,244 131,250	128,874	226,692	274,977	376,636
1835	90,000	108,800	131,250	100,812	339,508	410,805	560,758
1836	84,000 111,777 43,700 90,000 103,861 115,387	125,360	148,211 223,902 213,615	178,891	432,045	521,478 630,398 521,951	684,117 869,441
1837	115,387	139,041	213,615	269,802 256,979	530,152 446,875	521 951	738,697
1838 1839	78,207 122,300	94,083 146,760 177,867	221,025	265.230	475,077	545,446	818,402
1840	148 470	177.867	225 313	265,230 269,932	490 596	560,421	864,379
1841	148 470 192,270 252,599	229,955	143,037 272,540 267,793 377,002	171,072	624,466 583,273 710,200 887,937	795 078	959,773
1842	252,599	301,856	272,540	325,692	583,273	659,047 819,276 1,015,623 1,298,336 1,480,247	1,108,412 1,263,598
1843	285,605	340,441	207,783	319,209 448,633 509,761 512,783 748,805	710,200	1 015 693	1,630,850
1844	365,911	435,434 536,329	429,453	500 761	1,131,724	1 298 336	2,013,013
1845 1846	518 380	614.291	517,116	512.783	1 308 500	1.480.247	2.344.005
1847	451,836 518,389 583,067	689,185	633,507	748,805	-1,665,735		2,882,309
1848	685,196	808,531	670,321 781,556	(294), 29 (29	-1,665,735 1,733,721 1,728,500 1,840,620	1,973,185 1,942,168 2,079,387	2,882,309 3,089,238
1849	732,910	969 635	781,556	920,009	1,728,500	1,942,168	3.242.900
1850 :	827,823	972,692 1,355,028 1,502,865 1,723,655	690,456 964,224	920,009 811,286 1,130,071	1,840,020	2,705,591	3,358,899
1851	1,156,167	1,355,028	1 072 136	1,130,071	2,328,525 2,636,835	2 067 884	4,448,916 4,993,471
1852 1853	1,284,500 1,475,732	1,302,605	1,072,136	1,231,433	2 665 110	2.984,765 3,572,132 4,130,852	5.195.151
1854	1,603,478	1,868,052 2,060,267 2,288,134 2,261,114	1,207,186 1,284,113 1,351,970	1 406 372	3.191,670 3,552,943 3,602,999	3,572,132	5,195,151 6,002,334
1855	1.771.511	2,060,267	1,284,113	1,493,423 1,568,285 1,526,871	3,552,943	4,130,852	6,608,567 6,927,550
1856	1 972 581	2,288,194	1,351,970	1,568,285	3,602,999	4,143,288	6,927,550
1857	1,952,603 2,186,094 2,731,236 2,941,517	2,261,114	1,318,541	1,526,871	3,373,797 3,273,245	3,906,857	6,644,941 6,839,369
1858	2,186,094	2,527,125 3,151,846	1,380,030 1,628,311	1,595,315 1,879,071	3,448,708	3,741,790 3,979,809	7,808,255
1859 1860	2,731,230	3,388,973	1,821,674 1,738,377 1,351,054 1,894,713	2,098,569	3.749,632	4,319,576	8,513,123
1861	3,055,140	3,513,411	1,738,377	1,999,134	3,160,747	3,634,916 3,937,175	7.954,264
1862	3,145,770	3,608,198	1,351,054	1,549,658	3,160,747 3,372,583	3,937,175	7.954,264 7,869,407
1863,	3,759,610	4,304,754	1,894,713	2,169,446	3,911,683	4,478,877	9,566,006
1864	3 960 836	3,513,411 3,608,198 4,304,754 4,526,635	2,054,669 2,040,913	2,040,200	4,161,970 4,356,959	4,756,532 4,979,457	9,652,391
1865	3,254,519 4,736,616	3,720,717 5.413,958	2.179 364	2 433 280	5,787,902	6.245.599	12,703,882
1866 1867	5.325,000	6,089,272	2,502,054 2,502,582 1,949,673	2,433,280 2,356,867 2,865,820 2,313,989	5.161.671	6,245,599 5,899,505 6,097,947	12,988,725 13,801,465
1868	5,968,146	6.846.629	2,502,582	2,865,820	5,161,671 5,330,737	6,097,947	13,801,465
1869	6.141.369	7,279,543	1,949,673	2,313,989	5.775,138	6,782,146	13,866,180
1870	7,971,660	8,814,024	3,239,374 2,235,707	3,489,364		5,516,312	16,182,191
1871	6,911,242	7,667,129	3,873,339	2,568,764 4,202,824	6,552,772 6,694,890	7,120,340	15,699,721 19,669,778
1872	9,101,549	10,698,523	3 705 596	3,801,447	7 212 601	7,131,209 7 335,333 7,286,793	21 227.952
1873 1874	0.504.408	11,711,0 3	3,705,596 3,773,836	4,139,561	7,212,601 6,866,877	7.286,793	21,227,952 20,145,121
1875	10 596 155	10,204,764 11,231,924					
1876	8,424,158	8,929,607 8,798,399	6,221,934	6,595,250	3,854,919	4,086,214	18,501,011
1877	8.300.377	8,798,399	8,195,042	8,686,744	4,332,760	4,592,725	20,828,179
1878	1 8.085.587	8.570,722	0,282,220	0,009,108	4 505 567	4 971 903	17,605,262 26,142,689
1879	12,586,293	13,341,475	7 554 749	8 008 096	4,332,760 3,337,449 4,595,567 4,463,2:1	4,086,214 4,592,725 3,431,695 4,871,303 4,773,014 5,612,235	23,437,242
1880 1881	13 051 282	12,104,435 14,784,465 14,809,653	9,253,958	9,809,195	5,294,676	5,612,235	28,500,017
188 2	13,971,371	14,809,653	9.459,288	10,026,845	5,689,437		
1883	115.004.493	16,540,761	10,074,726	10,679,209	6,113,809 5,562,226	6,480,637	131.793.027
1884	15,677,753	16,540,761 16,618,418	9,478,314	10,047,012	5,562,226	5,895,959	30,718,293
1885	. 16,236,470	17,210,008	5,898,634	3,004,081 6,595,250 8,686,744 6,639,159 9,478,478 8,008,026 9,809,195 10,026,845 10,679,206 10,047,012 6,252,552	9 488,426	10,007,731	31,023 329
1886	117,931,846	18,003,736	5,723,128	6,066,52	9,381,407	9,944,29	34,1-6,362
1887	19,684,929	20,866,025	2,047.00	4,607.886 1,977,59 6,870,029	10.654.116	11 293 46	34.641,018 38,145,718 35,507,327
1888 1889	21,852,366 18,654,454	19.77 . 721	6,481,158	6,870,029	10,371,714	10,994,017	35,507,327
1000	- 5,000 E, E. 1		-,,,	, , , , ,		1	11

BITUMINOUS

The year in the soft coal trade was opened with the usual "iron-clad" combination of producers, and precedent was adhered to by the violation of the terms of the agreement before the ink on the signatures to it had time to dry. No fines seemed to be imposed upon the transgressors, and before long competition of the sharpest character was the order of the

before long competition of the sharpest characteristics of the amount agreed upon soon found that they were doing so simply for the benefit of less scrupulous competitors, and naturally much soreness of feeling resulted. This explains why, in our statistics of bituminous production, some districts show a falling off and others a large increase as compared with 1888, the demand being general and the productive capacity of all the mines the same as in previous years.

The collapse of the combination of course brought about a demoralization of prices for a time, but during the last four months of the year an analysis.

The collapse of the combination of course brought about a denoraliza-tion of prices for a time, but during the last four months of the year an increased demand, coupled with a scarcity of cars, enabled miners of good coals to obtain the original pool prices with little difficulty. The trade was greatly hampered throughout the latter part of the year by a scarcity of rolling stock. The pressure of freight traffic of all kinds on the leading roads was enormous, and, as a consequence, coal shippers were semantic producted.

were somewhat neglected.

For 1890 a trust is proposed. Coal is to be sold through one agency exclusively, and there are other interesting details of the scheme, which will be published in the Engineering and Mining Journal as soon as they are matured.

In the meantime an agreement has been entered into which is designed to prevent contracts for 1890 being made until the plans now under consideration are carried out. Some of the more aggressive elements in the market, however, are said to be making preparations for even more active competition than before.

competition than before.

Probably the greatest developments of the year were in Virginia and West Virginia, where there was a largely increased production. The Chesapeake & Ohio and the Norfolk & Western producers early in the year assumed great prominence in the market, and throughout were active competitors with miners much nearer to this market. In 1890, West Virginia will undoubtedly be a very powerful factor in the market. The well-earned reputation of Cumberland coals enabled miners of that district to maintain prices with little tronble, and although lack of transportation facilities somewhat checked production, the year was on the whole satisfactory.

Central Pennsylvania regions yielded a moderate output, and, although

whole satisfactory.

Central Pennsylvania regions yielded a moderate output, and, although troubled by a shortage of cars, producers were able, while maintaining prices, to hold their own in the market. The miners of the Clearfield district secured a particularly large share of the steamer trade.

In the Pittsburg district the competition of Southern coal has been severely felt, and this, together with labor troubles and lack of cars, contributed to make the year rather unsatisfactory.

In Illinois and Indiana a great deal of time was lost by strikes and lockouts.

REVIEW OF THE BOSTON COAL MARKET IN 1889.

(From Our Special Correspondent.)

The coal market at the port of Boston for the year 1889 has been unsatisfactory. Every one will be glad to welcome the new year, for it is likely to be an improvement. The anthracite trade has not been bad, but likely to be an improvement. The anthracite trade has not been bad, but for three months the demand has been disappointing. Nothing but the excellent condition of the local retail trade has made the situation tolerable. But, as it is, prices are maintained at retail, and the producers have kept the supply within bounds by curtailing production. Boston dealers have made a little money on what they have sold, at all events. The year will not prove nearly as satisfactory as 1888, which was one of the best years known to the local trade, because sales have been smaller and in a hand-to-mouth way. The division of the business of the Austin C. Wellington Coal Company among two firms, including the new Thompson-Baker to-mouth way. The division of the business of the Austin C. Wellington Coal Company among two firms, including the new Thompson-Baker Coal Company, has been the only change of importance in the retail trade. The year has been an uneventful one. Prophecies of the disruption of the combination have not proved true, and the outlook for the combine is good. The only concern which has endeavored to break the established price list had a brief and altogether inglorious career. The city contract is made for short periods and continues to pay its participators a living profit, and considering that this business is often done at a loss, affairs are not as bad as they might be. A dull business makes every one feel poor, but it is not so bad as an unprofitable business after all. There is one good retail coal wharf to rent here, but the city is well supplied and no one seems anxious to start in at the vacant stand.

Percise receipts of anthracite coming to this port cannot be stated for several days, but the figure will be very close to 1,750,000 tons. The natural increase in consumption is considerable, but here in the city every dealer, almost, has small stocks. Outside of Boston, in the manufacturing towns, the condition is much the same, only dealers do not run so close to the wind on stock outside of this port. In the wholesale to the wind on stock outside of this port. In the wholesale to the wind on stock outside of this port. In the wholesale trade the only changes of moment have been the withdrawal of Mr. W. B. Gay, from the Gay & Parker Company, and the admission of Messrs. Rogers and Hanson, and the succession of Mr. Jeffries to the agency of the Lehigh Company, made vacant by Mr. Thompson's retirement. Taken all in all, the anthracite trade is in fair shape: credits are good, and at light of the second market for these securities toward the end of 1889. Delaware & Hudson reached a higher figure than had been attained by any of the active coal stocks for many years at least. In 1888 the stock market for these securities toward the end of 1889. Delaware & Hudson reached a higher figure than had been attained by any of the active coal stocks for many years at least. In 1888 the stock market for these securities toward the end of 1889. This was due least one or more firms in this city, which have seen reverses of late years, have been building themselves up to a reasonably strong position again. If we can only have a few weeks of good winter weather in the next two months the season will end very well.

The bituminous coal trade has not been so unsatisfactory for several years as in 1889. Perhaps leading shippers will not lose very much outright, but their customers will lose, and this is always bad business. Then, two or three shippers will undoubtedly lose considerable sums on coal sold delivered. It has been nip and tuck to keep trade supplied for two months now, and jobbers find it very tiresome. Had it not bee

would have been even worse, but it is bad enough. The pool or Seaboard Association prices were cut considerably, but the scarcity of coal put an end to all chance of a demoralized market, until today there is virtually no price for bituminous for immediate shipment. Those who are so fortunate as to have coal, can get whatever they ask within reason, say \$2.75 f. o. b. at the lowest. The Conemaugh flood made deliveries at least two weeks behindhand, and this together with the resumption of business, increased activity on the railroads, has put everything back, so that contract deliveries are at least six weeks behind to-day, and one or two leading shippers are even worse off and are compelled to divide up every cargo they receive into various lots, in order to keep their customers supplied. Of course, this is very mean business for all concerned, and complaints against the Pennsylvania Railroad and the Baltimore & Ohio Railroad, long and loud, have been heard for from two and complaints against the Pennsylvania Railroad and the Baltimore & Ohio Railroad, long and loud, have been heard for from two to three months. The Pennsylvania people have ordered a lot of rolling stock, and will soon be in better shape, but reports from the Baltimore & Ohio are not so encouraging. That corporation is poor, and has not the means to improve its freight service. All their spare cash is put into passenger service improvements. Coal dealers claim that the Baltimore & Ohio is sadly deficient in its freight motive power and that none but passenger locomotives are bought. There is at least some truth in this. Only those shippers who have rigidly adhered to the f.o.b. standard have made money this season, and some of them have had much trouble in getting freight charters for their customers. Matters are in good shape for a strong pool to be formed for the season of 1890-91, in good shape for a strong pool to be formed for the season of 1890–91, in order that some of the leading shippers may have a chance to recover lost ground. Receipts of bituminous coal at this port will aggregate close on to 1,000,000 tons by water. There is no way of getting at the all-rail shipments of bituminous into New England but they are very considerable and are ground are ground as groun

able, and are growing larger each year.

Gas coal has enjoyed about the same movement as usual this year.

Gas coal has enjoyed about the same movement as usual this year. More and more water gas is being made, but it is used in admixture with coal gas, and the amount of gas coal consumed has not been materially lessened. Should the Legislature legalize the manufacture of water gas at the coming session a larger amount of it would be at once made. This has been a year of high coastwise freights, and coal freights have been particularly strong. This is one of the causes which has led to the delay in shipping soft coal. Every one thought last summer that the rates must come down off the high horse, and considerable precious time was lost. It has been, per contra, a harvest for vessel owners, and I have heard of some very handsome profits being made. More vessels are on the stocks in New England shipyards now than at any time for years, it is said, and probably more reasonable freight rates will rule next season

THE PITTSBURG COAL MARKET IN 1889.

(From Our Special Correspondent.) (From Our Special Correspondent.)

The following table furnishes the coal shipments from Pittsburg, by the Ohio River, for the past ten years. It is easy to note the years in which strikes prevailed on the Monongahela River. The shipments by river ought to be at least 100,000,000 bushels. In 1888 there were no strikes, and the shipments reached 109,652,000 bushels; the past year will show a deficiency of 41.000,000 bushels. The coal syndicate has secured the extension of its options till July 1. There is much speculation as to whother the deal will go through deficiency of 41.000,000 bushels. extension of its options till July whether the deal will go through.

TEN YEARS' COAL SHIPMENTS ON THE OHIO RIVER FROM PITTSBURG.

	Cincinnati.	Louisville.	Total Tons.
1889	. 30,360,000	37,895,000	68,255,000
1888	51,339,000	58,513,000	109,652,000
1887	20,770,000	35,973,000	56,743,000
1886	33,229,000	58,435,000	91,646,000
1885		42,334,000	74,924,000
1884		30,801,000	55,432,000
1883	31,533,000	56,462,000	87,990,000
1882	34,460,000	36,679,000	71, 139, 000
1881	25,490,000	37,396,000	62,886,000
1880		38,311,000	66,220,000

THE WORLD'S PRODUCTION OF COAL.

Countries.	Tons.
Great Britain (1888)	169,935,21
United States (1888)	126,819,400
Germany and Luxemburg (1888)	81,863,81
France (1888)	22,951,940
Belgium (1888)	19,185,18
Austria and Hungary (1886)	20 779.44
Russia (1886)	4,650,000
Sweden (1887)	300,00
Spain (1887)	977,55
Italy (1886)	243,32
Other countries (1888)	10,000,000
Total	457,705,885
Percentage of the United States 27	,,.

FLUCTUATIONS OF PRICES OF COAL STOCKS IN NEW YORK DURING 1888

NAME OF COMPANY.	Janu	ary.	Febr	uary.	Mar	ch.	Ap	ril.	M	ay,	· Ju	ne.	Ju	ly.	Aug	rust.	Septe	mber.	Octo	ber.	Nove	mber.	Decer	nber.
* 1	H.	L.	H.	L.	Н.	L.	Н.	L.	н.	L.	H.	L.	H.	L.	Н.	L.	н.	L.	H.	L.	H.	L.	Н.	L.
American Coal			4.00		60.00																			
Cambria Iron											93 00	99 00			100.00	93.00			102.50				103.	
Cameron Coal			33.50				34.75	30.50	34.50	31.38	1.32.08	31.00	30 50	99 00	99 50	98 75	15 95	4 50	9 00	5 12	6 50	4.00	7.25	4.5
Ches. & Ohio R. R Chic. & Ind. Coal R.R			42.50				14.00	111.20	21.10	11.00	.41.70	21.00									Lande and			
Col & Hocking Coal	21.00	19.00	42.50	18.50	20.50	17.00	17.50	17.13	18.50	17.00	20.00	17.00	17.00	15.00		*****	21 00	19 00	17 00	18 00	20 00	17 00	20 00	16 0
Col. C. & I	32.00	29.00	21.88 36.50	31.63	34.38	30.00	30.00	21.00	25.80	23.50	31.00	25.75	31.00	27.50	28,25	26.25	34.00	28.50	33.00	30.00	35.88	31.25	39.38	33.0
Consolidated Coal Del. & Hudson Can	190 09	1001	28.00 137.88	25.50	26.00	25.25	25.25	25.00	140 69	190 00	140 05	140.00	25.00	24.00	26.00	25.00		:::::::	:::::::	::::::				:::::
D. L. & W. R. R.																								
Hocking Valley	26.50	25.48	1128.25	26.25	20.75	23.30	24.20	16.U0	19.75	16.00	16 25	14.00	15 50	14 63	18 50	14 00	10 99	16 62	18 95	16 50	99 00	17 00	91 50	10 0
Hunt. & Broad Top	21.75	21.00	21.25 46.75	20.75	20.00	18.00	20.00		20.25	19.00	19.75	18.00			18.25		20.75	19.00	19.50	19.00	19.00	18.00	17.50	17.0
Lehigh Coal & Nav	48.00	51.00	52.25	51 63	40.00 59.95	51 38	59.00	51.00	53.00	46.50	48.00	46.50	47.25	45.63	46.00	45.75	47.25	46.25	47.50	45.00	47.00	45.00	45.00	
Lehigh Valley	30.00	34.30	1100.00	U2.00	U28.00	33.30	U2.00	30.40	U1.00	05.00	34.30	35.15	33.03	37. XX	34 UH	ny. 2h	34 133	3.3 3X	23 (2)	53.00	53 88	52.00	53.25	52.0
L. & W. C. I	31.00	29.00							27.50	127.00	134.00	22.00	52.50				31 00	30 00						
Mahoning Coal	43.00	40.00									1		40 00						44 00	41.00	50.00			
Marshal Con Coal	10 00		10.00																					
Maryland Coal	14.00	12.75	15.63	13.25	16.00	15,50							14.00	13.75	14.88	13.25								
Morris & Essex	147.00	14114	15.63 150.00	147.50	159.25	148.50	150.50	150.00	15636	154.00	155.50	151.75	155.00	154.00	153.88	153.00	153.00	151.00	153.50	150.00	152.25	152.00	150,00	149.0
New Centra! Coal N. J. C. R. R.	11.50	10.50																						
N. Y., Sus, & West	100.00 9.25		9.38	8.63	8.75	7.75	8.00	7.50	9.25	95.25	0 38	8 00	8 75	7 88	8 75	8 00	0.38	116.13	\$131	119.75	124.00	115.50	124.00	117.0
" pref	34.50																							
Norfolk & West. R.R	17.25		18.00	17.00	17.13	15.00	16.25	16.00	16.75	16.00 51.75	16.38	15.00	15.63	15.00	17.00	15.00	21.38	17.00	19.25	17.50	22.13	19.0	19.88	19.0
Pennsylvania Coal	52.88		53.13	51.00	52.00	47.50	53.38	49.38	53.38	51.75	53.50	51.63	51.88	49.75	54.75	50.50	58.25	53.50	57.50	55.25	61.75	55.75	60.50	59 0
Pennsylvania R. R	55 13	53 69	56.00																					
Phila & Reading R.R	50.00	47.50	49.50	46.75	47.88	42.38	46.25	43.25	47.50	43.88	48.75	48.38	48.50	42.25	45.75	42.25	48.50	45.00	46.63	42.25	43.25	39.38	40 53	37 2
Tennessee C. & 1	35.50	31.00	49.50 37.25	33.50	42.25	36.50	41.88	37.13	40.38	37.00	40.50	37.25	40.38	39.00	43.25	39.13	55.25	41.63	59.88	49.50	85.25	59.00	86.00	73.0
Westmoreland Coal	95.50	94.00	103.00 70.00	90,00	103.00	90.00	100.00	100.00	102.00	98.00	104.00	97.00	98.50	97.00	99.60	96.50	102.50	98.00	102.50i	97 00	81114	95 00	101 50	1101 0
Wyoming Valley	51.00	50.00	70.00		00.00				11.00	10.00	11.00	10.00											10.00	
1	02.00	00100	1						1		1													

The sales during the year of the companies quoted are as follows: American Coal, 30 shares; Barclay, — shares; Buck Mountain, 100 shares; Cambria, 3,124 shares; Cameron Coal and Iron Company, 72,779 shares; Chesapeake & Ohio Railroad, 20,251 shares; Chicago & Indiana Coal Railroad, 200 shares; ditto preferred stock, — shares; Colorado & Hocking Coal, 12,365 shares; Colorado Coal and Iron, 119,715 shares; Consolidated Coal, 3,749 shares; Delaware & Hudson Canal Company, 201 031 shares; Delaware & Hudson Canal Company, 201 031 shares; Delaware & Hudson Canal Company, 201 031 shares; Lehigh Coal and Navigation Company, 67,874 shares; Lehigh & Wilkes-Barre Coal and Iron Company, 11,520 shares; Lehigh Valley Railroad, 64,041 shares; Marshall Consolidated Coal, 1,540 shares; Manorey Coal, 230 shares; Lehigh Awaryland Coal, 3,194 shares; Morris & Essex, 6,362 shares; New York & Susquehanna Coal, — shares; New York & Perry Coal and Iron, 29,273 shares; Now York & Perry Coal and Iron, 29,273 shares; Norfolk & Western Railroad, 25,665 shares; ditto preferred stock, 154,131 shares; Pennsylvania Railroad, 25,655 shares; Pennsylvania Railroad, 25,655 shares; Sunday Creek, 700 shares; ditto preferred stock, 200 shares; Coal and Iron Company, 566,175 shares; ditto preferred stock, 25,530 shares; Westmoreland Coal, 356 shares; Wyoming Valley, 500 shares. TOTAL SALES, 14,035,148 shares.

Delaware, Lackawanna & Western advanced from 1234 early in the year to 151 afterward, breaking considerably for the same reasons stated above. Some of its friends predicted 175 to 200 for it during the year, and many were disappointed with such a comparatively small rise. The indications are, however, that the company will earn something like 9 per cent. for the year, and that no less than 7 per cent. dividends will be

per cent. for the year, and that no less than 7 per cent. dividends will be paid.

Perhaps the most surprising and at the same time gratifying feature of the market was the resumption of dividends by the Jersey Central Company. This stock advanced to 131, or much beyond the quotation, under the management of Mr. John Taylor Johnston back in the sixties, and when the company was paying 10 per cent. dividends. This stock has had a wonderful career, selling down to 6 per cent. when the company first went into the hands of a receiver, selling up to about 112 in the 1879 boom, breaking to nearly 30 on the second receivership, their recovering to the price named above. The company now appears to have a competent management and an assured tuture.

We have already expressed ourselves pretty freely on the Reading management a year ago, when the company was reorganized. Mr. Corbin's apparent success we showed was by neglecting the dead work in the mines and generally deferring expenditures necessary to keep the property in good working condition. These expenditures have had to be made, and after bringing the mines to the point where their productive capacity was seriously impaired and the cost of production increased it was this year found to be absolutely necessary to make heavy investments to bring the property back to a fair working condition. More experience in the business and an administration has been extremely unpopular with the best men connected with the Reading companies, and its now evident failure to attain success leaves little justification for his management.

The property is a magnificent one, the finest coal property in the world, and it should easily earn the fixed charges on the two companies, and thus escape the disgrace of another receivership, which many think it is now in danger of. The enormous growth of the coal trade should redeem this property under any good management.

The price of the stock of this company was in 1888 as high as 67½, while now it is under 40.

In the Pennsylvania Coal Compa

In the Pennsylvania Coal Company there were but a few public transactions. The prices in these instances ranged between 280 and 315.

The fluctuations in the Pennsylvania Railroad were about the same as

The fluctuations in the Pennsylvania Railroad were about the same as in 1888, although the very destructive floods upon this company's lines unsettled the price of the stock for a time. The company's coal business has been very good, while its general freight and passenger business has been greatly increased under much better prices.

The Cumberland bituminous coal stocks have been very quiet and without special feature. The "squeezing" policy of the Baltimore & Ohio Railroad has well-nigh strangled this as it has completely killed nearly all other local industries on its line.

For many years we have advised our readers against purchasing or holding the shares of the Cameron Coal Company. Some years ago this stock sold at \$50 a share under the most barefaced manipulation; later it disappeared at 50 cents per share. A new pool and new blood took hold

stock sold at \$50 a share under the most parenaced manipulation, taked a disappeared at 50 cents per share. A new pool and new blood took hold again and even this year advanced the price to \$344. Afterward "the bottom fell out" and it sold at \$4. We can't see how there can be a value to stockholders in this property of even four cents per share after the indebtedness is settled or the interest on it provided for,

Hocking Valley Railroad stock declined to 14 during the year, under the announcement that default would be made in the payment of interest on the company's bonds. This was averted, and it is believed that there is a brighter future for the company under the management of President

brighter future for the company under the management of President Waite.

The affairs of the Colorado Coal and Iron Company came to a crisis during the year just ended, and the result was that the stock sold at 21. A new management went into power; Mr. E. J. Berwind, of the Berwind White Coal Company, one of the most successful coal operators in this country, consented to take the presidency, and has surrounded himself with competent and experienced men. Expenses have been cut down in every direction, and the company's finances have been greatly improved, and the business is being energetically pushed. The stock recently sold within a fraction of 40, and much higher prices are predicted for it, especially if the iron and steel trades should be as bright during the coming year as they promise to be.

Tennessee Coal and Iron Company's stock has ranged between 31 and 854. There is some cause for this in the improved condition of the iron trade and generally increased business activity in the South; but there is a strong suspicion that a pool in the stock has been the main cause. The company has altogether too much "water" in its securities, and a suit has recently been commenced by the company against Mr. John Inman, its former director, for \$2,500,000, which represents some of this water.

THE NEW YORK AND SAN FRANCISCO MINING STOCK MARKETS IN 1889.

Eighteen eighty-nine in the mining markets of New York and San Francisco was a stereotyped repetition of 1888, save that if anything the year under review eclipsed its predecessors in dullness. No more tangible proof of this is needed than the fact that during 1889 but three new stocks were added anything t to the list.

is needed than the fact that during 1889 but three new stocks were added to the list.

The condition of the mining industry throughout the year was exceptionally prosperous, and probably more men, money and machinery went into mines than ever before; but, for now quite familiar reasons, this condition of affairs was not reflected in the mining share markets of New York and the Pacific Coast. The public seems to be firmly impressed with the belief that all mining stocks offered on the market nowadays are sold to fill promoters' pockets and not to develop bona fide mmes. This feeling, which generally obtains, shuts out new enterprises. As for the old ones listed on the two exchanges, only a few have given much encouragement to investors. The recent firmness in the price of silver temporarily helped some of the better class properties. Ontario and Daly continue to pile up dividends. Homestake pays steadily, although at a lower rate than last year. Horn Silver, after years of bad management, has vindicated its reputation as a mine and has become a dividend payer again. Quicksilver continues its returns on its preferred stock. Among the other dividend payers of the year have been Caledonia, North Star, Aspen Mining and Smelting, Morning Star. Evening Star, Alice, Small Hopes, and the new-comer, the Ward Consolidated. The market for the Comstock shares during the year, both in San Francisco and New York, was deplorably dull. The magnates of the Pacific Coast gave the market little or no attention, not to say support.

As usual, Consolidated California and Virginia has been the feature of the year, opening at \$10 per share, and steadily declining to \$4.50 in

	ET TICYPITA THOMS	OF DDICKS	OF	MINITAG	STOCKS	IN NEW	VORK	DIPLING 1990	
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Name& Location of Company.	r va	Janu	ary.	Fehru	lary.	Mar	reh.	Apr	il.	Ma	у.	Ju	ne.	Jul	у.	Aug	ust.	Septer	nber.	Oeto	ber.	Nover	nber.	Decer	nber.	Sales.
	Par	н.	L.	Н.	L.	н.	L.	Н.	L.	H.	L.	H,	·L	H.	L,	H.	L.	H.	L.	Н.	L.	H.	L.	н.	L.	
Adams, Colo	\$10 25	1.00	,25 .76	85		.28	75	.30 1.10	.75	,50	.27	90	.75	1.15	1.00	1.15		90		.28		1.25	85	1.00	1.00	5,80 22,50
Allouez, Mich Alpha, Nev Alta, Nev	25 100			3.88								.95								,		1.40		1.30		60 20
Amador, Cal Amer. Flag, Colo.	100 2 100	2.75	1.50	2.00	1.65	2.10 1.75	1.95 1.60	$\frac{2.30}{1.60}$	2.15 1.50	2.15	1.40	1.68 1.68		1.50	1.30	1.50	1.35	2.50	1.75	3.35	2.10	2.40	2.15	1.90	1.00	13,34 31,20 3,90
Andes, Nev Argenta, Nev	100 100 100		.03			.04						.02		12		12				.85	10	1.00	.75 .13	.85 .16	.75 .10	2,05 67,30
Aspen, Colo Astoria, Cal	10	.25	20	21	20	10.50		11.50	10.50	11.00	10.50	10,00		9.25	9.00	5.50	5.00	5.00		5.00	.10	6.00	10	.23	.10	1,10 296,77
Barcelona, Nev Bassiek, Colo	25 100	.80	.60	.95	.70 .08	. 65	.60	.72	.58	.70	. 65	.70		.50	.20	.50	.30			.30	.25	.43	.29	.39	.25	61,36
Bechtel Con., Cal. Becher, Nev	100 100	4.80		5.00	3.35	3.50	3.00	3.95	3.25	4.95	3.90	.07 3.90	3.10	3.10	2.75	3 00	2.95	3 15	2.60	2.60	2.55	2.60	2.35	.10	.05	5,35
Best & Belch., Nev	100	6.38	6.00		5.00	5.25	4.25	.30 4.60	.20 3.70	3.85	25	3.65	2.80	3.80	3.10	4.35	2.85 2.85	4.00	3.25	3.30		3.55	$\frac{.20}{3.10}$	3.10	2.45	11,15
Bodie Cons Cal Bos.& Mont., Mt. Breece, Colo	100 25 25	2.00	1.65		1.50	1.55	1.25	1.75	1.00	2.00	1.55	1 90 39.13	$\frac{1}{37.50}$	1.75	1.10	1.20 36.50		1.05 35 00	70		.60	.85 41.75 .35	.60	.80		24,93 46 3,90
Brunswick, Cal Buff. Icon Mining	5	6.00	.06	.29 .17 5.13	3.00	.23	.07	.20	.07	.08	.06	.07	.05	.18		06	.05	.08	.04	.15 .05	.02	.03	.02	.02	.01	165,60 14,10
Bullion, Nev Bulwer, Cal	100 100	2.00	1.60	1.80	1.45	1.60	1.10	1.30	1.10	1.30	1.10 .20*	1.65 .50	.85 .35	.90 .36	.70 .28	.70 .30	,17	.90 .35	.75	.80 .25	.60	.95	.70	.80 .45	.59	22,0° 11.0°
Caledonia, Dak	100 25	3.35	2.75	2.80 2751/8	2.70	3.25	2.85	3.10	2.90	3.20	3.00	3.05		3.20	3.00	229		3.10	2.85	2.75	2.00	2.35 236%	$\frac{1.50}{235\frac{1}{8}}$			15,00
Carupano, Venez.	2 100	.10	.05	.07	.04	.99	.03	.05	.03	.05	.03	.05	.03		04			.05	.03	.02		.03			.02	101,30
Castle C'k, Idaho. Catalpa, Colo Cent. Ariz., Ariz	100 10 10	.05										.20				.02		.02	1	2		2				7,30 52 3,50
Chollar, Nev Chrysolite, Colo	100 50	3.25		3.40	2.85	2.60	2.35 20	2.40	2 15	3.15	2 30	.07 2.35	1.65	1.65	1.35	2.35	2.15	2.25	2.10	1.65 .25	1.50		$\frac{1.65}{.27}$	2.80	2.05	6,95 12.75
Colchis, New Mex. Colo., Cen. Colo	10	$\frac{2.95}{2.15}$	1.55	2.50 2.30	1.50	2.65	2.35	5.00 2.20	2.60			6.00	$\frac{5.00}{1.70}$	6.00		6.00		10.00	9.50	9.75 1 00				1.05		23,7 5,6
Col. & Beav'r, 1d.	100	5.50	4.50	.01		5.25	5.00			5.00		4 70	4.10	4.25	4.00	.03 3.95	2.50			3.00				.03	.02	9,0 6,0
Comst'kTun., Nev	100	10.00	8.00	9.25	7.75	8.88	7.50	9.00	7.63	8.63	7 75	8.13		7.88	6.75	8.50	6.50	8.00	6.50	6.88	5.25	7.00	6.13	6.00	.15 4.30	42,6 49,7
Cons. Imper., Nev Cons. Pac., Cal Cown Pt., Nev	100 100 100	.90	65	.05	.60	.72	.56	.70	.50	.60						.60	.50	9.00	0.75	:		9.00		1.05		34,8 6 7,3
D'dw'd Terra, Dak Del Monte, Nev	25 100	2.00	1.62 1.20	6.13	5.50 1.48	5.38	4.70	4 30 1.50	3.80	4.30 1.50	3.60	3.70		2.40 1.55	$\frac{2.20}{1.40}$	3.40	1.50	3.30 1.60	2.75	2.90 1.55	2.30 1.25	2.60 2.00	2.40 1.50	1.95 1.50	1.75	18,1 12,0
Denver City, Colo. Dunkin, Colo	10 10 25	1.05	.83	.12	.10	1.00		.12	.10	1.30	1 25	1 25 .08 1.00		.08 .95		1.05		.95	.75							8,7 5,0
Eastern Ore., Ore. El Cristo, Rep. of C	2	1.20	.56	1.80	1.15	1.90	1.00	1.85	1.50	1.65	1.05	1.70		.01 1.45	1.10	1.10	.95		75	1.00	.85	1.25	95	1.65	1.00	1,1
Eureka, Nev Excelsior, Cal	100 100			1.50	.52	2.00 .72	1.00	3.00	1.00	2.87	1.50	2.25	1.75	2.20		2.65 ,74 .75	1.60		2.60	5.50	3.50	.73		4.00	2.25	6,6
Exchequer, Nev c. de Smet, Dak F. Treasure, Nev	100 100 100	1.80	1.35	.44	1.35	1.40	1.10 .35			1.15 .35	.80	1.15			65	.75	.25	.90	.80	.75 .25	.35	.90	.65 .25	.75	60	17,4 9,0 2
Franklin, Mich.	25 25			1.75														9.88				15.13	13.88	.60	40	4,3
Gould & C'ry Nev Grand Prize, Nev		3.10	.85	3.15		3.25	2.50	2.90	2.30	2.70	2.35	3.25	1.90	2.25	2.00	2.65	1.75	3.30	1.90	2.05		2.10	1.65	1.75	1.40	7,5
Hale & N'cr's, Nev Hector, Cal	100 5	5.38	4.95	4.65	4.00	4 50 .25	3.75	4.60 25	4.20 *.05	4.75	3.90	4.00	3.20	3.50 .20	2.90	3.50	2.85	3.15		2.95	2.90	3.15	3.05	2.55	2.45	13,7 2,9
Hollywood, Cal Holyoke, Idaho	1	.04	.02	.07	.02	.05	.02	.02		.04								.03		.04	.03	.06	.05			166,0 36,5
*Homestake, Dak. *Horn-Silv'r, Utah Iron Hill, Dak		13.50 .80 .11	.76	1.00	12.50	1.50	9.50 .89	9.88	6.50	10 00 1.20	7.50	10.00	9.00	9.50 1.30	8.50	9.13	9.00 1.15	1.45	9.00	9.50 1.70	1.30	2.65	9.25 1.65	10.00 2.30 .35	$\frac{9.50}{1.90}$	10,7 94,1 13,4
*Iron Silver, Colo Julia, Nev		3.20		3.50	3.30		3.40	.20 3.35	2.75	2.40	$\frac{20}{1.95}$	1.90 .40		2.00 2.35	.37	2.20 2.40	1.85		.33	2.40 .30		.55	.50	2.15	30	15,8 9,8
King'n& P'ke,Ont Kossuth, Nev	50	1.25	.88		1.25	1.25	.75	1.25		1.50	1.13					1.00				.75		.88	.63	.65	.55	24,8
Lacrosse, Colo Leadville, Colo	10	.08		.12	.09	.15	.08	.10 .14	.09	.10	.09	.10	.08	.09		.09	.07	.07	.07	.05		.07	.05	.07		166,0 31,1
Lee Basin, Colo Little Chief, Colo. Little P'burg, Colo	10 50 100	.70 .22 .09	.17	.32	.21	.70		.27	.23	.35	25	.36	.30	.35	.30	.37	.32	.39	.32	39	.30	.37	.33	.35	28	1,6 92,6
M'tin White, Nev. Mexican, Nev		3.50		3.65		4.25		7.50	4 00	.75	.50	.90	.70 3.25	3.85	2.95	5.25	2.55	4 95	3.75	4.20	3,25	4.15	3.15	2.95	2.40	13,2 1,9 17,6
Middle Bar, Cal	2	.35	.33	.30	30	.32	.20	.31	27	4.25 .30 .05	3.60 .25 .04	3.85 .30 .03	.23	.24	.22	0.20	2.00	4.35				.02				54,9 17,9
Mono, Cal Moulton, Mont	100	.50				1.20		1.75 .26	1.00	1 80	1.75		1.15	1.00	.85	1.15	.90					.30	.25	.40	.26	7,8
*Mt. Diablo, Nev. Mutual, W. T Navajo, Nev	100 1 100	1.50	1.25				1.40	1.45	1.00	1.45		1.45		1.50	1.40	2.00 1.50	1.45		1.45	2.40 1.50			1.45		1.55	111,7
Nev. Queen, Nev. N. Belle Isle, Nev. N. Com'w'lth, Nev	100	2.95	1.70					1.00 3.20 2.45	90	.95	.51	.65		.50 1 65	1.38	1.10			.35	.40		.85		1.45	.80	18,5 2,0 7,3
N. Com'w'lth, Nev N. Standard, Cal.	100	1.10		3.20	2.00	2.65		1.00	.90	1.60	1.40	1.50 1.30		1.35		1.15		90		1.00	.65	1.00		1.20	1.15	6
Occidental, Nev	100 100	35.00	32,75	35.13	34.00	35.00	33.50	35,00	33.75	33,00	34.50	$\frac{1.50}{35.25}$		2.45 35.25	1.50 35.00	2.15 35.25	1 75	1.95 36.00	1.45 35.00		35.00	36.00			35.00	38,8
Otal & Miller, Nev		6.13	5.38	6.38	5.75	5.88	5.50		5.38	5.50		5.25	4 00	5.75	4 50		3.90	5.13	4.60	5.00	4.00	5.00	4.05	3.95		3,4 61,0
Osceola, Mich Overman, Nev Phœnix&L'd,Colo	100 1															11.63						16,13			85	1,1
Phœnix, of Ariz Phœnix, Ark		.15	.07	.12	10	.12		.31		25	.11	.43	.20	.30	.12	.30	.13	.75	.29	65	.46	.60	.45	.49	.36	147,3 38,7
Plutus, Colo Plymouth, Cal	10 50	1.00 9.13	.90 8.50	1.05	1.00		.90	1.05	.95 10.00	1.00 12.00	.85 9.75	10.50		.85 9.50	.79 6.00		3.87		.70	5.00			3.00	3.50	3,00	63,6
Proustite, Idaho	1			1.05	.90	2 80		2.25	1.95	2.50	2.10	2.70	1.70						1.05						1.75	
'Q'ksilver, Cal., p. Q'ksilver, Cal., c.	100	37.00 7.00	35.00 5.75	7.50	6.25	37.00 6.88	35.00 5.75	39.75 7.38	37.75 6.63			6 75	38.50 6.13	6.50		6.00		37.00 6.25	35.00	35.00 6.38		34.00	5.50	36.00 6.50	34.00 5.63	10,1
*Quincy, Mich Rappahanock, Va Robinson, Colo	25 1 50	.08		.10	47.00 .07	. 09		.08	.06			49.75		.07	.06				.04	.06			.05	.07		266,
S. Sebast'n, S. Sal. Santiago Rep. of C	5							3.00	.47		40	.45	.42	.40		.45		.50		.38		.37		10 7		13,8 8,9 3,9
Savage, Nev Scorpion, Nev		3.50	2.90		2.90	3 15	2.65		2.45		2.70				1 70		1.50	2.50		2.05		2.50		1.75		8,
Shoshone, Idaho Sierra Nevada. N.	100		3.15	.10 3.55	3.05	. 09	.07	4.10	2.90	.08	.06	.08	.07	.06	.03	.04			.01	2.45	.01	.03	.02		2.00	125,4
Silver Cliff, Colo Silver Cord. Colo Silver Hill, Nev	10	.05	.76	1.00	.93			.05								.68			70					.60		3,
Silver King, Ariz. S.M. of L.V., N.M.	100	1.30 .28	1.00		.98				.75		.75	1.06			.70				.65				.20	.75	.24	64,
Silver Queen, Ariz Small Hopes, Colo	25 20	.06		.06	.25			.35 .05 1.10						1.70	1.50	1.00	1	.35	.30	1.10				1.00		23,8 2, 5,
Standard, Cal Stanislaus, Cal	100	1.40		2.00		1.25		1.40			11.20	1.20		1.10						.95					.50	10,
State L. 2 & 3, Nev Stormont, Utah	. 1	.04		.03	.04					06								2.00		.05		.05				18,
Sullivan Con., Dak Sutro Tun., Nev "Trust, Nev	10	.09	.04	.12	.07	.10	.07	.10	.09	.11	.10	.00	.07	.08	.06					09	.0.	.07		.08	.06	313. 184,
Sutter Creek, Cal. *Tamarack, Mich	. 5	65			.55	.61	54	,75	.57	58					.50				56	64	.54	.54	.50	.51 .60	.50	14,
Union Cons., Nev. UnitedCopper, Me	100		2.90					6.30	3.20 1.00	5.25 1.35	3.60	3.80	10134 2.95	3.25		1041/	2.50	3.65	3.10	3.00	2.70		3.15	3.05	2.00	16,6
Ward Cons., Colo	100	1.40						1.55	1.40						.80	1.15	.65	1.25	1.05	1.10	.8	1.10				
Yel Jacket, Nev.	100	5.00	4.50	4.75	3.70	4.40	3.75	4.30	3.25	4.40	3.95	3.75	3.00				2.25	2.00 3.50	3.25			3.35	2.75	2.10	2.00	
						1		1				1	1		-	1	ă .	1		1		V.	1			4,114,4

FLUCTUATIONS OF PRICES OF MINING STOCKS IN SAN FRANCISCO DURING 1889.

