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OVERSIGHT BOARD

OF THE FEDERAL RESERVE

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THE
CHAMBER OF COMMERCE
OF
PITTSBURGH.

Chartered July 8th, 1876.

ITS ORGANIZATION AND MEMBERSHIP,
1885.

Entering upon the tenth year of its career of usefulness, the Chamber of Commerce of Pittsburgh can point with pride to its achievements in the past, for warrant in asking an increased support on the part of business men of Western Pennsylvania.

Being the only organization of the kind, its chief factor of influence lies in that its endeavors, its purposes, its advocacy or its disapproval are not dictated by private interest or expectation of gain. Every measure of public concern, every movement in legislation, every new public enterprise that has come before this body has been judged on its merits solely, whether it would be for the public general good, to endorse, approve and sustain. So doing has been in most instances of signal benefit or aid, to the various movements alluded to, and it is not too much to claim, that very important enterprises would have failed had it not been for the support inspired by the Chamber of Commerce.

Not less significant has been the success of this commercial council in frustrating wily schemes, designed to draw illicit gain from the body politic, in defeating nefarious legislation intended to bestow the greatest good to the smallest number.

There are many hundreds of merchants and manufacturers in Western Pennsylvania who know this, and who appreciate the services rendered, but who have neglected to lend that helping hand and that assistance their names and their annual contributions might give. Business men should

consider that it is but enlightened self-interest to sustain such an institution ; that an enlarged membership can speak with greater chance to be heard, and make its influence felt in many ways, so as to inure to good of the whole of Western Pennsylvania.

Persuaded that the interests of Pittsburgh and of Western Pennsylvania are identical and dependent upon each other for their full development, the business men of the latter should no longer stand idly by, but join heartily those of their chief city, in advancing the interests of all.

One of the charter purposes of the Chamber of Commerce is the collecting and disseminating of statistics, and the volumes which have been issued by this organization have been largely instrumental in bringing knowledge of the natural resources, productions and trade of this region to parts and parties that were but poorly informed before.

The present volume is strictly in this line of purpose. Its perusal ought to show to those whose property and business lie in the counties of Western Pennsylvania, that an institution like the Pittsburgh Chamber of Commerce is animated by large and comprehensive views, capable of seeing beyond the bounds of their own municipality.

The whole region, so singularly blessed with manifold possibilities of industrial wealth, has been portrayed. First, by a map specially engraved and printed for this book ; second, by descriptions of numerous localities, procured by correspondence with parties having thorough acquaintance with the same, and third, by detailed notices of the leading lines of labor pursued here.

Without being exhaustive in itself, or to the patience of the reader, it is believed that in no other single publication can so much be learned about the past, present or future of Western Pennsylvania, and its great resources of iron, coal, coke, natural gas ; its railroads and river transportation ; its agriculture, commerce, etc.

The Chamber of Commerce issues a large edition for gratuitous distribution, and trusts that the authentic information conveyed thereby will bear abundant fruit.

shots of the greatest and bloodiest war of the last century. In this, the Seven Years' War, the Forks of the Ohio formed the pivotal point, so far as the course of events on this continent was concerned.

Was it not "manifest destiny" that this great conflict should bring about the first formulated suggestion towards the formation of a Confederation of the British Colonies, at the so-called Congress of Albany? And that in the campaigns for the conquest of the Ohio Valley, for the first time Americans from the North and the South should stand shoulder to shoulder?

Nor was merely the question of supremacy, as between France and Great Britain, decided in this locality. Resistance to further encroachment of the whites culminated, a few years after the fall of Fort Duquesne, in the grandest combination of Indian tribes ever gotten up. The genius and eloquence of Pontiac and Gyasutha were devoted towards a general and simultaneous rising against all western settlements. Every such succumbed, but the terrible wave of fire and blood dashed in vain against the Gibraltar of Civilization, Fort Pitt. A pitched battle was fought in August, 1763, at Bushy Run, twenty miles from this place, and the consummate leadership solely of Colonel Boquet prevented a repetition of the disaster that had befallen Braddock's army eight years before. The glorious victory secured all the country around the headwaters of the Ohio from Indian ravages, and wonderful was the progress in settlement made in the next few years. So much so, that the people of Western Pennsylvania could take up the controversy with Great Britain in their own way by issuing a Declaration of Independence of their own, months before that which has made the 4th of July, 1776, famous forever. More patriotic still, if possible, was the postponement of the boundary quarrel between Virginia and Pennsylvania, until the recognition of this independence. Then it fell to the lot of a citizen of this region, Arthur St. Clair, to bring the difficulty to an end, by the passage of that masterpiece of statesmanship, the great Ordinance of 1787. He became the founder of civilized government for all the vast tract of country now forming the great States of Ohio, Indiana, Illinois, Michigan and Wisconsin.