NAME AND LOCATION OF COMPANY.	rva	Janu	ary.	Febru	uary.	Mar	eh.	Ap	ril.	Ma	ay.	Jur	ne.	Jul	y.	Aug	ust.	Septe	mber.	Octo	ber.	Nove	mber.	Dece	mber
	Par	Н.	L.	Н.	L.	Н.	L.	H.	L.	H.	L.	Н.	L.	Н.	L.	H.	L.	Н.	L.	Н.	L.	H.	L.	H.	L.
Alpha, Nev	\$100 100 100 100	3.80 2.80 1.20 .15	1.95 2.25 1.00 .10	$2.20 \\ 2.50 \\ 1.10 \\ .10$	1.55 1.90 .80	2.30 2.15 1.00 $.10$	1.75 1.80 .80	2.75 2.25 1.10	1.55 2 00 .70	2.00	1.70 1.40 .50	1.85 1.60 .70	1.10 1.25 .35	1 20 1.45 .65	.90 1.20 .35	1.35 1.50 .70	.75 1.25 .50	1 50 2.40 .80	1.25 1.40 .70	1.35 2.35 .75	1.00 1.85 .55	1.55 2.30 .75	2.00	1.35 2.00 .55	1.1
Beleher, Nev Brophy, Nev	100 100	6.00	3.25	4.55	2.63	3.65	1.75	3.05	5.00		3.75	4.30	2.60	3.40	2.60	3.15	2 10	3.40	2.50	2.90	2.00	2.95	2.25	2.65	2.1
Best & Belcher, Nev Bullion, Nev Baltimore, Nev Belle Isle, Nev	100 100 100 100	7.50 1.55 .40 .45	5.25 1.15 .35	5.88 1.25 .35 .40	4.25 .80 .25 .35	5.13 1.00 .45 .30	3.75 .75 .20	6.00 1.30 .35	3.75 .70 .25	4.30 1.00 .20 .30	3.65 .80 .15	3.95 .85 .10	2.50 .60 .02	3 66 .7025	2 85	4.00 .75 .30	2.70	4.00 .85 .30	3.15 .60 .25	3 50 .65	2.80 .50	3.85 .70	3.10 .55	3.15	
Bodie Con., Cal Benton, Cal Bulwer, Cal	100	2.15 6.25 .60	1.50 2.75 .50	1.75 3.50	1.50 3.00 .45	1.55 4.00 .50	1.25 3.00 .30	1.20 3.75 .35	1.00	2.10	1.45	1.95 4.50	1.20 2.70 30	1.40 4.00 .35	1.05	1.00	.15	1 00	.10	.85 3.25 .30	.65	.75 4.50 .35	3.25 .20	.75 5.00 .25	4.0
Commonwealth, Nev Con. Va. & Cal., Nev Challenge, Nev Chollar Nev	100 100	10.00 6.25 4.10	7.88 4.25 3.10	8.88 5.63 3.50	7.50 3.80 2.05	8.75 5.13 3.15	7.38 3.19 2.10	8.50 3.60 3.50	7 88 6.00 1.95	5.50 8 50 4.25 3.30	4 70 7.50 2.70 2.05	5.38 7.88 3.10 2.55	$\begin{array}{c} 4.00 \\ 6.68 \\ 1.80 \\ 1.50 \end{array}$	4.30 7.75 2.30 1.80	3 85 6.58 1.85 1 40	4.00 7.75 2.20 2.10	2.50	3.25 8.00 3.40 2.55	2.50 6.50 2 00 1.85	3.30 6.88 2.90 1.90	2.95 5.25 1.90 1.45	3.20 6.50 2.50 2.00	$\frac{2.95}{5.63}$	3.10 6.13 2.70 2.50	2.10 5.00 1.3
Confidence, Nev Con. Imperial, Nev Caledonia, Nev Con. Pacific, Nev	100 100 100 100	15.00 .90 .45	.70 .40 .05	15,25 .80 .45	13.00 .60 .35	.80 .45 .20	12.50 .60 .35	12.50 .90 .40	10 00 .50 .30	10.00 .70 .40	7 00 .50 .25	7.36 .55 .30	5.00 .35 .20	6.00 .45 .25	5.38 .40 .20	7.00 .55 .25 .40		6.75 .55 .30	6.25 .40 .25	7.00 .45 .25	6.00 .30 .20	5.75 .40 .25	5.00 .30 .15	4.50 .30 .20	4.30
Crown Point, Nev Crocker, Ariz Central Dudley, Cal	$100 \\ 100 \\ 25$	7.00 1.10	4.90 .80	6 38	3.80 .50	6.13 .60 .25	4.10 .35	5.25 .60 .20	3.70 .45	4.80 .55 .15	3.40 .35 .10	3.80 .50	2 25 ·20	2.75 .40	2.00 .25	3,35	1.70 .30	3.50 .60	2.50 .45	2.85 .60	2.05 .40	3.00	2.50	2.55 .25	
East B. & B., Nev Eureka Con., Nev Exchequer, Nev	100 100 100	2.50 1.35	2.25 1.00	2.00 1.15	.80	2.00 1.05	1.00 .80	1.30 1.10	.75	2.00 1.10	1.50 .65	3.00	2.00	1.00	.60	15 2.75 .70	.10 1.35 .50	2.50	2.25	5.50	3.00	4.50	4.00	3.20	
Grand Prize, Nev Gould & Curry, Nev Hale & Norcross, Nev Holmes, Nev	100 100 100 100	$1.25 \\ 3.50 \\ 5.50$	2.75 4.85		1.05 2.55 3 85	1.10 3.10 4.10	$\begin{array}{c} .70 \\ 2.45 \\ 3.70 \end{array}$	$\frac{1.00}{3.80}$ $\frac{5.25}{5}$	2.20 4.05	$2.60 \\ 5.00$	65 2.35 3.75	$\begin{array}{c} .90 \\ 2.65 \\ 4.05 \end{array}$	1.75 3.00	.95 2.40 3.45	$\begin{array}{c} .65 \\ 1.80 \\ 2.85 \end{array}$.65 2.25 5.00 .60	1.60 2.70 .50	2.60 3.80	1.90 3.00	.70 2.05 3.30	$\begin{array}{c} .50 \\ 1.35 \\ 2.75 \end{array}$	$\begin{array}{c} .90 \\ 1.95 \\ 3.20 \end{array}$	1.50 2.90	1.75 3.00	1.10
Independence, Nev lowa, Nev	100	.50 .40 .40	.35	30	.25	.40	.25	.45		.35		.30	.20	.30	.25	.30	.20	.15		.20		.50		35	30
Justice, Nev Kentuck, Nev Lady Wash., Nev Mono, Cal	100	2.45 2.80 .65 1.55	1.95 2.00 .45 1.10	$ \begin{array}{r} 2.05 \\ 1.35 \\ .50 \\ 1.20 \end{array} $	1.50 1.90 .35 1.00	1.75 2.30 .40 .85	1.25 1.80 .30 .60	1.60 2.35 .40 1.55	1.10 1.65 .35	1.40 2.10 $.40$ 1.95	1.00 1.20 $.25$ 1.35	$1.45 \\ 1.70 \\ .40 \\ 1.60$	1.10 1.05 .35	2.15 1.25 .40 1.10	1.15 1.00 .35	2.00 1.00 .35	1.30	$ \begin{array}{c} 2.00 \\ 1.50 \\ .45 \\ 1.20 \end{array} $	1.55 1.10 35 .75	1 70 1.30 .40 .30	1.35 1.00 .35 .40	2.00 1.20 .45 3.75	1.60 1.05 .40 .50	1.65 .85 .40 .50	1.40 -60 -23
Mexican, Nev	100 100 100	$\frac{4.00}{2.75}$ 1.70	3.25 2.25 1.45	1.60	2.80	$\frac{4.10}{2.25}$ $\frac{1.45}{1.45}$	3.05 2.00 1.00	8.38 2.75 1.10	3 00	5.13	3 30	3.75	2.70	3.90	2.75		2.15	5.00	3.60	4.20	3.10	4.20	3.10	3.20	2.18
North Belle Isle, Nev Nev. Queen, Nev North G. & C., Nev Decidental, Nev	100 100 100 100	2.70 3.70 1.75	2.40 2.50	3.00	2.25 2.75	2.70 3.10	2.55	3.00	2.50 1.95	1.75 1.70	1.20 1.20	1.59 1.50	.95	1.25 1 80	.80	1 25 1.30		90	.60	.90	.55	1.75 1.30	.65	1.20 1.00	.70
Ophir, Nev	$100 \\ 100 \\ 100$	6.50 1.70 3.20 1.40	1.05 5.13 1.25 2.00 1.10	1.75 6.50 1.55 2.55 1.15	1.55 4.90 1.00 2.00	1.70 6.50 1.50 2.70	1.25 5.00 1.25 1.85	$ \begin{array}{c} 1 50 \\ 7.13 \\ 1.70 \\ 2.75 \end{array} $	1.00 5.13 1.20 1.60	1.75 5.50 1.50 2.60	1.10 4.10 1.10 1.80	1.65 4.75 1.50 2.30	1.25 4 00 .95 1.45 .25	2.40 5.88 1.15 1.70	1.40 4.30 .90 1.45	2.10 5.25 1.20 1.70	1.80 3.75 .65 1.20	1.90 5.63 1.40 1.90	1.40 4.40 1 10 1.25	1.50 4.95 1.30 1.60	1.10	4.50 4.95 1.90 2.05	1.15 1.00 .90 1.07	1.05 4.20 .95 2.20	1.70
Peer, Ariz Phil Sheridan, Ariz Savage, Nev	100 100 100	3.40	.35	.35	25	.80	.40	.55 .35 .05	.40	.65	.50	.60	.15	.25	.35	.20	.25	.30	.10	.40		1.55	.20	.25	20
Seg. Belcher. Nev Sierra Nevada, Nev Silver Hill, Nev Silver King, Ariz	100 100 100	3.50 3.65 1.00 1.40	2.70 2.75 2.95 .75 1.00	3.45 3.35 3.80 .80 1.30	2.75 2 65 2.80 .65 1.05	3.30 3.20 3.65 .75	2.50 2.60 2.60 .60	4.00 2.65 5.00 .65 .85	2 40 3.60 2.50 .45	3.25 3.90 3.85 .50 1.05	2 30 2 60 2 45	2.65 3.05 2.85 .50	1.80 1.50 1.75 .40	2.15 2.15 2.95 .65 .85	1.60 1.70 2.15 $.40$	2.25 1.90 3.10 ,50	1.15 1.40 1.95 .35	2.85 1.95 3.50 .55	2.15 1.05 2.60 .40	2.30 1.85 2.85 .35	1.55 1.05 1.55 .15	2.00 2.85 .55	1.40 2.45 .40	1.85 2.65 .35	1.25
Seorpion, Nev St. Louis, Mich Syndicate, Cal	100	.15	.45	.65	.45	.60	.50	.85 .50	.45	.60 .50	.20	.25	.15	.25	.20			.30 .35	.15	.30	.20	.25			
Jnion Con., Nev Jtah, Nev Yellow Jacket, Nev	100 100 100 5	$3.20 \\ 1.50 \\ 0.13$	$\frac{2.60}{1.20}$ $\frac{4.15}{1.20}$	$\frac{4.10}{1.50}$ $\frac{4.60}{4.60}$	$\frac{2.70}{1.15}$ $\frac{3.90}{3.90}$	4.05 1.45 4.90	3.10 .90 3.30	$1.75 \\ 1.90 \\ 4.20$	3.05 .80 3.10	5.13	$\begin{array}{c} 3.35 \\ \cdot 1.05 \\ 3.80 \end{array}$	3.65 1.15 4.00	2.75 .80 2.70	3.55 1.05 3.25	2.80 .70 2.75	3.95 1.20 3.30	2.20 .50 2.30	$1.30 \\ 3.50$	2.80 .95 3.15	3.30 1.05 3 40	$2.60 \\ .65 \\ 2.75$	3.60 .90 3.25	2.70 .65 2.75	3.15 .85 2.85	.55

These companies paid dividends in 1889.

FLUCTUATIONS OF PRICES OF MINING STOCKS IN BOSTON DURING 1889.

NAME & LOCATION		Janua	ary.	Febr	uary.	Ma	reh.	Ap	ril.	М	ay.	Ju	ne.	J	uly.	Au	gust.	Septe	ember.	Oet	ober.	Nove	mber.	Dece	mber.	Sales
OF COMPANY.	Par	H.	L.	Н.	L.	H.	L.	H.	L.	H.	L.	H.:	L.	H.	L.	H.	L.	Н.	L.	Н.	L.	H.	L.	H.	L.	Sale
Allouez, Mich	25	4.88	3.63			3.00	1.00	1.25	.99	1.06	.95	1.00	.90	.90	.63	.75	.70	.70	.63	1.00			.60	1.63	.90	38,66
Arnold, Mich	25		19.00	.20		10.50		*****										.07				10.50	10 50	17 00	10 05	1.80
*Atlantie, Mich Aztec, Mich	20	18:00	13.00	14.75	11.00	13.50	10.00	10.00	9.00	10.25	8.25						9.00	.05		8.75	7.50	13.50	10.50	15.00	12.25	13,90
Bonanza C. & M.	10	1.75	1.38	1.38	1 19	1.13	.75	.90	.77	.80	.78	.85	80	80	.65			63		.60			.55		.60	30,46
*Bost. & Mont. Mt.			6.25†	53.00	44.00	44.50	33.38	37.50	28.50	34.38	29.00	40.00	39.25	38.00	33.50	37.75	35.00	36.75	33.00	36.00		45.50		47.00		236,33
Bowman S., Nev.	1																									10
Breece, Colo	25	.27																.17	.15	. 20	. 19					3,15
Brunswick, Cal Butte&Bos., Mont	5	07.00	'66' 66'	00 00	99 00	00 10	70.00			10.00		95 00	90.00	94 00	90 00							95 00	20 00	99 00		£ 01
*Cal.& Hee. Mich.	23	200	260 50	20.00	960.00	25.15	214 50	998 00	309 00	990.00	100	20.00	906.00	24.00	22.00 205.00	230 00	215 00	220 00	200 00	225 00	211 00	20.00	20.00	260.00	245 00	19 07
Cashier, Col	20	.05	200.00	200.00	200.00	200.00	211.00	220.00	202.00	220.00	199.	213.00	200.00	210.00	200.00	200.00	210.00	220.00	200.00	220.00	all.00	240.00	424.00	200.00	410.00	10
Catalpa, Colo	10	.20	.18					.15						.12		.12		.12	.09	.12	.10	.12	.11			
*Central, Mich	25	20.00	18.00					10.00												1				14.00		19
Chrysolite, Colo	50																									40
Con.C.&Va.,Nev																										
Crescent, Colo Don Enrique, N M	10		.09															.05	20	.22	.05	90		.00		10,10 2,15
Dunkin, Colo.	25		80	1.00	95	98	95	.93	88	1 25	95	1 50	1.00	1 10	.97	1 04	.98		.70	.88	.70		.60		.65	
ElCristo.Rep.of C.	9	.95		2.00																						100
*Franklin, Mich	25	17.00	13.25	16.00	13.75	15.00	10.00	11.00	9.00	10.50	8.50	10.00	9.25	9.75	8.75	10.13	9.25	9.88	8.75	11.00	8.75	16.38	11.00	18.00	14.75	
Honorine, Utah	2					.60				.40		.38												.18		5,250
Humboldt, Mich.	25																					.15		. 13		150 400
Hungarian, Mich. Huron, Mich	25	6.00	4.13	z oz	1 00	9 00	9 00		9 00			1 05		75		1 00		75		75	.63	2.75		3.50	2.00	
Kearsarge, Mich.	95	12.00	8.00	10.50	8.00	8.00	6 88	6.00	5.00	5 58	5 00	5.50	5.00	6.00	5.00	6 00	5.88	5 00	4.25	6.75	4.25	8.60	6.25	10.88		20.014
Little Chief. Colo.	50			10.00																.40	. 58					2,300
Mesnard, Mich	25	.43																						.60	.50	1,200
Moulton, Mont																				.12						100
Napa, Cal	2	3.31			3.25		3.13	3.25		3.50	3.37		• • • • • •	3.75	3.50	3.75	3.63	4.00	3.75	4.00 1.00	3.88	9.00	1.25	3.00	4.13	10,210 18,615
National, Mich	25	7.63	4.75	5.38	3.50	4.00	2.00	2.00	1.75	1.50	.75	94 90		1.00	.50	1.10	1.13	25.50	.88	1.00	.75	3.00	1.23	3.00		495
Drient & M., Nev.	25																			.05	.04	.05		.06		700
*Osceola, Mich	25	21.00	16.00	18.50	12.50	15.50	12.50	13.00	9.00	10.00	7.13	10.00	9.50	9.75	8.50	12.00	9.50	11.00	9.50	12,00	10.00	19.00	12.00	24.25	17.00	29,749
Pewabie, Mich	25			5.00	4.63	5.00	3.25	3.25		3.25	2,25				8.50			3.00	2.25				3.63			10 685
Phenix, Ariz				1											1		.58	.43								1,400
Pontiae, Mich	25	40	.30			ow 00	******		10.00				F1 00	57 50	49.00	F4 00		24 00	40 50	54 00	50.00	*0.00	55 00	70 00	67 00	$\frac{1,000}{4,712}$
'Quiney, Mieh Rapphann'ek, Va.	25	85.00	68.00	71.00	66.38	67.00	46.00	50.00	49,00	04.00	47.00	51.00	91.00	97.90	19.00	34.00	51.00	34.00	49.30	34.00	00.00	10.00	35.00	10.00	07.00	1 300
Ridge, Mich	25	1 00															- 1		- 1			1 25	1			1 794
Santa Fe. N. M	10	2.63	1.88	2.50	1.75	1.99	.73	.93	.50	.65	.55	.80	.63	.70	.43	.73	.58	.73	.50	.63	.35	.80	.53	1.50	.75	307,364
Silver King, Ariz.	100	1.15																				.30				600
South Side, Mich.	25														.43									.23	.20	900
Sullivan, Dak	3																							155 00	30 00	200 17 104
Tamarack, Mich.	25	199 :	3.501	152.00	140.00	144.00	120.00	125.00	105.00	110.00	102.00	107.00	103.00	102.50	96.00	109.00	100.00	108.00	100.00	124.00	104.00	93	120.00	130.00	133.00	100
V'shington, Mich	20																					. 23				10

December. The company paid nine monthly dividends during the year, or about 75 per cent. of the average market value of the stock during the twelve months. The decline, it is generally believed, was occasioned by the growing conviction that the ore resources of the mine were being rapidly exhausted. If the company were able to continue monthly dividends throughout the coming year, there is reason to believe that those well acquainted with the condition of the mine—unless a deal is under way—would not allow the shares to be selling at the price they are at present, which would be more than covered by twelve monthly dividends of the usual amount. It therefore seems probable that the so-called "insiders" apprehend possibly a temporary suspension of dividends during 1890. In the East many investors are inclined to look upon the low price of the stock simply as a revival of the old squeezing out process which has become so familiar in the history of the Comstock manipulations.

Confidence tried to keep its good record of 1888, but failed. A dividend

Confidence tried to keep its good record of 1888, but failed. A dividend of \$1 per share in April was the only return made to the shareholders dur-

of \$1 per share in April was the only return made to the shareholders during the year. Alta has stopped levying assessments, and according to the latest reports, is now, or will shortly be, on a dividend basis.

Other Comstock shares were dull and uninteresting. The table of prices on another page show how narrow were the fluctuations in their values. The condition of the mines themselves does not seem to have improved. A great deal of the ore extracted returns over \$20 per ton, but cost of mining is large, and then when the mill owners take their profit out of it, there is apparently nothing left but salaries for officials and assessments for stockholders.

The tireless investors of the West, however, "never say die," and great confidence is professed in a number of plans for the further development of the famous "Lode," the most important of which are the drainage of the lower levels of the Gold Hill mines and the westward extension of the Sutro Tunnel. On both of these projects it is believed that work will

the Sutro Tunnel. On both of these projects it is believed that work will shortly be commenced.

The long talked-of reorganization of the Sutro Tunnel Company has been effected, and the Comstock Tunnel Company is the name of the new organization. Some of the old Sutro Tunnel stockholders, however, are dissatisfied with the manner in which the reorganization has been accomplished, and more litigation is promised.

The Tuscarora stocks during the year have been disappointing, Navajo

The Tuscarora stocks during the year have been disappointing, Navajo being the only dividend payer.

The once famous Bodies have fallen into a lethargy, from which the public seems to have little desire to awaken them.

Colorado shares have contributed a large part of the dealings. The Aspen Mining and Smelting Company shares were listed early in the year, and as the company paid seven consecutive monthly dividends, it was hoped that it would prove an exception to the general run of new companies, which in recent years have paid dividends principally to their promoters. The company's ore fell off in value for a while, however, and then came a difficulty in making satisfactory contracts for the disposal of the ore.

then came a difficulty in making satisfactory contracts for the disposal of the ore.

These difficulties have prevented dividends since July. There is some hope, however, of their ultimate resumption. The decline in the price of the stock during the year was \$4.00 per share. Leadville shares held their own during the year was \$4.00 per share. Leadville shares held their own during the year. Leadville Consolidated opened at 10c. and sold as high as 15c. in March, but from then on to September showed a declining tendency, selling in that month at 7c.; latterly the property has been making money and the stock has advanced to 12c. Small Hopes has been able to pay one dividend; the stock fluctuated from \$2c. to \$1.75 Iron Silver has had a rather unfavorable year, and the condition of the company has been reflected by a decline in the stock from \$3.50 in February to \$1.80 in the summer and early fall; latterly, however, a strike of more or less rich ore in the mine has enabled the mine to make a better showing, and the stock has reacted to \$2.40. It has also been a year of disappointment for the Colorado Central Company and the stock has depreciated over 50 per cent. in value. Chrysolite, although the prospects of the company have not at all improved, has advanced from 15c. in April, the lowest price in the year, to 31c. at the close. There has also been a small boom in Breece, although the property of the company was for the most part dormant. Supporters of the Bassick still believe that their property is not worked out, but the stock on limited transactions has shown a slight decline. Toward the latter part of the year, Freeland—an old-timer—has suddenly awakened to activity. From all appearances, a deal of more or less interesting proportions is under way in the stock. Lee Basin, one of the new-comers of 1888, sold only in the early part of the year, and at 70c. to 65c. A large amount of Lacrosse has also changed hands, but the fortunes of the company have undergone no change. Cashier has been reorganized.

tunes of the company have undergone no change. Cashier has been reorganized.

The Dakota stocks have attracted a great deal of attention during the year. Calendonia opened at \$3.35, but as the grade of the ore in the mine gradually fell off, the stock sympathetically declined, and after a snspension of dividends in November a sensational break of 50 cents per share occurred. Homestake opened at \$13.50; the reduction of dividends from 10 to 20 cents per share per month in April brought about a decline in stock from which there was a subsequent reaction to \$10. Deadwood Terra paid no dividends during the year, but on the whole, there was no net decline in the stock. A notable advance occurred in Iron Hill. The opening price in January was 10c., and lately sales have been made at 55c. The advance was occasioned mainly by the improvement in the company's prospects on account of the apparently successful application of the new pyritic smelting process to its ores. Father de Smet opened at 44c. and declined to 19c. in October. The decline was apparently caused by manipulation, as the stock then underwent a rapid advance to 65c., which is approximately the closing figure.

Among Arizona shares, Silver King and Phoenix were the most prominent. Silver King sold in January at \$1.30, and in December at 20 cents. The surplus in the company's treasury steadily decreased throughout the year. The minority in the board of directors say they have no voice in in the company's management, and altogether the year was a most unsatisfactory one for its stockholders. On the other hand, a number of stockholders in Phoenix have been endeavoring to relieve the property of the opprobrium cast upon it by the questionable deals to which it was subjected by its former managers. Actual work upon the property

has been commenced and with honest and economical management the

has been commenced and with honest and economical management the stockholders now hope to be able to prove the value of the mine.

El Cristo, until within the last month, was quiet throughout the year. Fluctuations in the stock were wide; it declined to 56c. in January, advanced to \$1.90 in March, then gradually declined to 75c. in September, since when there has been a gradual rise to \$1.60. There is no dearth of predictions among those interested that a boom in this stock equal to its former rise in 1887 is underway.

the market for mining stocks in both cities continues be greatly hampered by the presence on the active list the exchanges of virtually worthless securities. These "cats," inst which the Engineering and Mining Journal has waged a against which the ENGINEERING AND MINING JOURNAL has wagen a relentless war of extermination, become disagreeably conspicuous at the signs of any real activity in more respectable stocks and naturally create a feeling of distrustfulness among, if they do not actually drive away, investors. The Committee on Mining Securities of the New York Consolidated Stock and Petroleum Exchange, at the instigation of the Engineering and Mining Journal, have stricken a number of objectionable stocks from the list. Their work, however, is not yet completed and it is too early to judge of results.

BOSTON MINING STOCK MARKET IN 1889.

From our Special Correspondent.

That the past year has proved a great disappointment to holders of copper stocks cannot be doubted. When the year opened the market for ingot copper was controlled by the French syndicate, and the price of the metal was at a figure which afforded a large margin of profit to all the producing mines, and, consequently, stocks were buoyant, and expectations of large profits and fat dividends were freely indulged in. The collapse of the syndicate, and the consequent decline of ingot copper from 164c. to 11c., completely upset all the calculations of operators and speculators, and many of the mines which had started up, and which were expected to prove remunerative to the stockholders, were compelled to shut down, while the large companies were obliged to restrict their production and reduce dividends. The highest prices of the year were recorded in January, when everything had a rose-colored hue, and indications pointed to a great success of the copper magnates in their efforts to control the production of the world, and make their own price for the metal. It was not long, however, before it became evident that they had a bigger job on their hands than they had counted on, and rumors of trouble in the camp were freely circulated, which had a demoralizing effect upon the market, and a sharp decline in prices followed, which reached the lowest level in May. From that date a quiet reaction set in and prices gradually began to improve, and the past two months has witnessed a good degree of activity in the market and a recovery in prices, which, although not quite up to the point at which the war opened, are still tending that way. The advance in ingot copper from 11c. to 14½c., owing to the increased consumption of the metal and the short supply this side of the Atlantic, has stimulated the market for the dividend paying mines, and public attention has been attracted to the copper stocks as offering large margins for profit in the near future. These remarks apply to the class of stocks usually dealt in in this market,

\$260, or within \$40 of the price at which it sold in January of this year. Tamarack, next in order of value to Calumet & Hecla, sold down to \$100 per share, but following its near neighbor, it has nearly recovered the loss, and has sold within the past month at \$150. It is one of the great mines of the future. Its offshoot, Tamarack, Jr., has not yet been listed on the Stock Exchange, but we hear that its prospects are very flattering, and that it will soon be in condition to speak for itself.

Quincy, one of the oldest standards, declined from \$85 to \$46, and recovered to \$70 on the recent advance. The stockholders have received \$7 in dividends the past year, and will, doubtless, receive \$2 in February next. Franklin has felt the depressing influence of the market and declined to \$8\frac{1}{2}\$. Owing to the low price of ingot copper and the failure of the syndicate to keep their contract, the company was obliged to pass the July dividend; but the advance of the past month has enabled them to dispose of their copper at a remunerative price, and pay a dividend of \$2 per share, making \$4 for the year. The stock has recovered the loss and is now selling at \$15\frac{1}{2}\$ and dividend, or about the same as last year. Osceola sold as low as \$7\frac{1}{4}\$ in May, when the tide was lowest, but gradually worked up as the prospect brightened and reached \$12\$ in October. Later reports from the mine have been of a very favorable character, and, with the general good tone of the market, the price has advanced to \$24. The company paid but one dividend of \$1 per share the past year, but from the present outlook the stockholders may reasonably expect to receive good dividends upon their investment even at the present price of the stock.

The Atlantic mine was depressed from \$184\$ in January to \$8 25 in May. price of the stock.

price of the stock.

The Atlantic nine was depressed from \$18\frac{1}{2}\$ in January to \$8.25 in May, and touched its lowest point in October, viz., \$7\frac{1}{2}\$, from which it quickly rallied, and has sold up to \$15 within the past month. Only one dividend of \$2 for shares has been paid this year. The Kearsarge mine, owned largely by the Tamarack people, which was selling at \$12 in the early part of the year, sold down to \$4\frac{1}{2}\$ in October. The insiders bought up all the stock to be had at the low price, and when a dividend of \$2 was announced the stock advanced to \$10\frac{1}{2}\$, receding, however, to \$6\frac{1}{2}\$, ex-dividend. The possibilities of this mine are large, and it would not be surprising if it should prove to be a permanent dividend paying mine in the future.

Central has been inactive; very few dealings in it. The stock is largely held in New York and only occasionally does it find its way into this market. It sold as high \$20 and as low as \$10 the past year.

Boston & Montana has perhaps been the most active stock among the coppers the past year. It is one of the largest producers in the country and is largely held by Boston people. The stock sold at \$70\fmathbb{1} in January last and was one of the first to feel the effects of the fall of the syndicate, selling down to \$29, as its lowest record in May. Its recovery has not been so rapid as its competitors, but it has been enabled to pay \$5 in dividends, and its stock is now selling at about \$47 to \$48 per share. The present year they expect to pay at least \$6 on its 125,000 shares.

Butte & Boston has not come up to the expectations of its friends at the opening of the year. The downfall of the syndicate doubtless had much to do with it; there has been but little trading in it, but the price did not go down below \$19 at any time during the year, and is selling now occasionally at \$20 to \$22.

Among the Lake Superior mines which were expected to do something

to do with it; there has been but little trading in it, but the price did not go down below \$19 at any time during the year, and is selling now occasionally at \$20 to \$22.

Among the Lake Superior mines which were expected to do something for their stockholders the past year, but which the decline in ingot prevented, we may mention National, Huron, Allouez, Ridge, &c. National declined from \$7\frac{3}{2}\$ to 50c.; Huron from \$6\$ to 62\frac{3}{2}c.; Allouez from \$4\frac{3}{4}\$ to 50c.; Ridge from \$1\frac{3}{2}\$ to 50c.; Huron from \$6\$ to 62\frac{3}{2}c.; Allouez from \$4\frac{3}{4}\$ to 50c.; High general from \$4\$ to 50c.; Ridge from \$1\frac{3}{2}\$ to 50c.; Huron from \$6\$ to 62\frac{3}{2}c.; Allouez from \$4\frac{3}{4}\$ to 50c.; Ridge from \$1\frac{3}{4}\$ to 50c.; Ridge from \$1\frac{3}{4}\$ to 50c.; High general from \$4\$ to 50c.; Ridge from \$4\frac{3}{4}\$ to 50c.; Ridge from \$4\frac{3}{4}\$ to 50c.; Ridge from \$4\$ to 50c.; Ridge from \$4\$ to 50c. In April and to 35c. In October. Since then it has gradually improved, and has sold the past month at \$1\frac{3}{4}\$. A reorganization of the company is talked of by reducing the number of shares to 100,000, which is a move in the right direction. The property is said to have great possibilities, and may take a prominent position among the copper producers of the world.

The large army of non-producing mines which gave promise of a good degree of speculative activity when the year opened failed to respond, and very little has been seen of them during the year. With any active speculation in the general list, however, they will be likely to participate and play a prominent part in the market as they have in years past. The silver stocks have been almost entirely neglected. A few like Dunkin silver, Catalpa and Crescent, with Napa quicksilver, are sometimes quoted. The former, which is largely held in Boston, has been the most active of the list, selling as high as \$1\frac{1}{4}\$ and as low as 60c. It has paid four dividends of 5c. per share each during the year; but owing to th

THE GOGEBIC MINING STOCK MARKET IN 1889

From our Special Correspondent.

Since my annual report for 1888 of Gogebic iron properties and stocks there has been a number of material changes, among which I have to note sales of the following properties, most of which have been bought by railroad corporations, viz., the Aurora, Ashland, Germania, Montreal, Pabst, Superior, Section 33 and Windsor. Although shipments of ore are not yet completed for the season, I think it will be safe to say that the entire shipments from the Gogebic range by lake and rail will not be less than 2,200,000 tons, with prospects of much larger shipments in 1890. Shipments from this range since its discovery show a steady and decided annual increase.

1890. Shipments from this range since its discovery snow a steady and decided annual increase.

They have been as follows in tons: 1884, 1,022; 1885, 120,000; 1886, 750-000; 1887, 1,285,250; 1888, 1,425,000; 1889, 2,250,000. There has also been a healthy and advancing market for stocks, as is shown by the following

Comparative price of stocks in 1888 and present time:

Aurora	Dec., 1888. . \$4.50	Dec., 1889. \$7.00
Ashland (none on the market). Anvil	1.00	3.00
Brotherton		2,00
Colby (none on the market).	m #0	***************************************
Germania Gogebie Iron Syndicate	7.50	10.00
Iron Belt	75	1.00
Montreal	. 9.50	5.00 nominal.
Houri and Pabst mines		60.00 bid for these.
Odanah	2.00	12.00
PenceSuperior, eapital stock \$100,000	1.50	1.50 7.00 capital stock \$25,000
Section 33 Ryan (no stock on market).	1.25	8.00
Windsor, eapital stock \$100,000		10.00

During the past 70 days there has been more activity in stocks and a better demand than at any time since 1887. It is now estimated that from the Lake Superior region alone there will be shipped not less than 8,000,000 tons of ore this year—a larger amount than has probably ever been shipped from any other ore-producing district in the world. It may be safely predicted that with no ore in the market, and prices for 1890 delivery having advanced from \$1 to \$1.50 per ton, a prosperous year is before us.

BALTIMORE MINING STOCK MARKET IN 1889.

From our Special Correspondent.

Extreme dullness reigned in the mining stock market during the year 1889. The brokers and operators, though, are not disheartened, but look forward to better times in 1890, arguing that the season of depression cannot extend beyond a decade.

forward to better times in 1890, arguing that the season of depression cannot extend beyond a decade.

We have not had a really active market since 1881. Since our last annual review nothing has occurred to excite special comment, and prices at the closing of the year, for the most part, show but little change from the opening.

In the "fancies," Baltimore and North Carolina copper shows a loss of nearly 20c. An assessment of 2c. per share, and the probability of another more expensive one in the near future, are responsible for the weakness. The last sale was at 9c. North State dropped to 20c. and some long standing short contracts were covered. We do not hear so much talk now of the large quantity of precious ores "in sight."

Silver Valley also shows a small loss for the year, and can be bought for 35@45c. Its friends continue to give it some feeble support.

A "boom" was attempted in Lake Chrome, based on the fact that a new process for reducing the ore had been perfected, or that the soil had been discovered to be especially adapted to water melon culture. No matter which report is correct, "the people" did not buy the shares, and the movement soon petered out. The quotation is now nominal.

The coal stocks, though sharing the dullness of the balance of the list, have held their own pretty well, and those that have declared their January dividends make no reduction in the rate.

The earnings of the companies are probably not quite up to last year, and the car movement has been rather lighter.

The mine owners blame the railroad companies for not furnishing them with better facilities in the way of cars.

The mine owners blame the railroad companies for not furnishing them with better facilities in the way of cars.

FLUCTUATIONS IN PRICES OF MINING STOCKS AT BALTIMORE IN 1889.

	Par	Open	ing.	Highest	and le	ear.	during	1	sing.
NAME OF COMP'Y.				Bid	1.	Ask	ed.		
		Bid.	Asked	Н.	L.	н.	L.	Bid.	Asked
Atlantic Coal.	10.	\$1.25	\$1.50 .35	\$1.40	\$1.00	\$1.90	\$1.40		
Balt. & N'th Caro.		.24	.35	.30	.05	.35	.15		
Big Vein Coal			1.0_{5}^{0}	1.45	1.10	2.00	1.25		1.50
Conrad Hill			.15	.17	.05	.27	. 10		1.50
Consol. Coal				.28	.22	.29	.26	.22	.27
Diamond Tunnel.		.37			.30	.50	.25	.35	.45
George's Creek		100.00			190.00	115.00	110.00		1121/4
Lake Chrome.	5.	.05	.10	.10	.05	.20	.05		.12
N. State, Balto	5.	.20		.20	.15	.35	.22		.22
Ore Knob		.07		.08	.05	.12	.10		.12
Silver Valley	5.	.50	.90	.90	.30	1.00	.45	.35	

PITTSBURG STOCK MARKET IN 1889.

From Our Special Correspondent.

The past year has been one of great prosperity within our city. Not only has the population, manufactures, and general business vastly grown, but our people have been uniformly successful and prosperous. With only one serious failure to record among our manufacturing firms during the year, and that one attributable wholly to the most prodigal management, we can feel justly proud of our position financially, and continue to believe that our business interests rest upon a solid foundation. One very important factor in the material progress of the once "Smoky City," is, of course, our wonderful "natural gas," which continues to pour forth from the earth in ample volume.

During the year the prices of gas stocks have declined steadily, notwithstanding the supply of the valuable commodity has not materially fallen off. The volume remains quite as great as at any time, but the pressure is, perhaps, not so strong. The price of the leading stock, the Philadelphia Company, at the opening of the year was \$40, with sales in the last week at \$29, par \$50. The chief cause for this decline was the changing of the dividend from one per cent, monthly to two per cent, quarterly. The year closes with sales at \$30.

The Chartiers Gas Company has fallen to \$42, par \$100, in sympathy with its lessee, the Philadelphia. No dividend has been declared during the year, although one of six per cent. is promised and expected early in January.

The Reidgewater Company, the Ohio Valley and the Manufacturers

the year, although one of six per cent. is promised and expected early in January.

The Bridgewater Company, the Ohio Valley and the Manufacturers have all declined, owing to the stoppage of dividends. The reasons given for such a course are without doubt correct, viz., that the cost of maintenance for new wells and extension of pipe lines to same, have exhausted the surplus revenues. The indications are that after the present field operations are completed dividends will be resumed.

The People's Company and Allegheny Heating Company still pay regular dividends, the former one per cent. monthly and the latter quarterly, at the rate of eight per cent., with an occasional extra sum. Both of these companies remain at par.

The Westinghouse Electric and Manufacturing Company, with capital of \$5,000,000, continues to turn out the enormous total of about a half million monthly of its products. Its business has steadily grown, while its stock on the market remains stationary at or about par. At the beginning of the year it sold at \$35, par \$50, and advanced on rumors of con-

ning of the year it sold at \$35, par \$50, and advanced on rumors of consolidation with other companies to \$63.50. Subsequently it sold down to \$45, and has remained steady at and around par, with occasional breaks to \$47 and advances to \$52. Its dividend is quarterly, at the rate

of six per cent.

The Westinghouse Air Brake Company stock holds its own and varies but little. Its capital is also \$5,000,000, dividend 16 per cent. quarterly, with an extra dividend declared, payable January 1st, of two per cent.

FLUCTUATIONS IN PRICES OF STOCKS IN PITTSBURG DURING 1889.

N	val.	Janu	ary.	Febr	uary.	Mai	rch.	Ap	ril.	M	ay.	Ju	ne.	Ju	ly.	Aug	ust.	Septe	mber.	Octo	ber.	Nove	mber.	Dece	mber
Name of Company.	Par	н.	L.	н.	L.	н.	L.	Н.	L.	H.	L.	н.	L.	н.	L.	н.	L.	н.	L.	Н.	L.	н.	L.	н.	L.
Mining.																									
Consignee, N. M	95	5.00	4.63	5.00						30.00		31.00		3.00	2.00	38.00	35.00	.25							
Hidalgo, Mex. Iron City, Cal La Noria, Mex Lustre Mg., Mex New York & Cleveland																									
N. Y. & Westmoreland Silverton, Colo Yankee Girl, Colo	50 10	1.50	1.00	2.00	1.25	1.50	1.00	1.50		1.00		1.75	1.00	1.00	.50	1.00	.75	1.00	.75 4.00	1.00	1.00	00.1		1.00	
Natural Gas.											1														
Allegheny (Illuminating) Bridgewater Chartiers Valley	100	56.00	35.00	56.00	51 00	20.00	50.00	55.00	50.00	54.00	49.75	59 00	49.00	50.00	47.00	46.00 51.00	25.00 49.00	45.00 51.00	$\begin{vmatrix} 25.00 \\ 49.00 \end{vmatrix}$	43.00 50.00	25.00 45.00		$25.00 \\ 45.00$	29.00 48.00	39.00
Kittanning, Pa. Manufacturers Natural Gas Co. of W. Va Ohio Valley. Pennsylvania	50 100	27.00 60.00 35.00 17.00	20.00 55.00 25.00	34.00 16.00	13.00	26.00	14.00	85.00 40.00 22.00	57.50 35.00 16.00	30.00 70.00 36.00	23.00 56.00 32.50	70.00 35.00	67.00 25.00	40.00 70.00 35.00 18.00	25.00 67.00	30.00 85.00 35.00 15.25	20.00 70.00 34.00 15.00	36.00 85.00 34.50 17.63	20.00 78.00 39.75 15.00	81.00 35.00 15.38	78.00 30.00 15.00	78.00 31.75		25.00 75.00 32.67 15.25	32.0 13.0
Peoples' Natural Gas Co. Peoples'	50 50 100 50	15.00 40.50	38.00	38.50	37.13	39.88 85.00 62.50	36.00	18.00 43.00 90.00 62.50	16.00 38.25 82.50 61.00	18.00 42.00 100 25.00	16.00 35.38 85.0. 62.00	18.00 37.50 100.00 62.00	16.75 36.50 85.00	17.50 38.00	19.00 36.25	20.00 37.75 62.00	17.00 37.00	20.00 37.50 91.00 62.00	17.38 35.25 90.00	17.50 35.75 90.00	16.25 31.50	17.25 33.75	16.00 30.00	15.50 30.38 85.00	14.5 29.0
Royal Ohio South Side (Illuminat'g). Union	25	28.00		28.00				26.00		26.00	25.00	26.00	24.00	26.00 60.00	25.00 54.00	25.00		25.00	25.00	25.00 64.00	50.00	24.00 60.00		24.00 60.00	
West End Westmorel'd & Cambria Wheeling			99 00			66.00		40.00				40.00	15.00	35 00	15.00			28 00	25.00	28.00	25.00				
Oil.																					1				
Columbia	. 50 . 50	63.00	61.00	42.00 66.50	41.00 66.25	42.50	41.00	60 00	75.00	68 00	67.00 70.00			68 00	33.00	68 00	67 63	50.75	102.50 50.00 60.00	110.00 51.00 68.00	107.00 50.00	55.00	50.00	115.00 68.00 70.00	108.0
Machinery																					1				
Westinghouse Air Brake West'house Brake, Ltd West'house Electric Co.											115.00 54.00														

It is one of our successful and prosperous companies. The stock is held at \$117; par, \$50; with sales recently at \$114.

Within the year the Westinghouse Machine Company has become a dividend payer at the rate of six per cent., while an extra dividend of five per cent. was declared recently.

The preferred stock of the Union Switch and Signal Company has, during the year, paid dividends at the rate of six per cent., and the Standard Underground Cable Company promises early in the year to take position as a dividend-paying stock.

Pittsburg has completed two cable roads within the past year, the

Pittsburg has completed two cable roads within the past year, the Citizens' and the Pittsburg Traction. Both run to the east end of the city and are paying dividends, the former six per cent. and the latter four city and are paying dividends, the former six per cent. and the latter four per cent. The Central Traction, also running eastward, will be completed January 1st. Stock of Citizens held at \$70 per share, par \$50; Pittsburg, \$47, and Central, \$33. The Pleasant Valley electric road, running between Pittsburg and Allegheny, will also be completed on or about the first of the year, being the first completed electric road within the two cities. Its capital is \$1,300,000, par \$25, and the stock is selling at \$23.50, having gradually increased in value as the building of the road processed.

gressed.

The Pittsburg, Allegheny & Manchester Railway Company will commence building their new cable road in the spring, and the Birmingham cable road, to the south side of the city, will also be completed during the summer.

The former has declared its usual 5 per cent. semi-an-

The glass, iron and steel industries of our city have steadily grown and The glass, iron and steel industries of our city have steadily grown and prospered during the year. The steel rail, plate glass factories, and the tube works have all been running full time throughout the year, and the outlook for the future is very encouraging for business in all branches.

Money has been plenty, and discounting liberal at the banks, the usual autumn squeeze having, to any disturbing extent, failed to appear.

The coke trade of our city has been greatly enlarged and extended during the year and is now numbered among our leading industries. Coke

ing the year, and is now numbered among our leading industries. Coke is delivered all over the United States, as far as the mines on the extreme western and northern portions of the continent, while Pittsburg soft coal is shipped to all points, and is manufactured into gas in every portion of the country. Coke stocks and bonds are in demand, and no industry makes a better return for the capital invested. The field is practically exhaustless

exhaustless.

In mining matters we have to record a rapid increase in Lustre mining shares and in Yankee Girl, and a great tumble in La Noria. The first and last companies hold properties in Mexico, while the Yankee Girl mine is in Colorado. Lustre has rapidly advanced from \$5.00 per share, par \$10.00, up to \$40. Yankee Girl has come up from \$1 to \$3, while La Noria which one year ago sold at \$1.25, par \$25, advancing during the year to \$3.00, has sold as low as 50c. per share, and is now held at about 75c. per share. It sems to be a "dead duck." A meeting of the stockholders has been called for January 6th, and perhaps something may be done to rescue it, temporarily, from oblivion.

has been called for January 6th, and perhaps something may be done to rescue it, temporarily, from oblivion.

Total sales of stocks on our exchange during the year, 156,000 shares against sales in 1888 of 128,000 shares.

The sixty-two banks in Allegheny County have a capital and surplus of \$100,000,000, and but one failure, and that a State bank, is recorded during the year. Mismanagement and gross banking irregularity can be charged as the cause. It could not have occurred with a National bank.

For full questions on all our leading teacher reference investigations.

For full quotations on all our leading stocks reference is made to our full table of prices to be found elsewhere in this issue.

ST. LOUIS MINING STOCK MARKET IN 1889.

From our Special Correspondent.

Notwithstanding the numerous wrecks of mining companies that mark the course of the year 1889, and the many ventures that have proved disastrous failures, St. Louis is yet one of the greatest mining markets in the country, and gives promise of exceeding previous years by the number and richness of the productive mines listed at the exchange. The business of the past year has been an active one and has exceeded that of the year before by 100 per cent. During the winter and spring, and, indeed, far into the Summer months, when dullness is expected, trading in mining stocks was exceptionally good, and to the surprise and gratification of the brokers, exceeded their most sanguine expectations. During the fall and early winter months, however, business which had far into the Summer months, when dullness is expected, trading in mining stocks was exceptionally good, and to the surprise and gratification of the brokers, exceeded their most sanguine expectations. During the tall and early winter months, however, business which had succumbed to the midsummer dullness failed to revive to any great extent, and the close of the year witnessed unusual depression. Speculation appeared to have died out completely; the outside public, who had heretofore required little inducement to invest in stocks, refused to be tempted. The fact is they have been bitten so often, and so many of the properties in which they had invested had proven losing ventures, that it has been almost impossible to create an interest in mining stocks. And there has been good reasons for this. Mines that early in the year held out brilliant prospects of becoming dividend payers, have failed to keep their promise. Many have died out completely, while the stocks of those which still continue to drag out an existence have declined steadily, and are now either practically worthless or have depreciated in value to such an extent as to cause a distrust for mining speculations. This depreciation in the value of stocks has not been confined to non-dividend payers; the year has been a bear one for all. Granite Mountain, the greatest silver producer in the country, and which has paid a total of \$8,000,000 since April, 1885, and which sold as high as \$1250 per share at one time, dropped, during the year, to \$41, but has again reacted, and is rapidly approaching its old figure. The Mary Murphy, with a record of \$5 a share dividends, and which sold as high as \$1,250 per share, sold recently as low as \$70.50. Hope has declined steadily ever since the dividends ceased. The Adams, Small Hopes and Mountain Key have dropped out of the list of dividend payers, or, as in the case of the two last, pay them only at long intervals. The West Granite, from which great things were expected when it for some time to come, the nature of t next year. The Mikado, a close corporation, has divided \$500,000 among its owners. The failures have been numerous. Among the stocks that were prominent last year, but which have passed out of existence, are the Mary Foster, San Francisco Consolidated, Golden Era, Rena, Pedro, Grey Eagle and Andersen, but their places have been filled by a number of new mines, which have been organized upon a strong financial basis, and although not dividend payers are large producers, with every prospect of revine before many months. pect of paying before many months.

THE DENVER MINING STOCK MARKET IN 1889.

From our Special Correspondent.

The Colorado Mining Stock Exchange opened in Denver in July Its avowed object may be said to be to afford the public an opportunity to develop the mineral resources of the State and to allow them to reap the direct benefits of such development. The management of the exchange thus hope to develop legitimate mining enterprises.

Unfortunately, some of the investments offered on the exchange seem to be of doubtful value, and so strongly has the "boom" fever attacked the supporters of the exchange that the enthusiasm aroused by its establishment has blinded the better judgment of many.

There is also a suspicion that the total sales reported to date, nearly 11,000,000 shares, are not composed entirely of bona fide transactions in the full sense of the term.

It is to be hoped that honesty and good sense will so prevail in its man-

It is to be hoped that honesty and good sense will so prevail in its management that past errors may be corrected and in the future the exchange may be a real benefit to the mining industry, and not an institution of so pronounced a "boom" character as to provoke distrust of the genuincness of its pretensions.

FLUCTUATIONS IN PRICES OF MINING STOCKS AT DENVER, COLO., IN 1889.

NAME OF COMPANY.	Ju	dy.	Aug	gust.	Septe	mber.	Oeto	ber.	Nove	mber.	Dece	mber.
Allegheny Amity Aspen M't'al				L. .35 .121/9	H. .55 .25	L. .371/2 .20	H· .45 .25	L. .37 .18	H. .45 .20	L. .40 .17	H. .47½ .20	L. .25 .16
Big Indian Brownlow Calliope Claudia	.40	.35	.55	.30			.25 .55 .511 <u>6</u>	.20 .45 .40	.23 50 .50	.21 .45 .38 .12	.35 .471/g .50 .35	.20 .40 .45
Clay County Hard Money LegalTender Matchless			.35 .16 .07	.30 .15 .04	.42½ .25 1.00 1.10	.17 .061/2 .04	50 .17 .10 1.50	.40 .10 .06	.52½ .13 .09	.45 .08 .06	.67 10 .10	.35 .03 .061⁄2
May M'zeppa MollieGibs'n Morn. Glim. Puzzler	.8834	.70	1.57 6	.80	.55 .30 .52	.28 .47 .16 .20	.39 .50 .29 .23	.31 .40 .16 .10	1.77½ .41 .55 .29 .16	.32 .46 .23 .10	2.95 .81 .55 .271/2	1 55 .50 .45 .23 .15
Silver Cord. Whale			.80	.65	.80	621/4	.80 .34	.70	.821/2	.79 .31	.771/2	.60

SALES.—Allegheny, 346,600 shares; Amity, 1,174,450 shares; Aspen Mutual, 1,686,400 shares; Big Indian, 322,100 shares; Brownlow, 474,602 shares; Calliope, 151,250 shares; Claudia, 650,500 shares; Claudia, 650,500 shares; Claudia, 650,500 shares; Claudia, 650,500 shares; Legal Tender, 1,042,700 shares; Matchless, 499,500 shares; May Mazeppa, 2,226,425 shares; Mollie Gibson, 120,200 shares; Morning Ghm, 1,165,600 shares; Puzzler, 242,600 shares; Silver Cord, 27,400 shares; Whale, 169,300 shares. Total, 10,457,427 shares.

FLUCTUATIONS IN PRICES OF SOUTHERN COAL AND IRON STOCKS IN 1889.

	Oper	Opening.		and low	est duri	ng year	Closing.		
NAME OF COMPANY.			Bie	1.	Ask	ed.			
	В.	A.	Н.	L.	H.	L.	В.	A.	
Ala. Con, C. & C. Co Ala. R. Mil Co *Alice Furnace Anna Howe G. Mg. Co Bess Land Co Bir, Fur. Mg. Co	19 45 991/2 3 221/2	27 100 102 31/2 231/4	971/6 50 102 3 261/6 100	19 45 9914 14 1914	60 100 104 31/2 24 23	20 2234 1114 14 204	271/2 3/6 261/2	20 60 14 2114 23	
Bir. Mg. & Mfg Broken Arrow Cahaba Coa! Co	100 214	150 151/9 63	141	100 2 ¹ ⁄ ₄	150 15½	100 33⁄4	3	120 33/4 63	
Camille Gold Mg. Co. De B'rd'leb'n C. & I.Co. Decat. L. Imp	7/8 50 131/4 191/4 20 911/6	103 55 1434 28 50 109 18	102 72½ 14¼ 24 100 103 23¾	1/4 45 9 19 20 98/4 11/2	103 74 151/2 90 35 155 21	34 55 856 221/2 21 103 18	70 101/2 15 15 100 233/4	74 12 21 21 100 19½	
Heela Coal Co Hend. S. & M. Co Jagger Towley C. & Co. Mag-Ellen Mary Lee C. & C. Co Mary Pratt Furnace. Sheffield C. & I. Co Sloss I. & S. Co Sloss I. & S. Co Sloss I. & S. Co. 2d mg Tuscalo's C. I. & L.Co	30 138 5 85 30 89 6114 321/2 57 901/2	1541/2 90 50 102 721/2 39 60 891/2	30 140 11½ 95 40 101½ 61½ 59½ 96	40 5 85 30 89 51 321/4 53 60	200 13 101½ 50 104 72½ 58 95½ 92	53/8 55 30 100 60 55 551/4 631/4	30 73 10½ 92 40 100½ 59 59½ 95 74 22½	92 13 91 50 100 60 58 95 80	
Tenn. C. & I. Co Tenn. C. & I. Co., Pref. *Williamson I. & S. Co Woodstoek I. Co	33 97 9934 5114	40 100 58	75 100 102 88	32 97 631/4 511/2	77 102 61½	36	75 100 102 56	77 102 60	
* Bonds.		. •						1	

KANSAS CITY, MO., MINING STOCK MARKET IN 1889.

From our Special Correspondent.

The mining stock market has by no means been lively throughout the year. Speculation has been dragging along slowly with the market featureless and not of any particular interest.

There is a fairly active interest taken in mining in general. Several properties have been placed here in Kansas City in the past year. The interest is more in the line of investments in properties than speculation in stocks. The outlook for the next year is quite flattering, as, in all probabilities, we shall have some producing and paying properties owned

by Kansas City parties. The properties listed upon our board have, in the main, been "prospects." Had we some good dividend payers, the speculative tendencies of our people would be more apt to be made mani-

fest.

Ruby Silver, in the spring, was our most active stock, some 35,000 shares of the treasury stock being sold at from \$1 to \$1.30, and used for development purposes. This property is now confidently looked forward to as being a dividend payer in the near future. Burch lead and zinc of Joplin attracted considerable attention for a time, and several thousand dollars worth of the stock changed hands at from 25 to 75 cents per share.

Templar was in bød repute, but is looking up now. Some 100,000 shares of this stock were sold at from \$1 to \$1.50 per share. Minnequa Zinc, of Joplin, has attracted a little attention lately. About 20,000 shares have been sold at 25 cents. This property, it is expected, will be a dividend payer within the next six months. There has been no attempt to boom any particular stock. Every mine and its stock has stood upon its own merits.

The Mining and Stock Exchange of this city is getting along nicely.

The Mining and Stock Exchange of this city is getting along nicely, and very materially helping to advance the mining and financial interest of this Western country.

FLUCTUATIONS IN PRICES OF MINING STOCKS AT KANSAS CITY, MO., IN 1889,

NAME AND LOCATION OF COMPANY.			Opening. July.			nd lov		Clo	sing. nber.
COMPANY.	Par	Bid.	Ask.	В	id.	Asl	ked.	Bid.	Ask.
Ben Harrison. Burch L. & Z., Mo Express Group. Farmers' Coal Co. Granite. Hillsboro Gold. Ida Hill S. N., Mex Kan. City M. & M. Co. K. C., Colo. Kentucky Z., Mo La Motte, Mo Maverick S., Colo. Minnequa Zinc. Ruby Silver. Sonora G. & S., Mex. Standard S. S., Colo. Silver Monument. Templar, N. Mex The Sylph	\$1 100 100 10 10	20 .75 50.00 90.00 90.00 2.90 93.00 .97 .25 1.12 1.00 11.00	1.00 75.00 .40 .35 100.00 100.00 1.00 .20 100.00 1.00 .30 1.26 1.02	90.00 90.00 2.90 98.00 9.70 1.00 1.12 1.00 11.00 2.50	.97	.35 1.00 75.00 .30 100.00 100.00 1.00 .10 100.00 .45 1.25 1.02 	1.00 .02 1.00 .30 1.00	90.00 -60 2.90 -97 -25 -75 1.00	75.00 .40 100.00 3.00 1.00 .02 100.00 10.00 .45
Webb City L. Z., Mo	5	5.50	40.00	5.65 100.00	5.50	40.00		5.65	5.70 40.00

FLUCTUATIONS IN PRICES OF MINING STOCKS AT LONDON IN 1889.

NAME AND LOCATION OF COMPANY.		ar lue.	Oı	eni	ng.	Н		est a ring			est	Closin		ng.
	£	s.	0	s.	D.	£.	s.	D.	£.	s.	D.	£.	8.	D.
Alturas Gold, Idaho	1	5.	Je.	4	9	J.,	5	6	Tree	2	D.	due	4	D.
Amada, Mex	-			î	3		2			ī	3		ī	6
mador, Cal				ī	3		2	9		1	-		1	9
rizona Conner. Ariz	1			18	6	1	13	9		12	8		12	8
Birdseve Creek, Cal	4			3	6		4	6		2	6		4	6
Birdseye Creek, Cal	1			9		1	12	6		3			3	
Callao Bis, Venezuela	1			12	6		12	6		3			7	6
Callao Bis, Venezuela		. 1		3	1		7	5		3			7	5
Carlisle, N. Mex	1			0	6		9	6		2	4		4	3
olorado United, Colo		19		4			5			1	6		3 5	
olumbian, Rep. of C	1		1	15		2	3 5	1	1	9	10	2	3	1
columbian, Rep. of C	1		1	5		1	5		1	3	1	1		
ondova				1			1				6		1	-
ons. Esmeralda, Nev	1			6	_		7			1	3	•	4	6
enver Gold, Colo	1	5		25225	3		6	2		1			1	3
iekens Custer, Idaho	1			5	3		6	3		1	6		4	
ast Arevalos, Idaho				2	6		3	6		2			3	6
berhardt, Nev	i			2			3	9		1		0	1	6
Callao, Venezuela	5		3	õ		3	15		1	15		3	10	0
lmore, Idaho	1			5			6			3	3		4	9
inpire, Mont	i			15		3	16			2			1	6
agstaff, Utah. arfield, Utah. old Hill, N. C. ambley Freehold, N. C.	1			4	3		4	3		2	6		3	6
arneld, Utan	i			13	6		15			1	9	•	1	9
old Hill, N. C				3	3	1	3	1		17	4	1	3	1
ambley Freehold, N. C	1		1	7		1	9	3		1	8	1	9	6
ex, Caly Hawk, Mont	1			3	6		5	6		2	6		4	O
osephine, Cal	1			6	6		11	0		4	0		7	
ohinoor, Colo	î				6		4	6		1	6		2	3
Valera, Mex				.,	1		2	1		1	10		ī	6
Lug Moy				2 3	1		3	6		2	6		2	6
a Luz, Mex a Trinidad, Mex		- 1		3	6		3	6		2	6		3	6
Mason & Barry, Portugal	10		9	17	4	10	5		5	15		6	2	4
Mason & Barry, Portugal Montana Lt., Mont	1		2	3	1	2	6	4	1	5		1	8	4
ew California, Colo	1	- 1	_	10	6	_	13	6		7			11	
ew Consolidated	1	1		1	6		2	6			6		1	
ow Eherhart Nev		1		5			9			1			1	
ew Emma S., Utah	1			5			6	3		2	6		3	6
ew Flagstaff, Ut h				1	6		2	6		1			2	6
ew Ennna S., Utalı ew Flagstaff, Ut h ew Hoover Hill, N. C		10		3			5			1			2	3
ew La Plata, Colo	1			27			2	6		_	6		1	6
orth Mexico					6		8			5				
ld Lout, Colo			1	17	4	-1	17	4		12	1		16	4
almarigo, Mex			1	4		1	4	. 1	1	5	6	1	2	
onos Altos Mey				13	9		14	4					14	4
ittsburg Con., Nev	1			17	6	1		6		5			6	4
ittsburg Orig., Cal	10			5	4		9	3		5			6	4
ittsburg Orig., Caluebrada, Venezuelaiehmond Con., Nev.	10		5	10		5	18	2		15			1	
iehmond Con., Nev	5		3		0	3	0	0	1	5		1	17	4
nov & Dunderberg, Nev	1			1	6		3	9		1	6		2	9
ussel Gold, N. C	1			3	9		3	6		2	6		3	9
ussel Gold, N. Cam Christan, N. Cierra Buttes, Cal	2	1		3			15			7	5		7	. 5
erra Buttes, Cal	Z			12	4		19	9		-	3		6	9
onora, Mex	1		1	5	9	1	5	9		•)	0		7	6
onora, Mextanly, N. C nited Mexican, Mex	10		3	12		11	16			7			7	0
J. S. Placer, Colo	1		0	6		11	8	6		í			5	
iola, Lt., Idaho	1	1		9			9	6			9		1	9
IUIG, Litte, Midill				0			67	0						4.7

^{*} These companies paid dividends in 1889

FLUCTUATIONS IN PRICES OF MINING STOCKS AT PARIS IN 1889.

NAME AND LOCATION OF COMPANY.	Opening.		Highest and lowest during year.		
Boleo, Mex. Belmez, Spain. Callo, Bis., Ven. El Callao, Ven. East Oregon, Ore. Forest Hill Divide, Cal. Golding River, Cal. "parts. Ouray, Colo. "parts. To parts. Rio Tinto, Spain. Tharsis, Spain.		Francs. 440'00 550'00 12'50 111'25 49'00 400'00 410'00 80'00 50'00 55'00 56'00 611'25 15e'50	Francs, 200°00 540°00 4°00 58°00 18°25 220°00 60°00 105°00 4°25 19°00 4°25 250°00 85°00	Francs. 275 00 550 00 4 00 93 75 19 00 220 00 390 00 125 00 4 00 10 00 11 19 50 119 50	

THE CHEMICAL AND MINERAL MARKET IN 1889.

HEAVY CHEMICALS.

Eighteen hundred and eighty-nine, in the market for the so-called "heavy" chemicals, was an eventful year. When the Engineering And Mining Journal began the work of encouraging the development of the American chemical industry, it did so with the conviction that the supremacy of the English alkali makers using the Leblanc process was at an end, and that those engaged in this process of manufacture would, sooner or later, be obliged to fight desperately for existence.

The greater part of the past 12 months, particularly the latter half, in England has been occupied in vain endeavors either to prolong the existence of or to newly organize combinations of manufacturers to offset the sharpness of competition and the rapidly decreasing margin between the cost of production and market prices. The Parnell-Simpson and other processes for recovering sulphur from alkali waste will undoubtedly prolong the struggle with the ammonia process and enable the Leblanc to survive for a time, but it would seem as if its days were numbered, unless a revolution should take place in the cost of sulphur, of which there are no signs.

a revolution should take place in the cost of sulphur, of which there are no signs.

The ruling prices at the opening of the year were as follows: Caustic soda, 70–74 per cent., 2·30c. per pound; 60 per cent., 2·50c.; carbonated soda ash, 48 per cent., 1·30c.; alkali, Brunner Mond or Solvay, 58 per cent., 1·17½c.; caustic soda ash, 1.35c.; bleaching powder, 2c.; sal soda, 95c. Up to about December 1st these prices were the highest for the year, and this is still true at the close for bleaching powder.

During the closing months of 1888 the demand for consumption was very active, but it soon became apparent in the first month of 1889 that consumers had liberally supplied their wants. Matters were made still worse by dissensions among the English makers, and before the end of January the supply of bleaching powder grew so large that importers were unable to sustain the market, and its price, which had been slowly weakening, dropped rapidly to less than a cent and three-quarters a pound. Throughout the next few months trade continued light and prices low. It was learned that English manufacturers, members of the caustic soda and bleaching powder combinations, were not adhering to their agreements. Restriction of production was ordered, but the order bad little real effect.

real effect.

Various plans for new combinations were proposed during the summer months. The last and perhaps the most feasible one was based upon a proposition to allow each alkali manufacturer a fixed quantity of salt to

decompose, but even this ultimately failed.

Bleaching powder was practically depressed during the year. Several causes were contributory to this depression. Consumption, owing to the growing use of substitutes for bleaching purposes, seemed to be somewhat checked.

The situation in the New York market was further aggravated by a fight between two leading importers for the control of certain brands

which has brought about some very low quotations.

The weakness and collapse of the bleaching powder combination was, and is, still something of a surprise to those engaged in the importation of this article. The career of the "combine" began early in 1883, thus extending over six years. Prior to its formation, excessive competition had forced prices down to about £4 a ton, or about 25 per cent, less than those now ruling. Inasmuch as present prices are now claimed to be unprofitable, it ruling. Inasmuch as present prices are now claimed to be unprofitable, it can be readily understood how urgent was the call for a combination in 1883. Since then there has been every reason to believe that the combination was both satisfactory and profitable. There were various curtailments of output ranging from 10 to 20 per cent.; prices were advanced to an average of about £7 10s, with occasional advances to even higher figures. Moreover, despite the efforts of the United States and of Germany to establish the industry at home, the English exports increased from 6,890,000 hundredweights, valued at \$1,732,600, during 1878-82, a period of unrestricted competition, to 7,848,000 hundredweights, valued at \$2,745,000, during the five years of combination, 1883-87. At last, however, this artificial regulation of the trade went the familiar way of all other trade combinations. The large profits stimulated production, then came internal dissensions, and now has come the collapse, accompanied by a drop in price of about 40 per cent., from £7 to £5 per ton. As

then came internal dissensions, and now has come the collapse, accompanied by a drop in price of about 40 per cent. from £7 to £5 per ton. As to the future, there is much uncertainty.

Bleaching powder is not strictly a by-product of the Leblanc alkali process, but is usually made in conjunction with it; thus, during the depression in alkali, makers have relied on their profits on bleaching powder to balance their accounts on the right side. Now that this support is gone, the struggle will be severe, if brief.

the struggle will be severe, it brief.

It Alkalis, with the exception of caustic soda, were in better demand during November and December. Carbonated soda ash early in December advanced about 20c, per cwt. in New York.

It is most gratifying to note the progress of the American industry in 1889. The alkali makers of this State, using the modern ammonia process, were obliged to increase largely their capacity, and have made im-

provements that will enable them to produce at lower cost than here to-fore. The quality of the American article has always been the very highest in the market.

The importations of heavy chemicals during 1889 compare with 1888 as

The United States Bureau of Statistics reports the following importa-tions for the first ten months of 1889 and 1888.

	1889). ———		3
Article.	Quantity, lbs		Quantity, lbs	. Value.
Bleaching powde	r79,565,922	\$1,260,206	80,403,166	\$1,287,670
Soda bicarbonate		17,487	1,354,525	21,045
Soda Ash and Sa	l Soda . 250, 270, 100	2,386,838	240,909,391	2,336,545
Brimstone-tons	120,064	1,823,497	97,015	1,554,269

ACIDS.

In this, as in so many other markets during recent years, excessive competition has brought about a violent reaction in the shape of "combination" to control prices. A review of the New York acid market during the year just closed must be mainly a history of the formation of such

ing the year just closed must be mainly a history of the formation of such a combination with its antecedent causes and immediate effects.

During the first six months of the year very few of the 12 or 15 manufacturers located in this and neighboring States were running their works to full capacity. The advisability of some action to relieve the situation was freely discussed, but on account of the frequent failures of similar measures in the past and the antagonisms which had so long existed in the trade, it was thought by many impossible to agree upon terms of combination.

Some of the more energetic makers at length resolved that waiting for Some of the more energetic makers at length resolved that waiting for the growth of consumption was likely to exhaust their resources, and in July all the manufacturers agreed upon a uniform schedule of prices, varying according to quantity, which was based on a small advance over the prices previously ruling. This schedule continued in force until the

the prices previously ruling. This schedule continued in force until the end of the year without change.

From the outset the combination in one important direction was favored with good luck; it is a singular coincidence that no sooner was a uniform price agreed upon than consumption, probably from outside and legitimate causes, began to increase. The combination and the improvement in business being coincident, the latter was naturally attributed to the former and thus the perfecting of the combination was greatly facilitated.

facilitated.

At first the agreement on prices was mainly a verbal one, and the last six months were spent principally in effecting an organization of a permanent character. As soon as this idea was broached several manufacturers protested against having their hands tied, to use a favorite expression. The result is that 12 manufacturers out of the 15 in this vicinity united to form the New York Chemical Clnb. Out of this grew the Knickerbocker Chemical Company, which was legally incorporated in November under the laws of the State of New Jersey, and which will have the general control of the policy of 12 makers already referred to. The three manufacturers who are in no way included in the "combine" profess to be adhering to schedule prices, but it is apparent that they constitute a menace to the maintenance of prices and are the "little acorns from which great oaks do grow" to break such combinations.

The articles nominally under control are sulphuric, nitrie and muriatic acids and aquafortis.

acids and aquafortis

acids and aquafortis.

The price of acetic acid, which is manufactured by only a few makers, is regulated by a smaller combination composed of the manufacturers interested. The price of this acid during the year was particularly depressed, and owing to the advance in the cost of acetate of lime the margin between cost of production and selling prices was very narrow. The depression in the nitrate of soda market during the last half of the year, on the other hand, cheapened the cost of nitric acid.

Sulphuric acid makers were also fortunately situated in having cheap brimstone, which went down to about \$18 for thirds—as low a price as has ever been reached in this market, and one which, with freights deducted, touches cost of production in Sicily or Japan.

touches cost of production in Sicily or Japan.

FERTILIZING CHEMICALS.

The market for crude fertilizing materials during 1889 was not up to expectations. The preceding year had been one of largely increased consumption, which the capacity of many manufactories was required to supply. The year, therefore, opened with a feeling of confidence as to the future, and preparations were made by many for a continued increase in business. The more conservative members of the trade claim not to have shared in these sangnine feelings, but it is convertible during the properties of the trade claim not to have shared in these sangnine feelings, but it is generally admitted that a larger demand was looked for than that which the year developed. Consumers in the last few months of 1888 had evidently more than supplied their wants for some time to come, and consequently a falling off in demand was observable in the early part of the ear under review

year under review.

In fact, throughout the year an over supply of crude material was the principal cause of depression, and the excessive competition and cutting of prices that occurred were attributable to this cause. Under these circumstances the market naturally continued dull throughout both the spring and fa!l seasons. Ammoniacal material during the latter part of the year was particularly depressed, with the exception of sulphate of ammonia itself, which, owing to decreased production and a larger use for purposes other than the manufacture of fertilizers, was maintained at firm prices. firm prices.

firm prices.

There is very little of interest to note concerning the various potash salts during the year. Under the arbitrary ruling of the Stassfurt syndicate natural canses had little effect upon the market excepting so far as the general falling off in demand produced a surplus supply despite the restrictions of the syndicate. Muriate of potash appeared to be the article particularly favored by the German producers, as prices of both kainit and sulphate of potash were kept at figures sufficiently high to divert a great deal of the demand to muriate.

The importations of kainit during the year aggregated 12,600 tons. This compares with the receipts during the three preceding years as follows: 1888, 17,500 tons; 1887, 6,000 tons; 1886, 16,900 tons. The syndicate price throughout the year has been \$10 per ton actual weight, and \$9.75 per ton foreign invoice weight.

The importations of muriate of potash during the year aggregate 28,445 tons. This compares with the receipts for the two preceding years as follows: 1888, 27,922 tons; 1887, 17,905 tons. The importations at the port of New York for the three years were respectively 18,030, 16,560 and 9,945 tons. The syndicate price averaged \$1.80 per 100 lbs.

Early in the year a prominent firm of importers endeavored to secure the free entry of high-grade sulphate of potash, claiming that the duty enforced upon it practically prohibited its use in this country, and therefore was prejudicial to the interests of importers and consumers. The matter received a thorough discussion in the columns of the ENGLYEPING AND

entorced upon it practically promoted its use in this country, and therefore was prejudicial to the interests of importers and consumers. The matter received a thorough discussion in the columns of the Engineering and Mining Journal in our issue of April 20th. A final decision has not been reached on the subject as yet, and it is expected that when Congress next considers the question of the tariff it will be formally asked to place sulphate of potash upon the free list.

A notable feature of the year was the falling off in the Southern consumption of Northern fertilizers. This indeed is inevitable. THE ENGINEERING AND MINING JOURNAL has frequently pointed out the anomaly of Charleston rock being shipped to this city and treated with sulphuric acid, and then reshipped to South Carolina and the neighboring States for distribution. Acid factories are being established all through the Southern States, and there is certainly no reason why the South should be dependent upon the North for its fertilizers. During 1889 the consumption of acidulated phosphate rock in the South materially increased, but Northern dealers had little or no part in it. It is, therefore, apparent that Northern manufacturers cannot hope to retain much of their Southern trade, and to compensate for this loss they must concentrate their efforts in the North to widen the market for their goods in their own section of the country.

As to the trade in compelsate for this loss they have obtained the following

the country.

As to the trade in complete fertilizers, we have obtained the following criticisms from a prominent manufacturer:

"While sales of fertilizers in 1889 have been heavy, collections in many cases have been slow, demonstrating the necessity of more care in granting credits, and a lesser desire to augment the volume of business regardless of the reliability of purchasers. In many cases where competition has been keen, the sellers have shown a lack of wisdom by their desire to overreach their competitors, and they are reaping their reward with bills receivable unmet. The opening year manifests on the part of the manufacturers a more conservative feeling than has been shown for several years, the situation presenting itself at the close of the year demonstrating the necessity of greater care in credits.

The idea that any one concern can monopolize the business has received a set-back.

a set-back.

An attempt was made during the session of the Legislature of the State of New York in the spring of 1889 to establish a system of taxation of the fertilizer trade through the New York Experiment Station at Geneva, but as before attempted, having a license or tax clause in the bill, the consideration was laid over and no action taken.

The reputable mannfacturers who have manufactured goods of merit prefer a just law, and would aid in its passage; but they are opposed to any bill that levies a tax on their business for the support of an experiment station that receives \$20,000 annually already from the State funds, and in view of the fact that the United States Government appropriates \$15,000 yearly to each State for its experimental station. They claim that the cities where the manufacturers reside pay a very large proporand in view of the fact that the United States Government appropriates \$15,000 yearly to each State for its experimental station. They claim that the cities where the manufacturers reside pay a very large proportion of the State tax, and as of this tax they pay their prorata, it is unfair to tax again for the support of an institution that receives public funds so largely. It is beneath the dignity of the Empire State to turn backward in its onward march, and especially as States that have levied taxes on this industry have repealed the tax clause but maintained their experiment station from the public funds. New Jersey has the model experiment station of the country, and there has never been a tax imposed on the fertilizer industry in that State, and no station has done any more effective work.

THE SOUTH CAROLINA PHOSPHATE BOCK MARKET IN 1889.

From our Special Correspondent at Charleston.

The price of kiln-dried land rock in January, 1889, was \$6 f. o. b. vessel; February, March, April and May, \$6.25; June, July and August, \$6.50, and September to December, inclusive, \$6.75; a deduction of 10 cents per ton was allowed on some of the sales during November and December; wet rock, \$1 less per ton. The free on board cars prices were made 25 cents higher than on vessels.

cents higher than on vessels.

Ground rock, which is about 99 per cent. of land rock, was \$8 f. o. b. vessel in January, and advanced to \$8.50 May, June, and is about that price now. Sales f. o. b. cars for the year have been pretty uniform at \$7.75. Water shipments have decreased materially, while rail shipments have increased; but as the railroads report them as fertilizers it is importantly that the countily.

nave increased; but as the rainroads report them as fertilizers it is impracticable to state the quantity.

River rock, kiln dried, for January, February and March, was \$5.50 f. o. b. vessel at Beaufort, S. C.; April, May, June, \$6 to \$6.50. Prices continued improving, and in December an offer was made for a cargo for foreign shipment at 31s. per ton on basis 57 per cent. f. o. b. vessel.

SHIPMENTS OF PHOSPHATE ROCK FROM CHARLESTON, S. C., FOR 1889.

Domestic.	Crude,	Ground.	Total tons.
Baltimore	 		62,499
Philadelphia			23,028
New York	 7.845	1.289	9,134
Newtown Creek, N. Y	 2.026	275	3,311
Newtown Creek, N. 1	 . 3,030		
Weymouth, Mass			15,520
Richmond, Va	 		4,740
Wilmington, Del	 		9,435
Mantua Creek, N. J	 		4,795
Elizabethport, N. J	 	****	550
Barren Island, N. Y	 		6,888
			1,200
Seaford, Del	 	• . • • •	
Wilmington, N. C	 		6,802
Orient, L. I	 		2,550
Milford, Conn. (Welche's Point).	 		610
Newcastle, Del	 		585
Union Landing, N. J	 	*****	702
		*****	725
Alexandria, Va	 	*****	120
			450 004
Total coastwise			153,074

South Carolina		8,521			8,521
Charleston & Savannah		36,721		-	36,721
Northeastern		365			365
Total by railroads from Charles	ton				45,607
Foreign. United Kingdom					1.400
Liverpool					300
Bremen					170
					2,000
Belfast					700
Glasgow					100
				•	4,570
Consumed at Charleston, estimat Total coastwise from Charleston, "by railroads from Charlesto foreign"	crude and	ground			153,074 45,607
TOLOIGH					
					283,351
FR	OM BEAUF	ORT, S. C.			283,351
		Foreign.	Coastwis 68,661		283,351 ilroads 475
FR Total for cleven months Consumed at Beaufort, estimated		Foreign 151,333			ilroads
Total for eleven months		Foreign 151,333	68,661		ilroads 475
Total for eleven months	Foreign. 4,570 .	Foreign 151,333	68,661	Loc	ilroads 475
Total for eleven months	Foreign. 4,570 .	Foreign 151,333 Coast wise. 153,074	68,661 15,000 Railroads.	Loc Consur	ilroads 473 cal.
Total for eleven months	Foreign. 4,570 .	Foreign 151,333 Coastwise.	68,661 15,000 Railroads. 45,607	Loc Consur	ilroads 475 cal. nption.
Total for cleven months	Foreign. 4,570 .	Foreign 151,333	68,661 15,000 Railroads. 45,607	Loc Consur 80,	ilroads 475 cal. nption.
Total for eleven months	Foreign. 4,570 .	Foreign	68,661 15,000 Railroads. 45,607 475	Loc Consur 80,	ilroads 475 cal. nption.
Total for eleven months	Foreign. 4,570 .	Foreign 151,333 Coast wise	68,661 15,000 Railroads. 45,607	Loc Consur 80,	ilroads 475 cal. nption.

Shipments from Charleston are land rock, and from Beaufort river

SEMI-ANNUAL REVIEW OF THE NITRATE OF SODA MARKET.

Written for the Engineering and Mining Journal by F. B. Nichols.

The market in July was fairly active at \$1.85, and has, for the most part, steadily improved, with a continual reduction of spot stock, closing at \$1.92 to \$1.95, and an exceptional demand at the end of the year. A

at \$1.92 to \$1.95, and an exceptional demand at the end of the year. A larger advance would have been justified by the remarkable movement of the last half of the year. In July, the stock here was over 60,000 bags, and although the arrivals were 60,000 bags in excess of the last half of 1888, the stock to-day in warehouse is only about 20,000 bags.

The consumption of the year shows a large gain, and the depletion of spot supply indicates that while the business for forward delivery has been active throughout, consumers had to provide for unexpected wants. The detention of three cargoes in distress had something to do with the state of the market, yet the fact remains that a large increase of consumption has raised the value.

For forward delivery there has been a good demand at \$1.75 to \$1.82 in a large way, and contracts have been signed extending to May shipment.

sumption has raised the value.

For forward delivery there has been a good demand at \$1.75 to \$1.82 in a large way, and contracts have been signed extending to May shipment. Perhaps the most conspicuous movement of the year is that directed to Southern ports. The quantity is not large, but the increase is momentous. At last the cotton planter has found, since he lost the high-grade Peruvian guano, its substitute, and nearly equivalent, in nitrate of soda, at less cost. Our statement last September is now maintained by the Department of Agriculture of South Carolina. When it is considered that nearly 20,000.000 of acres are under cultivation for cotton in the States, we may well consider the probability of a large number of planters availing themselves of the experience recently published.

The movement in Europe is interesting and has an important bearing upon the future value. Valparaiso until lately has dictated and shipped as if the world would take its supply, but the steady decline in price, which dealers were forced to accept, finally aroused the producers to the fact that they were overdoing it, and the latest knoweledge we have is that they are resolving or have resolved to curtail the production. This is timely, and it is hoped that the production will be cut down to the world's possible needs until a new and attractive field of consumption, such as is offered in this country, is cultivated by the producers. It is a question whether the present low cost will enable the European dealers to dispose of the augmented supply, but it is a stimulant to consumption that may be fairly relied upon. If, however, the consumers do not take the large stock, the dealers will be enabled to carry the surplus if the producers act honestly in protecting them.

The situation so far as we are concerned is that while nitrate can be bought at a concession, we are confronted with a scarcity of tonnage that has carried freights from 24s. to 30s.

The shipments to the Atlantic ports were light in December, and are likely to be

bought at a concession, we are confronted with a scarcity of tonnage that has carried freights from 24s. to 30s.

The shipments to the Atlantic ports were light in December, and are likely to be small for the first two or three months of the year. The increase of deliveries at San Francisco is due partly to the development of the artificial guano trade where bone phosphate is used, which admits of a larger percentage of nitrate of soda in the compound. It is an interesting fact in this connection that the Sandwich Islands are in the market for supplies, presumably for sugar culture.

The shipments to Europe, including the estimate by cable from Valparaiso for December, will be \$42,000 tons, against 657,500 tons last year, and 600,000 the year before. The movement of beet sugar during the year, together with the present low cost of nitrate, make it possible for an absorption of the increased supply.

The shipments to the States were 667,500 bags against 517,500 the year before; 555,000, in 1887; 522,750, in 1886; and 270,323, in 1885.

The quantity to arrive for Atlantic ports is 320,000 bags against 224,000, in 1889; 239,000, in 1888; and 238,500, in 1887. The total visible supply is 371,726 bags against 310,000, in 1889; 301,940, in 1888; and 311,266, in 1887.

The quantity to arrive in Europe is 2,835 in bags, making the visible visible and 24,000 to 24,45,000 to 24,45,00

The quantity to arrive in Europe is 2,835 in bags, making the visible supply then 4,312,500 bags against 3,112,000 last year and 2,927,500 in

The deliveries at San Francisco in 1889 were 80,000 bags, making total deliveries in this country 618,358 bags against 515,000 in 1888; 534,347, in 1887; and 454,760, in 1886.

In Europe, the deliveries were 4,920,000 bags, making total for the

world 5,538,358 bags against 5,227,000 in 1888; 4,164,347 in 1887; 3,522,260,

in 1856; and 3,278,686, in 1885.				-
	1889	1838	1887	1886
Stock in New York, Boston, Philadelphia and Balti- more. January 1	86,000 306,482	62,940 319,078	72,766 272,264	
gow		• • • • • • •		6,280
Arrivals at Boston from South America	64,346	49,281	80,107	6,708 $59,298$
" Phila. " South America	63,587	62,738	81,616	51,484
" Baltimore from South America	41,288	34,800	40,269	
" New Bedford, Woods Holl, from South	1			13,687
America Arrivals at Charleston from South America Norfolk and New Orleans, Liverpool	27,582 799	12,017 $20,648$	9,606	
Exports	590,084	561,502 19,870	566,628 23,628	485,584
Stocks	51,726	86,000	62,940	72,766
Deliveries for Consumption	538,358 192@195	455,632 23/6@240	470,060 205@21	
1889 Stock in New York, Dec. 31 44,726 4	1888 80,800 5,200	1887 47,940 9,000 6,000	1886 67,766 1,000 Nil 4,000	1885 74,391 3,000 2,400 7,500
Stocks		62,910	72,766	87,291
Imports Deliveries Stocks, Dec. 31 Average Price	1889 504,081 538,358 51,726 207	1888 498 562 455,632 86,000 2½	1887 483,862 470,060 62,540 207	1886 398,293 412,818 72,766 2 ²⁻³
188 Stock in Europe, January 1	000 490 000 4,807	,000 3,4		1886 1,237,500 2,550,000 720,000
Deliveries to 4,945, Price in Liverpool 88.4 Deliveries in United Kingdom first six months on Continent 2,657,	6d. 11 000 568	s. 78	3d. 21,500	8,067,500 8s. 9d. 453,750 1,638,113
Total deliveries " " 3,167, Average price in Liverpool " " 98.	3d 9s.	9d. 10s	3d.	2,091,863 l0s. 3d.
Shipments from the West Coast to all Ports 6,982,	500 5,498	3,000 5,1	15,000 3	3,181,500

REVIEW OF THE PETROLEUM MARKET FOR 1889.

Sp.cially Reported by Messrs. Watson & Gibson, New York.

Sp.cially Reported by Messrs. Watson & Gibson, New York.

The year 1889 opened with a dull market in petroleum, at something of a decline from the latter days of 1888. The highest price during the first week of this year was 85½ cents. The total net stock on the 31st day of December amounted to 18,393,474 barrels. Early in the month of January a conference took place between the representatives of the Standard old interest and the organized producers, resulting in a harmonious agreement between them. By this agreement the Standard extended the time of a "call" of three and one-half million barrels until July 1st, and the Standard agreed that it would at that date accept any of this reserve oil which might remain unsold at a net profit to the producer of at least five cents per barrel. The Standard were to continue to carry this oil until July 1st, or till any previous date, when it might be called by the producers. This agreement, being a continuation of an option previously existing, did not have any very important effect upon the price of oil. From the first of the year up to the present time there has been a continual and steady reduction of the stock of oil above ground, but this gradually improving change in the situation did not begin to assert itself until the present autumn, and then only in a very moderate and indifferent sort of a way. The prices during the early months of the year ranged between 85 and 92½ falling to 80 cents the latter part of April. On the 24th of June, being just prior to the expiration of the "call" held by the producers, there was an important change in the temper and extent of speculation in the oil market, and the total dealings on that day in the Consolidated Exchange ran up to 4,910,000 barrels. The price on that day advanced from 83½ cents at the opening to 95, reacting before the close to 89½. This was not only an important advance, but an utter surprise to speculators and traders. On the 25th of June the Standard, which began in November, 1887, at the time of the original

Secondly, the existence of a large field in Ohio, the visible supply of which equals the visible supply of Pennsylvania oil, selling at about one-sixth the price of the latter, exercised a bearish or at least deterrent influence on would-be buyers. It is not an established fact that Ohio oil can be economically refined, but it is stated to be a fact that its refining is chemically possible, and, as the production is now at the present low price fully half the production in Pennsylvania, and its pos-

sibilities of increase are very great whenever its price shall be advanced. it remains a constant menace to the prices of Pennsylvania oil. The oil dealt in on the exchanges is Pennsylvania oil, and since the new oil coming out of the wells of Pennsylvania commands a premium of about 25 cents, none of the fresh oil goes into the tanks covered by the certifi-

25 cents, none of the fresh oil goes into the tanks covered by the certificates dealt in on the exchanges.

The oil now in the custody of the pipe line companies, which is a good delivery on the exchanges, is the old Bradford and Allegany oil and it is deteriorating by age. We believe that Ohio oil will be utilized for the production of illuminating fluid and the Standard have for some time had a large refinery at Lima. It may be feasible to blend Ohio with the Pennsylvania oil. In view of all the conditions surrounding the business, the utter and complete absence of all speculative desire on the part of the public, and the interest which the Standard must have, as the chief consumer of petroleum for conversion into refined, we cannot see our way to public, and the interest which the Standard must have, as the chief consumer of petroleum for conversion into refined, we cannot see our way to recommend purchases of Pennsylvania oil at current prices, notwithstanding the apparently strong and bullish complexion of statistics. We think that the price of Pennsylvania and Ohio oil must be more closely approximated and we predict that within the year 1890 the Standard will openly admit what they now deny, that Lima oil can be successfully and economically refined.

FLUCTUATION IN PRICES PER BARREL (40 GALS.) OF PETROLEUM DURING 1889.

Decreation in American Am	Ne Distriction (ao omano, c	T TOTAL COURT	CM DCHING IO
(Consolidate	ed Stock an	d Petroleur	m Exchange	
Months. Opening.	Highest.	Lowest.	Closing.	Sales.
January 885/8	885%	84	8538	18,369,000
February 851/4	921/4	851/8	211/2	323,040,000
March 901/2	93	88%	923%	14,031,000
April 90	9134	813%	8434	17,472,000
M ty 8434	861/8	803%	825%	10,472,000
June 8214	95	821/4	921/2	12,956,000
July 921/2	1021/2	91	933%	11,888,000
August 9834	1001/2	97	9734	14,818,000
September 98				5,851,000
October 9834	10834	997/6	931/2	13,222,000
November107	1121/2	1031/8	1031/4	13,664,000
December1031/4	1061/8	1023/4	103%	5,269,000
Year 885/8	1121/2	805/8	1035%	420,152,000
(Ne	w York Sto	ck Exchan	ge.)	
Months. Opening.	Highest.	Lowest.	Closing.	Sales.
January 871/2	88%	837/8	8516	7.920.000
February 851/2	921/4	8534	9134	3,125,000
March 9138	921/2	881/4	90%	8,876,000
April 901/8	91%	813%	845%	8,616,000
May 811/2	861/8	81	821/2	7,884,000
June 8288	95	82	9234	4,327,000
July 9234	102	9034	98%	8,251,000
August 99	1001/8	971/2	981/4	4,023,000
September 98	1011/8	971/2	99	2,444,000
October 9834	1081/2	99	106	10,479,000
November 1061/8	1121/8	1031/4	1031/4	8,158,000
December1021/2	10514	1013/8	103 %	2,981,000
Year 871/2	1121/8	813%	103%	87,077,000

The net stocks of oil held by the National Transit Company at the end of each month in 1889 were as follows:

or cross survival and room ore or	CALO				
January 16.483,804		July	12,004,533	barre	ls
February	**	August			
March		September			
April14,152,787	4.6	October	9.761,353	6.6	
May	4.6	November	9,230,266	5.4	
June 12 691 145	6.0	December (estimated) "	8 750 000	4.6	

THE BUILDING MATERIAL MARKET IN 1889.

The year in the building material market was one of moderate prosperity. Prices ruled relatively low, and an unusual amount of inclement weather greatly interfered with building operations, which, however, were very numerous, and the consumption of material remarkably large. Statistics of buildings projected show that during the twelve months plans were filed for 3,455 buildings, to cost \$70,000,000, as compared with 2,877 buildings, to cost \$45,000,000 projected in 1888.

The year was fairly exempt from labor troubles; in fact, no serious difficulty occurred until October, when the old contest between the trades unions and Peck, Martin & Co. was renewed. The men employed on a number of large downtown buildings, for which this firm was supplying material, quit work for a few days. Much inconvenience was occasioned to the builders, but no embarrassment resulted to the firm supplying the material. The year in the building material market was one of moderate pros-

material.

The most important result of this strike consisted in the perfection of an organization for the mutual protection and benefit of building material dealers. Such an association had been contemplated for some time, but it required this strike to bring it about. For a month or six weeks past a committee consisting of President James Rogers, of the Building Material Exchange, Col. George Moore Smith, of Candee & Smith, and R. C. Martin, of Peck, Martin & Co., have had plans for the association under consideration and it is probable that they will soon be matured.

Wages showed comparatively little variation during the year, and rated at about \$4 per day for bricklayers and \$3.50 for carpenters.

The long talked of project of consolidating the Building Material and the Mechanics' and Traders' Exchanges was brought up in the spring, but the negotiation fell through, owing to the unwillingness of the former Exchange to consolidate.

Bricks—It was not a year of uninterrunted prosperity in the bricks.

Bricks.—It was not a year of uninterrupted prosperity in the brick trade. Excessive production, when fine, and stormy weather combined brought about an unsatisfactory condition of affairs more than once during the year, and, in fact, throughout the greater part of the season, the margin of profit was narrow.

The year opened with unseasonably mild weather, and sellers were not able to advance prices until the close of Hudson River navigation, which occurred in the first week of February. Values then advanced to about \$.@\$8.25 per M. for good quality Haverstraw brick. Before the end of March the ice broke up in the Hudson, thus affording makers along the Hudson an opportunity eagerly seized to resume shipments from the stocks in their yards.

In a few weeks the weather permitted the resumption of production, and then new brick began to crowd the market. The advent of May witnessed the natural result of this policy in a gradual weakening in prices, which finally dropped precipitately to \$7 per M. The early demand

for brick for various reasons did not prove as large as was expected, and

the accumulation of stock on the market forced prices down another dollar per thousand, or to about \$6\$ at the close of May.

This made producers restrict output, and early in June, without any formal agreement, a more conservative policy was pursued in reducing

The market was temporarily improved, and sellers were enabled to advance prices fifty cents per M, but production soon increased again and values settled down to an average of about \$6 for good grades of Hudson river brick, at which figure they remained until October.

The monotony of a rather over-supplied market was broken early in the Fall by a slight attack of the "Trust" mania. The trade was slightly roused by an inquiry from English sources as to the practicability of monopolizing the production of brick in this section. The idea, however, was nipped in the bud when the clearer heads in the trade ridiculed the possibility of a "Trust" in a business with so many sources of supply and with so many conflicting interests as there are in the brick trade.

During the last three months, the expected advent of cold weather and the stoppage of production brought about a gradual advance in values, the closing prices being for Haverstraws, \$7: Uprivers, \$6.50; Jerseys, \$6: Pale, \$3.50.

Lime.—This market was devoid of interesting features throughout

\$6: Pale. \$3.50.

Lime.—This market was devoid of interesting features throughout the year. The trade was kept pretty well under control by the various associations of producers. The shipments of Maine lime from the Rockland, Rockfort, and Thomaston districts were judiciously regulated by the Knox County Lime Association, and the schedule prices of \$1.20 per bbl. for finishing and \$1 for common lime were maintained with little or no variation. The New York State lime all passed through one selling agency in this city, and prices were not subject to wide fluctuations, the average quotation for the year being from \$5c. to \$1.10 per bbl., according to grade. The receipts of St. John, N. B., lime at this port were not large.

Cement.—The cement trade in the Rosendale District during 1889 was marked by large production, and consequently depressed prices. Manufacturing was begun in March, a month earlier than usual, and continued steadily throughout the year. The closing of navigation on the Delaware & Hudson Canal, on which most of the cement manufacturers are located, on December 11th, put a stop to water navigation, and all shipments since then have been made by rail, thus increasing cost to consumers. The mild weather of the past few weeks, however, has facilitated deliveries, and thus stocks at the end of the year are lighter than they would otherwise have been. Owing to the long season of production the output of Rosendale in 1889 was about as large as in 1888, viz., 2,262,984 barrels. In 1887 2,238,744 barrels were made. Stocks at this time are estimated to be about as large as they were a year ago at this date. The trade during the year has been marked by no special features of interest. Some of the more energetic makers continue to agitate the "combine' idea, and at one time some little excitement was created by inquiries from English sources as to the practicability of monopolizing the industry in the Rosendale district. in the Rosendale district.

Despite the experience of previous years, importers of foreign brands of cement have brought to this market a good deal more than was required to supply the consumptive demand. Prices were, therefore, rather depressed throughout the year. Importations are estimated at about 1,700,000 barrels against 1,795,000 barrels in 1888.

Roofing State —When it is remembered that the stock of black slate at Pennsylvania quarries on January 1st was estimated to be 80,000 state at Pennsylvania quarries on January 1st was estimated to be 80,000 squares less than usual, and when it is borne in mind that consumption more than kept pace with production during the year, the cause of the continual scarcity of black slate can be easily understood. The prices named by the Bangor Slate Association last January for the year were at an advance of 25 cents over those ruling in 1888. The quarries were steadily taxed to the limit of their capacity to meet the demands of the buildness.

In June, a further advances of 25c. per square was made. In the early part of the year, the scarcity of black slate diverted some of the demand to the Vermont green product, but during the summer the consumption of the latter fell off again, and the Vermont State Association was forced

of the latter fell off again, and the Vermont State Association was forced to order a reduction of output amounting to 33½ per cem. No advance was made in the price of Vermont slate during the year.

The export trade in roofing slate which reached such 'e proportions in 1888, was very limited during 1889. The Australian market which had taken most of the 1888 shipments, was over supplied with slate all the year. Closing prices in New York are as follows: Purple and green roofing, per 100 feet, \$7@\$7.50; red roofing, per 100 square feet, \$12; black roofing, per 100 square feet, \$4.25@\$5.50.

Stone.—The year was one of activity in the building stone trade. The increase in the number of projected buildings in New York City in 1889 probably affected stone more than brick, as many of the structures erected were far above the average in size and cost, and of a character requiring granite, marble and limestone. This is evidenced by the relatively large increase in the estimated cost of the buildings for which plans were filed.

The most popular stones of 1889 have been granite and limestone. The gray granite of Maine has met with a much larger consumption than usual, while the use of Scotch red granite for pillars and monuments has been very limited.

been very limited.

The importations of marble are estimated to be twenty-five per cent.

The importations of marble are estimated to be twenty-five per cent. larger in 1889 than in 1888.

Limestones and sandstones have steadily grown in favor both for residences and the upper stories of office buildings. Some of the stones that have come into use in consequence of the fashionable craze for "something new" have not stood the test of wear, the short period that they have been exposed. In some instances the very objections to their use which were suggested by the Engineering and Mining Journal early in 1889, have made themselves apparent.

While the use of the time-honored brown stone has decreased in New York City during the year, it is only fair to state that the agents of the falling off in New York in its use has been fully compensated for by an increased consumption in other sections. An interesting feature of the year was the formation of a Trust of quarrymen in Illinois under the name of the Western Stone Company, with a capitalization of \$2,000,000.

Most of the quarries of Lemont and Joliet, Ill., are understood to be

Most of the quarries of Lemont and Stone Cutters listed included.

In 1889 the Joint Association of Quarrymen and Stone Cutters listed the blue stone of the Chattanooga Marble and Stone Company, and the limestone of the Indiana Oolitic Stone Company, of Stinesville, Ind.

Some trouble was occasioned early in the year by the refusal of the stone cutters' association—a trades union, not the association of employers—to allow a number of imported Scotch stone cutters to work in this city.

to allow a number of imported Scotch stone cutters to work in this city.