Most forcibly was it demonstrated to the people of Western Pennsylvania how essential to their very existence was the free navigation of the Mississippi. The Whiskey Insurrection, so-called, was simply an expression as to the necessity of opening communication with the markets of the world for their products. Necessity is the mother of invention, and to a citizen of this region, Robert Fulton, it was the inspiration that led him to the invention of steam navigation. The opening years of the present cen-

ture witnessed the fulfillment of the desired free use of the great river by the purchase of Louisiana. A curious incident it certainly is, that the third steamboat built in Pittsburgh should prove the means, by speedily and opportunely bringing munitions and material of war, of General Jackson fighting and winning the battle of New Orleans.

This hasty review of the salient events from 1753 to 1815 will, we trust, suffice to illustrate the fact that Pittsburgh and Western Pennsylvania have been as important in the history of the country, as its "manifest destiny" would seem to require of any locality. In these three score years, lie the seeds of all the marvelous developments of the mighty West. Pittsburgh has simply been the pioneer of progress for all the interior. In war, and in the grander achievements of peace; in commerce and manufactures; in road building and navigation, she has marked out the course for younger communities to follow.

THE GEOGRAPHICAL POSITION.

Two singular designations by the greatest historians of the age serve well to characterize the nature of our geographical position. Thomas Carlyle has much to say about the "three-legged place," as he denominates Fort Pitt, in his "Seven Years' War," in which his hero, Frederic II, gained so much glory and so little else. The phrase evidently refers to the three rivers, the Allegheny and the Monongahela, which joining, form here the noble Ohio—*la belle riviere* of the French. The former two were the lines along which the French and the English were advancing, and the occupancy of the point of confluence by either would almost insure the dominion of the whole valley, and of the largest river system of the temperate zone. Hence this point, on which was afterwards to arise the city of Pittsburgh, was happily termed by George Bancroft the "Gateway of the West."

The drainage basin of the Allegheny and the Monongahela has an area of nearly 20,000 square miles, embracing parts of six or seven States, and these natural water-ways form admirable routes for the artificial highways of modern times, that absorb by far the greater part of commercial movement. Details of the water and rail transportation systems of Western Pennsylvania are presented in this volume, and it needs only here to be said, that a glance at a map will show the importance of our geographical position better than any words can.

The natural resources are such as are but rarely joined together in

other part of the globe to like extent. The soil is sufficiently fertile to induce our farmers to stay where they are, notwithstanding the blandishments held out by newer sections. Our lumber resources, hidden away in the mountain valleys, are almost beyond computation. A single railroad claims a body of forest 70 miles long by 10 wide, with over ten billions of feet of merchantable lumber.

The mineral treasures of Western Pennsylvania are treated separately in subsequent pages so far as coal and iron are concerned. The former, the basis of all modern industries, is alone sufficient to insure the prosperity and progress of the region, while the manufacture of iron and steel has attained a predominance, unshakable by the severest tests known in the world. As to petroleum, it can only be said that all prophecies dictated by pessimistic views have come to naught, that the daily production is now larger than the markets of the world require.

It has taken a hundred years to start and develop our industries. Their infant struggles were pathetic and instructive, while the duty of the future, to carry forward and differentiate, will be pleasant and easy.

To say that the natural resources have hardly been touched, is merely stating a patent fact. If we consider how much of the energy, intellectual and physical, of the first two or three generations had to be devoted to the mere groundwork or foundation-laying of civilized society, and of settlement; how long and how much men had to save from other occupations before they could commence to invest capital in mines and mills, we get a realizing sense of the difficulties overcome. Practically, all the wealth of thirty counties has been created within their bounds—in fact, more has been taken away than brought into them. All these factors give a standard to estimate the future by.

Nor is it the natural resources, or the wealth thus created, that should be alone considered in forecasting the future of Western Pennsylvania. A great stock of technical and commercial skill and science had to be accumulated, an atmosphere of industrial life, so to speak, created, in and by which enterprise could be brought to bear on the varied problems of production presented to our people.

Now we have these. The science and skill are at hand to an amount bound to inspire respect and confidence. Every question and problem of dynamics in all its phases can be solved here. This is a capital the importance of which is often overlooked. Without these our resources and accumulations would be unprofitable indeed, and to take stock of these latter is the purpose of the following pages.

THE COAL MINING BUSINESS.

The wonderful prosperity of Pittsburgh as a manufacturing centre is chiefly due to its possession of a vast vein of Bituminous Coal, unexcelled in quality for gas, steam and domestic purposes.