DIVIDENDS PAID BY AMERICAN MINES IN 1889, WITH TOTAL UP TO DATE

NAME OF COMPANY.	Location of mlne.	Amount of dividends paid in 1889.	Total amount of dividends paid to date.	Present mar- ket value of the company	
Alice	Iontana	25,000	\$800,000	400,000	
Alma	daho	15,000	60,000	*	
American & Nettie	olorado	150,000	150,000	***********	
Aspen Mg & Sm C Atlantic A Boston & Montana Copper M	olorado	280,000	360,000	1,200,000	
Roston & Montana Connor N	Intenigan	80,000 500,000	560,000	560,000	
Caledonia D	lekote	80,000	900,000	4,400,000	
CalliopeC	oloredo	50,000	136,000 50,000	150,000 500,000	
Calumet & Hecla.	iehigan	2,000,000	33,350,000	24,800,000	
entral M	lichigan	40.000	1,930,000	280,000	
Colorado Central	olorado	55,000	406,250	275,000	
Confidence N	evada	24,960	199,680		
Confidence	evada	55,000 24,960 756,000	3,304,800	972,000	
opper Queen A	rizona	70,000	210,000	*	
opper Queen	daho	70,000	70,000	*********	
Jerbec Gravel	olorado	30,009	210,000	0.000.000	
OalyU	tah	450,000	1,312,500	3,000,000	
Evening Star	olorado	40,000 25,000	390,000 1,450,000	130,000	
Franklin	lichigan	80,000	880,000	560,000	
ranby Mg. & Sm. N	fontana	20,000	20,000	**	
Franklin	fontana	2,400,000	7,600,000	16,800,000	
Granite I	daho	20,000	28,400	***************************************	
Granite Mountain	akota	187,500	4,481,250	1,125,000	
		180.000	1,437,500	*	
Hubert	olorado	5,000	247,000		
IvanhoeC	olorado	10,000	10,000		
daho	alifornia	178,250	5,235,900	- *	
Illinois N Iron Silver C		20,000	45,000		
In olygon	olorado	100,000	2,500,000	1,075,000	
Iron Silver. C. Jackson . N. Jackson . N. Jay Gould . M. Horn Silver . U. Lexington . M. Mammoth	fortone	5,000 74,000	55,000 395,000		
Horn Silver	toh	50,000	4,050,000	800,000	
Lexington	fontana	64,000	609,000	*	
MammothI	tah	30,000	100,000	*	
Metropolitan (Norrie) M	lichigan	350,000	567,500		
Mount Diablo N	evada	40,000	160,000	150,000	
Manmollian (Norrie). Metropolitan (Norrie). Mount Diablo. Nonoritor. Di Montana, Limited. Morning Star. Co	akota	37,500 206,250 50,000	37,500 2,299,717		
Montana, Limited	Iontana	206,250	2,299,717	3,456,000	
Morning Star	olorado	50,000	850,000	900,000	
Napa	alifornia	30,000	330,000	388.000	
Napa C Navajo N New Guston C	evada	40,000 187,500	346,146	35,000	
North Star	olifornio	100,000	287,500 · 250 000		
Ontaria I	tah	900,000	10,625,000	5,400,000	
Osecola	lichigan.	50,000	1,222,500	950,000	
Pamlico N	eveda	12,000	177,080	*	
North Star	Iontana	144,000	440,000	*	
Plumas EurekaC	alifornia	123,046	2,548,046		
oormar C	olorado	15,000	40,000		
Corman C Juicksilver Preferred C Juincy M Silver Cord Silver Mg, of Lake Valley N Sierra Nevada I Small Hones C	alıfornia	193,107	1,530,682	1,548,000	
luincy M	lichlgan	280,000	5,250,000	2,680,000	
Sliver Cord	olorado	45,000	270,000	270,000	
Slowe Novada	ew Mexico	25,000	50,000	150,000	
mall Hopes	olorodo	20,000	40,000	975 000	
amarack	lichigan	25,000 440,000	3,137,500 1,200,000	275,000 5,600,000	
Ward Consolidated	olorado	20,000	20,000	120,000	
Vebb City	issouri	4,400	4,400	62,150	
Voodside	tah	25,000	25,000	, 100 *	
Small Hopes. C Famarack. M Ward Consolidated. C Webb City. M Woodside. U Young America. C	alifornia	10,000	175,000	*	
Total, 61 companies	-	\$10,537,522	\$104,326,811	\$78,111,150	
u 1888, 64 companies		13,061,105	101,483,709	90,045,531	
n 1888, 64 companies n 1887, 63 companies n 1886, 59 companies		10,515,753	101,483,709 98,519,767 81,751,981	89,096,135 85,707,771	
1000 10		10,282,093	01 551 001	OF HOM MAY	

* Stocks not quoted on any exchange.

The above table includes dividends paid in cash only from mines located in the United States, and the figures given are almost all from official sources. There are also a large number of dividend paying properties worked and owned by private individuals or "close corporations," of which it is impossible to secure an accurate record.

ASSESSMENTS BY MINING COMPANIES IN 1889.

e	NAME AND LOCATION OF COMPANY.		Total levied to date.	NAME AND LOCATION OF CONPANY.		Total levied to date.
	Alliance, Utah'	\$30,000	\$30,000	Locomotive, Ariz	\$10,000	\$110,000
e	Allouez, Mich	40,000	697,000	Martin White, Nev	25,000	1,175,000
9	Alpha M. & M., Nev	26,500		Mayflower, Cal	35,000	470,000
	Andes, Nev	25,000	975.000	Mexican, Nev	50,400	3,431,000
1	Anchor, Utah	15,000	190,000	Mono, Cal	62,500	747,500
3	Argenta, Nev	10,000	335,000	Navajo Queen, Nev	10,000	30,000
e	Baltimore, Nev	50,000	125,000	Nevada Queen, Nev	70,000	200,000
	Belcher, Nev	104,000	2,874,000	North Belle Isle, Nev.	100,000	375,000
•	Bellevue-Idaho	12,500	88,750	North Bonanza, Nev	10,000	240,000
9	Best & Belcher, Nev	75 200	2,129,790	N. Com'nwealth, Nev.	30,000	60,000
1	Bodie Cons., Cal	75,000	575,000	N. Gould & Curry, Nev.	20,000	260,000
S	Bulwer, Cal	50,000	130,000	North Peer, Ariz	5,000	16,000
3	Challenge Cons., Nev.	25,000	80,000	Occidental Con., Nev.	50,000	120,000
	Chollar, Nev	112,000	1,540,000		50,000	4,160,240
	Cons. Imperial, Nev	25,000	1,825,000	Overman, Nev	57,600	3,803,540
•	Cons. New York, Nev.	25,000	25,000		20,000	155,000
	Cons. Pacific, Nev	15,000	192,000	Peerless, Arlz	96,000	380,000
-	Croeker, Ariz	20,000	125,000	Phil Sheridan, Nev	35,000	40,000
t	Crown Point, Nev	100,000	2,925,000	Potosl, Nev	16,000	1,517,600
	Del Monte, Nev	20,000	45,000	Savage, Nev	112,000	6,632,000
	E. Sierra Nevada, Nev.	10,000	10,000	Scorplon, Nev	120,000	315,000
7	Eureka Cons., Nev	50,000	550,000	Seabury-Calkins, Dak.	1,250	28,750
9	Exchequer, Nev	25,000	815,000	Seg. Belcher, Nev	50,000	100,000
7	Found Treasure, Nev.	12,500	36,500	Sierra Nevada, Nev	100,000	6,225,000
	Gould & Curry, Nev	91,800	4,439,060	Silver Hill, Nev	43,200	1,895,400
	Grand Prize, Nev	120,000	760,000	Summit, Cal	2,500	120,000
	Hector, Cal	45,000	45,000	Trojan, Nev	10,000	370,000
9	Honorine, Utah	12,500	137,500	Tuscarora, Nev	10,000	15,000
	Iron Hill, Dak	15,000	133,750	Utah Cons., Nev	75,000	195,000
ð	John Duncan, Mich	2,000	4,000		75,000	2,260,000
1	Kentuck, Nev	27,000	368,930	Weldon, Ariz	10,000	30,000
9	Keyes, Nev	30,000	125,000	Yellow Jacket, Nev	60,000	2,184,000
	La Panta, Nev	3,000	3,000		,	,
9	200 2 000000, 2101111111111111	5,000	20,000			

PERSONALS.

Mr. Charles H. Gibson. mining engineer, of New York, sailed for London on the 2d inst. He is about to visit the Transvaal gold fields, Africa.

Mr. Wm. Allen Smith, mining engineer, of New York, sailed for Galveston to-day, for a month's absence in Texas and other Southern States.

Mr. Andrew Carnegie has notified Cyrus Elder, Esq., of Johnstown, to draw on the firm of Carne-gie Brothers & Co. for funds to restore the Cam-bria Library Association's building at Johnstown.

Mr. William H. Symington having been elected vice-president of the St. Louis Smelting and Refining Company, has left New York to reside in St. Louis, where he can be addressed at 421 Olive street.

Mr. Frank Nicholsou, mining engineer, and connected with the Yuma Copper Company, of Arizona, is at present in New York City with the officers of the company, Mesrs. Charles W. Prange, J. E. McFaul and Wu. H. Quernheim.

Mr. R. J. Frecheville, M. Inst. C. E., F. G. S., Mem. Am. Inst. M. E., late H. M. Inspector of Mines for Cornwall, Devon, etc., who has had mining experience extending over the last twenty years, both in managing and examining mines in England, the United States, South America, South Africa and other countries; and Mr. Wm. Frecheville, F. G. S., Mem. Am. Inst. M. E., who has had experience during the last fourteen years in managing and examining mines in the United States, Mysore, South Africa and other countries, have taken offices at 33 Broad street. Avenue, New Broad street, London, as consulting engineers and mine managers.

OBITUARY.

Horatio Allen, the well-known civil engineer, under whose direction the first locomotive brought to America was built and run, died at his home in Montrose, N. J., on December 3lst. He was born at Schenectady, N. Y., in 1802, and was graduated from Columbia College in 1823. For many years he was the chief consulting engineer of the Erie Railway, and at one time was President of that road.

Joseph G. Fox, A. M., professor of civil and Joseph G. Fox, A. M., professor of civil and topographical engineering, at Lafayette College, Easton, Pa., died suddenly on the 26th ult. from paralysis, aged 57 years. He had held the position since 1872. For 10 years prior to that he was engaged in teaching in Cooper Institute, New York, and in the University of New York. He was engineer of the Sixth Brigade, Second Division, New York State Guard, on Gen. Hamilton's staff, in

We have to announce the death of Mr. Hut on Vignoles, the second son of the celebrated Charles Blacker Vignoles, which took place on the 14th inst. at Hereford, England. Mr. Hutton Vignoles was born in November, 1824. When he was twenty-five years of age he was elected an Associate of the Institution of Civil Engineers, and became a member in 1854. For some years he had lived chiefly at his residence, the Château Rougemont, Tours, France, and was in his 66th year at the time of his death.

Mr. Edward Petit of the firm of Parsons & Petit, the well-known importers of nitrate of soda and brimstone, died suddenly at his residence in New York City on December 31st, 1889. Mr. Petit had been ill five days. He contracted a cold on Christmas day which resulted in pneumonia. The firm of Parsons & Petit have been il resistence for thirty or forty years. It was originally composed of Messrs. John J. Petit, a brother of the gentleman whose death we now record, and Mr. William B. Parsons. Mr. John J. Petit died on December 31st, 1887, and Mr. W. B. Parsons on October 25th, 1886. It is a noteworthy coincidence that the brothers Petit should both have passed away on the last day of the year. For some time past the business had been carried on by Messrs. Edward Petit and Schuyler L. Parsons, son of William B. Parsons.

INDUSTRIAL NOTES.

The Thomas Iron Company, Pa., has raised the wages of its employés ten per cent., the advance to take effect Jan. 1.

The Sheldon Axle Works in Wilkesbarre, Pa., employing a large number of hands, have been purchased by an English syndicate.

The Coleraine Iron Company's furnace, at Redington, Pa., which was idle for three months, and remodeled at an expense of \$50,000, has been re-

The furnaces of the Chestnut Hill Iron Ore Company, at Columbia, Penna., which has been idle or three years, are being repaired to be put in blast at once.

The Ingersoll-Sergeant Rock Drill Company, of New York, has just taken a large order for air-compressing machinery, boilers, etc., for the St Clair Tunnel, at Hamilton, Ontario.

Robert A. Cook has sold the exclusive rights for the Wenstrom Magnetic Separator for Essex County, N.Y., to Messrs. Witherbee Sherman & Co., who have it in operation for the past six months.

The Aluminum Brass and Bronze Company, manufacturers of the Cowle's Aluminum and Silica Copper Alloys, has removed its offices from 261 Broadway to the Stewart Building, 53 Cham-bers street, New York.

The Wainwright Manufacturing Company of Boston, Mass., is doing a large business with its corrugated copper tube feed water heaters, and has furnished the same to some of the largest companies in this country.

The sheet mill of the Brooke Iron Company, at Birdsboro', Berks County, Penna., closed January, 1, in consequence of the strike of nailers for the restoration of the ten per cent. reduction made in their wages, some time ago.

Mr. W. B. Pearson, commencing January 1, 1890 will represent the Ball Engine Co., of Erie, Pa., in Chicago; office, 403 Home Insurance Building. His territory will be Illinois, Iowa, Northern Indiana, Wisconsin and Michigan east shore.

The Carpenter Steel Works, at Reading, Pa., have just secured the contract from the Brown Sectional Gun Company, of New York, to furnish the steel for the new 30-ton gun which the latter company had contracted to make for the United

The Pennsylvania Railroad Company has contracted with the Baldwin Locomotive Works for fifty-five heavy freight engines, which will soon be finished. The railroad company received twenty-two locomotives from the Baldwin works last month. The freight traffic of the road is very large and is increasing daily.

The direct cause of the failure was the protesting of paper to the amount of \$80,000 in New York. The mills of the firm did not stop running an hour. The failure was announced in the afternoon of January 15th, and next morning everything was running at all the works of the company as usual. This has been the case ever since.

The Bucyrus Foundry and Manufacturing Company, of Bucyrus, O.. on January 1st, 1890, changed its name to the Bucyrus Steam Shovel and Dredge Company. The organization and management will remain the same, the change being one of name only, except that the capital stock will be increased to \$150,000, to accommodate the constantly increasing business, and allow the necessary extension of the company's plant.

The Oliver Iron and Steel Company, of Pittsburg, Pa., will discharge the last of its obligations in February next. On Jan. 15, 1885, the firm failed. At a meeting of the creditors held a few days after the Olivers asked for time, promising to pay the entire amount of indebtedness in five equal payments of \$300,000 each, the proposition was promptly accepted by the creditors, and has been kept to the letter.

A competitive trial of flour milling machinery will take place in September of 1890, in Santiago, the capital of Chili. A premium of 20,000 francs will be awarded for the most approved system and other premiums for such systems as, without filling the prescribed requisites, most nearly approach them. Freight on the machinery, building, etc., and passage to Chili and return of the operators, will be defrayed by the parties in charge of the exhibition. For further particulars address the Legation of Chili, Washington, D. C. Fredk. A. Beelen, Consulate General of Chili, 15 Cortlandt St., New York.

The Jeffrey electric coal mining machines are now in successful operation at Shawnee, Ohio; Jobs, Ohio; Thurmond, W. Va., and Canelton, Pa. Other plants are in process of erection at Fairmont and Parkersburg, W. Va. This is the ouly electric coal mining machine now offered to the public which is in daily operation, and the manufacturiers, the Jeffrey Manufacturing Company, of Columbus, Ohio, are to be congratulated upon the success they have achieved. Their electric haulage system is also said to be a perfect success, and is in constant operation at Shawnee, Ohio, and Thurmond, W. Va.

The Valley Steel Company, formed to operate the plant known for years as the Western Nail Works, at Belleville, Ill., has been chartered under the laws of Missouri, with \$150,000 of capital stock. The incorporators are Chas. A. McNair, George O. Carpenter, Jr., George S. Engell, George J. Plant, B. S. Adams, F. W. Oliver, and T. A. Meysenburg. The works will be started up in January with about 300 hands. Col. T. A. Meysenburg states the product will be soft steel in the form of slabs and billets, together with nails. The Tudor Iron Works, of East St. Louis, are intimately connected with the enterprise, and will be supplied from the Belleville plant with billets for the manufacture of light rails, etc. The office of the new company is in St. Louis.

CONTRACTING NOTES.

The Westinghouse Electric Company has just closed an important contract with the Wellamette Light Company, of Portland, Ore. The company is to furnish 10,000 incandescent and 100 arc lamps, together with the wire and machinery necessary for operating the same. The current is to be carried twelve miles before being distributed, a thing never before attempted in this country. For that purpose a specially constructed machine, capable of producing 4,000 volts, is to be used. The cost of the entire plant, including the distributing station building, will be in the neighborhood of \$200,000. The completion of this plant will be the inauguration of electric lighting in that city.

MACHINERY AND SUPPLIES WANTED AT HOME AND ABROAD.

If any one wanting Machinery or Supplies of any kind will notify the "Engineering and Mining Journal "of what he needs, his "Want" will be published in this column.

Any manufacturer or dealer wishing to communic de with the parties whose wants are given in this column can obtain their addresses from this office.

No charge will be made for these services

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information con cerning American goods of any kind, and forward them catalogues and discounts of manufacturers in each line, thus enabling the purchaser to select the most suitable articles before ordering.

These services are rendered gratuitously in the interest of the subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling

GOODS WANTED AT HOME.

469. Machinery for band mill. Texas. 470. Rails. Two miles of 16 or 20-pound T rails.

470. Rails. Two miles of 16 or 20-pound T rails. Mississippi.
471. Wheel, gears, etc. Fly wheel, 18 feet in diameter and weighing about 12 tons. Two gears, 9 feet in diameter and one pinion gear. Four 13-inch pillow blocks: two nine-inch pillow blocks. Sole plates and anchor plates. New Jersey.
472. Light locomotive. Mississippi.
473. Engine. Mississippi.
474. Self-feed rip saw. Mississippi.
475. Drill for a coal machine to bore a hole in coal, 334 inches in diameter and 4 feet deep. Illinois.

coai, 3% menes in diameter and 4 feet deep. Illinois.

476. Tools. Prices on small lathe 10 inches × 8 feet Large lathe 30 inches × 12 feet. Plane × 8 feet Large lathe 30 inches × 12 feet. Plane × 24 inches × 24 inches × 6 feet. Upright drill. Hand feed and back geared 24-inch hand shaping machine. Bolt and milling machine. Also tools for above machines. North Carolina.

477. Grist Mill. Bids on machinery for grist mill with a capacity of 30 or 35 bushels of corn per hour. Florida.

478. Pump to supply water to brick yard tank. West Virginia.

479. Elevator with small engine, boiler and hoist complete, to hoist brick and other material on buildings as they are put up. West Virginia.

480. Electric power. Estimates on transmission of power by electricity a distance of two miles. Tennessee.

of power by electricity a distance of two mues. Tennessee.

481. Water Wheel. Cost of turbine water wheel, everything complete, of say 50 horse power, to work under 26 feet head. Tennessee.

482. Gun with barrels 36 inches long; the bore of one barrel of proper size for No. 10 brass shell, and the other No. 16 shell. Weight about 10 pounds. Mississippi.

483. Ax handle, pick handle, broom handle and spoke handle lathes. Mississippi.

484. Excelsior machines for new plant. Mississippi.

sissippi.
485. Gas engine three or four horse-power. is, that cag.... sissippi. 36. Wood-working machinery; full line. Ten-Mis 486.

nessee. Foundry and machine shop supplies. Ten-

nessee.
488. Brick machinery for manufacturing about 25,000 brick per pay. North Carolina.
489. Wood-working machinery; band saw, blind stile mortising and boring machine, shaper and carving machine. Tennessee.

AMERICAN GOODS WANTED ABROAD

AMERICAN GOODS WANTED ABROAD.

449. Dry lubricant for the journals of the bearing rolls of a revolving calcining furnace. The journals are 6 inches × 3½ inches, resting in half brass; the movement is a very slow one, only about 1½ revolutions a minute. South Australia.

450. Turning lathe with bed long enough to turn a stick of timber 30 inches long; also a frame for circular saws, one rip saw and one cross-cut saw, each 10 inches in diameter. West Africa.

490. Teal hoists. Australia.

491. Cigars; good line to represent. Australia.

492. American goods on consignment. Australia.

493. India rubber goods, mechanical. Aus

tralia. 494. 495. 496.

Cutlery. Australia.
Watches; cheap grade. Australia.
Wire cables. Australia.
Blasting powder. Australia.
Safety burglar alarms. Australia.
Gas works; especially gas water system.
ia. 498. 499.

499. Gas works; especially gas water system.
Australia.
500. Electrical supplies; full line. Anstralia.
501. Crackers. Queensland.
502. Spades, shovels, &c. Queensland.
503. Sweat collars. Queensland.
504. Large line of various boxes. Queensland.
505. Trunks. Queensland.
506. Tin-working machinery; especially a machine that will do folding, grooving and turning, all in one, for canisters. Queensland.
507. Lighting by electricity for railway cars. Queensland.
508. Lighting by oil for tram cars. Queensland.

508. Lighting by oil for tram cars. Queensland.
509. Blasting and sporting powder. New South Wales.
510. Milk. Queensland.
511. Shooks. Quotations for white pine and spruce shooks, 3/4-inch dressed one side, f. o. b., in the following quantities and sizes: 2,000, 10 lnches wide and 15 inches long; 2,000, 10 inches wide and 12 inches long; 6,000, 2 inches wide and 12 inches long; 2,000, 10 inches wide and 14 inches long; 6,000, 2 inches wide and 15 inches long; 2,000, 10 inches wide and 14 inches long; 6,000, 2 inches wide and 14 inches long; 6,000, 2 inches wide and 14 inches long; 6,000, 2 inches wide and 14 inches long. West Indies.

512. Portable houses. South Africa.
513. Coal cutter. South Africa.
514. Agency wanted for mining and other machinery. South Africa.

GENERAL MINING NEWS.

ARIZONA.

COCHISE COUNTY.

BEER MINING COMPANY.—At the annual meeting of stockholders in San Francisco, December 26th, the following officers were elected: W. S. Lyle, President, C. H. Fish, vice-president. J. B. Low, A. B. Clute and E. Gauthier, directors.

Low, A. B. Clute and E. Gauthier, directors.

Combination Mining Company.—At the annual meeting in San Francisco, December 28th, the following officers were elected: W. S. Lyle, president; C. H. Fish, vice-president; J. B. Low, A. B. Ruggles and A. B. Clute, directors.

PEERLESS MINING COMPANY.—At the annual meeting in San Francisco, December 28th, the following officers were elected: W. S. Lyle, president; C. H. Fish, vice-president; J. B. Low, A. B. Ruggles and E. Gauthier, directors.

Weldon Mining Company.—At the annual stockholders' meeting in San Francisco, December 28th, the following officers were elected: W. S. Lyle, president; C. H. Fish, vice-president; J. B. Low, A. B. Clute and A. B. Ruggles, directors. Aug. Waterman was reappointed secretary, and william Pickett superintendent of the four companies.

COLORADO.

GILPIN COUNTY.

GILPIN COUNTY.

GOULD SILVER MINING COMPANY.—The Joe Reynolds' silver mine, belonging to this company, of Boston, Mass., and leased and bonded to Mrs. William O'Hea and Prof. S. W. Tyler, says the Central City Register Call, is now looking exceedingly well, with a fine showing of mineral, lead intermixed with zine blende, recently struck in the breast of the longest east level. It is intended to sink the east shaft and connect with the east level, which, when completed, will open up a large body of stoping ground, besides developing ground heretofore unexplored. Sinking of the engine shaft is to be resumed shortly. Eastern capitalists have been looking at the property with a view to the purchase of it should it prove such as it has been represented.

represented.

SPRINGDALE.—A. S. Pettit has sold a half interest in this mine at Central City for \$15,000. It is in the Russell district, and is one of the oldest patents on the hill. There has been some ore got out, says the Denver News, but attention has been given mainly to developing. Just at the present time a shaft is being put down as fast as possible to head off the Denbigh people who are coming in below. It is not expected by Mr. Pettit that there will be any trouble, legal or otherwise, over the matter.

LAKE COUNTY.

BIG SIX MINING COMPANY.—The next mining stock to be listed on the Denver Exchange is that of this company. The capital stock is \$500.000, of which \$100,000 will be placed on the Exchange. It will open on January 7th. The mining operations of the company, says the Denver Republican, are carried on at Leadville, on the northwestern slope of Breece hill, at the head of Stray Horse gulch and adjoining the Breece Iron Mine. The claims of the company consist of the Big Six, Little Prince, Nettie Morgan and Tootie Gaylord, which are all patented, and the title of the company is good. They cover an area of 21 acres, and are well and favorably known by many miners in the great carbonate camp. Three shafts, averaging about 350 feet each, have been sunk on

these claims, through the porphyry to an iron carbonate and quartzite contact, carrying gold and silver. Three other shafts have also been put down, one of which is 230 feet, and the other two 100 and 125 feet respectively. Some pay ore has been exposed, on which drifts have been already run. A large body of iron has been uncovered in the Nettie Morgan and Big Six lodes, and that in the latter is similar to the ore in the Breece mine. The officers are: S. C. Houck, President; C. A. Thompson, First Vice-President; A. B. Case, Second Vice-President; A. B. McGill, Secretary; J. H. Aller, Treasurer.

cond Vice-President; A. B. McGill, Secretary; J. H. Aller, Treasurer.

COLONEL SELLERS.—Very little, comparatively, smelting ore is being mined and shipped—only what is taken out in running the different drifts and upraises, particulary those now in operation on the smuggler ore chute, as met with on the joint upraise, and the working in the immediate vicinity. This upraise is made on the line of the Sellers and Minnie claims, and is connected with a body of ore from six to eight feet in thickness, which is of high grade, running well in silver and lead, and carrying some gold.

As the north line of the Sellers is reached, the ore body diminishes slightly in thickness, to resume very shortly to its normal condition where opened in the Willlard ground of the Silver Cord property. About 1,000 tons only of this class of ore is mined and shipped to the smelters monthly, the balance of the output going to the mill on the premises, which is now treating about 2,000 tons per month, working night and day. The trouble with the water has been obviated by making connections with the Moyer tanks, and by finning the gulch to permit the water, which is much affected by the tailings from the Antioch mill, to pass over the Colonel with the present clear supply.

Dunkin Mining Company.—It is reported that this company's accrued surplus or reserve on

DUNKIN MINING COMPANY.—It is reported that this company's accrued surplus or reserve on December 1st amounted to \$28,451.55. Recent purchases of new mining claims is the cause assigned for the passage of the usual quarterly dividend, as announced in last week's Engineering and Mining Journal.

Venue —This apparetric and all accounts the company of the second of the company of th

ING JOURNAL.

VENUS.—This property is under lease to Messrs. Carson and Dickey. The shaft has been thoroughly retimbered and sinking resumed. This claim is bounded on three sides by the Mikoda, R. A. M. and Devlin, and a deal of good ore has been extracted from the property, says the Denver Mining Industry, taken from the upper contact, the ground immediately about the shaft having been very rich. It was stoped out all about the shaft, causing the present lessees an immense amount of work, as the timbers came in, in a number of places, from lack of back support. When the station at the 350-foot level is completed, as is nearly the case now, the shaft will be carried down to a certain depth and drifting begun.

DAKOTA.

LAWRENCE COUNTY.

DULUTH MINING COMPANY.—The regular annual meeting was held at Deadwood recently. Robert McShane, Julius Rebsamen, Frank M. Mills, Wm. Naddy and Sol D. Burns were elected directors. Reports from the treasurer, secretary and superintendent showed the company owns four full claims in Bald Mountain district, on each of which the full amount of representation work required by law has been done. The company is free from debt. After stockholders adjourned directors met and elected officers as follows: President, Julius Rebsamen; vice-president, Frank M. Mills; secretary, John A. Gaston; treasurer, D. LaChapelle; superintendent, Wm. Naddy.

MICHIGAN.

IRON MINES.

The Wisconsin Central Railroad, which has re-cently purchased several mines in the Gogebic range for the purpose of controling shipments of ore over their route, has now bought the Palms mine, which adjoins the Colby.

MISSOURI.

(From our Special Correspondent.)

The following is the output of the mines in Jasper, Newton and Lawrence Counties from January 5th, 1889, to December 28th, 1889, inclusive: Lead ore, 12,000 tons, valued at \$504,000; zinc ore, 88,740 tons, valued at \$2,218,500; total value from the lead and zinc mines for the entire district, \$2,722.500. Metal products—Spelter, 30,959 tons; pig lead, 8,400 tons.

JASPER COUNTY.

In reviewing the lead and zinc mining industry for the calendar year ending December 28th, 1886, we find by referring to the statistics of former years that there has been a steady increase in the production of zinc ore. This is due to the fact that a great number of capitalists have come and made investments in mines and mining lands during the past year. Among the many that come we may mention the Lehigh Zinc and Iron Company, of Bethehem, Pa., who came here last April and purchased about 2,500 acres of mining lands around Joplin, then

organized the Empire Zinc Works Company, with a capital of \$500,000; in the meantime they purchased the Pat Murphy zinc smelters. As soon as all details were arranged they commenced a systematic plan of operation by the erection of a \$25,000 concentrating plant on one of the developed tracts of land included in the purchase. It is the intention of this company in the spring to double the capacity of the present smelters and add a zinc rolling mill with a capacity of producing 20,000 pounds of sheet zinc per day. This will be the first rolling mill west of the Mississippi river.

The following is a list of the principle mining companies in operation during the past year:

Joplin District.—Oswego Mining Company. Empire Zinc Works Company, Granby Mining Company, Sterling Lead & Zinc Company, Mining Company, Sterling Lead & Zinc Company, Interstate Mining Company, Consolidated Company, Whitsett Mining Company, Roaring Springs Company, Ferguson Land, E. D. Porter Land, Modoc Mining Company, Roaring Springs Company, Mahask Lead and Zinc Company, Pinkard Mines, Bay State Mining Company, Webb City—Canter Creek Mining Company, Webb City—Canter Creek Mining Company, Nevada Mining Company, Steelman & Co., Houghton & Sons, Bradley & Co., Joseph F. Lewis. Casterville—Tracey Mining Company, Eleventh Hour Mining Company, Jasper County Mining Company, Victor Mining Company, Eleventh Hour Mining Company, Jasper County Mining Company, Victor Mining Company, Eleventh Hour Mining Company, Jasper County Mining Company, Zincite—McClelland Land, McAvee & Co. Lehigh—Lehigh Drainage Company, Holden Land, Hostetter & Co., Baker Land, Hovner & Co. Lehigh—Lehigh Drainage Company, Jonson & Sturkey, Leckie Land, Knight Land, McAvee & Co. Galena, Kan., Southside Mining Company, in operation. In the past nine months over \$700,000 has been invested by outside parties in developed and undeveloped mineral lands. A number of large sales are now pending, which will be closed up soon after January I, 1800. One great feature during the past year has

MEETINGS.

Aspen Mining and Smelting Company, 54 Wall street, New York. Adjourned meeting January 10th, at 11 A. M.

Negaunee Concentrating Company, 29 Broad street, New York, January 8th, 12 to 1 P. M.

DIVIDENDS.

Coal Creek Mining and Manufacturing Company. Coupon No. 5 for six months' interest on the debentures of this company payable at the office of Messrs. Moore & Schley, 26 Broad street, New York.

Columbus and Eastern Coal Company. Coupons on the first mortgage bonds due July 1st, 1890, will be paid on presentation at the Bowery Bank, New York.

Consolidated Electric Light Company. Coupons maturing January 1st, 1890, payable on and after January 2d, 1890, at the American Exchange Na-tional Bank, New York.

Delaware, Lackawanna & Western Railroad Company dividend of 1% per cent., payable January 20th. Transfer books close December 31st, at three P. M.

Julien Electric Traction Company. Coupons maturing January 1st, 1890, payable January 2d, by the Mercantile Trust Company, 120 Broadway, New York.

Tennessee Coal, Iron and Railroad Company. Coupons due January 1st, 1890, on the Birmingham Division bonds of this company, payable after that date at the Hanover National Bank, New York.

Virginia Mining and improvement Company interest due on January 1st, 1890, on the trust mortgage 6 per cent. bonds, papable at the Boston Safe Deposit and Trust Company, Boston, Mass.

ASSESSMENT.

COMPANY.	No.	When levied.	D'l'nq' in office.	Day of	Amn't per share.
Belle Isle, Nev	13	Dec. 4	Jan.	8 Jan. 30	.15
Bodie	11	Nov. 11	Dec.	7 Jan. 22	.25
Bullion, Nev	35	Dec. 4	Jan.	7 Jan. 24	.25
Con. Imperial	26	Nov. 22	Dec. 2	7 Jan. 15	.05
Cons. New York. Nev				5 Feb. 5	.15
Exchequer, Nev	28	Dec. 16	Jan. 2	1 Feb. 11	. 25
Grand Prize				4 Jan. 15	.30
Mono		Nov. 18			.25
Mongold, Cal				3 Jan. 24	.25
Palisade, Nev				6 Jan. 9	.05
Ruby Hill, Nev				6 Jan. 16	.01
Russell, Cal				6 Jan. 8	.03
Summit				0 Jan. 14	.05
Trinity River, Cal	2	Nov. 27	Jan.	6 Jan. 28	.50

MINING STOCKS

[For complete quotations of shares listed in New York, Boston, San Francisco, Baltimore, Denver, Kansas City, St. Louis, Pittsburg, Birmingham, Ala.; London and Parls, see pages 581 and 582.]

New York.

FRIDAY EVENING, Jan. 3d.

New York.

FRIDAY EVENING, Jan. 3d.

In the words of a well-known trader, the "month of liquidation" has closed, and January, which, according to tradition, is a "month of profits," has begun. Logically, therefore, they reason, an improved market for mining shares is likely to ensue, and members of the committee on mining securities of the Mining Exchange, with commendable persistency, continue to predict the boom which they have been looking for and prophesying at the first of every year for the last half deade. As another broker expresses it, "We have had seven years of famine and now we are looking for seven years of plenty." To those who have followed the market year after year, and who have heard these confident predictions uttered over and over again, all of this will naturally seem simply one of those New Year resolutions which fate decrees must inevitably be broken. However, it is to be hoped with all seriousness that the introduction of new and meritorious mining properties on this exchange, the honest management of those already on the list here and the exclusion of those whose presence is objectionable, will combine to bring about a healthier interest in mining investments and enlist attention in the industry, the profits of which under proper management, are as great as any other in which capital may legitimately engage.

Perhaps the most interesting news of the week is the "Approximate statement of the financial condition and prospects" of the Comstock Tunnel Company, which was issued yesterday, bearing date of December 1st, and signed by the president and the secretary and treasurer of the company. This statement, which is published in full in our mining news columns, is rather indefinite, but apparently a more complete one will be forthcoming later on. The company is stated to have a cash surplus in its treasury amounting to the sum of about \$115,000, and there are due meolilected royalties from some of the Comstock mines amounting to about \$34,000. Except its bonded indebtedness it is stated tha

week at 17@16c. The scrip sold at \$30@\$34 in \$100 lots.

Comstock Lode shares during the week were generally quiet. Consolidated California and Virginia showed a fair degree of steadiness, with no new developments concerning the condition of the property. Sales are reported at \$4.85@\$5.13. The closing price this afternoon was \$4.50 bid, \$5 asked. Among the other sales of these shares were Crown Point at \$1.90; Alta, \$1.50; Bullion, 75c.; Exchequer, 60c.; Oriental & Miller, 6c.; Mexican, \$2.80@\$2.55; Overman, 95c.; Occidental, 80c.; Potosi, \$2.15@\$1.95; Ophir, \$3.50; Chollar, \$3.50; Sierra Nevada, \$2.15; Yellow Jacket, \$2.15; Julia, 30c.

ean, \$2.80@\$2.53; Overman, \$2.50; Chollar, \$3.50; Sierra Nevada, \$2.15; Yellow Jacket, \$2.15; Julia, 30c.
Sales of Tusearora shares included Nevada Queen at \$1.05. The market is destitute of news from the mines of this camp.

The solitary representative of the mines of the Bodie district on the sales list is Standard Consolidated, which sold on Monday at 70c., displaying some firmness.

Astoria is still reported to be changing hands at about 10c. Insiders apparently have their hands full with a number of other schemes, and are rather neglecting this stock, except so far as daily quotations go. It is probable, however, that if all the plans now in contemplation are carried out, this enterprise will be revived again. Its career so far has not been brilliantly successful. There is nothing doing in Brunswick. There is a good deal of hesitancy among the stockholders about entering the re-organization scheme on the plan proposed. We have already discussed its advantages and disadvantages in our mining news columns, to which we advise all stockholders who have not heretofore done so to refer. The idea of locking up all the stock except the 100,000 shares held by the re-organizers is a stickling point with most of the shareholders. Probably this mine has occasioned as much disappointment among investors in mining shares as any other that has been active on the list of the local exchange within the past few years. Many who had bought it at a low figure were at the point of selling out when it reached \$1.70, when the untimely death of Charles

Adler brought a sensational collapse in its value. Encouraged by the statements of the management of the company, however, many of these continued to buy even as it declined. Their feelings, when the shares were finally quoted at a cent each and the property seemed hopelessly in debt, can as well be imagined as described. One stockholder, who was met this week, had purchased his holdings at \$1.60; he said emphatically that this was his last experience in mining share speculations.

Plymouth Consolidated is quoted at \$4 asked this afternoon. Sales were made early in the week at \$2.90@\$2.95, a slight decline from previous quotations.

quotations

this afternoon. Sales were made early in the week at \$2.90@\$2.95, a slight deeline from previous quotations.

Silver King sold at 35@33c. Stockholders should remember that the annual meeting will be held in San Francisco on January 4th.

Phoenix and Arizona showed a gradual hardening tendency, selling as high as 46c, yesterday.

A moderate degree of attention was devoted to Colorado stocks. Sales included Lacrosse, at 7c.; Little Chief, at 30c., and Freeland at from 42c. to 56c. Leadville Consolidated is held at 12c., asked. The best bid is not so high as it was a fortnight ago, but still there is a steady demand for the stock at low figures. The reorganization of the Cashier Mining Company into the Brooklyn Mining Company is reported to be progressing satisfactorily. The period during which stockholders may enter into the reorganization expires early in February. A meeting of the Aspen Mining and Smelting Company will be held at the office of the company, 54 Wall street, on January 10th. The regular annual reports of superintendent and officers of the company which were not ready for presentation at the Deeember meeting will then probably be read. Stockholders seem to be inclined to take a more optimistic view of the prospects of the company, and a report showing quite a balance in the company's treasnry is anticipated. Nothing is doing in the stock, asking prices being nominally \$7 per share. Beginning with the first of the year the Colorado Central Company starts out under new superintendency at the mines. The prospects of the company seem to be clouded with a great deal of uncertainty. Ward Consolidated sold at 65c. The dividend on this stock in Deeember was something of a surprise to outsiders, but was of course an agreeable one to all interested in the success of mining speculations.

Horn Silver has shown a stiffening tendency, sales being made at \$1.80 last Saturday and \$2 yesterday, closing to-day at \$2 asked. No sales of Ontario are reported.

There has been less actual business in the Dakota shares t

Alice is steady at \$1.15 asked. No sales of Moulton were made.

There has been to a certain extent a renewal of interest in El Cristo, although quotations have not materially changed. It seems to be generally believed that the stock has not received the support from the public that was expected, but nevertheless those on the inside say that eventually it will advance to the figures they have predicted. It must be confessed that waiting for "the good time coming" is apt to be monotonous.

Treasurer Harpending's voice continues to resound through the exchange with bids of \$1.60 for any part of 5,000 shares, buyer 60 days. As there is frequently a difference of 10c, per share between the eash and 60-day quotations, the room traders take the opportunities thus afforded to get \$10 for the investment of \$100 for 60 days.

Among the sales of miscellaneous shares during the week were: Rappahannock, at 6c., and Mutual Mining and Smelting, at \$1.65.

Boston.

(From our Special Correspondent.)

(From our Special Correspondent.)

The new year opens with a strong and active market for copper stocks, which gives promise of a large business in this class of securities the coming season. Ingot copper at 14½c., with prospects of being higher in the near future, the absence of any combination to keep up prices above the legitimate basis, and an active demand for the metal will no doubt stimulate speculation in the copper stocks, and higher prices will prevail.

The market opened this morning with an active demand for Boston & Montana, large orders having been received, which carried the price from \$48 to \$50½ in a short time, with sales of about 3,000 shares. Osceola was also in active request, the news from the mine being of an encouraging nature, and the stock sold up to \$23%, although but little was to be had at that figure.

Tamarack was firm at \$150, with very little offering.

nering.
Quincy was also strong at \$70, and Franklin sold
p to \$16 ex-dividend. Atlantic advanced from
13½ to \$14½ on sale of 50 shares only.
Kearsarge steady at \$8@88%, ex-dividend.
Huron advanced from \$3 to \$3%, and National

to \$1.521/2, with sales of over 20,000 shares for the

to \$1.52½, with sales of over 20,000 snares for the week.

Butte declined from \$22 to \$15, with recovery to \$17. We cannot hear of any adverse reports concerning the mine, and can only account for the decline from an absence of orders to purchase and a forced sale of stock in order to depress the price. Pewable sold at \$7. Bonanza at 87½@90e. Mesnard at 50c. Calumet & Hecla has been very quiet this week. It sold up to \$250 on the 27th for a lot of \$9 shares. A few shares sold later at \$255@\$256.

Dunkin silver declined to 65c. on small sales.

3 P. M.—At the afternoon call Boston & Montana was firm at \$50¼ @ \$50½. Butte declined to \$16; on sale, 300 shares. Santa Fe fell off to \$145. Oscola strong at \$23½ @ \$23½. Kearsarge and Franklin steady at \$8 for former and \$15¼ for latter.

Denver.

The following call has been issued to the members of the Denver Mining Exchange:

An adjourned meeting of the members of the Colorado Mining Stock Exchange will be held on Monday, January 6th, at 7:30 p. M., in the Chamber of Conmerce. The objects of the meeting are: First—To formally vote in the fifty extra members to whom certificates were issued under the \$150 rate. Second—To decide the question of issuing another 100 certificates at either \$400 or \$500 each for the purpose of realizing sufficient funds to purchase a site upon which to erect a building for the exchange. Third—To vote upon the adoption of the revised constitution and discuss such other matters as may come up.

Lake Superfor Gold and Leon Stocks.

Lake Superior Gold and Iron Stocks.

(Special Report by David M. FORD, Houghton, Mich.)
The prices of the gold and iron stocks show but little change, but continue to be in demand.

GOLD MINING STOCKS.	D	ec. 28.
Name of Company Par value. Grayling Gold & Silver Co	Lowest. \$0.90 2.50 .75 2.25	High. \$1.00. 3.50 .90 2.50
IRON MINING STOCKS.		
Name of company. Par value. Ashland Iron Co. \$25.00 Aurora Iron Co. 25 00 Champlon Iron Co. 25 00 Chandler Iron Co. 25 00 Chapter Iron Co. 25 00 Chepin Iron Mining Co. 25,00 Cheval Iron Co. 25 00 Germania. 25,00 Jackson Iron Co. 25 00 Jackson Iron Co. 25 00 Milwaukee Iron Co. 25 00 Milwaukee Iron Co. 100,00 Montreal Iron Co. 25,00 Norrie (Metropolitan). 25,00 Odanah Iron Co. 25,00 Odanah Iron Co. 25,00 Pittsburg Lake Angeline Co. 25,00 Republic Iron Co. 25,00	Bid. 7.50 \$100.00 44.00 25.00 125.00 19.00 100.00 62.00 4.00 80.00 62.00 48.00	Asked. \$65.00 8.00 110.00 45.00 33.00 120.00 11.00 66.00 85.00 5.50 65.00 15.00 160.00 49.00
	20000	20.00

PIPE LINE CERTIFICATES.

(Speelal Report by Messrs. Watson & Gibson.)

The oil market is destitute of all features. Owing to floods and muddy roads the usual amount of work was not done in the field in December, hence the report of development work was bullish, but speculation is dead in this commodity.

		NEW Y	ORK STO	CK EXCH.	ANGE.	
D			Highest.			Sales.
Dee.	28	1031/6	1031/2	1031/6	10314	66,000
	30	1031/4	1031/2	102%	1031/4	43,000
	31	1031/4	1031/2	1015%	102%	211,000
Jan.	1*					
	2	1021/2	1025%	1021/6	10254	72,000
	3	1025%	1031/2	10258	1031/2	164,000
	Total s		arrels * New Ye		•••••	556,000
CO	NSOLID.	ATED STO	OCK AND	PETROLE	UM EXCHA	INGE.

		New 16	ars.		
CO	NSOLIDATED STO	OCK AND	PETROLE	UM EXCHA	NGE.
Dee.	Opening. 28 103½ 30 103¼ 31 103¼	Highest. 1031/4 1035/6 1031/4	Lowest. 103¼ 102% 101¼	Closing. 103% 103% 102%	Sales. 21,000 195,000 375,000
Jan.	1* 2 103 3 103½	103½ 103¾ 103¾	1023/4 1031/8	1031/6 1031/2	395,000 215,000

Total sales in barrels...... 1,201,000 * New Year's COAL TRADE REVIEW.

NEW YORK, Friday Evening, Jan. 3. Statistics.

In our annual review of the anthracite coal trade in 1889, on another page, will be found the latest statisties of production both by companies and by regions, including the output to the last day of the year.

PRODUCTION OF BITUMINOUS COAL for week ended December 28th and year from January 1st:

l	Quincy was also strong at \$70, and Franklin sold	EASTERN AND NORTHERN SI		
1	up to \$16 ex-dividend. Atlantic advanced from \$13\% to \$14\% on sale of 50 shares only.	Tons of 2.240 lbs. Week.	9. Year.	Year.
	Kearsarge steady at \$8@\$8\%, ex-dividend.	Phila. & Erie R.R. 2,733 Cumberland, Md. 70,000	88,631	70,179
	Huron advanced from \$3 to \$3%, and National	Barelay, Pa 7,500	3,137,964 135,500	3,590,483 161,366
1	sold at \$2%.	Broad Top, Pa	376,801	385,150
1	Allouez has taken quite a jump the past week, owing to reports that the mill was to be put in	Clearfield, Pa 60,748 Allegheny, Pa 15,240	3,184,327 918,374	3,364,952 810,806
1	operation again and the mine worked for all it is	Beach Creek, Pa	1,378,967 1,614,568	1,512,384 1,387,280
١	worth. Price advanced from \$1.05 to \$2\fomath{1}, with reaction to 1\fomation.	Kanawha, W. Va 35,300	1,599,164	1,621,079
	Sante Fe dropped to \$1.30, with later recovery	Total	12,437,296	12,903,679
	a something and		,,	

WESTERN SHIPMENTS Pittsburg, Pa 13,133 Westmoreland, Pa 34,506 Monongahela, Pa 4,175 Total..... 51,714 15,044,952 15,581,080 Grand total.... 320,620

PRODUCTION OF COKE on line of Pennsylvania R. It. for week ending December 28th, and year from January 1st, in tons of 2,000 lbs.: Week, 1s2,233 tons; year, 4,553,618 tons: to corresponding date in 1883, 4,126,303.

Anthracite.

Anthracite.

There is altogether too much coal on the market to permit of a very confident feeting as to the future of the trade during the next mouth or two. Notwithstanding the number of collieries that have been reported closed down, the production for last week was larger than during the corresponding week in 1888. It showed a decrease, fortunately from the inordinate and unnecessarily large production of the week previous. Almost a total suspension of production is imperative if the weather continues as mild as it is at present. The gentlemen in charge of our producing interests know this as well as any one else, and it is to be hoped that they will lose no time in bringing such a restriction about. The weather this year seems to have been prepared for the express purpose of teaching anthracite coal producers a severe moral lesson. It has long been evident that only one of two things, as we have frequently stated, would bring about a decided change for the better in the hard coal trade. One of these was a pronounced cold snap and the other a stoppage of production. In years past the miners of anthracite coal have always been unwilling to resort to the latter expedient, but this year the mildness of the weather should convince them that their only salvation is the course which seems so disagreeable to them. The trade in its present condition cannot endure many more violations of agreements as to production. Honesty now is not only the best policy but the only policy.

A meeting of the general sales agents was to be held this afternoon, but was postponed until next Tuesday afternoon.

Tuesday afternoon. But was postponed that hext Tuesday afternoon.

There continue to be rumors as to the amount of coal held by various firms, all of which does not put a cheering aspect on the situation.

Mr. John H. Jones sends us the following state-ment of shipments of anthracite coal (approxi-mated) for the week ending December 28th, 1889, compared with the same period last year:

Regions.	Dec 28, 1889.	Dec. 29, 1888.	Difference.
Wyoming Region.Tons Lehlgh Region " Schuykill Region. "	221,933 99,586 150,269	93.601	Dec. 26,649 Inc. 5,985 Inc. 31,566
Total Total for year to date	471,788 35,224,116		

Bituminous.

The week in the soft coal trade has been featureless so far as news is concerned. At the lower
shipping ports, particularly Philadelphia, Baltimore, and Norfolk, vessels have lately been very
scarce, and there has been some slight accumulation of coal in consequence thereof, but this is
only temporary. As soon as some of the vessels
now in the East return to Southern ports it will
be entirely disposed of. The demand continues
large at full prices.

There is nothing new to report concerning the
progress of the soft-coal combination, save that
several more signatures have been obtained to the
sales of coal before February 1st. Many consumers
have contracts for about all the coal they require,
which do not expire until March 1st, and, in the
meantime, attention is directed to the fulfilment
of these contracts.

Beston. The week in the soft coal trade has been feature

Boston.

of these contracts.

Boston.

IFrom our Special Correspondent.!*

The anthracite coal market has been as flat all the week as the flattest pancake ever seen. The thermometer was 50 above to-day and overcoats were a burden. It is useless to contend that prices are strong in view of these facts. A good buyer can place an order for store at his own figures. The steam sizes of anthracite are well sold up owing to the shortage in bituminous, but domestic sizes are plenty enough, notwithstanding the curtailment. Any forcing on part of the companies would completely demoralize the market. It is scarcely likely that we shall have any very cold weather, but dealers do not despair of a few sample days of the old-fashioned winter of our grandfathers.

The bituminous movement is active as the limited supply of soft coal permits. Those shippers and jobbers who have been in position to sell coal for immediate delivery have made money in the last month; they have easily obtained asking prices. Most of the coal readily available is in jobbers' hands now. The soft coal roads are doing a little better by the operators, and it is not quite as difficult to get bituminous along as it was last week. If there continues to be an improvement, even though slight, contractors will manage to worry through the season. Bituminous will bring \$2.75 f.o.b. easily. The increased amounts available for shipment are mainly Clearfield; Cumberland coal will be in short supply

for some months to come; practically speaking there is no Cumberland coal for sale to-day.

The freight situation is unchanged. New York rates are 80@90c.; Philadelphia, \$1.30; Baltimore, \$1.50@ \$1.60.

The retail trade is lifeless, and dealers are unhappy. The days begin to lengthen, but the cold does not begin to strengthen, and possibly it is hope deferred that giveth the coal dealer La Grippe. A great many in the trade are down with the distemper.

The exact figures of coal receipts at this port for the year 1889 are: Anthracite, 1,637,338 tons, against 2,057,297 tons in 1888; bituminous, 914,966 tons, against 1,001,195 tons in 1888. The falling off in anthracite is very marked, considering that there is an appreciable yearly increase in the consumption of domestic sizes of anthracite.

Only 5,538 tons of provincial coal were imported.

Buffalo.

Jan. 2.

Buffalo.

(From our Special Correspondent.)
Anthracite coal goes begging. Trade very dull in consequence of mild weather and the accumulation of stock. Prices unchanged, and no indications of a change—either higher or lower—for

Bituminous coal in fair demand and the market may be quoted with a weak tone. Supply adequate for want of manufacturers and consumers generally.

for want of manufacturers and consumers generally.

The coke trade without notable features.

Items very scarce this week; hope that some interesting features will be developed soon.

The coal shipping and the retail trestles and the wharf of the Central Dock and Terminal Company, in this city, are complete and ready for business. Details of the structures, capacity of trestles, etc., have been noted in your columns while their construction was in progress. This work is the most notable achievement in the way of business progress during 1889. The contractors being H. M. Ellsworth, of Rochester, and A. F. Chapman, of Watkins. The work was not begun, however, until March 25th, and it was finished on the 20th of last month. The total number of working days was 208.

until March 25th, and it was finished on the 20th of last month. The total number of working days was 20s.

The first thing done was the dredging out of the channel on both sides of the jetty pier, 90 feet wide and 725 feet long, so as to give 18 feet of water. This was followed by the putting in of cribwork as a foundation for the main wharf on which rests the shipping trestle, and also for the breakwater on the northwest side. So the work has progressed steadily and rapidly to a completed whole that today affords an interesting study to the observer.

The main wharf, which is 75 feet wide and 1,000 feet long, has a total frontage of 316 feet for vessels and 40 pockets on either side, each having a capacity of 65 tons, making the total capacity of 65 tons, making the total capacity of the big structure, in round numbers, 5,000 tons. On top of the pockets there are four tracks upon which to handle loaded cars and a fifth for returning light cars by gravity to the ground below. Each track has a Fairbanks scale of 80,000 pounds capacity. On each side of the main wharf, as before stated, there is a slip 90 feet wide with 18 feet of water, from which a channel of the same depth leads out into the lake around the northwest end of the old breakwater. The height from the water line to the top of the wharf is 9 feet, and from the wharf to the top of the wharf is 9 feet, and from the wharf to the top of the wharf is 9 feet, a total of 45 feet. The north slip is protected by a breakwater 650 feet long and 35 feet wide. It consists of crib work 20 feet deep, filled with broken stone. The approach to this trestle begins beyond Carolina street, level with the tracks of the New York Central, and between these tracks and the canal, and with an up grade of three feet in 100, reaches its highest elevation of 35 feet at a point on a line with the top of the pocket work, and 1,004 feet from the starting point. The connection with the trestle is by an iron riveted bridge resting on iron columns, which was built by the Rochester Br

(From our Special Correspondent.)

(From our Special Correspondent.)

Coal.—The trade is not very active, dissatisfaction being the rule and not the exception. The year just closed does not show a balance on the right side of the ledger. This fact prevents coal operators from being in the best humor. The year's shipments by the Ohio River, compared with 1888, show a deficiency exceeding 40,000,000 bushels. Most of the mines are now in operation.

The nominal rates are:

PRICE OF COAL PER 100 BUSHELS = 7,600 LBS.
First pool.....\$4.75 | Fourth pool.....\$3.25
Second pool.....\$4.75 | Fourth pool.....\$3.25
Second pool.....\$3.90 | Railroad coal.....\$5.00025.50
Third pool......\$3.90 | Connellsville Coke.—At the last moment the coke men decided not to advance prices to \$2.
Production keeps pace with the demand, and holidays' always interfere with business, the present ones being no exception. At some points cars are still scarce; others, again, have all they require.
The coming week business will resume its former position.

position.
Quoted rates are: Furnace, f.o.b., \$1.75; foundry, \$2.05: crushed, \$2.55.
Freights.—Shipments, 70c.; Mahoningh and Shenango valleys, \$1.35; St. Louis, \$3.65; Chicago, \$2.75: Cleveland, \$1.70.

John Brennen, formerly of the Pittsburg post office, but now general superintendent of McClure & Co.'s coke works, was in Pittsburg yesterday. Mr. Brennen is a brother of W. J. Brennen, the well-known Democrat. He is the youngest manager in the region, and his popularity is unbounded. He says the coke workers' scale of prices for the year will be presented to the operators on the fith inst. The scale, he says, will call for many privileges not now enjoyed by the cokers. There will be no demand for an advance of wages, but he believes the demand for privileges will be greatly modified before the scale is accepted by the operators. He does not believe there will be a strike. The strike which has been in progress since Tuesday, 31st December, at the Buckeye Coke Works, of 160 ovens and about 200 men employed, is at an end. The company reinstated a couple of discharged men, over which the trouble arose, and the works will be in full blast in the morning. A few members of the Executive Board of Knights of Labor held a meeting here to-day, but they would not say what was transacted. It is understood they are making preparations for a fight should the operators not sign their scale of wages for '90.

FREIGHTS.

FREIGHTS.

From Baltimore to: Boston, Mass., 1.60; Bridgeport, Conn., 1.40; Brooklyn, N. Y., 1.00; Charleston, .80; Fair Haven, Mass., 1.40; Fall River, 1.40; Galveston, .300; New Bedford, 1.40; New Haven, 1.40; New London, 1.40; New York, N. Y., 1.05; Portland, 1.60; Portsmouth, Va., .60; Providence, 1.40; Quincy Point 1.80; Riehmond, Va., .85; Salem, Mass., 1.60; Savannah, 1.00; Somerset, 1.40; Williamsburgh, N. Y., 1.10.

From Philadelphia to: Alexandria, Va., 1.00; Boston, Mass., *1.40@150; Charleston, .75; Galveston, 3.05; Georgetown, D. C., 1.00†; New York, .90†; New Orleans, 2.75; Norfolk, Va., .75†; Providence, R. I., *1.20@1.30; Richmond, 1.00; Savannah, .90; Washington, 1.1.00; Wilmington, N. C., *1.00.

* And discharging. † Alongside. ; And towage.

METAL MARKET.

NEW YORK, FRIDAY EVENING, Jan. 3. Prices of silver per ounce troy.

Dec.	Sterling Exch'ge.	Lond'n Pence.	N. Y. Cts.	Jan.	Sterling Exch 'ge.	Lond 'n Pence.	N. Y.
28 30	4.821/g 4.82	43% 43 15-16	9434 9476	1*	4.83	441/4	951/6
31	4.82	44	95	3	4.83	441%	95%

*Holiday. Council bills advanced 1-32d on this week's al-

Silver has been strong and advancing on good London demand for India shipment. Depressing influence, however, has been our tight money market and consequent weak ex-

United States Assay Office at New York reports total receipts of silver for the week 90,000 ounces. **Domestic and Foreign Coin.**

The following are the latest market quotations for American and other coin:

	Bid.	Asked
Trade dollars	.75	s -
Mexican dollars	.75	.76
Peruvian soles and Chilian pesos	.72	.731/
English silver	4.83	4.88
Five francs	.94	.95
Victoria sovereigns	4.85	4.88
Twenty francs	3.85	3.90
Twenty marks	4.74	4.78
Spanish doubloons	15.55	15.70
Spanish 25 pesetas	4.80	4.85
Mexican doubloons	15.55	15.70
Mexican 20 pesos	19.50	19.65
Ten guilders	3.96	4.00

Tin.—Our market on this side has been in a dragging condition during the greater part of the

week with business restricted, and the quotations for spot tin, ranging from 21'15c. to 21'25c., which prices are about 1/3c. below the London parity. To-day a decidedly better feeling became apparent and the closing prices are: Spot, 21'25c.; January, 21'25c.; February, 21'25c.; March, 21'35c.; April, 21'40c.

The London market has been very strong, and the latest cable quotations received to-day are: the best at £97 10s. @£97 12s. 6d. spot, and £97 10s. @£97 15s. three months.

Lead has been dull and neglected, buyers

Lead has been dull and neglected, buyers and sellers showing no disposition to do anything. Under these circumstances hardly any business has been transacted and quotations are greatly nominal at 3°85@3°90c.

The latest London quotations are: English, £14 10s.; Spanish, £14 5s.@£14 10s.

The St. Louis Market.—Messrs. John Wahl & Co. telegraph ns as follows: The usual holiday week dullness has characterized our lead market. Transactions were few and far between at say 3°60c. for common and 3°62½c. for corroding. The opening of the new year appears to have nothing striking in store for the metal, and the concensus of opinion is that some time will elapse before it is safe to look for a "healthy advance."

The Chicago Market.—Messrs. Everett & Post telegraph us as follows: Lead is steady at 3°70c. asked, 3°65c. bid. Sales aggregate 200 tons at 3°67½c. In this market trade for the year has been slightly in excess of 1888, and values have been very satisfactory to all concerned. The average price of pig lead for the year is 3°67½c, and is lower than since 1884. Stocks at this center are about the same as at the opening of 1889, and although the opportunity was offered to sell some at and around 3°95c., no trades were consummated.

Spelter continues firm with very little metal effering, and we have now to quote \$5.446@\$5.50

Spelter continues firm with very little metal offering, and we have now to quote \$5.45@\$5.50 delivered New York for prime Western.

Autimony remains very firm with Cookson's quoted at 28c. and Hallett's at 20%c.

IRON MARKET REVIEW.

IRON MARKET REVIEW.

New York, Friday Evening, Jan. 3.

Pig Iron.—The Thomas Iron Company has opened its books for 1890 deliveries at \$20 for No. 1 foundry, \$19 for No. 2 and \$18 for gray forge. These prices were announced late this afternoon, and, as will be noticed, are the same as those predicted in this column. While the announcement of these prices to some extent may have been discounted, the fact that they have been officially fixed is an event of no little importance, and will have a powerful influence upon the market in steadying values and in fixing definite prices for future negotiations. As we have from time to time pointed out, the altered conditions under which the new year has opened have contributed elements of uncertainty to the market, and there has been naturally a hesitancy on the part of both buyers and sellers to close contracts for long periods to come at any definite figure. Now that this influential company has definitely fixed its prices, and as these prices agree with the quotations privately given to us by other prominent companies, it seems probable that the market will rest upon a very secure foundation. The Thomas Company will book orders only from its regular customers, and will have no iron to sell to outsiders until the wants of their regular patrons are supplied. The company has booked orders for forge irons aggregating about 80,000 tons. The buyers are understood to be pipe makers, principally, who, in fixing their schedules for the year, are, of course, obliged to determine definitely the cost of their crude material. The various orders for forge irons aggregating the above amount have been reported regularly during the past six weeks in this column as they have been placed.

Scotch Pig.—Cables received to day from Glasgow report a further advance. Scotch warrants have been listed on the London Stock Exchange. This news has much significance. Additional facilities will thus be afforded to the investing public for speculation in these warrants, and "booms" are likely to be of

quoted. Ferro-manganese quotations range from \$100 to \$105 for 80 per cent.

Steel Rails.—Temporarily there is a dearth of new business, but a feeling of confidence is apparent on all sides. During December it is estimated that the orders booked for 1890 delivery aggregated not much over 35,000 tons, making a total quantity already booked for 1890 about 635,000 tons. There have been a number of inquiries in the market, notably one for 15,000 tons for the South, but these have not all been eash propositions, which are the only kind that mills care to listen to under present circumstances. Money is not really scarce although it has been greatly manipulated of late, but it does not seem to be very equally distributed among buyers of rails.

Structural Iron and Steet.-Ruling prices are

steel, 23/c.

Pipes and Tubes.—Rates of discount on wrought-iron pipe remain as follows: Butt welded, plain and tarred, 50 per cent, discount; galvanized, 42½ per cent, discount; lap-welded, plain and tarred, 62½ per cent, discount; galvanized, 50 per cent, discount. A discount of 55 per cent, is allowed on boiler tubes of 2 inches and larger, and 50 per cent. on 1¾ inches and smaller. Cast-iron pipes remain at \$25@\$28, according to size Pipes

ze. Rail Fastenings. — Ruling prices may be uoted as follows: Spikes, 2°25c.; angle fish plates, 15@2°25c.; bolts and square nuts, 3c.; hex. nut,

3 25c.
Old Material.—Consumers are undoubtedly in need of raw material, but at the moment are unwilling to pay the prices asked. Old iron rails continue to show a hardening tendency, the latest quotations for tees being \$28.

Louisville.

(Special report by Messrs. Hall Brothers & Co.)

There is nothing especially new to be said about the market, except that the volume of business has increased considerably during the past week. Some concerns have made inquiries for round lots of iron, for future deliveries, covering several grades, but they are slow to decide purchases; and it is thought on some of them conclusions will not be reached until after the first of the year. The be reached until after the first of the year. The inquiries are, therefore, construed as a feeler of the market, and will, probably, result in round purchases, as some of them need the metal. Trades during the week past have been mainly in quantities ranging in car lots, up to two, five, and 600 ton

		t Blast Foundry Irons.	
Southern	Coke No	. 1	19.50.
66	" No	. 2 18.75@	19.00.
44	" No	. 3 19.00@	18.75.
Mahoning	Valley.	Lake ore mixture 20.00	
Southern	Charcoa	l No. 1 18,50@	19.00.
£6	**	No. 2 18.00@	18.50.
Missouri	+6	No. 1	20.00.
44	+6	No. 2 19.00@	19.50.
		Forge Irons.	
Neutral (Coke	17.50@	

| Car Wheel and Malleable Irons. | Southern (standard brands). | 23.50@ 24.50 | 24.50 | 29.50 | 29.50 | 23.00@ 23.50 | 23.00@ 23.50 |

news has much significance. Additional facilities will thus be afforded to the investing public for speculation in these warrants, and "booms" are likely to be of even more frequent occurrence, all of which is particularly encouraging to American producers, who are hoping to maintain their complete independence and to be free from any fear of foreign competition.

Speigeleisen and Ferro-Manganese.—The new year opens with a very marked scarcity of manganese ores. In fact this scarcity has been growing steadily throughout the year, and has, of course, materially aided the tremendous advance in this line which has taken place. The American sources of supply have not been increased and, in fact, our production seems to be falling off. Foreign advices also state that the increase in production abroad will not be important and will be more than absorbed by the increasing demand during the year on account of the boom in the steel industry abroad. Thus it seems that a continuance of high prices is very probable. In this market there are a number of important inquiries in sight, but consumers, on account of the high prices ruling, are reluctant to close contracts, before long, however, they will be obliged to do so. For speigeleisen, 20 per cent. \$37.50 is Philadelphia.

Foreign Material.—Twenty per cent, spiegeleisen is wanted at \$37, and held at \$38. It is rumored that a further advance is to take place, but as to the facts of the matter we can say nothing. Ferro-manganese is quoted at \$95.60

nothing. Ferro-manganese is quoted at \$95@ \$100.

Muck Bars.—Another advance has taken place in muck bars, nominally, at least; and those who are in position to speak with authority say that present quotations will be paid without question when buyers ascertain the actual condition of things. Consumers would be glad to get supplies at \$30.50@\$31, but asking prices are \$31.50@\$32.

Blooms and Biltets.—While no large transactions in blooms and billets have been reported this week, there are several large buyers who would like to be accommodated, and manufacturers have promised that they shall be taken care of in any event. The figures at which large business will be taken have been made, but are not publicly known. Several large blocks are wanted.

Merchant Iron.—Very little business was transacted this past week, and it is not likely that there will be any rush next. The mills are pretty well off, and ruling prices for refined are 1 90c. Nails.—Nails are strong but quiet at \$220 and

wen on, and runing prices for refined are 190c.

Nails.—Nails are strong but quiet at \$2.20 and \$2.40, respectively, for iron and steel. Mill owners who have expressed opinions say that the signs to-day are as favorable as a month ago, and that the Pennsylvania nail factories will probably run steadily all winter, for the purpose of accumulating stocks for the coming season. No reaction is considered probable.

Skelp Iron.—Skelp is very strong at 190c. for grooved, and 2-20c. for sheared.

Wrought Iron Pipe.—The pipe makers expect a large amount of business soon, or so it would appear, from the manner in which they are endeavoring to hurry forward negotiations for material.

Sheet Iron.—Sheet iron is very strong, but the retail distribution this week has been unimport-

retail distribution this week has been unimportant.

Plate and Tank Iron.—Nonew orders of consequence have been received, but things look all right for manufacturers. Those who are watching the buying interests say there are a great many orders to come in, and that a large number will come in in January. Tank is quoted at 2.35c. for iron, and 2.70c. to 2.80c. for steel. Shell is 2.60c. to 2.70c.; flange, 3.25c.; fire-box, 3.75c.

Structural Iron.—Those who are accustomed to speak for the structural iron trade say that within the past week or so a great deal of business has been unearthed, but which will not be placed for an indefinite time. There is an inclination, so they say, among promoters of large enterprises calling for structural iron to make contracts two or three months ahead. Capitalists and others engaged in large enterprises are thoroughly aroused to the probability that 1890 is to be a booming year, both as to demand and prices, and, from all we can learn, they seem inclined to protect themselves against possible fluctuations. Angles are quoted at 2.30@2.35c.; tees, 2.80c.; beams and channels, 3.10c.

Steel Rails.—Steel rails are quoted at \$35 in

3'10c.

Steel Raits.—Steel rails are quoted at \$35 in large lots. Reports for the week are very unsatisfactory so far as new business is concerned. While business has been very quiet, there has been a great deal of talk on the street as to what is likely to be done before the close of the present

month.

Old Raits.—Old rails are quoted nominally at \$28; but owing to the very light supply on hand, the unwillingness of holders to name prices and the unwillingness of buyers to pay fancy figures, no business has been closed.

Scrap Iron.—No. I is nominally \$25 and choice \$26. Yardmen and brokers are negotiating as fast as possible for a great deal of cargo and carload stuff to be delivered during the winter, and some of them expect to have enough to meet the wants of all their customers.

Pittsburg.

Jan. 2.

some of them expect to have enough to meet the wants of all their customers.

Pittburg.

[From our Special Correspondent.]

Raw Iron.—Our first report for the new year has to record, in spite of the holidays, a good demand for leading descriptions of gray forge and Bessemer. The raw iron sales reported in the Engineering and Mining Journal for 1889 amount to 1,923,050 tons, exceeding the previous year by 813,189 tons. We also reported sales of 3,000,000 tone Bessemer ore, at an advance of \$1 per ton over the previous year's prices; from this it will be perceived that our iron and steel business is growing at a wonderful rate, being without doubt the leading iron market of this country; the trade is yet in its infancy and there is no telling what the future has in store for us.

We hear persons talking about prices reaching the highest point ever known.

Gray forge iron has been sold in this market at \$55 per ton. These figures will never be repeated. The world, is moving steadily on, and those who fail to catch on are certain to be left. It makes no difference how long you have been in the business, there is plenty to learn, and the sooner the fact is realized the better. Years ago iron was sold on four and six months and sometimes even longer. A cash sale was something that did not often occur. Now things are changed. A time sale is seldom made. Formerly leading houses confined their business principally to pig iron and occasionally a sale of blooms. How is it no w?

Leading brokers sell pig iron, blooms, billets, muck bar, spiegel, ferro-manganese, steel rails, structural iron, skelp iron, bloom ends, steel wire rods, iron ores, old iron and steel rails. The fact is there is scarcely a limit to their transactions. A new feature in the market is the purchase by Eastern dealers of steel billets; some round lots are under negotiation for delivery East. This is something that does not occur very often; but then iron and steel must be had, and when it becomes scarce Pittsburg is found to be equal to the occasion.

Coke and Coal Smelted Lake Ore.

Coke and		

Cont and Com 2	
3,000 Tons Bessemer	
2,000 Tons Gray Forge	18.00 cash.
2,000 Tons Gray Forge	
3,000 Tons Bessemer	24.25 cash.
1,500 Tons Bessemer	23,80 cash.
1,000 Tons Bessemer	24.00 cash.
1,000 Tons off Bessemer	
1,000 Tons Mill Valley Furns	ce 18.00 cash.
1.000 Tons Gray Forge.	18.50 cash.
1,000 Tons Gray Forge 1,000 Tons Neutral Forge	
1,000 Tons Gray Forge	19.00 cash.
1,000 Tons off Bessemer	
750 Tons Gray Forge	18,50 cash.
750 Tons Gray Forge, Cold	Short 18.00 cash.
750 Tons Gray Forge	18.75 cash.
500 Tons Gray Forge	
500 Tons Gray Forge	18,50 cash.
500 Tons Gray Forge Coke, Na	tive Ore.
1,000 Tons Gray Forge	17.50 cash.
400 Tons No. 2 Foundry	18.75 cash.
100 Tons Mottled	
100 Tons Clear Gray Forg	e
50 Tons Silvery No. 2	18,00 cash.
50 Tons Silvery Extra	
Muck	Bar.
1,500 Tons Neutral, Januar	v 31,50 cash.
1,500 Tons Neutral, January	and February 30.50 cash.
500 Tons Neutral, January	7 30.50 cash.
500 Tons Neutral	31,25 cash.
500 Tons Neutral Steel Slabs	and Billets.
4 000 Tons Billets and Slabs.	: 36.75 cash. l
2.000 Tons Billets	37.00 cash
2.000 Tons Slabs, Wheeling.	36.25 cash.
2,000 Tons Billets 2,000 Tons Slabs, Wheeling. 2,000 Tons Billets	
750 Tons Billets	37.00 cash.
Steel W	ire Rods. 37.00 cash.
500 Tons American Fives	50.00 cash.
wete ste	et Raus,
22,000 Tons. Spring deliver	ry for Western
Roads	34 60 cash.
Sni	egel.
100 Tons 10 to 12 per cent	32.60 cash.
Skeln	Iron.
2,000 Tons Sheared Iron	2.121/9 4 mo.
1.500 Tons Wide Grooved	
1,000 Tons Narrow Grooved.	1.85 4 mo.
Bloom	Ends.
3,500 Tons Mixed Lots	
Pi	ices.
Coke or Bituminous	20% Spiegel at
Pig-	seaboard 36,00@37.0
	Muck-Bar 31,00@31,50
Foundry No. 1\$20.00@20.25	Steel Blooms. 36,00@37.00
Foundry No. 1\$20.00@20.25 Foundry No. 2 19.00@19.25	Steel Slabs 35.75@36.00

	Scabbata boloocot.o
	Muck-Bar 31.00@31.50
Foundry No. 1\$20.00@20.25	Steel Blooms. 36,00@37.00
Foundry No. 2 19.00@19.25	Steel Slabs 35,75@36,00
Gray F. No. 3 18.00@19.00 No. 4 @17.50	Steel Cr'n Ends 25,00@26.60
" No. 4 @17.50	Steel Bl. Ends. 25.10@26.00
White 17.00@17.25	Ferro-Man., 80%
Mottled 17.00@17.25	102.50@105.00
Silvery 18.00@21.00	Steel Billets. 36.50@37.00
Bessemer 24.00@24.50	Old Iron Rails.: 27.50@28.00
Low Phos@28.00	Old Steel Rails. 23,00@24.00
Charcoal Pig-	No. 1 W. Scrap. 22.00@23.00
Charcoai Fig-	No 2 W Scrap @19.00

Low Phos@28.00	Old Steel Rails.	23.00@24.0
Charcoal Pig-	No. 1 W. Scrap.	
	No. 2 W. Scrap.	@19.0
Foundry No. 1 23.50@24.50	Steel Rails	@35.0
Foundry No. 2., 22.00@22,25	" light sec	35.00@38.0
Cold-Blast 25,00@ 48.00	Bar Iron, nom	1.90@ 1.9a
Warm Blast 24,00@25,00	Iron Nails	2,25@ 2,3
10 + 12% Spiegel	Steel Nails	2.25@ 2.3
at seaboard 30.00@32.00	Wire Nails	2.90@3.0
		_

CHEMICALS AND MINERALS.

New York, Friday Evening, Jan. 3.
In all branches of the markets covered by this report, the year just opened promises to be fruitful of interesting and important events. It will be not only to the advantage but absolutely necessary to both consumers and purchasers to use every means available to secure at all times an accurate knowledge of current progress. This the Engineering and Mining Journal has in the past endeavored to record, and we trust that in the future it will not be found wanting.

Heavy Chemicals.—With the single exception

Double manure salts, 48 to 51 per cent. sulphate past endeavored to record, and we trust that in the future it will not be found wanting.

Heavy Chemicals.—With the single exception of bleaching powder, it is thought that higher prices will rule for all of the so-called heavy chemicals during the year on which we have just entered. Soda ash and refined alkali are not only scarce on the spot, but are obtainable only with some difficulty for future delivery, and the probability of increased consumption early in the year arising from the resumption of work by the glass manufacturers, encourages holders to believe that higher prices will prevail.

For carbonated soda ash, 48 per cent., \$1.35 to \$1.45, according to quantity and brand, is now asked. For retined alkali, 58 per cent., on the spot as high as \$1.50 is quoted, Futures can probably be obtained at \$1.37½.

Caustic soda is somewhat scarce on the spot. At the beginning of the new year higher prices for raw material and fuel will go into effect on the other side, and consequently cable advices received from Liverpool this week quote prices higher than they have been. Cable advices received yesterday afternoon indicate that the cost of importation of 70 and 74 per cent. will be \$2.40. On the spot there is a small supply that can probably be obtained at \$2.356 \$2.37½.

Bleaching powder still continues to be the weak spot on the list. For lots ex-store, \$1,50 is quoted. Forward deliveries can probably be obtained at \$1.350 is quoted. Forward deliveries can probably be obtained at \$2.360 \$2.37½.

\$1.45. Dealers are hoping that ere long a reaction in the long continued depression in this article will ensue. It must be confessed that so far as can be judged, at present, the outlook is not encouraging. There is a possibility, however, that some of the influences which have been affecting the market very powerfully during the year, may be shifted so that values may be advanced.

Hyposulphite of soda is quoted at \$1.50 per pound in casks, and \$1.60 per pound in kegs.

Acids.—The new year opens under conditions

pound in casks, and \$1.60 per pound in kegs.

Acids.—The new year opens under conditions that are in many ways without a parallel in recent years. In the first place, during the last six months trade has been much better than usual; stocks at present are supposed to be lighter than they have been on January 1st any time during the past ten years; thirdly, and most important of all, the greater part of trade is now included in a more or less "iron clad" combination, a condition of affairs which only a few years ago many manufacturers would have deemed as far off as the millenium.

fairs which only a few years ago many manufacturers would have deemed as far off as the millenium.

The Standard Oil Company is reported to have made some large purchases of acid lately.

The management of the Knickerbocker Chemical Company is very much gratified with the unanimity with which the schedule prices adopted last July have been adhered to. There has possibly been some cutting by those who are not included in the combination, but it is said that this has not amounted to much. Consumers have not hesitated to close contracts, particularly as a number have been made with the proviso that if the combination prices are not maintained, contracts will be filled at ruling market values. If those who are earnestly and energetically supporting the combination are right in their views, however, there is very little likelihood that consumers will find this last proviso necessary. Prospects for an increased consumption of acid during the year are apparently good; but if the demand does not come up to expectations, the combination professes to be able to regulate the matter of production, and thus the trade seems to be likely to be kept in a satisfactory condition. Raw material, in nearly all cases, is cheap. Of course there is a great deal of doubt as to the course that will be pursued, under varying circumstances, by those who are not included in the combination, but the members of the "combine" think it probable that the so-called outsiders will find it to their advantage to uphold the market. At all events the year promises to be one of unusual interest.

will find it to their advantage to uphold the market. At all events the year promises to be one of unusual interest.

Fertilizing Chemicals.—While the holidays have engrossed their due share of attention, there are signs that manufacturers are beginning to look around for supplies for spring consumption. Some sales of blood have recently been made, and while prices are not quotably changed, there seems to be a general impression that the bottom has been reached. Potash salts are temporarily quiet. Most of the buyers who were ready to make purchases supplied their wants at the low figures ruling before December 21st. Revised quotations are as follows: Azotine, \$2.05; dried blood, low grade, \$2.00; high grade, \$2.10. Tankage, high grade, 9 to 10 per cent. ammonia and 15 to 20 per cent. phosphate, \$20.6821 per ton, and low grade, 7 to 8 per cent. ammonia and 25 to 30 per cent. phosphate, \$20.6820.50. Fish scrap, \$21.506822 per ton, f.o.b. factory. Sulphate of ammonia at \$3.15@\$3.20 per cwt. Concentrated tankage, \$2@\$2.05. Refuse bone-black, guaranteed 70 per cent. phosphate, \$200 per c cwt. Donoblack, guaranteed 70 per cent. phosphoric acid. Steamed bones, unground, \$20@\$2.22; ground, \$25@\$20.50. Thereston rock, undried, \$5.75 per ton; kiln dried, \$6.75@\$7 per ton, both f.o.b. vessels at the mines. Freights by sail from Charleston to New York, \$30@\$3.25 per ton. Charleston rock, ground, \$1.50@\$12, cx-vessel at New York.

Donble manure salts, 48 to 51 per cent. sulphate of potash, for 1890 shipment, \$1.12½ per 100 pounds; high grade manure salts, basis 90 per cent. sulphate of potash, for 1890 shipment, \$1.12½ per 100 pounds; high grade manure salts, basis 90 per cent. sulphate of potash.—An item of interest in this market which is attracting some attention is the resale of two lots of 50 tons each, held by local manufacturers at \$1.75 and \$1.77½ per pound respectively. The syndicate prices continue at the latter figure for 1890 shipments.

Kainit.—Prices are unchanged at \$10.35 per ton and the trade passing presen

Messrs. Adolph Hirsh and Carl Weidinger have returned from a short business visit to Germany. The death of Mr. Edward Petit, to which we refer on another page, occasions sincere regret in the fertilizer trade, where Mr. Petit had been well known and highly regarded for many years.

The fifteenth annual meeting of the United States Menhaden Oil and Guano Association will be held on Wednesday, January 8th, 1890, in the United States Hotel, New York City, at 10 A. M. Mr. Jasper Pryer, the secretary, says that a full attendance is requested, as matters of importance will be brought before the meeting, particularly the recent seizures cf fishing steamers by the State of Massachusetts.

At the hearing in Washington this week on the

the recent seizures of fishing steamers by the State of Massachusetts.

At the hearing in Washington this week on the tariff question before the Ways and Means Committee of Congress, Mr. Armstrong, the president of the Pennsylvania Salt Company, advocated the imposition of a specific duty of ½ cent per pound on sulphate of soda, instead of the present rate of 20 per cent. ad valorem. W. B. Cogswell, of Syracuse, representing the only manfactory of soda ash in the country—that of the Solvay Process Company—said that the Senate bill was satisfactory so far as he was concerned. He informed the committee that the dividends of his company were small. He did not think that the duty of \$5 a ton could be taken off soda ash and his business make any profit unless the price of labor were reduced. He admitted that English and Belgian companies were interested in his company. Over two-thirds of the capital invested in his company was American capital. An argument was made by a Philadelphia manufacturer, N. P. Allen, for an increase of the duty on phosphorus of from 10c. a pound—as fixed in last winter's Senate substitute—to 25c.

The Brooklyn Sulphur Works had a representative on hand to propose the scaling down of the duty on sublimated flour from \$20 to \$15 a ton.

BUILDING MATERIAL MARKET.

New York, Friday Evening, Jan. 3.

The year 1890 opens with a feeling of great confidence as to the future in all branches of the building material trade. Real estate transactions during the year just closed have been unusually heavy, and the number of buildings projected very large. It is, therefore, thought that consumption will probably be active during the year to come. There will also be a number of large projects upon which the work of construction will begin during 1890, and it is hoped that to a moderate degree this will cause some of the activity occasioned a few years ago by the demand for material for the new Croton aqueduct. An interesting review of the building material market for 1889 is published on another page.

will cause some of the activity occasioned a rew years ago by the demand for material for the new Croton aqueduct. An interesting review of the building material market for 1889 is published on another page.

Brick.—The market for brick during the week has been very quiet. There has been altogether too large a supply available to permit any hope that prices will shortly advance. The mild weather, however, makes it possible for builders to continue operations, and if we are to have a repetition in 1890 of the weather of 1880, before production commences again stocks of brick will become greatly depleted. In this event, unless brick is made much earlier than looked for, dealers will undonbtedly make a strenuous effort to boom prices.

The year just closed, as will be seen by reference to the review on another page, was one of de pressed values, and holders will now be all the more anxious to take advantage of any opportunity that is offered for securing higher prices.

No Up-river brick are now coming forward. For washed Haverstraws, \$7 per thousand. Jerseysare worth \$5.50@\$6 per thousand. Pales, \$3@\$3.50.

Mr. James D. Avery is reported to be endeavoring to organize the Star Brick Company for the purpose of purchasing the Montrose and Fishkill brick yards.

The attendance at the Building Material Exchange falls off perceptibly during the winter months, but there is, nevertheless, quite a large assemblage of builders who indulge in gossip and social intercourse rather than in husiness.

Lime.—It is thought that the cargoes of Rockland lime now on the market are probably the last that will be received this season, all of the kilns having stopped work. The demand is rather light. Stocks at the end of the year are estimated to be about as large as they were a year ago this date. Sanguine feelings are expressed as to the lime market in 1890. On Long Island two large jobs will require a great amount of lime. These are the big aqueduct to be built on the south side of the island, and the county buildings to be erected

DIVI	DEND-	PAYI	NO N	IINES.

NON-DIVIDEND PAYING MINES

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NEW YORK MINING STOCKS QUOTATIONS.

DIVIDEND-PAYING MINES.

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION	De	3. 28.	Dec	30.	Dec.	31.	Jan	1 5	Jan	. 2.	Jan	. 3		NAME AND LOCATION	, De	c. 28.	Dec.	31,	Dec.	31.	Jan	15:	Jan.	. 2 .	Jan	3. 1	
OF COMPANY.	H.	L.	H.	L.	H. 1	L.	Н.	L.	H.	L.	H.	L.	SALES.	OF COMPANY.	H.	I.	H.	Ĺ.	Н.	L.	Н.	L.	H. 1	L	H. 1	L	SALES
Ailce, Mont	1,05	1.00	1.05	1.00										Aipha		1											
Argenta, Nev														Aita, Nev					1.40				1 50		****		300
Atlantic, Mich							***							Andes, Nev													
Basic, Colo				***					****			• • •	*******	Amador, Cai			****	****									
Beicher				****		****				****	****	****		American Fiag,Colo			.03			*****		****			****		100
Beile Isie, Nev Bodie Cons., Cal														Barceiona, Nev	.10	1 :::	.10	***				****			.10		1,800
Bes. & Mont., Mont														Bechtei, Cai									****				
Breece, Coio														Best & Beicher, Nev.													
Buiwer, Cai							****		***					Brunswick, Cal												****	
Caiedonia. Dak			****		****						****	***		Builion, Nev Cashier, Colo					****						.75		400
Calumet & Hecla				****		****	***		***			****		Cashier, Colo					****		***	****	****	-	****	****	*** ***
Cons. Cai. & Va., Nev.			5.13	4.80	4 85				4.95				850	Chollar, Nev	1				3.50	***	****			****	2.50		250
Crown Point, Nev	1,9												100	Col. & Beaver, Id.	1				0.110					***	2.00	** .	
Deadwood, Dak											1.50		500	Comst.ck T. Nev.	.17	.16			.17				.17	.10	.17		4,960
Eureka Con., Nev							***							" scrip	.30				.33						.34	-33	1,200
Father de Smet, Dak					****		*****	****						Con. Pacific, Cai.	****		9.	****		***							
Franklin, Mich Freeland, Colo			.45	::::	.56	.42	:::		.50		.54		5,700	Eastern Oregon				****				****	*****				
Gould & Curry, Nev						. 3.00					1.50		100	EiCristo, Rep. ofCoi.		****	1 50		1.65	1.50	****		1 45			***	900
Hale & Norcross, Nev														Exceisior, Cal					****	2.00						****	800
Hoiyoke, Id														Exchequer Nev	.60												200
Homestake, Dak	3.00		1.00	****	****	1 00								Gold Stripe, Cal								****			.03	****	100
Horn-Silver, Ut	1.90					1.99	****	***	2,00		•••		1,055	Julia, Nev Kingst'n& Pemb'ke	.30	****			***								200
Iron Hiii, Dak			****	*****	****	****					****	****		Kossuth, Nev								****			****	****	
Leadville C., Colo											,40		100	Lacrosse, Coio	07	****	.07	***	****			***		.07	.07		5,000
Little Chlef, Colo	.30		.30			****					.30		2.400	Lee Basin, Colo											.0.		3,000
Little Pittsburg, Colo														Mexican, Nev	2.80		2.70		2.55								270
Mono, Cal			****	****		***			****	***	****			Middie Bar, Cal	****							****					
Mouiton Navajo, Nev					*****	****			***					Monitor, Colo Mutuai Sm.& M.Co	1.65	****	1.65	****	1.65	1 40			1 60	2 02	* 00	****	
North Beije Isie, Nev.			****	*****		****			****	****				NevadaQueen, Nev.			1.00	****	1 05	1.40			1.00	1.65	1.60	****	9,400
North Star, Cal														N. Com'nw'th, Nev.					1				4.00				400
Ontario, Ut														Occidental, Nev			.75		. 80				.80		.85		900
Ophir, Nev					3,50					****			200	Orientai & Mil., Nev	.06		.07	.06	.06				.06		.06		7,010
Osceola, Mich			***		****	*****	****				****	****		Overman, Nev Phœnix of Ariz	.95		***	*** **									100
Piutus, Colo Piymouth, Cai			****		2.95	2.90				****			200	Potosi, Nev	2.15	****	.43	.41	1.95			****	2.05	2.00	.50		1,600
Quicksiiver, Pref					3.00									Rappahann'k, Va				****	1.07						1, 95		5 0
" Com														S. Sebastian, San S						****							000
Robinson Cons. Colo.						****				***				Scorpion, Nev													
Savage, Nev			****			****	****		****		****		** ***	Shoshone Idaho						****	****	***					
Sierra Nevada, Nev	3.10		***		****	****	****		****				500	Silver Hill, Nev							***						300
Silver Cord			.35	.38		****		****	.35		.44	.40		Stanislaus, Cai												****	** ***
Silver Mg. of L. V														Sutro Tunnel, Nev.													
Standard, Cai			Mers										100	" Trust Cert.												****	
Stormont, Utah													*******	Sutter Creek, Cal	,60		60		.60				.60		.60		4,500
Tamarack, Mich		,							****				1.045	Union Cons., Nev.													
Ward Con	2.15			• • • • • •	2.10	****		***	.65		.65	****	300	United Copper Utah, Nev				2	2.35						75		300
Yeliow Jacket			- NT	371		a la Tôma	FY-1	1	••••]		* * * * * * * * * * * * * * * * * * * *				.75			****		****			****		.75		7:0
*Ex. dividend. †De	ait i	natth	e New	York	k Sto	KEX.	Uni	isted	secur	ities.	TASSE	ssmei	it unpaid	 Dividend shares so liday. 	id, 14,	905.	Non-d	ividei	id sha	ares s	old, 34	1,620.	Tota	II, Ne	w You	k, 49,	,525.
													2110	Huay.												_	

BOSTON MINING STOCK QUOTATIONS.

Name of Company. Dec. 2	7. Dec. 28.	Dec. 30. Dec. 31.	Jan. 1.* Jan. 2.	SALES.	NAME OF COMPANY.	Dec. 27. Dec.	28. Dec. 30.	Dec. 31.	Jan. 1.**	Jan. 2. SAL 8
Atlantic, Mich			14 50 13.50	144	Allouez, Mich					
Bonanza Developm't .88 Bost. & Mont., Mont 46.88 46	.50 47.00 46.6	3 47.00 46.75 48.00 47.0	0 50.75 48.00	5,777	Aztec, Mich					
Caiumet& Hecia, Mich. 260		255		64	Butte & Bost., Mont Canada					
Cataipa, Coio					Crescent, Coio					
Chrysofite, Coio					Denver City, Colo Don Enrique, N M	**				
Dunkin, Coio		70 .6	at65		Evereut, mich					
Franklin, Mich 15.00		15.00 14.75 15.00		1,240	Hanover, Mich				******	
Haie & Norcross, Nev				*** ****	Huron, Mich 3.	.00	3 25 2,75	3.50 3.00		3.631 3.f01 1.105
Little ChiefLittle Pittsburg, Colo.					Mesnard, Mich	50 7.88	7.75	8.00 7.75		4 0
Martin White, Nev					Oriental & M., Nev.			*** ** *** *	****	2.75 100
Napa, Cai					Pontiac, Mich					
Osceoia, Mich 20.50	21.00 19.0	0 24.25 21 0 23.75 22.0	7.00	100	Rockland					
Quincy, Mich	.00	70.00 69.88	70,00 69.78		Santa Fe, N. Mex 1.	.40 1.40 1.43	1.38 1.48 1.30	1 00 1.40		1.50 1.45 21,055
Sierra Nev., Nev					Shoshone, Idaho					
Standard, Cai					St. Louis Cop., Mich					
ramarack, mich 150	401 1001		12.40.004	1 200	Washington, Mich					

* New Year. Boston: Dividend shares soid, 19,994. Non-dividend shares soid, 28,915. Total Boston, 39,909.

COAL STOCKS.

Par														
NAME OF	val.of	Dec	. 28.	Dec.	. 30.	Dec	. 31.	Jan	. 1*.	Jan	. 2.	Jai	n. 3.	Sales.
COMPANY.	sh'rs.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
American Coal														
Cambria Iron														
Cameron Coal & Iron Co														
Ches. & O. RR	100													
Chic. & Ind. Coal RR	100													
Do. pref	100													
Col. & Hocking Coal	100	16		15										120
Col., C. & I	100		38	3734	3834	39%	3856			3914		4034	3914	9,355
Colorado Fuel Co	100													
Del. & H. C	100			145	14416	14714	146			14716	147	14816	148	8.311
D., L. & W. RR	ō0	13656	13616	13646	13586	13586	13416			136%	13516	136%	136	67,793
Hocking Valley	100	1916	19	200/6	100/8	230/8	20 2/2			/-	/2	1916	19	370
Hunt. & Broad Top	200	20/2										- 70		
Do. pref.														
Lehlgh C. & N	50	52%												
Lehigh & W. B. Coal		13-78												
Lehigh Valley RR	50	5214		5.984	521/4					53	5974			1.057
Marshall Con. Coal	100	0-74		0278	0~74	00								1,007
Mahoning Coal	100													
Do. pref.														
Maryland Coal.	100													
Morris & Essex														
New Central Coal	100													
	50		1001	10017			10092			1009/	105	1001/	1079	
N. J. C. RR.	100	121	12014	120%	11916	124					125	12178	12094	6,609
N. Y. & S. Coal	100											*****		
N. Y Susq. & Western	100	716	788	7		73/8	71/8			716		758	0017	1,170
Do. pref. N. Y. & Perry C. & I	100			301/8		3012				30%		3034	301/2	1,060
Norfall Perry C. & I	100													
Norfolk & Western R.R.	50													
Do. pref	50	6016	60	6014	5934	60								
Penn. Coal.	50													
renn, RR.	50	531/6	53	53	527/8	531/8	53			5314				
ru. & R. RR.		38%	375%	3714	36	3856	3714			3914	3814	39%	3856	277,011
Sunday Creek Coal														
Do, pref	100													
Tennessee C. & I. Co		78	7714	7916	7716	86	80			85%	8314	86	84	9,730
Do. pref					, 0									100
Westmoreland Coal														

*New Year's. Sold in New York, 142,350; in Philadelphia, 134,661. Total sales, 386,769.

San Francisco Mining Stock Quotations.

	CLOSING QUOTATIONS.											
COMPANY	Dec. 27.	Dec. 28.	Dec. 30.	Dec. 31.	Jan. 1*	Jan.						
lpha												
lta	1.40		1.30									
elcher												
elle Isle						.05						
lest & Bel.	2.75		2.50	2.50		2.50						
odie						.50						
ulwer	.25											
hollar	2.60		2.45	2.45		2.45						
'm'weal'b	2.95		3.00	3.05		3.15						
on. C. & V	5.00		4.05	4.75		4.75						
on. Pac.	3.00		4.00	X. 10								
rown Pt.	1.80	**	1.75	1.80	******	1.85						
ureka C	1.00	*****		1.00	****	1.00						
ould & C.	1.55		1.40	1.45		1.45						
rd. Prize.	1.00			1.40		1.20						
ale & N.	2.70		2.60	2.55		2.35						
. White		* * * * * * * * * * * * * * * * * * * *		4.03		2,00						
exican	2.70		2.45	2.45		2.55						
	~.10	**** * .	2,40	2.40		.40						
t. Diablo						.40						
avajo						.30						
ev. Queen			1.00	***								
. Belle I				1.10		1.10						
ccidental.												
phir	3,70		3.45	3.55		3.55						
otosi	2.05		1.90			1.90						
avage	1.70		1.50	1.55		1.55						
ierra Nev	2.15		1.95			1.90						
nion Con	2.35		2.30	2,30		2.00						
tah	.70		.65			.65						
ellow Jkt.	2.05		2.05	2.10		2.05						

10				
STOCK MAR	KET QUO	TATIO	ons.	W'house A
	timore, Mo			W'house A W'house E Wheeling
Company. Atlantic Coai		Bid. As 1.00	1 50	Wheeling (Yankee Gi
Atlantic Coal Balt. & N. C Big Vein Coal		8	.10 [Soles du
Conrad Hill		.22 .10	Ø.15	Chartiers Luster
Diamond Tunnel George's Crk. C			(Pa. Gas Philadelph West. Elec
Lake Cbrome	0	5@.08	.1.9	West, Elec
Big Vein Coal Conrad Hill Cons. Coal Diamond Tunnel George's Crk. C Lake Cbrome North State (Ball Silver Valley Prices bld and ending. Jan. 2d.	d asked duri	10@.35	week	COMPANY
ending. Jan. 2d.			-	Adams, Co American
COMPANY.	i ngham, A Bid.	Aske	d.	Anderson . Aztec, N. I Black Oak Black Spar
Ala. Con. C. & C. Co			\$20 \$60	Black Oak, Black Spar
C. Co Ala, R. Mill Co. Alice Furnace.	\$102		\$60	Central Sil
Mg. Co Bir. Mg. & Mfg.	\$36		130	Cleveland, Cleveland,
Broken Arrow.		4	\$334	Cœur d'Ale Dinero, Co
Mg Co Camille Gold			\$63	Dinero, Co Golden Era Golden Kir Gold Run
Mg. Co De Bardeleben	\$1/2		\$34	Granite Mo Hope, Mon
C. & I. Co Decat. L. Imp. DecaturMin.L.	\$75 \$10@ \$108/	210342	880	Ingram
DecaturMin.L.	\$21 \$100		\$23	Ingram Iron Clad. Ivanhoe, C I. X. L., C Jumbo, Co
*Eureka Florence L. &	\$2334			Jumbo, Co
Mg. Co Heela Coal Co. Hen. S. & M. Co.	\$30 \$73@\$85		\$92	Keystone. La Union. Little Gian Major Bud
Jagger Towley	\$10@\$1116			Major Bud Mexican I
Mary Lee C &	\$93			Mexican II Micbael Br Montrose Mountain
Sheffield C &	\$40			Mountain Mountain
1. Co	\$59@\$60 \$5914@\$60			Mountain Neath, Col Old Colony
	\$95 \$74		\$95 \$80	Old Jesuit Pat Murph
Tuscaloose C.	\$20 <u>16</u> \$75@\$76	***		Old Jesuit Pat Murph Poillips, C Pine Grove
I. & L. Co. Tenn.C. & I. Co. " rref. Woodstock I.Co.	\$100	20	LU~ I	Idaho
Prices old and	\$56@\$57 asked during	\$58@ week	end-	Raspberry Rosalis San Franc
ing Dec. 28th. Bonds. † F mortgage.	irst mortgag	e. tt Se	econd	San Pedro
	nver, Colo	•		Silver Age Silver Bell Small Hop
COMPANY. Allegheny, Colo Amity " Aspen Mutu'l" Big Indian "	Н.	.29	Sales. 22,000	Tourtelott West Gran
Amity Aspen Mutu'l"	19		21,000 5,500	Wire Pate Yuma, Ar
		.33	21,400 700	
Claudia, J., "		.14 .65	200 7,100	The folloreported t
Calliope "Claudia, J., "Clay County "Hard Money "Legal Tender"	10	0614	200 100	members CERTIFIC
Matchiess	1.00	.75	13,400	American Cattle Tru Distillers'
May-Mazeppa Mollie Gibson" Morning Glim" Pay Rock Puzzler		.50		Linseed Oi National I
Pay Rock "Puzzler"	.25	.19 1	5,100 40,800 24,900	Natural G Standard
Silver Cord " Whale "		.32	1,400 3,500	Sugar Ref Sales at
Total Prices during	the most on	_	266,500	week endi
1889.	City, Mo.	_		American National I
G	Des males	TOLA A	sked.	Sugar
Ben Harrison . Burch, L. & Z. Express Group Hillsboro Gold	Mo 1	.20 .75	\$35.00 .30 1 00	
Express Group Hillsboro Gold Farmers' Coal Ida Hill, S., N. Kansas City L. Kan. City M. K. C., Colo Kentuck, Z., M La Motte, Mo. Leona Maverick, S., G		50.00	75.00	Almada. M
Ida Hill, S., N.	Mex 100	.60	100	Amador, (
Kan. City M. & K. C., Colo	z M. Co	2.60	3.00	Arizona C California
Kentuck, Z., M La Motte, Mo.	lo 1 100		100.00	Callao Bis Canadian Carlisle, N
Maverick, S., (Minnequa Zine Quartz Mt Ruby Silver Sonora, G. & S Standard, S. S.	Colo 10		1.00	Colorado,
Quartz Mt		.25	1.25	Comstock, Condova Cons. Esm
Sonora, G. & S	., Mex. 10	1.12	1.00	Denver Go Dickens C
Standard, S. S. Silver Monume	ent		3.00	East Arev Eberhardt
Silver Monumor Templar, N. M The Sylph Webb City, L. Wichita, L. Z.,	7 Mo 5	5,65	1.00 2.50	
Wiehita, L. Z.,	Kan 100	3,63	.40	Empire, M. Fiagstaff.
COMPANY.	ttsburg. P	L. C	losing	El Callao, Eimore, Id Empire, M Fiagstaff, Garfield, I Hambley Ilex, Cal Jay Hawk Josephine
		29.00	32,00	llex, Cal. Jay Hawk
Columbia Oil C	Gas 50.00	40.00	47.50 3.00	
Bridgewater G Cbartiers Val. Columbia Oil C Consolidated (Forest Oil Haziewood Oil		••••	38.00 108.00 50.00	La Trivida
Haziewood Oil La Noria Mini Luster Mg. Co	ng 50.00	.50	50.00 .75	
La Noria Mini Luster Mg. Co Manuf'turers Nat. Gas Co. o N. Y. & Clev. Ge Ohio Valley G Pennsylvania People's N. G	Gas Co	65.00	50.00 75.00	New Cons
Nat. Gas Co. of N. Y.& Clev. Ga	as Coal. 37 00	35.00 31.00	37.00	New Eber New Emm New Flag
Pennsylvania	Gas 13.25	31.00 12.75	31.50 13.121⁄2	Newfound
Dhiladalphia (Co 20 00	90 19	15.37 30.00	New Hoo
Pine Run Gas Pittsburg Gas	Co	66.00	80.00	Pinos Alto
Pinadeiphia of Pina Run Gas Pittsburg Gas South Side Ga Tuna Oil Co	70.00	69.00	70.00	Pittsburg
Union Gas Washington	Oil Co 90.00	75.00		Pittsburg Quebrada Richmond

				-
1	W'house Brake Co 62.		62.75	Rı
ı	W'house Brake Co 62 W'house A. B. Co 117 W'house E. Light 48 Wheeling Gas 30 Yankee Girl Mg 3 * Actual selling price.	.00 46.		Sa
ı	Yankee Girl Mg 30	.00 20. .75 3.	50 3.50	Sta
1	Sales during the weel Chartiers 50 shar	k ending	Dag 21.	Ŭ.
l	Chartiers 50 shar Luster 100 shar Pa Gas 50 sbar Philadelphia 665 shar West, Electric 240 shar	es. \$50.0 es. \$13.5	00@\$21.50 25@\$12.75	
	Philadelphia665 shar West, Electric 240 shar	es. \$30. es. \$48.	00@\$29 13 00@\$46.00	Be Ca Ca
1				Es Fo
١	CLOSING PRI COMPANY. Adams, Colo	Bid.	Asked. \$.321/2	Go
1	Adams, Colo	1.45	1.55	Le
	Aztec, N. Mex Black Oak, Cal	.15 .001/2		Oi Ri
ı	Black Spar Carriboo, Idaho	161/4	.1716	Th
l	Cleveland, Colo	.1674 .02 .25	.031/8	
1	American & Nettle. Anderson Aztec, N. Mex. Black Oak, Cal. Black Spar. Carriboo, Idaho Central Silver. Cleveland, Colo. Cleveland, Idaho Cœur d'Alene Dinero, Colo.	.70	.90	in
١	Golden Era, Mont	.0716		CI
١	Granite Mountain, Mont.	46.50	47.00	
			4,00	
į	Ingrain. Iron Clad. Ivanhoe, Colo. I. X. L. Colo. Jumbo, Colo Keystone.	.04	.051/2	-
١	Jumbo, Colo	.02	.03	A
١	La Union	*****	.03	
ı	Major Budd, Mont Mexican 1mp., Mex	.221/2	.2334	4
l	Micbael Breen Montrose Placer, Colo	.811/2	45	
١	Mountain Key Mountain Lion	.6334	.671⁄2	A
	La Union. Little Giant. Major Budd, Mont. Mexican Imp., Mex Micbael Breen Montrose Placer, Colo Mountain Key. Mountain Lion Neath, Colo Old Colony. Old Jesuit. Pat Murphy, Colo. Phillips, Colo Pine Grove, Idaho Queen of the West, Idaho Basphorry, Mont	.02	.02	A
ı	Pat Murphy, Colo	.08	.04	A
Ì	Pine Grove, Idaho Queen of the West,	.02	.021/2	
ĺ			.121/2	A
l	Con Francisco Mont	01	.011/2	A
١	San Pedro Silver Age, Colo	.001/2 1.50	1.55	B
l	San Pedro. Silver Age, Colo Silver Bell Small Hopes, Colo Tourtelotte, Colo West Granite, Mont	.80	.051/2	
	West Granite, Mont Wire Patch	.0416 .771/2	.8114	
ı	Yuma, Ariz	.50	.511/4	1
	Trust Sto			
I	The following closing		Jan. 3.	B
	The following closing reported to-day by C. I members of New York			B
	CERTIFICATES.	quota I. Hudse Stock E	tions are on & Co., xchange:	H
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Feet	quotal l. Hudso Stock E \$3 ders'.	tions are on & Co., xchange: 3 @\$35 10 @ 12 89 @ 3914 1314@ 4414	H
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Feet Linseed Oil National Lead	quotal I. Hudso Stock E	tions are on & Co., xchange: 33 @\$35 10 @ 12 39 @ 39½ 13½@ 44½ 11%@ 21½	H C C C C
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Feet Linseed Oil National Lead	quotal I. Hudso Stock E	tions are on & Co., xchange: 33 @\$35 10 @ 12 39 @ 39½ 13½@ 44½ 11%@ 21½	H C C
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Fee Linseed Oil National Lead. Natural Gas Standard Oil Sugar Refineries. Sales at the New York week ending Dec. 13:	quota I. Hudso Stock E ders'.	tions are on & Co., xchange: 38 (\$35, 10 @ 12 89 @ 39½ 13½ 44½ 21½ 18½ 64 @ 165 59½ 659½ 59½ Exchange Price H. L.	HH C C C C C C C C C C C C C C C C C C
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Fee Linseed Oil National Lead. Natural Gas Standard Oil Sugar Refineries. Sales at the New York week ending Dec. 13:	quota I. Hudso Stock E ders'.	tions are on & Co., xchange: 38 (\$35, 10 @ 12 89 @ 39½ 13½ 44½ 21½ 18½ 64 @ 165 59½ 659½ 59½ Exchange Price H. L.	H C C C C C C
	CERTIFICATES. American Cotton Oil Cattle Trust Distillers' & Cattle Fee Linseed Oil National Lead National Lead Standard Oil Sugar Refineries Sales at the New York week ending Dec. 13: American Cotton Oil National Lead Sugar	quotal Hudse Stock E \$3 ders'. 1 \$ Stock 1 \$ Sales. 3,424 58,365 359,922	tions are on & Co., when Record 20, 21 25 21 21 24 24 24 24 24 24 24 24 24 24 24 24 24	HHC C CCCC
	CERTIFICATES. American Cotton Oil Cattle Trust. Distillers' & Cattle Feel Linseed Oil National Lead Natural Gas Standard Oil Sugar Refineries Sales at the New York week ending Dec. 13: American Cotton Oil National Lead Sugar.	quotal Hudse Stock E Siders'. 1 1 Stock Sales. 3,424 58,365 359,922	tions are on & Co., when & Co., we hange: 3 (\$35 to 212 to 2134 to 213	HHC C CCCC
	CERTIFICATES. American Cotton Oil Cattle Trust. Distillers' & Cattle Feet Linseed Oil National Lead Natural Gas Standard Oil Sugar Refineries Sales at the New York week ending Dec. 13: American Cotton Oil National Lead Sugar Foreign Quo	quotal Hudse Stock E \$3 ders'.	tions are on & Co., we hange: 3 (\$35) (0 @ 12) (9 @ 39) (2 39) (2 31) (2 41) (4 41) (2 11) (4 (6 15) (1 4 16) (HHC C CCCC
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ND MINING JOURNAL.	
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Ruby & Dunderberg, Nev 1s. 6d. Sam Christan, N. C. 3s. 2s. 6d. Sierra Buttes, Cal. £3/8 2s. 6d. Stanly, N. C. 7s. 7s. 6d. 6e. 6d. United Mexican, Mex. 7s. 5s. 4s. VI. S. Placer, Colo. 5s. 4s. Vlola Lt., Idaho 1s. 9d. 1s. 3d.	5
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East Oregon, Ore 19.00 19.00 Forest Hill Divide, Cal	SI
Rio Tinto, Spain 396,25 396 25	SI
CURRENT PRICES.	T
These quotations are for wholesale lots in New York. CHEMICALS AND MINERALS. ACId—Acetic, \$\(\pi\) 100 lbs\$1.70\(\pi\)\$2.50 Myntotic 188 \$\(\pi\) 100 lbs\$1.70\(\pi\)\$2.50	V
CHEMICALS AND MINERALS. Acid—Acetic, \$100 lbs. \$1.75@\$2.00 Muriatic, 18°, \$100 lbs. \$1.00@1.50 Muriatic, 29°, \$100 lbs. \$1.24@1.50 Muriatic, 29°, \$100 lbs. \$1.374@2.00 Nitric, 36°, \$100 lbs. \$1.374@2.00 Nitric, 32°, \$100 lbs. \$4.00@4.25 Nitric, 42°, \$100 lbs. \$6.00@6.25 Oxalic, \$100 lbs. \$6.50@10.50 Sulphuric, 60°, \$100 lbs. \$80@1.25 Sulphuric, 60°, \$100 lbs. \$1.00@1.75	A
Sulphuric, 60°, \$ 100 lbs 80@1.25 Sulphuric, 66°, \$ 100 lbs 1.00@1.75 Aikaii — Refined, 48 p. c	AHHC
Refined, 58°	0000
Aqua Ammonia—18°, \$\mathbf{y} \text{ b} \tag{4\gamma} \\ 20°, \$\mathbf{y} \text{ b} \tag{6} \\ 22°, \$\mathbf{y} \text{ b} \tag{6} \\ 607 \\ 26°, \$\mathbf{y} \text{ b} \tag{100} \tag{11}	DEGG
Sulpburic, 66°, \$ 100 lbe. 1.00@1.75 Aikaii— Befined, 48 p. c. 1.50@1.55 Refined, 58° 1.40@1.45 Alum—Lump, \$ lb. 1.40@1.45 Alum—Lump, \$ lb. 1.40@1.45 Alum—Lump, \$ lb. 1.42 Ground, \$ lb. 1.42 Ground, \$ lb. 1.42 Lump \$ ton, Liverpool £4 1.76 Sulpbate of Alumina, \$ ton. £4 10 Aqua Ammonia—18°, \$ b. 44% 20°, \$ b. 66.7 26°, \$ b. 10@11 Ammonia—Sul., \$ 100 lbs. 3.15 Carb., per lb. 746@8% Arsenie—White, powdered, \$ lb.34@3% Red. \$ lb. 54%@6% White, at Plymouth, \$ ton. \$ 12 2 6d. Asbestos—Am., p. ton. \$50@5300 Italian, p. tos., c. i.f. L'pool.£18@456 Asphaitum—P. ton 13.00 Prime Cuban, \$ b. 44%@5460 Asphaitum—P. ton. \$28.00 Trinidad, refined, \$ ton. \$28.00 Trinidad, refined, \$ ton. \$28.00 Trinidad, refined, \$ ton. \$20.00 Trinidad refined, \$ ton. \$20.00 Trinidad, \$ ton. \$20.00 Trinidad	L
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Hard Cuban, \$\pi\$ ton\$28.00 Trinldad. refined, \$\pi\$ ton\$30.00 Barytes —Sulph Am. prime wblte17@20 Sulphforeign,floated, p. ton.19½@21.50	F
Suipo., off color, p. ton	HEHESS
Borax—Refined, \$\pi\lorenth{b}\text{lb.} 9\\pi_0\pi_0\pi_0\pi_0\pi_0\pi_0\pi_0\pi_	STIT
Bromine 1b 37@38 Chaik 1c 1.75 Precipitated 1b 43@5 China Clay 2c 1c English 1c 1c Souther 1c 1c Souther 1c 1c China 1c<	THE
## Instone — See Sulphur. ## Stromine — # Ib	2
Best, ¥ 100 lbs	是
Cream of Tartar—Am. 99%. 223	
Gypsum—Calcined, % bbl. 1.25@1.50 Iodine—Resublimed 2.75 Kainit—% ton 10.00 Kaoiin—See China Clay.	
White, American, in oil, \$\\$10	
Gray 1.75@ 1.87% Litharge—Powdered, # lb 6½@6% English flake, # lb 90,99% Magnesite—Greek, # ton 20,00	
Oxioe ground, per lo. 21/6/61/6 Mercuric-Chioride — (Corrosve Sublimate) \$\frac{1}{16}\$ lb 70@72 Mineral Wool — \$\frac{1}{16}\$ lb 2	
Mica—In sbeets according to size, 1st quality. \$\pi\$ 5	,
Kainit—\$t ton	
Phosphorus—\$ lb	
Bromide, \$\pi\$ b. 330 40 Carb. \$\pi\$ b. 4.70\pi.5 Caustic. \$\pi\$ b. 74\pi.6 S	1
Iodide	
Potassium - Cyanide,	
Powdered, pure, \$1b	1

	Quartz—Ground, \$\(\) ton. 14.00\(\) 16.00 Rotten Stone—Powdered, \$\(\) 15.3\(\) 4\(\) 3\(\) 4\(\) 3\(\) 4\(\) 3\(\) 4\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 3\(\) 14\(\) 15\(\) 2\(\) 3\(\) 14\(\) 14\(\) 15\(\) 2\(\) 16\(\) 2\(\) 16\(
Ì	THE RARER METALS.
	Aiuminum—(Metallic), \$1b. \$2. @\$2.50 Arsenic—(Metallic), per lb
	Tantailum—(Metallic) per gram 9.00 Teinrium—(Metallic) per lb 5.00 Thaliium—(Metallic) per gram25
	Titanium – (Metallic) per gram. 2.25 Thorium – (Metallic) per gram. 17.00 Tungsteu – (Metallic) per co 2.25 Uranium – (Metallic) per lb 5.00 Vanadium – (Metallic), per gm. 22.00 Vitrium – (Metallic), per gram. 9.00 Zirconium – (Metallic), per co 65.00
	Zirconium – (Metallic), per oz. 65.00
1	BUILDING MATERIAL.

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	BUILDING MATERIAL.
- 1	Bricks-Paie, \$ 1,000 3 25@3.50
- 1	Jerseys, \$\mathbb{R}\ 1.000 5.50@6 50
í	Up Rivers, \$\mathbb{R}\ 1000 6 00@6.50
١,	Up Rivers, \$ 1000
	Haverstraw firsts \$ 1,000 6,50@7.00
	Fronts, nominal, \$\mathbb{P} 1000.
- 1	Croton 14.00@16.00
. 1	Wilmington 20.00@21.00
	Philadelphia
1	Trenton @22.00
1	Baltimore
١,	Building Stone-Amherst
1	freestone, # cu. ft 95@1.00
- 1	Brownstone, # cu. ft 1.00@1.35
. 1	Granite, rough, \$\mathbb{B}\$ cu.ft 45@1.25 Granite, Scotch \$\mathbb{B}\$ cu. ft 1.00@1.15
	Granite, Scotch & cu ft 1.00@1.15
8	Cement-Rosendale, \$8 bbl .85@1.10
Ы	Portland, American, % bbl 2 15@2.45
	Cement—Rosendale, # bbl .85@1.10 Portland, American, # bbl 2 15@2.45 Portland, foreign, # bbl 2 30@2.40
9	Portland, "special brands.2.45@2.75
S A	Roman 19 hhl 965@285
9	Keene's coarse 39 hbl 4 50@5 50
8	Roman, \$\partial \text{bbl} \cdots 2.65\(\text{\tinte\text{\te}\text{\texi}\text{\text{\text{\text{\text{\texi}\text{\text{\text{\texicr{\texi{\texi}\text{\texi}\text{\tin\text{\text{\text{\texi{\texi{\texi{\texi{\texi}\texit{\
	Sinte-Purple and green roof-
6	ng, \$\psi\$ 100 ft
- 1	Red roofing, \$8 100 sq. ft. 12 00
- 1	Black, roofing, \$2 100 so, ft. 4 25@5 0
	Lime-Rockland, common & bbl 1.00
1	Rockisnd, finishing, \$ bbl 1.20
	St. John, com. and finish, \$ bbl90@.95
	Glens Falls, com. and fin., \$ bbl .85@1.10
,	Labor-Ordinary, # day 1.50@2.00
6	Masons, \$\text{\$\text{\$\text{day}}\$
	Piasterers, \$\partial day \day \day \day \day \day \day \day
	Companione 30 day
Û	Carpenters, \$\mathbb{g}\$ day 3.50 Plumbers, \$\mathbb{g}\$ day 3.50 Painters, \$\mathbb{g}\$ day 2.50@3.50
	Deintown 10 der
	Stonesottone 10 dem 250.04.00
	Tilelevens 39 day
	Stonesetters, day
	Discharges, way 400

THE ENGINEERING AND MINING JOURNAL will thank any one who will indicate any other articles which might with advantage be quoted in thes tables or who will correct any errors which may be found in these quotations.

NEW YORK PRICES CURRENT. JANUARY 4, 1890.

Discounts are for Export Only.

In the interest of the extension of the markets for American manufactures the Engineering and Mining Journal has secured the services of gentlemen thoroughly acquainted with the export trade and with foreign markets, and it offers its services to foreign buyers who may desire information concerning any article whatever of American manufacture. No charge will be made for these services, either directly or indirectly through commissions on goods purchased. The proprietors of the Engineering and Mining Journal are neither commission merchants nor exporters, but they have many sources of information, both at home and in foreign countries, and place these at the service of manufacturers and exporters here and of importers and consumers in other countries.

Agricultural Implements.



"Planet, Jr." No. 2 Seed Drill, \$9.



Combined Drill Cultivator Rake, Plow, etc., \$12.



"Fire Fly" single wheel Hoe, Culti vator and Plow, \$5

"Fire Fly" Hand low, \$2.50.

30 % discount, f.o.b New York.



All Steel Horse Hoe and Cultivator combined, with wheel, \$11.



All Steel Plain Cultivator, \$6.00. 40% discount, f.o.b. New York.

1100	YES TO SERVICE STATE OF THE PERSON OF THE PE	Ely Ho	e & F	ork Co.—Go Overcar	ld Finish, Patent
1				Three Tine	Forks.
		No.	Tine.	Handles.	
- 1		30	10 in.	416 ft.	Boy's\$7.75
		32	.12 "	4 to 6 ft.	
- 1		32 S	10 66	66	Strapped 10.50
- 1		32 B	12 "	44	Bent 9.50
-		32 B S	12 "	64	Bent & St'pd 11.00
		33	12 "	66	9.50
/ 1		3S	13 "	66	Strapped 11.00
	-	33 B	13 "	66	Bent 10 00
	1	33 B S	13 "	44	Bent & St'pd 11.50
		34	14 "	66	
		34 B	14 66	. 66	D-m4 10.25
- 1		35 D	15 66	66	Bent 10.75
			10	44	
		35 B	10	44	Bent 11.75
	1	42 B	12	-	Bent 12.50
		42 B S	12 "	44	Bent & St'pd 14.00

Manure Forks, Solid Steel Shanks, Gold Bronze Finish, Patent Over-Gold Bronze Finish, Patent Overcaps.
No. 44, oval, 4 tine, 12 in. tine, 4 ft. handle, plain ferrules, \$12.50 per doz.
No. 48, oval, 4 tine, 12 in. tine, 4 ft. handle, strapped ferrules, \$11.
No. 44½, oval, 4 tine, 12 in. tine, 4½ ft. handle, plain ferrules, \$12.50.
No. 44½ S, oval, 4 tine, 12 ft. tine, 4½ ft. handle, strapped ferrules, \$14.
No. 54, oval, 5 tine, 13 in. tine, 4 ft. handle, plain ferrules, \$19.50.
No. 54 S, oval, 5 tine, 13 in. tine, 4 ft. handle, strapped ferrules, \$21.
No 64, oval, 6 tine, 13 in. tine, 4 ft. handle, plain ferrules, \$21.
No 64, oval, 6 tine, 13 in. tine, 4 ft. handle, plain ferrules, \$20.
No. 64 S, oval, 6 tine, 13 in. tine, 4 ft. handle, plain ferrules, \$24.

		но	ES.			
Ely Stand C. S. Blade	dard Sock	et, all (old Bro	nze Ne	ck, ful	l Pol'd,
	Wash	dles	County	" Patter	" n, spri	10.00
	Rhode	Island	1, 7 to 9 i 91% in. 10 " ow, 9 dles	in., spr	g hand	les 9.00 9.25 9.50 lar
2		Mead han Mead han Broom	ow, 9½ dles ow, 10 dles n Corn, handles.	× 31/2 in × 31/2 in 71/2 × 41/	., pop	lar 9.25 lar 9.50
Popular otherwise	Handles ordered.		eadow s	Socket	Hoes,	unless

otherwise ordered.	
PLOWS.	
Reversible Oneonta Clipper.	
ONEONTA CLIPPER. 16. Oneonta Clipper, Reversible, Iron beam Cutter	214
"Oneonta Clipper, Reversible, Iron Wheel and	914
Cutter	15
" ter "Oneonta Clipper, Rever- sible, Iron Beam,	15
Wheel and Cutter 17. Hard Metal. Reversible.	16
Iron Beam Cutter	17
17. Hard Metal, Reversible, Iron Beam, Wheel and	
Jointer Jointer Hard Metal, Reversible, Wood Beam Cutter " " Wheel and	17 16
Jointer	17
20. Steel Mould Board, Reversible, Wood Beam Cutter "Wheel	15
and Cutter	16
Two-horse Sod and Stony Land 8.50 plain.	
Curtis's Sod Two horse 11.50 "	
" " " 13,00 cutter.	
" " " 14.25 wheel & cut Subsoil Plows.	ter.

6	and Cutter 16
	Iron Beam Plows.
	Two-horse Sod and Stony Land 8.50 plain.
	Curtis's Sod Two horse 11.50 "
	" " " 13.00 cutter.
	" " 14.25 wheel & cutter.
	Two-horse 9.50 Draft Rod. " " 11.00 Wheel and Draft Rod.
-	Hitchcock's Potato Digger and Shovel Plow.
ļ-	Improved adjustable handle shovel plow 7.00
١,	Hitchcock's Potato Digger 8.00
d	" and shovel plow 10.50 Dis, 30%.
	RAKES.





Golden Farmer Self-Dumping Rake, \$37.00; 22 cu. ft., 430 lbs. gro., 250 lbs. net. Chieftain Hay Tedders, \$59.00; 700 lbs. gro., 450 lbs. net. Potato Diggers, \$7.00; 100 lbs. gro., 60 lbs. net; dis., 40% f.o.b. ship New York or Boston.

RAKES (GARDEN).

		I	Bracec	stee	garden	rakes.	Perdoz
	8						\$8.00
	10						9.00
	12						
1	14	66					11.00
	16	3 66					
					leable g		
	10	teet.	h				\$5.50
	12	66					
	14	66					6.50
	16	66					7.00
-	Ten-	reeth	Mall	eable	Garden	Steel	Garden.
				lain.	Braced		. Braced.
-Teeth.					\$6,00	\$9.00	
					6.50	10.00	
66				6.50	7.00	11.00	
				7.00	7.50	12.00	
				70 and		28400	2000
1					,		

•				t steel g				doz.
	10 12	teeth,	polished,	taperin	g bar,	tempered	rake.	\$9.00 10.00
84	14	66	4.	44	66	46	66	11.00
L	16	- 46	- 66	- 44	44	- 66	66	12.00
n rai	-			Cast s	teel la	wn rakes.		
		-	pered ra	ke	tape	ering bar, ering bar,	tem-	
1	1	-	16 teeth	polishe	l tape	ering bar, ering bar,	tem-	12.00
	1		pered ra Dis. 70%	from St	anda	rd Associa X handle	tion 1	13.00 ist. ., are

	SULTILES (GILASS).	
,	Waldron's pattern, oiled	\$8.50
0	Silver steel, painted	8.50
9	Western dutchman, bronzed and painted	
	Clipper, polished web	9.00
0	Fine cutlery steel, full polished	11.00
0	Grain Scythes.	11.00
		** **
0	Waldron's pattern, oiled	11.25
0	Silver steel, painted	11.25
5	Clover, oiled	11.25
ñ	Clipper, bronzed and painted	11.50
	Lawn Scythes.	
0	Clipper, bronzed and painted	9.00

SOWER, BROADCAST SEED.



Goodell & Co.

Per dozen \$36 f.o.b. Gross wt., 110 pounds per dozen Net wt., 75 pounds per dozen.

Weight			Weight
about	1		about
. 16 lb	\$1.00	No. 4	. 40 lbs\$4.25
. 4 "	1.70	. " 5	. 50 " 5.05
. 10 "	2.20	" 6	. 60 " 5.50
. 15 "	2.75	" 7	. 70 " 6.00
. 20 "	3.00	** 8	. 80 " 7.00
30 "	3.75	" 9	
	about	about ½ lb\$1 00 4 " 1.70 10 " 2.20 15 " 2.75 20 " 3.00	about \$1.00 No. 4 \$1.00 No. 4 \$1.00 No. 4 \$1.00 "5 \$1.00 "6 \$1.5 " 2.75 "7 \$2.0 "8 \$3.00 "8 \$1.00 No. 4

Arms and Ammunition.

Woo	od Powder.		
American Wo			
American wo			
		1/4 kegs.	
	Kegs, 25 lbs.	61/4 lbs.	1 lb. cans.
Trap for first quality arm	ns		
only		5,00	.85
A, for large bore		0.00	.00
C, for general use			
D, fine for small bore			
and rifles	\ 17.00	4.35	.75
E. very fine for small			
bore rifles and gallery			
shooting	j		
onooting.			Discount.
		1	er cent.
Dullot Durach Come			
Bullet Breech Caps			10
Conical Bullet Caps		" 1.75	10
			Discount.
		1	er cent.
Dina Pina Cantuidana			
Rim Fire Cartridges	3	00	10
Military Rim Fire Cartri			10
Central Fire Pistol and I			10
Central Fire Metallic Ca	rtridges for T	ar-	
get and Sporting Rifles		30	10
Military Cartridges, Cen	tral Fire	30	10
Lefaucheux Cartridges			60
Minute Cartillegos.			00



Gatling Cartridges		Special
Primed Shells and Bullets	25	- 10
Friction Cannon Primers	20	10
Primers		10
Percussion Caps, F. Cper M.	33c.	
U. M. C	4216c.	
Musket "	45c.	
Brass Shot Shells, U. M. C., 1st qual	. 60	10
Club brand	65	10



Paper Shot Shells.

14, 16 and 20 ga. First quality, 30, 10 and 10 per cent; 4, 8, 10 and 12 ga., First quality, 25, 10 and 10 per cent.

14, 16 and 20 ga, Club brand, 30, 10 and 10 per cent. 10 and 12 ga, Club brand, 33½, 10 and 10 per cent. Gun Wads, 20 and 5 per cent.

RIFLES. Colts' Lightning Magazine.



40 / 60	and	45 / 60	calib	re octagon	barr	el	10	lbs.	\$15.38
66	66	66	66	round	66		934	66	14.25
66	4.6	66	66	carbine	66		9	66	14.25
32, 38,	and	44 ca.	libres.	octagon	66		71/4	66	13,50
66	46	66	66	round	66		634	66	12,38
66	66	66	66	carbine	66		614	66	12.38
66	66	66	66	baby carb	ine		514	4.6	12.38
22 cali	bre.	rim fl	re, oc	tagon barr	el				15.38
66		- 66							14.25

MARLIN RIFLE. MODEL, 1889.



The best in the market, e m-bodying all lat-est improvements.

38 and 44 calibres, using the same cartridges as Winchester rifles of the respective sizes.
ctagon barrel, 24 inch, 6¼ lbs.
" " 26 " 6¾ " 21.50
" " 28 " 7 " 23.50
Round " 24 " 6¼ " 18.50
Carbine 20 " 5½ " 17.50
Discount, 25, 10 and 10%. Round Carbine

REVOLVERS.



Smith & Weston

32, Single Action, 3, 3½ in., \$8.00. 32, Double Action, 3, 3½ in., \$9.35. 32, Safety Hammerless, 3, 3½ in., \$11.00. Single Action, 3, 31/2 in.,

38, Single Action, 3½ in., \$9.40; 38, Single Action, 4 in., \$9.65; 38, Single Action, 5 in., \$10.00; 38, Double Action, 3½ in., \$10.40; 38, Double Action, 4 in., \$10.65; 38, Double Action, 5 in., \$11.00; 38, Safety Hammerless, 3½ in., \$12.00; 38, Safety Hammerless, 4 in., \$12.25; 38, Safety Hammerless, 5 in., \$12.50; 44, Single Action, 6 in., \$11.75; 44, Single Action, 6 in., \$11.75; 44, Single Action, 6 in., \$12.50; 44, Double Action, 6 in., \$12.75; 45, Double Action, 6 in., \$12.75; 47, Double Action Favorite, 5 in., \$12.75.



Colts.

Discount, 10 per cent from following prices.

Double Action Army, 44 and 45 calibre, 434, 5½, 7½ nch bbl., \$13.00.

Double Action, 41 calibre, 2½ to 6 inch bbl., \$11.20.

38 " 2½ to 6 " " \$10.00.

Single " Army, 45 calibre, 4¾, 5½, and 7½ inch bbl. \$12.00.

Single Action, \$1 callbre, \$2\frac{2}{2}\$ to 6 \$\frac{1}{3}\$ \$\frac{1}{3}\$ \$\frac{1}{2}\$ \$\frac{1}{3}\$ to 6 \$\frac{1}{3}\$ \$\frac



American Bull Dog

Double Action 32, 38 and 44 calibre, 2½ inch barrel, \$1.60; Double Action 32, 38 and 44 calibre, 4½ inch barrel, \$1.85; Double Action 32, 38 and 44 calibre, 6 inch barrel, \$2.10.

F. & W. British Bull Dog revolvers, 32 and 38 calibre 214 inch bbl., \$1.80.
F. & W. Automatic revolver, 32 and 38 calibre, 314 inch bbl., \$5.0.
H. & R. Automatic revolver, 32 and 38 calibre, 314 inch bbl., \$4.75.
Defender revolvers, Single Action, 22, wood handle, 65.
Defender revolvers, Single Action, 22, rubber 70.
4 4 4 52, wood 85.
4 52, rubber 90.

Remington Army revolver, Single Action, 44 cal., frontier cartridge, 3% inch barrel, \$6.50.
Remington Army revolver, Single Action, 44 cal., frontier cartridge, 7% inch barrel, \$6.00.
Remington Double Deringers, 41 cal., rim fire, \$4.05.
National Deringers, 41 calibre, per pair, half or ful plate, \$4.00.

New House, 41 or 38 calibre, blued or nickeled, \$5.00.
" Police, 38 calibre, 6 in., " " 7.00.
" " 38 " 4½ in., " " 7.00.

MARLIN AUTOMATIC DOUBLE ACTION REVOLVERS.

32 and 38 cal., 31/4 bbl., \$10; 25 and 10%.

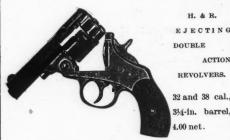


This revolver is made in the best manner, and is equal toany in the market, Uses Smith & Wesson cartridges,

AUTOMATIC DOUBLE ACTION

REVOLVERS 32 and 38 cal., 3¼-in. barrel,

4.75 net.



AMERICAN DOUBLE-ACTION REVOLVERS.



AMERICAN BULLDOG REVOLVERS.



Assay Furnace.

Hydro-Carbon Blow-Pipe Assay Furnace,



Pipe Assay Furnace.

No. 2. Muffle Furnace
taking C Battersea Muffle
8x494x3 in.......\$10.00

No. 3. taking F Muffle, 10x6x4 in........ 15.00

No. 1. Crucible Furnace, taking Battersea,
U or Colorado B Crucible, 4 in. dia. 5½ deep... 4.00

No. 2, taking Batter-





Claw Hatchets. Collins', \$5.25, \$5.75, \$6.25 doz., dis. Collins', \$5.25, \$5.75, \$6.25 doz., dis. 10%.
Peck's, \$9.00, \$9.50 \$10.00, doz 45%.
Ryder's, \$9.00, \$9.50, \$10,00 doz., dis, 10%



Hatchets, Broad Single Bevel.

Collins', cut in., 5, \$9.50; 5½. \$10.00; 6, \$10.50; 6½, \$11.00; 7½. \$11.50; dis. 10%

Peck's, cut in., 4, \$10.50; 4½, \$11.50; 5, \$13.00; 5½, \$14.50; 6, \$16.50; 6½, \$18.00; 7½, \$19.50; 8½, \$22.00; dis. 45%.

Ryder's, cut in., 5, \$13.00; 514, \$14.50; 6, \$16.50; 614, \$18.00; 714, \$19.50; dis. 50%.

	Adzes. House.	Ship	
	Half flat head.	spur poll.	Discount.
	Dozen.	Dozen.	Per cent.
4	Collins'\$14.00	\$13.00	10
A	Peck's 24.00	25.00	45
(40)	Ryder's 24.00	25.00	50
	Broad Axes-Pit	tsburgh Pa	attern.

5 to 8 pounds, \$32.00 dozen.
7 to 9 pounds, \$35.00 dozen.

ACTION

8 to 10 pounds, \$38.00 dozen. 9 to 12 pounds, \$45.00

dozen. Vestern pattern same price.

Spanish Pattern. Detumba round eye, \$10.50 per doz.





Axle Grease.				
Frazer's (2-lb. tins)	per gross			\$18.00
2-lb. wooden boxes	Discount, 25 a	nd 5 %.	• • • • • • •	12.00
Dixon's Everlastin	g. boxes 1 lb.,	pendoz.		\$1.20
**	" 2 1bs	S		2.00

HARTFORD CO.

Lovell, Tracy & Co. English coach axle grease.

Regular wooden boxes per gross, \$8.50.

Axleine



Decorated tin boxes, per gross

\$12.

Special prices on quantity, and

goods in large packages.

See Oils, page 10.

Barrel Machinery.



Single V	Vhee	Beer!	Keg St	ave	Jointer.	16	to	22	in.	8	8	\$190
Double	46	49	44	49	44	16	66	22	66	8	8	330
Single V	Vheel	Half	Barre	1 "	66	24	94	30	66	8	8	275
Double	66	66	66	69	44	24	96	30	96	8	8	440
Single	44	Barr	el	66	66	30	96	36	46	8	8	330
Double	66	66		94	49	30			66	8	8	50C
Double	Indep	ender	it Barr	el S	tave Joi	nte	ar	W	ith	-	-	000
Wheel	ls, on	separ	ate sha	afts.	but sus	per	nd	ed	ln			
one fra	ame,	30 to 3	6 in							8	8	520

One Frame, 30 to 30 in Single Wheel Barrel Stave Jointer, 32 to 38 in. 8 8 350 Double "22 to 38 in. 8 8 550 Double "32 to 38 in. 8 8 550 Double 1 independent Barrel Stave Jointer, 32 to 38 in. 8 8 575



Miner's Bellows: 24 ln., \$8.50; 26 ln., \$8.75; 28 ln., \$11.00; 30 in., \$11.25; 32 ln., \$13.50, 60 and 5% dis.

Standard, each: 18 to 24 ln., \$10; 28 ln., \$12; 22 in., \$14; 34 ln., \$16; 36 ln., \$18; 38 ln., \$20; 40 in., \$23; 44 ln., \$32.

Hand Bellows, per doz.; 6 ln., plain, \$10; fancy, \$20; 7 in., plain, \$12; fancy, \$24; 8 ln., plain, \$14; fancy, \$23; 9 ln., plain, \$14; fancy, \$23; 10 in., plain, \$16; fancy, \$32; 10 in., plain, \$18; fancy, \$33; 10 in., plain, \$18; fancy, \$36.



Belting.	LEATHER BELTS.	-
Ston	dard Manufacturer	e Lilet.
Stan		
	Single belts per foo	l.
Width.	Width.	Width.
1 lnch10	6 lnch	20 inch2.84
11/4 "13	7 "	21 "3.02
116 "17	8 "1.02	22 "3.20
	0 " 115	23 "3.37
134 " 20	9	
2 "23	10 "1.29	24
21/4 "26	11 "1.42	26 "3.92
	12 "1.55	28 "4.30
21/2 "30	19 44 1 20	
23/4 "33	10	
23¼ "33 3 "36	14 "1.82	32
31/2 "	15 "1.98	34 "5.35
4 "50	16 "2.14	36 "5.70
41/ 44	17 44 0 91	
179	17	40
5 "63	18 "2.49	44 "7.10
51/2 "70	19 "2.66	48 "
Double	belts twice the price	
	of Newark Leather	

Discounts of Newark Leather Belting Co.
Dis. single and double belts, cemented, 50 and 5%.
Dis. single and double belts, riveted and cemented, 50 and 5%.
Dis. single belts, cemented and lacesewn, water proofed, 50%.
Dis. double belts, cemented and lacesewn, water proofed, 45%.
See Rubber Belting, 2007.

See Rubber Belting, page 7. See Link Belting, page 9.

Bolts.
Philadelphia Tire Bolt, with forged nuts.
Price per hundred. Condensed list.

Length	1-8	3-16	7-32	1-4	5-16	3-8
1 2 3	\$1.50 1.50	\$1.50 1.60 1.90	\$1.50 1.85 2.25	\$2.25 2.75 3.25	\$3.05 3.65 4.25	\$5.00 5.80 6.60
5					4.90	7.40

Fractional sizes, intermediate prices.
Discount 80 and 2 %.

Common Carriage Bolts, price per hundred.

Length.	3-16 & 1-4	5-16	3-8	7-16	1-2	9-16 & 5-8	3-4
to 11½}	\$1.35	\$1.60	\$2.30	\$3.10	\$3.80	\$7.50	
2	1.45	1.75	2.30	3.10	3.80	7.50	
3	1.65	2.05	2.70	3.60	4.44	7.50	\$13.50
4	1.85	2.35	3.10	4.10	5.08	8.50	14.90
5	2.05	2.65	3.50	4.60	5.72	9.50	16.30
6	2.25	2.95	3.90	5.10	6.36	10.50	17.70
7	2.45	3.25	4.30	5.60	7.00	11.50	19,10
8	2.65	3.55	4.70	6.10	7.64	12.50	20,50
9	2.85	3.85	5.10	6.60	8.28	13.50	21.90
10	3.05	4.15	5.50	7.10	8.92	14.50	23,30
12	3.45	4.75	6.30	8.10	10.20	16.50	26.10
4	3.85	5.35	7.10	9.10	11.48	18.50	28,90
16	4.25	5.95	7.90	10.10	12.76	20.50	31.70

Philadelphia Carriage Bolt, price per hundred.

Length	1-8, 3-16 & 1-4	5-16	3-8	7-16	1-2
1 inch.	\$3,00	\$£.00	\$5,00	87.40	\$9.00
2 "	3.40	4.10	5.00	7.40	9.00
3 "	3.80	4.70	5.80	8,20	10.00
4 66	4.20	5.30	6,60	9.00	11.00
5 "	4.80	6.00	7.40	9.80	12.00
6 "	5.40	6.60	8.20	10.60	13.00
7 "	0.10	7.30	9.00	11.40	14.00
8 "		7.90	9.80	12.20	15.00
9 "		8.50	10.60	13.00	16.00
10 "		0.00	11.40	13,80	17.00
11 "			11.10	14.60	18.00

Fractional sizes, intermediate prices. Dls. 80 and 5 %.



Brick Machinery.	
BENNETT BROS. & C	0.
Heavy Steam Power Ma-	
chine	\$525.00
Horse-Power Machines	300.00
Additional Horizontal	
Pugmlll	225,00
Brick Moulds\$2.50 t	o \$3.00
Brick Trucks 5.00	to 13.50
Brick Barrows	7.25
Brick Barrows with	
Springs	8.2
Sand Barrows, steel	
tray	Grat



SAFETY AUTOMATIC BURGLAR ALARM AND DOOR FASTENER. REQUIRES NO WINDING UP. Per doz., \$24. Dis., 40%. The slightest push on the door explodes two caps in successlon and rings alarm bell.

Clay Working Machines.



			No. brick perday. (Complite.
10 D	brick	machine	350.000	\$1,500
	66			
				1.200
4	46	66	40.000	1 100
# C1	44	44		1,100
78	**	**		650
6 0	6.6	66	15,000	
				575
2 E.	н. Р.	- 44	6,000	3,360
	10 S 4 7 S 6 S	10 S " 4 " 7 S "	10 S " " " " " " " " " " " " " " " " " "	4 " 40,000 7 S " "

Coal Mining Machine.



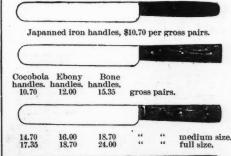
Jeffrey.
6 feet undercut.....\$1500 | 5 feet undercut.....\$1400
Air feed drill......\$275 | Serew feed drill......\$200
Discount. 10s.

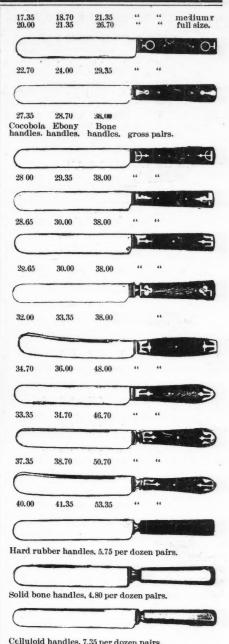
Cork Pullers. The Samson Cork Puller, per dozen, \$12 net.

(8)		elbles. Battersea	E. H.	Sargent &	c Co.
	No.	Height.	Width. Inches.	Crucibles Per doz.	. Covers.
	S	41/6	41/6	\$1.00	\$0.50
1 1	T	4	334	0.80	0.50
BATTERSEA	U	31/2	31/4	0.60	0.40
1	V	31/4	27/8	0.45	0.40
TRIANGLE	W	25%	25%	0.35	0.30
1	X	21/2	21/4	0.30	0.30
1 1	Y	21/8	21/8	0.25	0.30
	Z	134	134	0.20	0.30
				ade to ord	er.
S	ce Illu	stration i	n adverti	sement.	

		Long.	Wide.	High.	Price.
No.		Inches.	Inches.	Inches.	Each
A		7	31/2	21/2	\$.60
B		71/2	436	27/8	.75
C		8	434	3	.88
D		81/2	5	31/4	1.00
E		9	51/2	35%	1.13
		10	6	4	1.25
G		11	4	31/8	1.00
Н		101/2	51/4	37/8	1.00
J		12	6	4	1.2
K		14	8	5	1.73
L		15	9	6	2.00
	Export	discount	15 %.		
Cutler	ry.				

(Tommins & Adams.) KNIVES-TABLE,

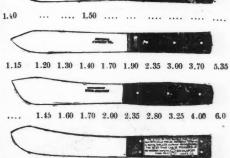


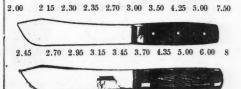


Celluloid handles, 7.35 per dozen pairs. Forks are made to match all above patterns, with either three or four prongs.

Discount 25 %.

BUTCHERS'- COCOBOLA HANDLES. 7 8 9 ln. in. in.





44 2.20 2.35 2.50 2.80 3.40 4.35 5.30 6.85 2.10 3.40 3.55 3.70 4.10 4.60 5 30 7 00 8.75 11. 4.10 4.25 4.40 4.80 5.30 6.00 7.75 9.50 12.5 2.15 2.30 2.35 2.70 3.00 3.50 2.00 Discount 25 and 10 %. HUNTING-EBONY HANDLES. 7 in. 8 in. 9 in. 10 in. 5in. 5½ in. 6 in. 6½ in. 7 i Per Dozen. 4.30 3.00 3.60 5.2 2.75 2.20 2.35 4,30 5.25 . 10 2.20 2.35 2.75 3.00 3.60

W-6.00 3.00 4.00 5.00 12.70 2.55 3,55 4.00 5.00 3.30 6.00 .55 2.70 3,00 Discount, 25 and 10 %.

Per Dozen.
Putty knives, cocobola handles...... \$1.30@\$1.50



SHEARS.
TAILORS'—JAPA.:NED OR NICKEL HANDLES.



BENT TRIMMERS. Per dozen.

STRAIGHT TRIMMERS. Per dozen,
6 in... 12.00 | 10 in... 25.00
7 in... 14.00 | 11 in... 30.00
8 in... 16.00 | 12 in... 33.00
9 in... 19.00 | LADIES' SCISSORS. Per dozen.
4½ in. 10.00 6 in. 11.00
5 in. 10.00 | 6½ in. 12.00
5½ in. 10.50 | 7 in. 13.00 PAPER AND BANKERS'.

Per doze n.
9 in... 18.00 | 13 in... 36.00
10 in... 25.00 | 14 in... 42.00
11 in... 27.00 | 16 in... 54.00
12 in... 32.00 | 18 in... 20.00

Per dozen. 7½ in. 15.00 | 9 in. 18.00 8 in. 16.00 | 9½ in. 20.00 8½ in 17.00 |

SCISSORS. BUTTON-HOLE. 5 and 51/2 in., 14.00 per dozen. Disco int. japanned, 70 and 10% nickel, 60 and 10% PRUNING. 1 B., 9 in., 24 per dozen; 2 B., 8½ in., 21; 3 B., 7¾ in., 19.80,



PRUNING SHEARS FOR LONG HANDLES, No. 1, \$36 per dozen; No. 2, \$30 per dozen. Discount, 35%.

Tipped Tea Spoon.

SPOONS, FORKS, ETC., BEST PLATE ON HARD WHITE

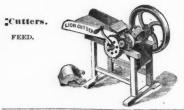


--- 5 oz. or extra plate | Perfect and Leader. Perfect and Leader. 4.75 per doz. 8.50 " " 9.50 " " 8.50 " " 9.50 " "



Table spoons. M 15.00 15 Discount, 30 and 5 %. Tea spoons. 7.50 Medium forks. 15.00 per gross.

Children's sets on cards. 3 pcs. 4 pcs. 4 pcs. Leader pattern, as per cut... 21.00 24.00 doz. 60 and 5 % Aesthetic pattern, as per cut... 5.75 7.25 doz. 30 and 5 %



No. of cutter.	No. of knives.	inches of knives.	Length in inches of feed cut.	Price.
1	2 2 1 2	6¼ 7¼	1/2, 3/4 and 11/4	\$18.00
2	2	71/4	1/2, 8/4 and 11/4	21.00
21/4	1	71/	%, %, 11/4 and 18/4	21.00
21%	2	71/4	5, 7, % and %	23 00
3	1	714 714 814	18, 78, 8 and 78 %, 78. 14 and 184	25.00
3	2	81/2	5, 70 % and 7/8	27.00
2 2 1/2 2 1/2 3 3 4 4 5	1	10	5/ 7/ 11/ and 18/	30,00
4	2	10	14. 17, % and %	33,00
	2	10	7a, %, % and 1%	35,00
6	2	11	7a, %, 11/4 and 2	45.00
61/2	2	11	Ta, 84, 114 and 2	45,00
7	2	13	7a, %, 114 and 2	60.00
61/2 71/2	2	13	15. 75. % and 7% 15. 75. % and 1% 15. %, 7% and 1½ 15. %, 1¼ and 2 16. %, 1¼ and 2 17. %, 1¼ and 2 17. %, 1¼ and 2 17. %, 1¼ and 2	60,00
10	2	16	76, 84, 114 and 2 76, 84, 114 and 2	80,00
12	2	20	7a, 34, 114 and 2	100,00
11	200000000000000000000000000000000000000	11	17, 84, 114 and 2 17, 84, 114 and 2 17, 84, 114 and 2 17, 84, 114 and 2 17, 84, 114 and 2	45,00
13	2	13	78, 84, 114 and 2	60.00
16	2	16	78, 84, 114 and 2	80.00
20	2	20	3, 84, 11/ and 2	100.00

The knife arbors for all sizes are made of machin-ry steel. 30 per cent. dis.

VEGETABLE-GALE'S.





Drill-Portable Hand Rock.

Price, \$225.

Dis., 20%.

		22-inel	, Hard, M	fediu	m and	l Soft.	
		Weight per yd,	Cents, per yd.	1		Weight per yd.	Cents, per yd.
No.	0	19 oz.	35	No.	6	13 oz.	26
	1	18 "	33 32		8	11 "	25 23
	2	16 "	30		9	10 "	21
	4	15 "	28		10	9 "	20
	5	14 "	27	1			

5... 14 27
Ravens, 28½-inch.—Eight ounce, 15 cents per yard
Ten ounce, 19 cents per yard; twelve ounce, 22 cents per
yard; Fifteen ounce, 27 cents per yard. Dis. 25 and 15.
Cotton Sail Twine,—Three-fold and upward, 17 to 20
cents per pound. Dis. 3%.

Electroplate.—Babcock & Co.'s.

Dis. 60 and 2%.



1.200-Dinner

232-Breakfast.

1,200—Dinner 232—Bre:
Dinner Casters.
No. 1,200, 17½ in. high, \$8.00, quadruple plate.
No. 80, 17 in., \$6.00, quadruple plate.
No. 14e, 16 in., \$7.50, " " Plain, 50
No. 25, 16 in., \$5.00, " " Plain, 50
No. 25, 16 in., \$4.00, double plate.
No. 33, 15 in., \$3.75, " "
No. 53, 15 in., \$3.75, " "
No. 1534, 14½ in., \$2.00, single plate.
No. 19, 14½ in., \$1.85, " "
No. 40, 14 in., \$1.75, " Plain, 50 cents less,



Breakfast Casters, 231, 10 in. high, \$4.00. quadruple plate. No. 232. 12 in. high, \$6.00 quadruple plate. No. 13. 12 in. high, \$2.25, double plate. No. 12. 10/5 in. high, \$1.75, single plate.

single plate.

CAKE BASKETS.
Quadruple Plate.
No. 448. 7 in. high-chased,
\$16; gold lined, \$17.
No. 690. 7½ in. high,
chased, \$7; gold lined,
\$8. \$8. No. 686. 61/4 in. high-chased, \$4.50; gold lined, \$5.50. No. 681. 6 in. high, chased, \$3; gold lined, \$3.50.

BUTTER DISHES. No. 126. 11 inches high, \$5.50.

No. 127. 7 inches high, \$5.50.

No. 75. 8 inches high, \$1.85.

No. 78. 71/2 inches high, \$2.00.



CHILD'S SETS.

No. 90. Satin lined case, cup, saucer, knife. fork and spoon, \$2.25.

No. 41. Cup, gold lined, in fancy ease, \$1.15.

No. 43, Cup and saucer, gold lined. fanc case, \$1.15,

FLAT WARE. Calla Lily, Empress, Windsor and Olive Patterns, 18 Per Cent Nickel Silver Base.

Cent Nicker	Suver B	ase.	
	Extra	Double	Triple
	plate.	plate.	plate.
p	er doz.	per doz.	per doz.
Tea spoons	\$4.75	\$6.00	\$7.25
Dessert spoons	8.50	10.50	12.50
Table spoons	9.50	12,50	14.50
French coffee spoons	4.75	6.00	7.25
Berry or nut spoons	24.00	30.00	36.00
Bar spoons, small	4.75	6.00	7.25
Dessert forks	8,50	10.50	12.50
Medium forks	9.50	12.00	14.50
Oyster forks	7.00	9.00	11.00
Sugar shells	9.00	11.00	13.00
Sugar tongs	25.50	31.50	37.50
Butter knives, twist or re-			
versed handles	10.50	12.50	14.50
Nut pieks	4.75	6.00	7.25
Pie knives, engraved hlades.	42.00	51.00	60.00
Soup ladles	48.00	60.00	72.00
A .	PI	CKLE DISH	ES
	Vo. 144.	12 in. high.	\$3.50
		1016 in. high	
9 4		eolored gla	
		12 in. high	
49'111 11 125	sorted	eolored gla	88.
MILL IZE N		21/2 in. high.	
	decora	ted glass.	
	o. 156, 1	21/2 in. high.	\$6: hand
		ted glass.	
3 7 7 7 7		-	
THE PARTY NAMED IN COLUMN TWO IS NOT THE OWNER.		*	



TEA SETS.
No. 255. 6 pieces, \$35, quadruple plate.
No. 301. 4 pieces, \$23, quadruple plate.
No. 1847. 6 pieces, \$42, quadruple plate.

Flouring

MIII

Machinery. Nordyke & Marmon Co.



No. 253.

Roller Mills for Wheat Flour. Prices of Double and Single Roller Mills.

C' All		16 Corrug.	All	Single n	aehines.
Size.	smooth.	1/2 smooth.	eorrug.	Corrug.	Smooth.
6×12	\$465	\$475	\$480		
6×16 6×20	515 565	525 575	530 580		
7×14	515	525	530		******
7×18	560	570	575		
7×24 9×18	635 625	645 640	650 650	\$350	\$335
9×24	700	720	735	390	375
9×30	785	810	830	440	420



20-ineh New Era Mill for Wheat, Corn, and Middlings.

Size. Power. Pulley. Capacity Ineh. H. P. Ineh. 20 4 to 10 14×7 Bush. 12 to 40 Speed. Weight. Price. Lhs. 500 to 800 660

The Nordyke Bradford Portable Mill.



Corn, Wheat Sing'l Dou-	Mor-
20 10 to 12 5 600 700 140 175	wh'ls
20 10 to 12 5 600 700 140 175	\$180
99 19 40 15 500 950 160 100	190
22 12 to 15 5 700 850 160 190	210
24 15 to 18 6 900 1050 175 210	225
26 18 to 20 8 to 10 8 1200 1400 185 225	250
30 20 to 25 10 to 12 10 1500 1700 225 265	290 380
36 25 to 30 14 to 17 12 1800 2100 315 355	

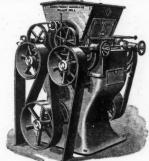
Farm and Plantations Mills.



Diameter of burrs.	Power to drive.	Size of pulley.	Capacity per hour.	Revolu- tions per minute.	Weight.	Price
14 in. 18 in.		9×51/6 11×61/6	4 to 14 bushels 8 to 40 bushels	600 to 1200 400 to 700		

· · ·	Power.	Capacity.	We	ight.	Pulley.	on gear.	ortise gear.
Size.			Pulley.	Geared	Pu	Iron	Mo
18 22 26 30	4 to 6H.P.		560 lhs	650	\$130	\$165	
22		12 to 30 "	800 "	1000	165	200	
26	8 to 12 "	16 to 40 "	1100 "	1500	185		
30		25 to 60 "	1300 "	1700	215		

Flour Mills. E. P. Allis & Co.



			4		
Gray's	pat. noiseless	helt	roller-mills,	poreelain	rolls

Price	\$600.00 800.00 580.00		\$600.00		\$650.00		lbs. \$590.00	615.00	625.00
Approximate	lbs.		lbs.		lbs.		lbs.	lbs.	lbs.
Approximate shipping weight.	2,700 4,000 2,700		2,700		2,700		2,700	6'' 2,700	2,700
Length of driving helt above floor.	6,3,		6, 6,,		9, 9,		,,9 ,9		9, 9
Approximate to power required.	14" × 16", single 577" 2" 2" 4" 5" 29" × 64" 200 to 300 [34 to 25.4 H.] 16" 3" 2700 [14" × 16" double 57 10", 5" 6" 4" 10" 2" × 54" (300 ± 300 ± 300) 3" 4" 4" H. P. B 9" 3" 4,000 [14" × 16" double 57 10", 5" 6" 4" 10" 2" × 54" (300 ± 400) 14" 2" 2" × 54" (300 ± 400) 14" 2" 2" 2" 2" 2"		8 9' × 14" 5' 1½" 3' 10' 3' 10' 12" × 5½" 300 to 400 1½ to 2½ H. P. 16' 6" 2,700 1bs. \$600.00	olls.	$\dots = 5'115'' 3'10' 3'10' 12'' \times 5'4'' 300 to 400 115' to 25'' H. P. 16' 6'' 2,700 1bs. $850.00 to 10'' 10'' 10'' 10'' 10'' 10'' 10'' 10'$		are sm 5' 11\%" 3' 10' 3' 10' 12'' × 5\4" 300 to 400 11\% to 2\\% H. P. 16' 6" 2,700	5' 1½" 3' 10" 3 10" 12" × 5¼" 300 to 400 1½ to 2½ H. P. 16	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
	00 1% t 00 1%	n rolls	00 11/£ t	elain r	00 11/2 t	ines.	0 11/6 t	00 11/2 t	00 11/2 t
Revolutions per minute.	200 to 3 200 : 3 300 : 4	lled iro	300 to 4	nt pore	300 to 40	r mach	300 to 40	300 to 40	300 to 40
Driving pulley.	20" × 616" 20" × 616" 12" × 514"	With corrugated chilled iron rolls.	12" × 5¼"	With Wegmann's patent porcelain rolls.	2" × 514"	Divided four roller machines.	12" × 5¼"	12" × 5¼"	2" × 5¼"
Width.	4, 5", 4' 10", 3' 10",	h eorr	3, 10,	Wegn	3, 10 /	ivided	3, 10,	3 10"	3 10"
Length.	3, 2, 5, 6, 3, 10,	Wit	3, 10,	With	10,	a	,01	, 10,	, 10,,
Height.	5, 7,, 5, 10,, 5, 13,6,,		11/2"		11/8" 3		11,8" 3	11/8"/ 3	11/6"/ 3
Rolls.	' single		-10		-43		I.nr am	9, × 14,	9" × 14" 5 1-pr. por. 5 1-pr. eor. 1-pr. por.
Size of Rolls.	14" × 16" 14" × 16" 9" × 14"	feer	9" × 14".		9'' × 14 '		9' × 14'	$9' \times 14''$	9" × 14". 1-pr. eor.

	U2 1	0		Ç,	
For a	grinding	eorn.	feed.	rye.	ete.

	Size.	Height.	Width.	Length.	
e''	× 12"	4' 6"	3' 5"	2' 7"	
9"	× 14"	5' 8"	3' 10"	3' 5"	
9"	× 18"	5' 8"	4' 9"	3' 5'	
9"	× 24"	5′ 8′	5' 6"	3′	

Driving pulley.	Revolu- tions per minute.	Length of belt above floor.	Approxi- mate ship- ping weight	Price.
10" × 5 ¹ 4" 14" × 6 ¹ 4" 14" × 7 ¹ 4" 14" × 8 ¹ 4"	400 to 500 350 to 450 350 to 450 350 to 450		2600 fb. 3050 fb. 3350 fb.	\$500.00 600.00 650.00 735.00

Flue Cleaner. Hurley's Automatic Steam Flue Cleaner.



diam. of hose Best 4-ply	
	steam
No. tuhes. elamps. Globe Valves. hose. Per	foot.
11½ to 2 \$5.00 ¼, 95 cents ¾, 67	eents.
22 to 2½ 6.25 16, 95 eents 34, 67 632½ to 3 7.50 34,\$1.30 34, 67	eents.
32½ to 3 7.50 ¾,\$1.30 ¾, 67	eents.
43 to 31/2 8.75 1, 1.75 13/4, 83	eents.
531/2 to 41/4 10.00 11/4 2.90 11/4,\$1.04	
Dis. on flue cleaners, 60 and 70%.	

T. CPT	rnai	nks.												
No.	2e,	weight.	155	lhs.	21	X	27 hear	${ m rth}$	 		 	 		\$42.0
66	3a.	46	80	66	18	in.	diam.	hearth			 			27.0
4.6	3h,	66	75	64	18	66	6.6	66						. 24.0
66	3e.	44	85	66	18	66	64	4.6						30.0
66	6a.	44	45	66	14	46	6.6	6.6						
66	6B.	44	45	66	14	66	66	66		•		•	•	16.0



Riveting Forges. Bellows, 18 in., 20 in., 22 in., 24 in., 88.00. \$10.00. \$13.00. \$17.00. 20 \$ dic.



Light work, 12 × 17; height, 15 in., \$16.00.

Same, with Hood, 12 × 17; height, 28 in., \$20.00.

Bridge, Boller or Railroad work, Pan, 17 × 19; height, 29 in.; Fan, 8 in., \$27.00.

Water Tank, \$4.00 extra.

Iron Fire Ring Round Tuyere, \$1.00 extra.

50 \$\frac{1}{2}\$ dis.



Fruit Evaporator.

No. 1. Evaporator.

No. 2. Fruit Drier and Baker, with Bleacher attachment. Weight, 225 lbs. Capacity, 5 to 7 hushels apples per day; 24 in. deep, 26 in. wide, 5½ ft. high; 12 trays, 22 22; 40 square feet drying surface. Complete.

No. 3. Capacity, 15 to 20 hushels per day.

No. 4. Capacity, 20 to 30 bushels per day.

Dis, No. 1, 3 and 4 = 20%. No. 2 = 30%.

Boxing, extra:

No. 1, \$3.00; No. 2, \$3.00; No. 3, \$7.54; No. 4, \$12.50.

Freight to New York:

No. 1, \$4.00; No. 2, \$6.00; No. 3, \$12.00; No. 4, \$18.00.



Gaskets.

Corrugated Copper. Price, 2 cents per square inch, less 30 per cent. discount for home trade. Less 60% discount for export trade.

Glass Tube Cutters.



雙	6-in. h	owl	and eover,	per de	oz	\$3.25
ALC: UNITED BY	7-in. 8-in.	66	66	44		6.00
	9-in.		66	66		. 8.00
ALANGE THE T	10-in.		66	44		. 10.50
ALCOHOLD !		N	et.			
///			en .		-	0
		,		M		CII
			-	B	1 - 3	B. //

Nappy, 41/2-mch., per doz., 50c.; 6-inch., per doz., \$2 inch., per doz., \$3; 8-inch., per doz.' \$4.

Cream Pitcher, 1 pint, per doz., \$1.25; one quart, per doz., \$3.50; 3 pints, per doz., \$4.50.
Pint Pitcher, per doz., \$1.50; quart pitcher, per doz., \$2; ½ gallon pitcher, per doz., \$3; 3 quart pitcher per oz., \$4.50.





Flange Butter and Cover, per doz., \$1.75. Water Set, per doz., sets of 60 pieces, \$7.50.



Cheese Dish and Cover, 8 in., per doz., \$4.50. Quart Water Bottle, per doz., \$4.50.

Ind. Salts; per gross, \$2.00. A sorted patterns, 4 Bottle Castors, per doz., \$7.50; 3 bottle, per doz., \$4.50







Berry Dish, 4½-ineh, per doz., 50c.; 10-ineh, per doz., \$4.
Butter Dish and Cover, per doz., \$1.25.
Butter Dish and Cover, per doz., 75c.





Candlesticks, per doz., \$2.00. Glass Slipper for Flowers, per doz., 50 cents; slipper and tray, per doz., \$1. Jam Jar and Cover, 1 qt., per doz., \$2.50; ½ gal., per doz., \$3.25; ¾ gal., per doz., \$4; 1 gal., per doz., \$5; 1½ gals., \$9; 2 gals., per doz., \$12. Poeket Flask, 1 pint, \$1. Tumblers.

8 " "75 {



9 oz., per doz., \$2.75.



11 oz., assorted pat-terns, per doz., 30 cts.



1 oz. to 12 oz., nested for shipping, per doz. nest, \$2.

Goblets, banded, per doz 5 cents. Claret to match, per doz., 55 cents. Wines, to match, per doz. Willes, 50 eents. Cordials, to match, per 45 eents.



Champagne, per doz., \$1.25.



per doz..55 cts. 1/2 Pt. tumbler. 1/2 Pt. mug to match, " .. 65 " ..50 " Spoon holder, eream pitcher, sugar, butter dish to match.

Sets of 4 pieces, per doz. sets, 48 pieces, \$3.75.

-Emmert & Lamb.
'Daisy," without Shaking Grinding Mills. Bolt, 170 pounds, 9 eubie feet, \$40. 'Daisy," with Shaking Bolt, 185 pounds, 9 eubie

Discount



Di	Size of	Pulleys			
Diameter of Buhr Stones	Diam.	Face.			
12 in . 16 "	8 in.	6¼ in. 7½ "			

"The Union Mill."

Horse Power	Capacity in B'sh's	Speed	With- out Bolt	With Bolt	Saek- ing Eleva- tor, Extra	Extra Metal Buhrs
8 to 10 10 to 15	12 to 30 20 to 50	1200 to 1500 1000 to 1600	\$90.00 160.00			\$1.20 pair 1.50 "



	-	-	-	XX	-	J. C	4	4	,					6	31	r	in	9		-		
- T		44.	•		-	-	-		٦.]	No). (3,	S	aı	n	B	si	Z	es a	ě
NO	Ų.,																			5	12.0	M
66		same	size	sas	NO.	1															10.5	И
**	8,	**	**	44	No.	9															9.7	E
		W	ith	Thir	\mathbf{W}	hee	-1	W	144	h	211	+	8	250	ir	100	0					
No.	3,	same	size	81 8	No.	0							~ 1			•0				5	12,0	M
46	4,	**	**		No	1															10 5	3
46	5,	66	44	66	No.	2															9.5	5

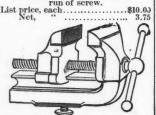
Hardware Specialties.



AUGERS. Patent Adjustable Hollow. Cuts from ¼ to 1¼, pivoted jaws, graduated scale to 1-16ths, per doz., \$60.00

!Discount, 15 and 10%,





Bench Vise, Steel Jaws, 3½ in., opens 3 in.; weight, 12 bs.; list price, each, \$4.00.; net price, each, \$1.60.



BARN DOOR HANGER.

4 in., per doz. pairs......\$12.00 5 " 14.40 5 " " Track, per foot. One dozen pairs in case. Dis., 50%.

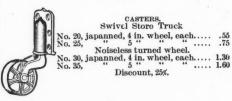


BENCH HOOK.
Patent, adjustable and reversible
List \$9 dozen, ½ dozen in box.
Discount, 20 and 10%.



BLACKSMITH'S TONGS.

						S	V	V	į١	V 6	el	l	J	8	L	W										
.0.	1, 2,	16 18	in.,	perdoz				I	ì			2	0	%											\$10.0 10.0)O





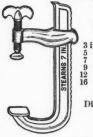
Store Truck, stationary. No. 50, 5-ineh wheel, 1½ inch wide, each, \$1.05.

No. 60, 5-ineh,extra heavy, 1½ inch wide, each \$1.50.

Discount, 25%.



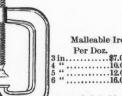




SCREW CLAMPS. Adjustable.

44 44 44 1/2 doz. in box. Discount, 20 and 10%.

CLAMPS. New Door Frame. 3 ft. long, per doz., \$8 list; \$5 per doz. net.



Malleable Iron Serew Clamps. Per Doz. Per Doz. 3 in. \$7.00 | 7 in. \$20.00 | 4 " ... 10,00 | 8 " ... 25.00 | 5 " ... 12.00 | 9 " ... 27.50 | 6 " ... 16.00 | 10 " ... 30.00



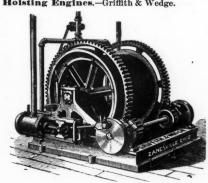
Silent Saw Vise. No. 10., 10 in. jaw. per doz \$15,00 Dis., 331/4%.

	4.5			
Moore	per No	t Mfg. Co.	erdz. gr	1ha
No. per dz. s	r., Ibs. Cl	amn pt	i uz. gi	., 100
1 Amateur	11, 108, 01	ś	3.00	8
vise\$2.25	70 91	§	5.00	22
Anvil.	21		14 95	70
	200 41	8	91.00	1,42
2 3.75 311.25	615 Cc	mbination	.21.00	1,74
418.00		hand	5 95	8
1024.00	1.675		. 0.20	
		, 20 and 2, f.c	n. h.	
Nos. 1, 116, 2 and 214	are nack	ed in dozens	. Nos.	3 and
31/2 in half dozens; N				
and No. 20 singly. Ea	ach hand	vice is nut un	n in nes	t hor
and packed in half do	zen lots.	visc is put u	, III IICO	10 00.
			Fooh	910.0
1 Hinge pipe vise, 0 to	2 III. pipe	J P	Each	\$10.0
4	O THE PH	JC		. 20.0
1 Malleable pipe vise, 1 Combination pipe a	o to 2 III.	pipe		10.0
	Discount,		i. pipe.	. 10.0
_			RENCHI	30
		, W	RENUIL	14C0+



Coes Mechanics' Screw Wrenches, same list, less 55, 10, 10, 7½ and 3 %.
A. G. Coes & Co. Pat. Screw Wrenches, same list as above. Discount, 55, 10, 7½ and 3%.

Hoisting Engines.-Griffith & Wedge.



Hoisting	Engines,	Miner'	s Prosp	ecting.	Weight 4,500	\$ 750
loisting	Engines,	No. 11 Disc	Double count. 2	Cylinde	er 4,500	800
44	44		ouble (r 6,000	1,000
44	66	No. 3	66	66	11,000	1,550
44	44	No. 4	66	4.6	15,500	1,800
44	44	No. 5	66	66	17,000	2,100
4.	44	No. 6	66	66	13,600	1,750
44	44	No. 7	44	66	17,000	2,100
44	44	No. 8	44	66	19,000	2,400
44	44	No. 9	66	66	48,000	4,500
			count, 2	5%.	111201000	1,000



Webster Camp & Lane Machine Co.
Double drum.

		Approx. weight,
Single drum.	Average Lo	ad. complete.
No.	Pounds.	Pounds.
\$825.00 = 5	1,950	$6,000 = \dots$
918.50 = 6	1,650	$6,500 = \dots$
1,177.00 = 7	2,200	8,000 = \$1,661.00
1,331.00 = 8	3,000	8,500 = 1,815.00
1.694.00 = 9	3,500	14,000 = 2,722.50
$1,914.00 = 16\frac{1}{2}$	3,700	16,000 = 3,12400
$2,343.00 = 17\frac{1}{3}$	5,500	19,000 = 3,333.00
2,475.00 = 18	5,500	22,000 = 3,872.00
/	W7	

2,475.00 = 18 5.500 22,000 = 3,872.00

Ice Machines (Family).

L. Dermingny & Co.
No. 1, Ice machine, ice and ice cream molds, 1b ice, \$15.00.
No. 2, Ice machine, ice and ice cream molds, 1½ lbs. ice, \$20.00.
No. 3, Ice machine, ice and ice cream molds, 1 carafe 1 bottle holder, 2 lbs. ice, \$20.50.
No. 4, Ice machine, ice and ice cream molds, 2 carafe 1 bottle holder, 4 lbs. ice, \$33.00.
No. 5, Ice machine, ice and ice cream molds, 3 carafe 1 bottle holder, 6 lbs. ice, \$40.50.

No. 6, Ice machine, ice and ice cream molds, 4 carafe 1 bottle holder, 9 lbs. ice, \$46.50.

India Rubber Goods.

MECHANICAL.

Commonwealth Rubber Co.



		RUBBER	BELTING.		
	2 ply per	3 ply per	4 ply per	5 ply per	6 ply per
Inches.	foot.	foot.	foot.	foot.	foot.
1	\$0.07				
:11/4	0.09				
116	0.11				
2'*	0.15	\$0.17	\$0.21		
21/2	0.18	0.22	0.26		
3	0.22	0.26	0.31		
31/6	0.26	0.30	0.37		
1 4	0.30	0.34	0.42		
416	0.33	0.39	0.47		
5	0.36	0.39	0.52		
6	0.43	0.52	0.62		
0					
7	0.51	0.60	0.73	07.05	
8	0.59	0.70	0.84	\$1.05	\$1.25
9	0.07	0.80	0.95	1.18	1.42
10	0.75	0.90	1.07	1.33	1.60
11	0.83	1.00	1.18	1.47	1.77
12	0.91	1.08	1.30	1.62	1.95
13	1.00	1.18	1.42	1.77	2.13
14	1.08	1.28	1.54	1.92	2.31
15	1,16	1.38	1.66	2.07	2.49
16	1.25	1.50	1.78	2.22	2.67
18	1.41	1.70	2.02	2.52	3.03
20	1.58	1.90	2.26	2.82	3,39
22	1.76	2.12	2.52	3.15	3.74
24	1.96	2.36	2.80	3.50	4.20
26	2.18	2,60	3.08	3.85	4.62
28	2.42	2.84	3.36	4.20	5.04
30	a. La	4.01	3.64	4.55	5.46
32			3.92	4.90	5.88
34			4.20	5.25	6.30
36		******	4.48	5.60	
38		******	4.76	5.95	6.72
		******			7.14
40			5.04	6.30	7.56
42			5.32	6.65	7.98
44			5.60	7.00	8.40
46			5.88	7.35	8.82
48			6.16	7.70	9.24
50			6.44	8.05	9.66
_ 52			6.72	8.40	10.08
Dis. Re	eliance, 60	and 5. 1	Dis. Royal	, 60, 10 an	d 10. Dis
Manhati	an. 70 and	5. See L	eather Be	lting, pag	e 3; Link
Belting,	page 9.				
-	STEWART .			PACKIN	G.

PACKING. Piston Packing.

Round Piston Packing Per lb. 85c. Discount, 60, 10 and 5 per cent.

Square Piston Packing.

Price same as above.
Round and square piston packing is made in lengths of twelve or twenty-four feet.

Square Piston Packing.
Rubber back, per
pound \$1.
Discount 60
der cent. Best only,
Square piston packing
rubber back is made in
lengths of twenty feet.



		n Insertion, ertion, Cloth			a
	ickness.	1-Ply.	2-Ply.	3-Ply.	4-Ply.
-64 i	nch	70 cts.			*******
-32		65 cts.			******
-16		60 cts.	63 cts.	66 cts.	
-32		55 cts.	58 cts.	61 cts.	
-32 -8	44	55 cts.	55 cts.	58 cts.	61 cts.
-16		55 cts.	55 cts.	55 cts.	58 cts.
-4		55 cts.		55 cts.	55 cts.

Three cents per pound additional will be charged for each extra ply of cloth. Each cloth, whether insertion or on outside, to count as one ply.

All cloth insertion or plain packing is one yard wide, and any length desired.

Wire insertion packing, all thicknesses, per 18, 50 cents. Discounts: Reliance, 70 & 10; Royal, 60, 10 & 10; Man hattan, 60 per cent.

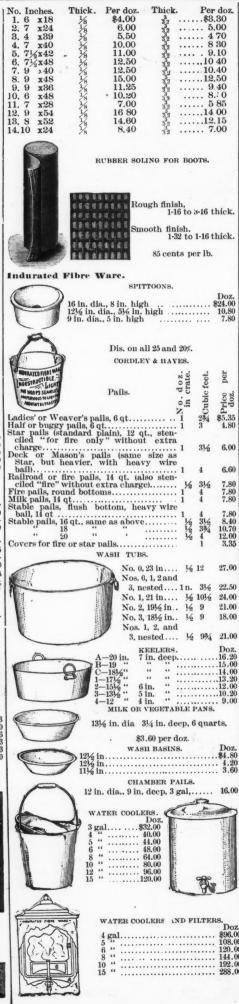
See Packing, page 10.







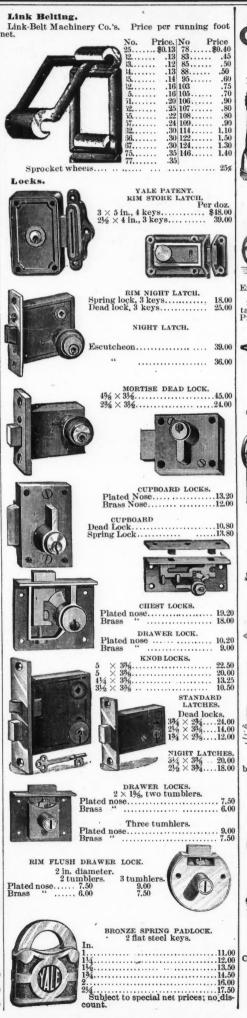
Hose	No. Inches. 1. 6 x18 2. 7 x24 3. 4 x39 4. 7 x40 5. 7 x48 6. 7 x48 7. 9 x40 8. 9 x46 9. 9 x36 10. 6 x48 11. 7 x28 12. 9 x54 13. 8 x52 14.10 x24
	Indurated
RUBBER HOSE. Conducting Hose—Two-ply. Int. Per Int. Per Int. Per diam. ft. diam. ft. diam. ft. diam. ft. diam. ft. diam. ft. ft. so. 20 2 in. \$0.66 5 in. \$1.65 34 in. \$2.5 2½4 in. 75 6 in. \$1.65 11 in. 33 2½4 in. 83 7 in. 2.31 1½4 in. 42 2½4 in. 83 7 in. 2.31 1½4 in. 50 3 in. 99 9 in. 2.97 1½4 in. 50 3 in. 99 9 in. 2.97 1½4 in. 50 3 in. 99 9 in. 2.97 1½4 in. 50 1½4 in. 1.32 10 in. 3.33 1½4 in. 58 4 in. 1.32 10 in. 3.33 11½4 in. 58 1½ in. \$0.60 2½4 in. \$1.00 3½4 in. \$1.00 1½4 in. \$0.25 1½6 in. \$0.60 2½4 in. \$1.00 1½4 in. \$0.25 1½6 in. \$0.60 2½4 in. \$1.00 1½4 in. \$0.24 in. \$0.30 1½4 in. \$0.25 1½6 in. \$0.60 2½6 in. \$1.00 1½4 in. \$0.25 1½6 in. \$0.60 2½6 in. \$1.00 1½6 in. \$0.50 2½6 in. \$1.00 1½6 in. \$0.50 2½6 in. \$1.00 1½6 in. \$0.50 2½6 in. \$0.60 2½6 i	Ladies' or We that or bugg Star pails (s ciled "for charge
Dis., 60, 10 and 5%. CORRUGATED RUBBER MATTING. Rolls 1 yard wide, 30 yards long, cut to any size required. 3-32 in. thick, per sq. ft. \$0.33 ½	
Cuts show full size of pattern. Diamond Point. Corrugated. Price, \$1 per! Rubber cement to attach soles STAIR TREADS.	





tise.

JAN.	4,	1890.				THE	EN
No. 11, i No. 2, ir Solance F.o.h.carse Keystone Complete People's Lower	ron i on fi iron iron at v Dou Bl4.	frame cog ame cog frame (f frame (f) yorks; 60 hle Benc 134, 836.50 ble Foldi g Table, shing Ma	r doz. I. Roy No. No. No. wheee No. whee No. whee No. whee Youreka P Cureka	bis., 40 al Ke 134 rol. 174 rol. 1754 rol. 1754 rol. 1754 rol. 1754 rol. 1755 rol. 175	xystone of specific s	rame co \$39.50. rame co \$39.50. *ame co \$48.50. \$20. 24. colls, \$20. colls, \$24. New York i. d 6 in crat	g g g g g g g g g g g g g g g g g g g
In. 10 Weigh 12 " 14 "	Lh:	Forwa s.	In. \$13,00 16 15,00 18 17,00 21 Dis. 60 and	Weigl	Lhs. nt, 38 41	\$19. 21. 34.	00
		人一		\$1 16 \$1 G	3.00 \$1 3 in. 18 19.00 \$2 24 in., eared at	in. 14 ir 5.00 \$17.4 in. 20 ir 1.00 \$23.6 \$30.00. both end id 5 and 5	00 n. 00 s.
Dis., 60	and	5% and 5	MO MO NEW YORK	o in. C	Mfg. Coroquet, 10 in 12 in 14 in 16 in 20 in	18 pound \$11	d, 00 00 00 00 00 00 00 00 00
The state of the s							
30 " 35 " 40 "	, wit	w Excels hout sha h shaft a " per set	fts or sea nd seat.	it		\$65. 110. 135. 170.	00.00
					Blade N Roller. 8 in., \$ \$13.00; 13 14 in., \$1 \$19.00; 13	ior Three flower at 11.00; 10 in 2 in., \$15.67.00; 16 in \$21.63.00.0% and days f.o.	nd n., 00; n., 00;
Lemo	n S	queezei	rs.		4	Ď	
	HE	SAMSON			THE THE		PB
The Aper doze The Sa Porcelai Wood. N	on, \$1 imso n lin No. 2,	Lemon 5.00. n, per do ed, No. 1 25 a per doz.	zen, \$3.00 , per doz .nd 30 % d	iscour	it.	d squeez	3.00







Hand Circular Rip Saw.

Price \$50.00.

Dis., 35%.



Meat Cutters.

One turned face-plate, two pointed and one spur center, two rests, with sockets and plate for hand tools, slide restwrench, belting, etc., \$40.

Lathe.

Dis., 25%.



Enterprise. American.



Motors (Water).

Size No. 8, for Sewing Machines, etc., \$18 each.

No. 9, ½ horse-power (30 lbs. pressure), ¼ h. p. (50 lbs.), ½ h. p. (100 lbs.), ½ h. p. (150 lbs.), 1 h. p. (200 lbs.), ½ h. p. (150 lbs.), 1 h. p. (200 lbs.), ½ h. p. (150 lbs.), 1 h. p. (200 lbs.), ½ h. p. (150 lbs.), 2 h. p. (100 lbs.), 1½ h. p. (150 lbs.), 2 h. p. (100 lbs.), 1½ h. p. (150 lbs.), 2 h. p. (200 lbs.), \$50.

No. 11, 1 horse-power (30 lbs. pressure), 1½ h. p. (200 lbs.), \$75.

No. 12, 2 horse-power (30 lbs. pressure), 1½ h. p. (50 lbs.), 3 h. p. (100 lbs.), 4½ h. p. (150 lbs.), 6 h. p. (200 lbs.), \$100.

No. 12, 2 horse-power (30 lbs. pressure), 1½ h. p. (50 lbs.), 6 h. p. (200 lbs.), \$150.

No. 13, 3 horse-power (30 lbs. pressure), 3 h. p. (50 lbs.), 10 h. p. (100 lbs.), 15 h. p. (150 lbs.), 20 h. p. (200 lbs.), \$285.

Bis., 40z.

Governors for 11 and 12, \$25 extra; for No. 13, \$35 extra.

Mining Machinery.

N. B.—Special attention is Invited to the goods advertised and illustrated in the advertising pages of the Engineering and Mining Journal, quotations and discounts upon which would only mislead buyers.

Price-lists and other information may be obtained by addressing the advertisers direct, or by writing to the Engineering and Mining Journal.



Concentrating Machinery, Fort Scott Foundry & Mach-ine Works Co. Blake Improved Crusher: 10x7, weight 7,500; \$410.00. Blake Improved Crusher: 15x9, weight 9,000; \$580.00. Discount 25%. Cornish Crushing Rollers:

20 diameter, 10 face, weight 5,400; \$450,00.
Cornish Crushing Rollers: 29 diameter, 14 face, weight 6,000; \$500,00.
Cornish Crushing Rollers: 22 diameter, 14 face, weight 9,500; \$625,00.
Cornish Crushing Rollers: 27 diameter, 14 face, weight 13,000; \$750,00.
Cornish Crushing Rollers: 30 diameter, 14 face, weight 15,000, \$850,00.

Discount 25%.

Discount 25%.

15,000, \$850,00.

Discount 25%.
Complete Sizing Arrangement, consisting of Revolving Screens of Steel Sheet and Hydraulic Classifier.
For Concentrator, 25 tons capacity, \$250; 50 tons capacity, \$350; 75 tons capacity, \$250; 50 tons capacity, \$350; 75 tons capacity, \$450; 100 tons capacity, \$800. Discount, ¹⁰ per cent.
Automatic working Jig Machines, all complete, woodword included, with slidemotion: 2 sieves, \$3.0; 3 sieves, \$300; 4 sieves, \$450.
With Eccentric Motion, all complete, woodwork included: 1 sieves, \$200; 2 sieves, \$270; 3 sieves, \$220; 4 sieves, \$230.
Automatic working Double Jig Machines, all complete, woodwork included: 4 sieves, \$210; 6 sieves, \$335; 8 sieves, \$425. Discount, 25 per cent.
Single Rittinger Percussion Tables, all the iron parts, \$350; Double Rittinger Percussion Tables, all the iron parts, \$500. Discount, 10 per cent.
Improved Rotary Tables, all the iron parts and pipes, \$2.0. Discount, 25 per cent.

Mouse Traps.

Mouse Traps.



The Cyclone Mouse Trap, per gross, \$4.05.

The Idea



Slaver Rat Traps, per gross, \$10. Net prices

Nails and Tacks.

6 36

O. H. Swedes. Price, same as Swedes. Swedes steel tacks same list price as iron. Discounts, 721/2, 10 and 2%.

Upholsterers.

Price, same as Swedes, Cut Tacks. Price per dozen ounces

4-8 416-8 56 516-8 35 31 29 27 6-8 25 Discount, 60, 10 and 2%,

	Common a	and patent brad	8.
	Price per doz.	Price per doz.	Price per lb. in
lneh.	16 wt.	full wt.	papers or bulk.
2-8	.50	1.00	1.25
3-8	.60	1.20	.80
4-8	.65	1.30	.58
5-8	.72	1.44	.48
6-8	.80	1.60	.36
7-8	.90	1.80	.30
1,	1.00	2.00	.26
11/4	1.12	2.24	.25
11/4	1.26	2.52	.24
116.	1.82	3.64	.22
134	2.25	4.50	.20
2	2.43	4.86	.18
		0, 10 and 2%.	
0.11		at we consider solve	

Colls.

Lubroleine A cylinder oil 50 in. barrels.
Lubroleine D cylinder oil 50 in. barrels.
Lubroleine D cylinder oil 50 in. barrels.
Lubroleine A machine oil 45 in. barrels.
Lubroleine B machine oil 35 in. barrels.
Lubroleine A engine oil 40 in. harrels.
Lubroleine B engine oil 40 in. harrels.
Lubroleine B engine oil 40 in. harrels.
In cases 5c gal. extra.
Crescent Axle Grease.—Barrels, 3c per lb; 100-lb. kegs
3½c lb.; 2-lb. decorated tims, \$12, gross less 5 per cent.
Texas Star Axle Grease.—Barrels, 2½c per lb.; 100-lb. kegs, 3c per lb.
See Axle Grease, page 2.
Oll Stones.

See Axie Grease, page 2.	
Oil Stones.	
Best White Washita.	
Green Paper Brand, $8 \times 2 \times 1\%$ inchesper lb.	.32
Oil stone, No. 1, " " "	.221/6
"Extra, " "	.30
High rounds. " " "	.30
Round edge slips, Nos. 1, 31/2 to 5, in hoxes	*00
10 lbs. upwards	.40
Round edge slips, extra, in boxes 10 lbs, up-	.10
	.50
wards	.00
hower 10 lbs approads	.50
boxes 10 lbs. upwards	
Needle piecesper hundred. \$3	
Wheels, 11/2 to 53/4 in. thlekper inch.	.40
Good Washita,	
Oil Stone No. 1, 8x2x11/8per lb.	.15
2,	.12
Axe Stone, assorted sizes	.10
Rollid rage Slips, assorted sizes	.25
Arkansas.	
Oil Stone No. 1, 4 to 6 in. long x2x34 to 1 in. per lb.	\$1.35
Oil Stone No. 1, 6 to 9 in. long x2x34 to 1 in. "	1.75
Oil Stone No. 2, 4 to 9 ln. long x2x34 to 1 in. "	.75
Round Edged Sllps, assorted sizes "	2.00
Square File Slips, 3 to 4 inches longper doz.	1.75
Diamonds, 31/4 to 4 inches long "	3.00
Triangulars, 31/2 to 4 Inches long "	3,00
Flat Files, 3 to 4 inches long "	2.00
Beveled Files, 31/4 to 4 inches long "	2.50
Knlfe Blades, 3 to 4 Inches long "	3.00
Points, extra long, 3 to 31/2 inches"	2.00
Polnts	1.50
Pen Knife Pieces, assorted sizesper lb.	2.00
Needle Piecesper hund	
Wheels, 2 to 4 inches, ½ inch thickper inch	1.25
Oil Stone Powderper lb.	1.20
10, 10 and 21/2 dis.	10
Oil Stories	



Burns 8 hours; holds 1 quart oil,

Nickel plated crown plate, per doz., \$12.

Packing. Selden's Patent.

For Steam, Air, Water and Ammonia.

With Rubber Core, 60 cents per lb.

Dis., 25 and 5%.

With canvas core, 50 cents per lb.

Dis., 30 and 5%.

Hine & Robertson.

Eureka, 75c. per lb. Dis., 40%.

Soapstone—Standard, 8c. per lb.

XX. It. per lb.

Crown—No. 1, 23c. per lb.

No. 2, 26c. per lb.

Climax, 9c. per lb.

Climax, 9c. per lb.

Net.

See Rubber Packing, page 7.

For Assorted Cans of 1, 2, 3 a	and 5 pounds. 100-lbcases.
No. fb. c.	No. fb. c.
533. Scotch yellow 18	583. Black 18
534. Lead color 18	584. Dark blue 25
536. Brown 18	585. Chrome yellow 30
537. Light drab 18	586. Vermilion 30
539. Buff 18	587. Indian red 25
542. Warm drab 18	588. Bronzegreen 25
544. Dark green 25	589. Quaker green 25
581. Light green 25	546. Inside white 15
582. Norway red 18	547. Outside white 18
Discount 5	0 per cent.
Ordinary shades. Per gal.	Per gal.
One to 5 gallon cans. \$1.90	Half gallon cans \$2.00
Tuscan Red, Gre	en and Yellow.
Per gal.	Per gal.
One to 5 gallon cans \$3.10	Half gallon cans \$3,30
Vern	illion.
Por col	Por gal

Vermilion.

Per gal.
One to 5 gallon cans... \$5.00 | Half gallon cans...... \$5.20
Discount 40 per cent.
The list in barrels, half-barrels and kegs (of 5 gallons or larger) will be 10c. a gallon less than in gallon cans. Kegs of less than 5 gallons will be charged at gallon price. One-quarter gallon cans not put up. Special shades made to order.

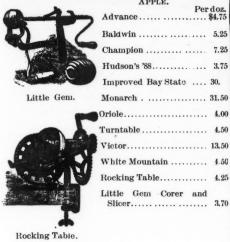
Special cash discount for large orders.

Parers and Corers.



SAML, LEES & CO.

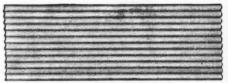
List, \$9 per gross.



Roofing.

CORRUGATED IRON.

21/2 inch corrugations.



		PRICE LIST.	
Gauge.			Per square.
No. 18.	Painted	Red	\$9.80
No. 20,	66	4.	6.90
No. 22.	4.6	**	
No. 24	64	"	
No. 26.	46		
No. 27.	6.6	44	4 1
	64	46	4 14
No. 28,		**	
	Gaivani	æd	
No. 22,	44		8.8
No. 24,			7.60
No. 26,	4.6		6.60
No. 27.	6.6		
No. 28.	44		6.3
		Discounts next issue.	

Portable Houses. (Ducker Portable House.



Weight, 450 lbs. Price, \$150. Closes securely. Dis., 10%.

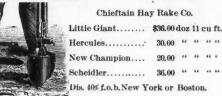
Weight, 85 lbs. per section. Price, \$220. Dis., 10%.



No. 10.-26 × 33 ft., including veranda and rear extension. Main part, 19 × 26 ft.

					No. 1.		No. 2.	No. 3.
				,	Veranda		Veranda	without
					on side.		on end.	veranda.
2×12	. 1	door.	3	windows,	\$120.00		\$120.00	\$105.00
$^2 imes 14$. 1	44	3	66	135.00		130,00	120.00
2×17	, 1	46	3	66	155.00		150,00	135.00
2×19	. 2	66		6.6	175.00		165.00	150.00
2×21	, 3	66	45555533	66	190,00		180.00	165.00
$^2 \times 23$. 3	6.6	5	66	200:00		190.00	175.0
2×26	, 3	66	5	44	220,00		205,00	190.0
1×21	, 3	46	5	6.6	205.00		195,00	180.0
0×12	. 1	66	3	6.6			100,00	90.0
0×14	. 1	6.6	3	44			105.00	95.0
7×10	. 1	6.6		44			200,00	65.00
7×12	. 1	66	2 2 2	46				75.00
7×14	, 1	"	2	66				85.00
				Hunte	r's Cabin	s.		
\times 12,	W	th 4 b	e	rths				\$80,00
× 14,		. 4	61					96,00

Post Hole Diggers.





Press

Combined press for cutting, forming, horning and seaming.

Particulars of flat front presses, including beds, siides, bolsters, plates, etc.

Prices are net, delivered on steamers in New York, including insurance, etc.

4						
i	Nominal size of press	41	42	43	44	450
	Price, including et ceteras	\$130	\$200	\$260	\$420	\$660
ì	Weight, aboutlbs	600	1050	1900	3600	7200
	Greatest diameter that can be					
1	wiredins		7	10	14	20
	Greatest depth that can be					
	wiredins		10	13	161/2	20
	Hole through bed-eircle inter-		10	10	10/2	-
ı	sectingins		6	816	12	17
1	Hole through back-widthins		91/2		1516	
	Width between die clamps-		0/2	1-	10/2	20/2
	clearins		11	15	20	27
	Distance back from center of slide			10	-0	
	barins		516	7	9	12
	Height to slide-bar, when up. ins			716	81/2	9
	Stroke of siide-bar, when upins		11/4	112	134	9
	Adjustment of slide-barins		114	71/6 11/6 11/9	134 134	2 2
	Diameter of fly-wheelins			32	38	44
	Width of fly-wheeiins		4	5	6	7
	Weight of fly-wheel, aboutlbs					1100
	Speed per minute, aboutrev			50		
	Cubic feet boxed, about	1 30	1 40	1 30	00	10
	Deintors' Sundvice					

Printers' Sundries.

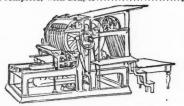
Vanderburgh, Wells & Co. And Liberty Machine Works. Wood ruies, 12 cents per yard. Wood ruies, on end wood, 15 cents per foot.



Brass, 40c. doz. Steel, 60c. doz. Golden, 40c. doz. MITRE BOXES.

Regular size, 2 in., 50c. each. Extra size, 3½ in., 75c. each.

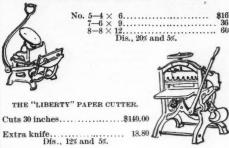


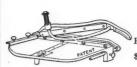


THE "LE	BERTY" CYLINDER PRESS.
	paper and Job Printing. Form.
No. 5-29 × 42 6-33 × 47	24×40 \$1,200 $28\% \times 45$
$7-37 \times 51$	$33 \times 49 1,600$
	Dis., 20 and 5%

	Dis., 20	and 5%		
Очения	THE "LIBE	RTY" Jo	DB PRIN	TING PRES
	S	ize of ch	ase.	
THE REAL PROPERTY.	No.2 - 7			
	2a-9	× 13		
TEURT	3 -10	× 15		30
				35
3	4 - 13	× 19		40
	5 -1416	× 22		50
- SE 16-	/:	Dis., 12	% and 5%.	
Two sizes bu	ilt extra stre	ong for	boxmake	ers, embos

ing, etc. No. $3a-11\times17$. \$375 $4-13\times19$. 425Dis., 12 and 5%. Fountains, either size, \$25 extra, if ordered with press. Steam fixtures, either size, \$15 extra. THE AMERICAN CARD AND BILL HEAD PRESS.

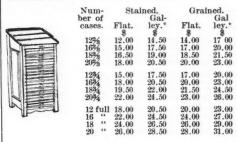




Kelsey & Co.,

The Eagle Card and Paper Cutter, 24½ inch. \$12 each, \$100 per doz.

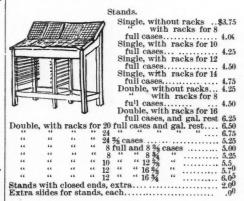
THE "LIBERTY" TYPE CABINETS.



Number of Galcases. Fiat. iey.* Flat. ley.* Galcases. Flat. iey.* Flat. ley.* Flat. ley.* Flat. ley.* Flat. ley.* Salcases. Flat. iey.* Salcases. Flat. iey.* Salcases. Flat. ley.* Flat. ley.* Salcases. Flat. ley.* Salcases. Flat. ley.* Flat. ley.* Flat. ley.* Salcases. Flat. ley.* Salcases. Flat. ley.* Flat. ley.* Salcases. Salcases. Flat. ley.* Salc

*Furnished with galley top and extra drawer for copy.
Dis., 20 and 5%.

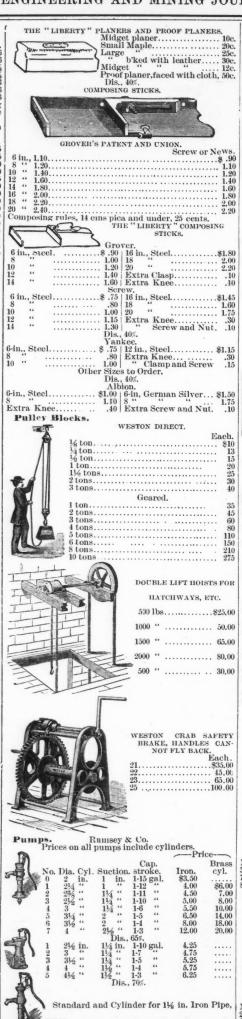
THE "LIBERTY" CASE STANDS AND RACKS.



Case Racks.

	Inches		nclosed ack and		Inch	es Ba	nclosed ck and
Case:	s. High.	Price. \$6.00	Sides.	Case 30	s. Hig	sh. Price. \$10.00	Sides. \$13,50
16 20	50 60	7.00	9.50 11.00	32 40	51 60	12.50 14.00	16. t0 17.50
24	70	9.00	12.00 Dis., 20	60	84	18.00	23,00

J: IHE	ENGINEED
THE "LIBERTY" TYPE CASES.	THE "LIBER
Name. Measurements.	Sum Carrie
Name. Full size	1
% size. 2236x16½x1% Enlarged size. 32½x23x2 3-16	
Wood type "	
	A SHOULD SHA
wanted. With Without Pat, Pat.	
Clause Clause	GRO
	10 " 1.40
Music 2 00 2.20 Job "90 1.00 Job, full size, California90 1.00	16 " 1.80
: ob, full size, California	18 " 2.20
" 34 Regular	Composing Panes
" Boston	11 1
" "improved90 1.00 "full size, Middletown 1.20	6 in., Steel
" New York90 1.00	10 " 12 " 14 "
cob, full size, California. 90 1.00 " Rooker. 90 1.00 " full, Yankee. 90 1.00 " full, Yankee. 90 1.00 " 24 Regular. 80 90 " 5/2 Yankee. 75 85 " Boston. 75 85 " " California. 75 85 " " improved. 90 1.00 " full size, Middletown. 1.20 " Paterson. 90 1.00 Quadruple, full size. 1.20 Double lower, 1.20 With With	
Name Without pat. pat.	6 in., Steel 8 " 10 "
Galley lower, full size\$1.10 Enlarged Yankee job	12 " 14 "
Galley lower, full size \$1.10 Enlarged Yankee job 2.20 Enlarged German 2.20 Founder's sort case 2.20	
Half-cap	6-in., Steel 8 " 10 "
" rule "	10
Founder's sort case	6-in., Steel
lug "	8 "Extra Knee
Triple " .90 1.00 Improved triple " .90 1.00	Pulley Bloc
Triple, ¾ size. .80 .90 Blank, full-size .65	A ,
4 size	// }
Script, full-size	_ / 1
Wood type, 23x32¼. 1.10 Mammoth, 23x11 1.30	2 3
Metal furniture, full-size 1.25 Border	1
" % size	¥ 2 3
Script, full-size	M 9 5
Dis., 25 and 5%.	8 10
THE "LIBERTY" GALLEVS. All brass "indestructible." Single, 334 x 2334 inside	1 1 1
Eingle, 334 x 2334 inside. \$2.50 334 x 1 34 2.00 " 334 x 1134 1 75 Medium, 5 x 2334 inside 2.75	
Double, 64 x 23% inside	
D18., 33½%.	
Half-lined, Full-lined, Half-lined, Full-lined single col. \$1.75 \$2.00 Double col. \$2.00 \$2.50	
SCREW GALLEYS.	
Unlined. Half-lined. Full-lined. Single column\$1.25 \$1.50 \$1.75 Double column\$1.50 1.75 2.00	
Dis., 20% and 5%.	3
SMOOTH LINED JOB GALLEYS. Full-	
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	-50
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
Dis., 20% and 5%,	
These have a rule laid out on one of the rims, divided !	
ato quarter inches, by which to set advertisements. Cost of ruling extra, 25 cents. Dis., 20% and 5%.	APRIL
Zinc bottom, 50 cents; brass bottom, 90 cents. Brass	
losed both ends, \$3. Dis., 20% and 5%.	
GALLEY RACKS. From \$3 up.	D
LEAD CUTTERS.	Pumps. Prices o
From \$2 up. Dis., 20% and 5%.	Va Dia
THE "LIBERTY" STEEL SHOOTING STICKS.	No. Dia. 0 2 1 214 2 234 2 234
Bright, \$1 each. Nickelplated, \$1.25 each.	₩ 3 472
Dis., 40%.	5 31/4
STANDARD METAL FURNITURE 25c. a pound.	A 6 31/2
In fonts of 25, 50, 75 and 100 lbs. Dis., 15%.	1 21/4
THE "LIBERTY" MALLETS.	3 314
Hickory, small. \$.20 " medium 25 " large30	5 41/9
" iron bound 100	
" No. 340	Stand
Dis. 2) a.1 56. No. 1	\$16.00,





No. 61%, sta and cylinder, 124 in pipe, \$13.00.
No. 71%, standard and cylinder, 11% in pipe, \$15.00.
No. 81%, standard and cylinder, 11% in pipe, \$18.00.
With hose and discharge pipe, add \$3.00 to list price.
Dis. 55%.

No. 1, diam. cyl., 2½ in.; cap. stroke, 1-8 gal.; slze pipe, 1¼ in. Price, iron, \$12.50; brass cyl., \$17.50.

No. 2, diam. cyl., 3 ln.; cap. stroke, 1-6 gal.; slze pipe, 1¼ or 1½ in. Price, iron, \$14.50; brass cyl., \$18.50;

No. 3, diam. cyl., 4 ln.; cap. stroke, 2-5 gal.; slze pipe, 1½ or 2 in. Price, iron, \$23.50; brass cyl., \$34.50.

No. 1, diam. cyl., 3 in.; suction, 1½ in. cap. stroke, 3-10 gal. Price, iron, \$28.00; brass cyl., \$58.00.

No. 2, diam. cyl., 4 ln.; suction, 1½ in.; cap. stroke, 1-2 gal. Price, iron, \$32.00; brass cyl., \$50.00.

No. 3, diam. cyl., 5 in.; suction, 2 ln.; cap. stroke, 6-7 gal. Price, iron, \$35.00; brass cyl., \$60.00.

No. 4, diam. cyl., 6 in.; suction, 2½ in.; cap. stroke, 1-5 gal. Price, iron, \$35.00; brass cyl., \$120.00.

Dis., 45%.

Dis., 45%.

1	Dia No. cy 0. 2 00. 2½ 1. 3 2. 3½ 3. 4 3½, 4½	im. C	0 "	Stroke. 7 in. 7 '' 7 '' 7 '' 7 '' 7 ''	Pipe. 1 in. 1¼ " 1¼ " 1½ " 2 "	Price. \$21.50 23.00 25.25 27.25 30.50 37.50
	45	8-10	0 "	10 "	21/2 "	44.00 47.00
	56	" 1 1-5		10 "	3 "	50.00
4	1	Dis Diam.	cap.	Dia		rice.— Br's

n- A	9						-Pric	e
		Diam.	Car).	Dia	m.		Br's
	No.	cyl.	stro	ke.	pi	ж.	Iron.	cyl.
JU.	1	2 in.	1-5 8	al.	1	in.	\$39	\$51
1	2	21/6 "	1-3	64	114	66	41	56
1/2	3		1-2	66	11/6	46	45	62
23.	4	31/6 "	6-7	66	2	66	51	81
11	5	4 "	7-8	66	2	66	63	114
SP .	6	.416 "	1	6.6	2	6	80	155

With Tight and Loose Pulleys.

No. 1, cap. per rev., 1-6 gal.; size of pipe, 1½ in.; price, iron, \$26; bronze, \$45.

No. 2, cap. per rev., 1-5 gal.; size of pipe, 1½ in.; price, iron, \$31; bronze, \$55.

No. 4, cap. per rev., 1-3 gal.; size of pipe, 2 in.; price, iron, \$48;

of pipe, 2 in.; price, iron, \$48; bronze, \$75.

Pulleys on Nos. 1 and 2 are 8 ln. diam., 2½ in. face; on No. 4, 12 in. diam., 3½ in face.

Balance wheels for above pumps. \$1. \$2, and \$3, according to size.

Dis., 45%.

No. 2, ½ to 2 gal. per min.; length of drive pipe, 25 to 40 ft.; calibre of pipes, drive, ¾ in.; discharge, ¾ in.; price, \$9.

No. 3, 1 to 4 gal per min.; length of drive pipe, 25 to 40 ft.; calibre of pipes, drive, 1 in.; discharge, ¾ in.; price, \$11.

No. 4, 2 to 8 gal. per min.; length of drive pipe, 25 to 40 ft.; calibre of pipes, drive, 1½ in.; discharge, ½ in.; price, \$14.

No. 4, \$\frac{2}{\text{ to 8}}\$ gal. per \(\text{min.};\) length of drive pipe, 25 to 40 ft.; calibre of pipes, drive, 1\frac{1}{2}\) in; discharge, \(\frac{1}{2}\) in; price, \$\frac{1}{2}\) in, 5, 3 to 14 gal, per \(\text{min.};\) length of drive pipe, 25 to 40 ft.; calabre of pipes, drive, 2 in.; discharge, 1 in.; price, \$22.

No. 6, 4 to 25 gal. per \(\text{min.};\) length of drive pipe, 30 to 40 ft.; calibre of pipes, drive, 2\frac{1}{2}\) in.; discharge, 1\frac{1}{2}\) in.; price, \$40.

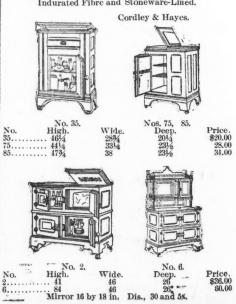
No. 7, 8 to 60 gals. per \(\text{min.};\) length of drive pipe, 30 to 40 ft.; calibre of pipes, drive, 4 in.; discharge, 2 in.; price, \$75.

No. 8, 12 to 120 gal. per \(\text{min.};\) length of drive pipe, 30 to 50 ft.; calibre of pipes, drive, 6 in.; discaarge, 2\(\frac{1}{2}\) in.; price, \$125.

Dis., 45%.

Refrigerators.

Indurated Fibre and Stoneware-Lined.



Railroad Dumping Cars and Carts.



Gauge.	cap.	Net	Cap.	Net	Cap.	Net
24"	1 c. y.	\$55	2e.y.	\$65	3 e. y.	\$75
1.6	44	55	66	65	66	75*
46	66	70	66	80	66	90*
44	66	80	64	90	66	100*
66	46	55	4.6	65	66	15
66	66		4.6		44	70*
30"				1		1
36"				1		1
4' 816"	1					
36"				1	1	1
4' 816"						
36"						1
4' 816"				1		
36"		20			1	
00		60				
4' 816"						
1 0/2		00	1			
		45				1
						1
	1					1
'				i		1
-						1
_					1	1
	1 66	175	116 "	200	1	
	24"	24" 1 c. y. " " " " " " " " " " " " " " " " " " "	24" 1 c, y. \$55 " " 80 " " 80 30" 43 36" 117 36" 484" 185 4" 814" 45 36" 40 4" 814" 50 36" 40 4" 814" 50 36" 40 4" 814" 50 50 50 50 50 50 50 50 50 50	24" 1 c. y. \$55 2 c. y. 55 2 c. y	24" 1 c, y. \$55 2 c, y. \$65 65	24" 1 c, y. \$55 2 c, y. \$65 3 c, y. \$65 3 c, y. \$65 " 65 " 65 " 80 " 90 " 90 " 90 " 90 " 90 " 90 " 90

'These cars built of any gauge from 18" to 56\4" and of any capacity from \\(\frac{1}{2} \) to 6 cu. yd.

Slate. F. o. b. New York. Stowage allowed. Purple and Green, per 100 feet sq. \$4.59 Dark blue, per 100 feet sq. 4.19 Sizes, $24 \times 12 = 115$ to sq., 650 lbs, weight. Sizes, $20 \times 10 = 170$ to sq., 650 lbs, weight.

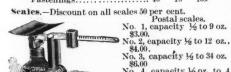
No. A. "Giant" metal, 15c. pr. ft., wts. not over 125 lbs.
No. 1. "Giant" metal, 12c. pr. ft., wts. not over 40 lbs.
No. 2. "Giant" metal, 10c. pr. ft., wts. not over 40 lbs.
No. 0. "Giant" metal, 10c. pr. ft., wts. not over 25 lbs.
No. 1. Red metal, 10c. pr. ft., wts. not over 40 lbs.
No. 1. Red metal, 10c. pr. ft., wts. not over 40 lbs.
No. 1. Red metal, 8c. pr. ft., wts. not over 40 lbs.
No. 1. Steel, 8c. pr. ft., wts. not over 15 lbs.
No. 1. Steel, 8c. pr. ft., wts. not over 30 lbs.
No. 0. Steel, 4c. pr. ft., wts. not over 15 lbs.
No. 1. Steel, black enameled, 9c. pr. ft., wts. not over 75 lbs.
No. 1. Steel, 4c. pr. ft., wts. not over 15 lbs.
No. 0. Steel, 4c. pr. ft., wts. not over 15 lbs.
No. 0. Steel, 4c. pr. ft., wts. not over 15 lbs.
No. 0. Steel, black enameled, 7c. pr. ft., wts. not over 30 lbs.
No. 0. Steel, 4c. pr. ft., wts. not over 75 lbs.

30 lbs. No. 0. Steel, black enameled, 5c. pr. ft., wts. not over 15 lbs. Fastenings for hanging a window of 2 sashes for Nos. 1 and 2 chains, consisting of 4 hooks, 4 rings, 4 sash irons, a set, 18c. per set. Fastenings for hanging a window of 2 sashes for No. 0 chains, 14c. per set. Dis, on "Giant" metal chain ... 40 10 10 10 10 "

" Red metal chain ... 40 10 10 10 10 "

" Steel " ... 40 10 10 10 "

" Fastenings ... 40 10 10 10 "



No. 3, capacity ½ to 34 oz. \$6.00 No. 4, capacity ½ oz. to 4 lbs., \$8.00

Even balance trip scales, seamless scoop, with weights.

No. 1, capacity ½ oz. to
2 lbs., tin scoop, \$5.50
brass scoop, \$6.50.
No. 2, capacity ½ oz. to
4 lbs., tin scoop, \$6.50;
brass scoop, \$7.50.
No. 2½, capacity ½ oz. to
18 lbs., tin scoop, \$12.50.



Butter Trip Scales, slab, weights and scoop.

No. 7, 1/2, 0z. to 10 lbs., 10 in. slab, without side beam\$10.50

"8 "20 lbs., 12 in. "with "11.50

"8 "20 lbs., 12 in. "without "12.50

13.50

Tea Scales—All Seamless Scoops.

Capacity, Scoop.

4 oz. to 10 lbs. Tin ... \$8,00 | ½ oz. to 10 lbs. Brass . 9,00

Druggists.

Capacity, Scoop.

1-10 oz. to 8 lbs. Brass. \$11.00



Capacity. Scoop. Capacity. Scoop. Scoop. (24 oz. to 36 lbs. Tin...\$10.00 | \(\frac{1}{2}\) oz. to 36 lbs. Brass. \$12.00 Grocer. Capacity. Scoop. (25 oz. to 62 lbs. Tin...\$12.00 | \(\frac{1}{2}\) oz. to 62 lbs. Tin...\$12.00 | \(\frac{1}{2}\) oz. to 62 lbs. Brass. \$14.00 Meat or Butter Scales, with Slab. (4 oz. to 62 lbs., with Single Beam. \$14.00 \)

15.00



Lianormi			
No.	Capacity.	Platform.	Price.
1	400 lbs.	211/2 by 15 inches.	\$23.00
2		25 by 16 "	30,00
3		25 by 17 "	34.00
4	1,000 lbs.	26 by 17 "	39.00
5	1,200 lbs.	28 by 20 "	45.00
6	1,600 lbs.	29 by 21 "	55,00
7	2,000 lbs.	32 by 23 "	70.00
	With	Wheels.	
No.	Capacity.	Platform.	Price.
1	400 lbs.	211/2 by 15 inches.	\$26.00
2	600 lbs.	25 by 16 "	33.00
3		25 by 17 "	28.00
4	1,000 lbs.	26 by 17 "	43.00
5	1,200 lbs.	28 by 20 "	49.00
6	1,600 lbs.	29 by 21 "	60.00
7	2,000 lbs.	32 by 23 "	75.00
Brass slid	ing poise at same	e price if so specifie	d in order
	With Wheels	and Drop Lever.	
No.	Capacity.	Platform.	Price.
4	1,000 lbs.	26 by 17 inches,	\$51,00
	1,200 lbs.	28 by 20 "	59.00
6	1,600 lbs,	29 by 21 "	70.00
7	2,000 lbs.	32 by 23 "	82,00
	2,500 lbs.	33¼ by 24¾ "	94.00
9	3.000 lbs.	38 by 30 "	125,00
	Slates.		

Noiseless School Slates.

Winsboro Cord Bound.
Doz. in Price
ease. per case.
18 \$18.00
9 12 15.00
10 114.40
8 14.00
6 12.00 Size.
5 by 7.
6 by 9.
7 by 11.
8 by 12.
9 by 13. UNIQUE NOISELESS SCHOOL SLATE.

Dis., 200 ease lots, 50 and 21/2%.

The Patent "Eureka

No. 1 euts round metal up to ¼ in. steel to ¼, \$12. No. 2 euts round metal up to ½ in., steel to 3-16, \$20.

Discount, 25%,

Steel Wire Mats.



Screws.

STEEL SCREWS ADD 50% TO LIST.
Prices are per 100.
Hexagon Cap Screws.
Heads on Steam-tight Screws not
polished, unless so ordered. Can
make these 12 inches long.

										-	
Diam. head.	7-16	1/2	9-16	56	3/4	13-16	7/8	1	11/6	11/4	13%
Length									7/8	1	
head.	74	9-10	98	1-10	78	9-10	78	3/4	1/8	1	11/9
Diam. serew.	34	5-16	3/8	7-16	1/2	9-16	5%	3/4	7/8		11/8
34	3.00	3,25	3.75	4.40	5.50	7.00					
g 1	3.25	3.50	4.00	4.70	5.70	7.00	9.50				
5 34 1 114	3.59	3,75	4.25	5.00	6.00	7.50	9.50	12,20			
- 116	3.75	4.00	4.50	5,39	6.30	8.00	10.00	12,20	16.00		
134	4.00	4.25	4.75	5.60	6.60	8,50	10,60	12.80	16.60	21,20	
2 2	4.25	4.60	5.05	5.95	7.00	9.10	11.20	13,40	17.20	22,30	29.00
= 91/4	1,00	5.00	5.40	6.35	7.50	9.70	11.90	14.10	17.90	23,60	30.50
9 216		0.00	5.80	6.80	8.00	10,40					
984	1		1			11.20					
5 234 5 234				1.00		12.10					
Thread								2000		1	
to in.		18	16	14	19	12	11	10	9	8	7
Add III.	20	10	10	12	1	1.00	**	10		U	
for			-								
each 1/4 in.	30	40	50	60	80	1.00	1.30	1.60	2.00	2.40	3.00

Dis., heads ground, 60%; dis., heads black, 60 and 5%; dis., heads extra finish, 50%; dis., heads case-hardened, 5%; dis., heads polished after hardening, 45%.



SQUARE CAP SCREWS.

	i.,		144									
Dia	m.	3/8	7.10	14	9-16	54	11	3/4	74	11/8	11/4	13/6
Len		78	1.10	72	9-10	78	16	94	3/8	178	174	178
he	ad.	1/4	5-16	3/8	7-16	1/2	9-16	5/8	3/4	3/8	1	11/8
Diε												
SCI	ew.						9-16		34	7/8	1	11/6
ಕ	3/4						5.75					
e	1	2.60	2.95	3,40	4.00	4.70	5.75	7.70				
		2.75	3.10	3.65	4,20	4.95	6.05	7.70	10.50			
Sec.	13/4	2.90	3,30	3,85	4.45	5,25	6,35	8.25	10.50	14,00		1
Je	134	3.05	3,50	4.10	4.70	5,55	6.65	8.80	11.10	14.80	18,00	
ă	2							9,40	11.80	15,70	19.00	22,50
=	21/4		4.00	4.65	5.25	6.30	7.55	10.10	12,60	16,70	20,20	24.00
Д	216							10,90				
E	234			-	6.00	7.25	8.85	11.80	14.60	19.10	23,10	27.90
2	3							12,80				
Thr	ead											
	in.	20	18	16	14	12	12	11	10	9	-8	7
Add			10	-0								
fo	r											
	eh ·									- 00		
1/4	in.	25	35	45	55	65	90	1.20	1.50	1.80	2,30	3.00

Dis., heads ground, 65%; dis., heads black, 65 and 5%; dis., heads extra finish, 55%; dis., heads case hardened, 60%; dis., heads polished-hardened, 50%.



MILLED HEADS, COLLAR SCREWS

Diameter of Collar.	1/4	11	78	1/2	5%	11	13	15	1	11/4
Diameter of Serew.	1/8	3	1/4	5	3/8	170	1/2	9	5%	3/4
DE 34						5.00		0.00		
Ĭ 11/4			$\frac{3.40}{3.70}$			5.60	6.60 7.00	8.25 8.60	11.25	
5 11/2	3.45	3.70	4 00	4.70	5.30	5.95	7.40		11.90	
P 134		4.05				$6.35 \\ 6.85$		9.45	12.60	
21/4			2.10			7.40	9.00	10,60	14.15	17.10
문을 21/2			1		7.50	8.10		11.25		
Length under Head to Point, to Point, 12,575,575,578,774,774,774,774,774,774,774,774,774,7						8.75		11.90 12.60		
Threads to										
ineh	40	30	20	18	16	14	12 or	12	11	10
Add for							13			
each 1/4 inch	30	40	50	60	80	1.00	1.30	1.60	2.00	2,40

Dis., 25%. MILLED FROM SOLID BAR.

Fillister.	Bevel Head.					Button Head				
Diam. Head Length	3-16	1/4	3/8	7-16	9-16	5/8	3/4	13-16	7/8	1
Head Diam. Screw	1/8 1/8		1	5-16				9-16 9-16		3/4 3/4
Pength 11/4 11/4 11/4 11/4 11/4 11/4 11/4 11/	$\frac{2}{2}, \frac{25}{50}$	$\frac{2.50}{2.75}$ $\frac{3.00}{3.00}$	2.75 3.00 3.25 3.50	$\frac{3.75}{4.00}$ $\frac{4.35}{4.35}$	3.75 4.00 4.25 4.50 5.00 5.50	4.25 4.50 4.75 5.00 5.50 6.00 6.50	5.30 5.60 5.90 6.20 6.75 7.25 7.75 8.25	6.60 6.90 7.20 7.50 8.00 8.50 9.00 9.50	9.00	12.00 12.50 13.00 13.73 14.50 15 23
Threads to inch.	40	30	20	18	16	14	12	12	11	10

Head on Bevel and Button Head Screws, 1-16 larger in diameter than above specifications. Price, according to size of head. Discount, 50%; case hardened, 45%; case hardened and polished, 35%.

Soups (French). Franco-American Brand Fer dozen. In	1
Quarts. Pints. 1½ pt.	
Green turtle } \$8.00 \$4.32 \$9.00	
Chicken	
Ox tail	
Tomato	
French bouillon 3.50 2.10	
Mutton broth Vegetable	Ш
Beetglass.	
Pea. Packed in cases of 2 doz. 4 doz. 1 doz. Regular Assorted Cases. In Cans—Quarts. 2 Chicken, 1 Mulligatawny, 3 Mock Turtle, 3 Ox Tail, 2 Consommé, 2 Tomato, 3 Julienne, 1 Printanier, 1 Mutton Broth, 1 Vegetable, 1 Beef, 2 French Bouillon, 2 Pea. Per doz., \$3.55.	
3 Ox Tail, 2 Consommé, 2 Tomato, 3 Julienne, 1 Printanier, 1 Mutton Broth, 1 Vegetable, 1	
11 Cbicken, 1 Mulligatawny, 2 Mock Turtle, 1 Ox Tail, 2 Consommé, 2 Tomato, 1 Julienne, Printanier, 1 Mutton Broth.	1
Terms cash Discounts: 5% for lots of 10 cases, 10% for	2
ots f 25 cases. 15% for lots of 50 cases. Spades and Shovels.	1 2
The D. F. Jones Mfg. Co., of Gananoque (Ld.). JONES'	
Patent plain black solid cast-steel shovels and spades.	Sn
Patent solid steel shovel.	ļ
Old Service Se	
Per Per Doz. Doz.	
No. Black. Pol's'd	
21. " " 3 16.25 17.25 22. " " 4 17.00 18.50	
23. " " " " 6 17.50 19.00 24. " " charcoal.8 20.50 22.00	
Pt. plain back solid cast steel	16 i
. sbovel.	
25. Dor long handle round-point shovels.3 16.25 17.25	11/4
Patent solid cast steel spa de	21/2
Patent sond cast steer spa de	7
28. Dor long bandle spades	١.
Patent plain back solid cast steel.	5
	1
28. Long round joint shovel No. 2	
shovels	
extra heavy	38
35 L. handle round point shovel, with	
foot cap	-
Detent plein back solid-steel shovels and snades.	
50. D. or long handle sqpoint sbovels.2 \$12.00 \$15.00 51. " 12.75 14.00	33
55 D handle snades	
00.	F
Patent solid corrugated cast steel scoop.	45c
SOCOTO	per
scoops. Jones' patent plain back solid corrugated cast	-
steel scoops. 90. D. or long handle solid cast steel2 \$13.50 \$14.50	-
91. " " " "4 14.50 15.50 91½. " " "6 16.50 17.50 Jones' riveted scoops.	
92. Cast steel D. or long handle	1
94. " " "6 16.50 17.50 Half polisbed.	0
95. " " 10 22,50	1
97. " Lo c o - motive or coal (heavy)	
heavy)	60 0
furnace	
(extra heavy)	
dle	0
D. handle	
Ditching spade.	
124. D handle ditching (flat)	
125. D bandle post bole (concave)18.00 19.50 126. D bandle Alcock (for clay and brick)16.00 17.00	
Discount on sbovels and spades, 50 and 10. " " scoops, 50. Boxed f.o.b. New York, Boston or Montreal.	
The solid shovels, spades and scoops are made from cast steel bars by a recently patented process, the blade	
and strap being in one piece, not welded. All goods are American patterns.	
	1



RAILROADS.		STANLEY "ODD JOBS."
Railway Track Punch Round Point.	CARPENTERS'.	Embraces in combination with ordinary Carpenters' Rule:
15c. lb net. Track Wrench.	BOXWOOD RULES. Two feet, four-fold, 1 inch wide.	(1) Try square. (2) Mitre square.
73/4e. lb., net.	Plate. Middle. Edge. Bound. Round joint \$4	(3) T—— square.
Rail Fork.	Square " 5 \$7 \$15 Arch " 6 8 16	(5) Mortise gauge. (6) Depth gauge. (7) Mitre level.
9c. lb., net.	Two feet, four fold, 1% inches wide. Plate. Middle. Edge. Bound.	(8) Spirit level and plumb. (9) Beam compass. (10) Inside square for making
Crow Bars,	Square joint \$7 \$9 \$18 Arch " 9 11 20	boxes and frames. Price 75 cents.
Wedge Points, 31/8c. lb., net.	Two feet, two-fold, 1½ inches wide. Square joint. Arch. Arch Bound.	Dis., 20, 10 and 10%.
Pinch Point, 3 1/8c. lb., net.	\$5	TACK HAMMERS, Doz. Magnetie, small
65 Tamping Bar, 6c. lb., net.	Dis. So, to and to.	Medium
66 Claw Bar,	LEVELS. 10 to 18 to 16 in. 24 in. Arch top plate, 2 side views\$9.00 \$12.00	Discount, 30, 10, 10%.
7c. lb., net.	Arch top plate, 2 side views\$9.00 \$12.00 PLUMBS AND LEVELS.	
47 Railroad Spike Mauls	Arch top plate, 2 side views. 12 to 18 to 24 to	MALLEABLE IRON. Inlaid Handle.
Railroad Spike Mauls 6 to 16 lbs., Steel Face 18c. lb.	18 in. 24 in. 30 in. Polished	Per Doz\$2.50 Discount, 30, 10, 10%.
Dis., 50, 10, and 5%.	Mahogany. 16.50 22.50 Mahogany tp'd and lp'd 27.00 24.00 Pollshed and lpped. 24.00 Pollshed and tipped. 28.00 Pollshed, lip'd and tip'd 35.00	
	Polished, lip'd and tip'd 35.00	STEAK HAMMERS. Japanned\$2,25
Steel Track Chisel,	Mason's level, 2 plumbs, polished, 36,\$30.00 Mason's level, 2 plumbs, p'd and t'd, 36, 36.00 Mason's level, 2 plumbs, polished, 42, 36.00	X Plated 3.00 Discount, 30, 10, 10%.
15c. per lb., net.	PATENT ADJUSTABLE PLUMBS AND LEVEL.	
	Arch Top plate, 2 side views 26 to 30 in. Polished and lipped. \$27.00 Polished and tipped. 30.00	Trucks.
Railroad or Clay Picks. No. Per doz.	Polished and tipped	New York Pattern.
11, Adze eye, 4 to 5 lbs\$11.00	Mahogany, lipped 33.00 Mahogany, lipped and tipped 48.00 Polished, triple stock, lipped and tipped 48.00 Mahogany 4.00 Mahogany 6.00 Mahogany 6.00	Length Width Width at of at upper Size of
11, " 5 to 6 "12.00 11, " 6 to 7 "13.00	Mahogany " " 60.00 Rosewood, lipped and tipped 90.00 Dis., 70, 10, 10%	Size. hdles. nose. bar. wheel. Ft. In. Inches. Inches. Price. No. 0 3 6½ 12 13¼ 6½ × 1¾ \$4.50
11, " 7 to 8 "14,00 11, " 8 to 9 "16,00	POCKET LEVELS. Iron top, Japanned	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
11, " 8 to 9 "16.00 11, " 9 to 10 "18.00	Brass top	No. 4 5 0 1614 1734 934 × 234 8.00 No. 5 5 4 1734 1834 1034 × 234 9.50 Discount 50%.
12, Hunt eye, 4 to 5 "11.00 12, " 5 to 6 "12.00	SCREWDRIVERS.	special net prices on quantity orders.
= 12, " 6 to 7 "13.00	Varnished handles, pat. metallic fastening. Size 1½, \$1 per dozen; 2, \$1,50; 3, \$2; 4, \$2.50; 5, \$3; 6, \$3.50; 7, \$4; 8, \$4.75; 10, \$6; 12, \$8. Dis., 75 %.	Tuyeres. No. 2. No. 4.
12, " 7 to 8 "	Dis., 75 %.	\$25.00 \$35.00 per doz.
ω Mattocks-Price per	PLANES, BAILEY'S PATENT IRON.	20 % dis.
2, Adze Eye, Long Cut- ter, 61bs., \$16.00.	With pat. lateral adjustment. Smooth, 8 in. × 134 in., \$3; 9 in. × 2 in., \$3.25; 10 in. × 296 in.,	Valves. Brass Globe and Angle Valves. Size, inches 1/8 1/4 3/4 3/4 Starglobe and angle
3, Adze Eye, Short Cut- ter, 5½ lbs., \$15.50. 2, Adze Eye, Long Cut-	\$3.75 each. Jack, 14 in. × 2 in., \$3.75.	valves
ter, Light, \$15.00. 3, Adze Eye, Short Cutter, Light, \$15.00.	Jointer, 24 in. × 2% in., \$6.50 each.	Extra_heavy Star 1.50 1,95 2.80
4, Hunt Eye, Long Cut- ter, 6 lbs., \$16.00.	Dis., 40, 10 and 10 %. BAILEY'S PATENT WOOD PLANES.	and Lion vatterns
5, Hunt Eye, Short Cut- ter, 5½ lbs., \$15.50	Smooth. Handle smooth. $9 \times 8\%$ in. 8×2 in. 9×2 in.	
7 Adze Eye Pick Mattocks	\$2 \$2 \$2.50 each Jack. Fore. Jointer. 15 × 2½ in. 20 × 2¾ in. 26 × 2¾ in.	angle valves60
2000	\$2.50 \$2.75. \$3.25 each Dis., 40, 10 and 10%.	Vertical cheek v'lv's .50 .60 .85 1.15 1.55 Jenkins globe and
Hunt Eye Piek	STANLEY IRON BLOCK PLANES.	Jenkins cheek valv's . 1.10 1.20 1.30 1.90 2.60 Gate valves, Chap-
Mattocks\$10	3½ × 1 in. 20c.	man
Dis., 60 and 10%. Grub Hoes.	5½ × 1¼ in. 40c.	Brass safety valves. 2.00 2.25 2.75 3.50 5.00 Brass butterfly v'lv's 3.50 5.00 Size, inches 114 114 2 2 214 3
Western Pattern No. 0, 3 lbs., 3	7½ × 1¾ in. 60c, each.	Star globe and angle valves. \$3.00 \$4.00 \$6.50 \$12.50 \$19.00 do. heavy pattern. 3.95 5.30 8.35 14.00 22.00 Extra heavy Star and Lion
doz., \$10.50. Western Pattern No. 1, 3½ lbs., 3 doz., \$11.		patterns
doz., \$11. Western Pattern No. 2, 4 lbs., 4 doz., \$11.50.	5½ × 1¼ in.	Cross valves
doz., \$11.50. Western Pattern Vog 444 be 3	60c.	Crescent globe and angle valves
Western Pattern No. 3, 4½ lbs., 3 doz., \$12. Baltimore Pattern	7½ × 1¾ in. 85c. each.	eheek valves
No. 1, 3½ lbs., 3 doz., \$11. Baltimore Pattern, No. 2, 4½ lbs., \$\pi \doz., \$11.75		Valves
Baltimore Pattern, No. 2, 4½ lbs., ₹ doz., \$11.75 Baltimore Pattern, No. 3, 5 lbs., ₹ doz., \$12.75. Baltimore Pattern, No. 4, 5¾ lbs., ₹ doz., \$12.75. Dis., 60 and 10%.	STANLEY'S BEADING, RABBET, SLITTING AND MATCHING PLANE. Eighteen Tools, Bits, etc.	Brass safety valves
MACHINISTS'.	1	Brass outterfly valves 4.50 5.50 8.00 11.00 16.00 Pressure Regulating.
Combination Square, Bevel and Surface		Mason Regulator Co.
Gauge.	U	Size Size Size Size pipe. Price. pipe. Price.
Price complete\$3.0		1 inch, \$22. 1¼ inch. \$28. 1¼ inch, \$35.

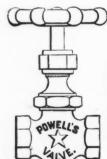
Dis., 20, 10 and 5%.

Ludlow Valve Co. Double Gate Brass Valves. Gland in packing hox

		_		becoming	0024		
T.	Size.	Screw socket.	Flange.	Diameter of Standard Flange.	Face to face of Screw socket	Face to face of Flanges.	Extra for slide s t e m and lever subject to discount.
1000000	In.	\$ 1.25 1.65	\$	In.	In. 2¼ 2½	In.	\$1.00 1.00
	1 1¼ 1½ 2	3.15 4.25			27/6 33/8 33/4	457	1.00 1.00 1.00
A	21/2	11.50 16.00 21.00	$18.00 \\ 22.00$	61/2	4 13-16 5	53% 61/4	1.00 1.25 1.25 1.25
	4 5 6 8 10	35.00 52.00 78.00	43.00 64.00	71/2 9 10 11		7 1-16	1.25 1.25 1.25
	8 10 12						

0	C	Dia meter of pipe e on nection. Dia meter of stand pipe.		Dia meter of seat ring.	One 2 1/2 nozzle.	Two 21/2 nozzles.	Three 21/2 n ozzles.
		Inches. 3 or 4 3-4-6 4 or 6 6 or 8 8 or 10	Inches. 456 534 7 8 10	Inches. 3 4 5 6 8	\$28 31	\$33.00 38.50 49.00	\$35.00 40.50 51.00
Four 2½ nozzles. Six 2½ nozzles.		One steam- er nozzle.	One steam- er and one 21%	One steam-	One steam- er and two 2% nozzles.		length.
\$53.00		\$33.00 38.50 49.00	\$35.00 40.50 51.00	4	7.00 2.50 3.00	6.	.50 .00 .50 .50

or each 6 inches more or less than standard length of stand pipe, add or deduct from list.		Extra charge for hub.	Inde- pende't nozzle gates each.
\$0.60 .75	\$0.44 .50	6 in. \$0.50	
. 85 1.00	70 .90	No ch'ge 8 in. \$1.25	
2.00			4.50



Star Radiator Valves, with Brass T Handles or Wood

Wheels.

Size, inches.... 1¼ 1½ 2 Plain brass.....\$3.60 \$4.80 \$7.50 Plated trim'gs. 3.95 5.20 8.00 Rough & Plat'd 4.20 5.50 8.05 Finish'd & Pl't. 4.95 6.50 9.75

Dis., 40, 10 and 5%.

EDDY VALVES.



O. S.Class & Y. 2. Class 2.



	Class 2		Class 3.	Class 4.		Class 5.	
	Iron, brass mounted.		All ir'n		Quick with r stem. mount		valves pinion brass
Size.	Screw, or flange ends.	Add for S S&L	Hub. ends.	valves. Hub ends.	Hub ends.	Screwed.	Flanged.
2	\$7.00	\$1.00	\$8.00	\$10.00	\$10.00	\$9.00	\$9.00
21/6	10.50	1.30			15.00	14.00	14:00
3	13,00	1.40	10.00	15.00	20.00	17.00	17.00
316	16.50	1.50	20100	20100	25.00	21.00	21.00
4	18.00	1.70	15.00	18.00	30.00	25.00	25.00
416	22.00	1.80	20100	20.00	00100	20100	
5	25.00	2.00	20.00	25.00	35.00	31.00	31.00
6	31.00	2.30	25.00	31.00	40.00	37.00	37.00
6 7	37.00	2.70	30.00	37.00	40.00	01100	01100
8	45 00	3.00	35.00	45.00	55.00	55.00	55,00
10	60.00	3.50		60.00		55.00	55,00
12	80.00	4.00		80.00			

All Iron Valves, Classes 2 and 5, 10 per cent. less than Brass Mounted,

F. O. B. Common sense sizes.

F. O. B. Dis., 25%, in car lots.

For												gal
Wearing bod	ly	var	ni	sl	h						-	\$5.5
Medium dry	ing	bo	dy	7.			 					5.5
One coat coad	ch	var	ni	8	h							4.5
Wearing car	ria	ge.					 					4.5
Heavy gear	vai	rnis	h.									4.0
Coach body		66										4.0
No. 1 coach		66										2.2

Hard drving body\$4.50	Black rubbing varnish.\$4.00
Rubbing body varnish. 4.00	Priming (1st coat) 2.50
Quick rubbing " 3.50	Filling (2d eoat) 2.50
	Rough stuff 2.50
For Insid	le Work.
Best flowing varnish \$4.50	Hard oil finish light \$2.75
Best polishing " . 4.50	

Cabinet	5.00 [w mice	сораг	4.00
Japan gold size Coach japan Discour	Dry \$3.59 1.75	Brown	japandryer	\$1.25 1.25

Discount, to per	cont, noise in a.
Preservativ	re Coatings.
Spar coatings\$4.00	Exterior ear coating \$4.00
I. X. L. No. 1 2.50	Interior car coating 3.25
I. X. L. No. 2 4.00	Loeomotive coating 4.00
Floor finish 2.50	-
Discount, 35 per	cent, f.o.b. N. Y.

Wagons, Carts, Etc.



No. 5. Cart, two man, top.	00
No. 5. Cart, two man, top	00
and fenders.	90
No. 6. Cart, two men, top and fenders	90
vo. o. Cart, two men, top and tenders	
No. 7. Two man combination cart	110
Wide track 5 feet.	
Wide Clack 5 lect.	

Narrow track 4 feet 8 inches. Discount 331/8 per cent. off.

Wheelbarrows.



Common Nailed Barrow per de		9 50		
" Bolted " "		8.75.		
Lansing's Patent Iron-Bolted B	arrov	v,per	doz.	\$25.50
Capital Patent Bolted Dirt	44	**	+ 6	30.00
Red oak or Government	6.6	44	4.6	40.50
Wharf	66	4.6	4.6	72.50
Mortar	44	4.4	46	30.00
Bent Handle Stone	4.6	4.6	6.6	48.00
Coal or Ore	4.6	44	6.6	31.50
Pig Metal or Casting	+4	44	44	40,50
Brick Yard 20 inch Iron Wheel	1 **	eac	h	10.50
Globe Patent Bolted Garden B Box 30 by 24 by 12 deep, wood		v pe	rdo	2., 42.50.

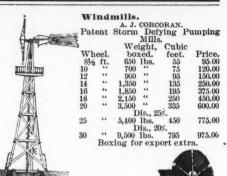
Box 30 by 24 by 12 deep, wood wheel per doz., 42.50.
Capita Patent Barrows With Iron Tray, A, per doz. \$39.00 "B, 42.00 The Leader Iron and Steel Barrows, 42.00 Gas-pipe Legs and Handles in one price. No. 1 Tray of 16 iron, capacity 3 cu, ft, of earth, each \$12.
or 250 lbs. of coal
3 Galvanized 18 iron, capacity same as No. 2 " 15

Whiffletree.



w	ills	on	sp	ring (Je	efferv	M	ſa	n	uf	ac	tu	ır	in	g Com	pany).
	34	or	36	inches	long	rs	te	el	 b	00	ok	s	0205	single. \$1.25 1.40 1.50 1.65	Double. \$2.50 2.75 3.00 3.25

Whims-Horse.



Corcoran Storm Defying Geared Wind mills for Driving Machinery.

Price includes upper set of Bessemer steel gears, one length of shaft.

Dia.	H. P.	Weis	ght.	Cu. ft.	Price.
16 ft.	21/2	1.900	lbs.	200	\$400.00
20 **	5	3,600	. 46	340	650.00
25 "	616	5,400	46	355	850.00
30 "	8	9,600	66	816	1,150,00
36 "	10	12,000	66	856	1,500,00
10 "	12	14,500	6.6	896	2,000,00
50 "	30	16,500	66	956	3,500.00
30 "	40	20,000	66	1,015	4,500.00
		Dis.	, 25%.		•

RUCHANAN

	10 ft. p	ımpiı	ng	\$75	}
	12 ft.	44		95	Plus eost
	14 ft.	44		140	of packing.
A	16 ft.	**		225	
F	Dis., 50	per c	ent.	,	

EMMERT & LAMB. "Stover" Pumping Windmills (no tower).

7	Size wheel.	Wt. paeked.	Cubic ft.	Price.
7111	10 ft.	650	50	\$80.00
	_ 12 ft.	750	58	100.00
111		Pumping Wine		
	10 ft.	650	48	85.00
	12 ft.	750	57	110.00
	3	Dis., 50 per cent		
	14 ft.	1.400	108	160,00
	16 ft.	1,600	114	250.00
		Dis., 45 per cent		
	20 ft.	2,950	220	400.00
	25 ft.	4.225	280	600,00
		Dis., 40 per cent	t.	

"Zenith" Geared Windmill (no tower).

Prices include upper set of Gears and about 5 feet vertical extra heavy shaft in windmill head.

	14 ft. 16 ft. 20 ft.	1,550 1,780 3,170	178 198 216	260.00 300.00 500.00	
		Dis., 40 per cen	t.		

Wire Cloth.

Brass and Copper Wire Cloth.

No				F	rice	N	0.					rice
Mesh. per foot.			Mesh.			per foot.						
	om No	. 10	wire	i	\$2 50	20	from	No.	26		3	\$.80
3	6.6	11	66		2.50	22	64		27	46		.80
	4.	12	4.6		2.50	24	6+		28	4.6		.80
5	6.6	13	6.6		2.50	30	6.6	-	30	6.6		.65
6	66	14	66		2.50	40	4		32	64		.70
6 8 10	66	16	66		2.50	50	44		34	60		.75
10	6.6	18	66		2.00	60	6+		35	44		.78
12	6+	19	66		2.00	70	64		37	64		.70
14	46	22	44		1.10	80	66		38	64		.90
14 16	44	24	66		.80	90	44		39	60		1.10
18	44	25	64		.80	00		Di		60%.		



Dis., 10%.