The area of the coal fields of the world is estimated over 260,000 square miles, of which the United States contain 192,000 square miles, or 74 per cent. of the total area. The bituminous coal field of Pennsylvania, which underlies the western portion of the State, and by which Pittsburgh is surrounded, is estimated to contain 14,000 square miles. It is not, however, from the mere matter of area in square miles that the value of a coal deposit is to be estimated, nor the success of a coal trade builded upon; the essential requirements are:

1st. Quality of the coal.

2d. Thickness and regularity of the vein, and its accessibility.

3d. Cheapness and sufficiency of transportation to market.

The Pittsburgh vein eminently combines these requirements. The seam is from 5½ to 8 feet high, and the coal, so all testimony combines to establish, is of the best bituminous quality in the United States for the generation of steam, the manufacture of gas, and for household use. When Sir Charles Lyell, the eminent geologist, investigated this field, he said: "I was truly astonished, now that I had entered the hydrographical basin of the Ohio, at beholding the richness of the seams of coal which appeared everywhere on the flanks of the hills and at the bottoms of the valleys—and which are accessible in a degree I had never witnessed elsewhere."

As to the second requirement, it needs but to be stated that, while it takes from \$300,000 to \$500,000 of outlay in the old world to reach a vein of coal whose thickness frequently does not reach over 1½ to 2 feet, mining here requires no outlay whatever, or only an insignificant sum, since the coal seam crops out on the flanks of the hills, and the banks of the rivers, the investment being simply that for transportation facilities from veins to carrier or market. The character of the coal, too, is of such consistency as to stand the necessary handling for its being marketed without having its value appreciably impaired by crushing, and yet permits its mining with the use of but little, if any, explosives.

The last requirement, namely, "cheapness and sufficiency of transportation to market," will be dealt with more in detail in subsequent pages of this paper—suffice it here to say, that we have on our rivers the cheapest known transport service in the world. Nowhere else are merchantable commodities moved for a distance of 2000 miles at the rate of less than

one dollar per ton. Railroad rates, as will also be explained hereafter, are likewise at a minimum—the fact being that the cost of moving coal and coke might reasonably be made higher without serious detriment to anybody, and be of a manifest tendency to establish that equation of service sought for by every intelligent railroad manager.

In 1884 the coal output of the United States was, in round numbers, 96,000,000 tons, of which quantity Pennsylvania furnished 32,000,000 tons anthracite, and 24,000,000 tons bituminous, of which bituminous coal the counties of Allegheny, Washington, Fayette and Westmoreland output 13,000,000 tons, which is 54 per cent. of the whole quantity of bituminous coal furnished by the State, and 20 per cent. of the quantity furnished by the United States.

Nearly one-third of these thirteen million of tons was turned into coke in the 12,000 coke ovens that dot the Monongahela and Youghiogheny Valleys, presenting a spectacle in the night-time, suggestive of Dante's *Inferno*. The coal shipped East in 1884 amounted to over 1,600,000 tons, being for the largest part used in gas making. Shipped by river to Cincinnati, Louisville, Memphis, New Orleans, St. Louis, etc., were about 4,400,000 tons; the balance remaining being divided among local consumers and the Lake ports.

As a rule, all Pittsburgh coal shipped by rail a greater distance than 50 miles is for use exclusively in the manufacture of gas, while that shipped by water can be shipped 2000 miles and used for all the different purposes of fuel as well as that of illumination. As a curiosity in the problem of cheap transportation, it may be mentioned that some of the coal shipped down the Ohio, is loaded on board cars at Cincinnati and thus taken to gas works as far distant as Michigan. The gas which illumines the cities of London, Windsor and St. Catharines, in Ontario, Chicago, Detroit, East Saginaw, Port Huron, Marquette, Milwaukee, etc., is largely made from Pittsburgh coal, reshipped from Erie, Cleveland and Ashtabula.

The increase in the product of our mines from 1870 to 1884 was nearly 300 per cent., and the price of coal in these years declined more than the price of the labor necessary to produce it. The cost at pit mouth here is only one-half that at same place in Great Britain.

The energy or force contained in a pound of coal is equal to the average day's work of a man; and the coal miner who daily digs 100 bushels of coal, adds by his labor to the labor forces of the world an equivalent to the labor of 8,000 men.

As was stated by a well informed writer on the subject, as regards the future of this industry: "If Great Britain, with an area of coal less by

3000 square miles than that of Pittsburgh, and of difficult access, has yet reached the position of the first coal producing, coal exporting, and manufacturing country of the world, what may not Pittsburgh achieve when the same amount of energy and enterprise shall have been bestowed upon her greater natural advantages?"

From 18 to 20,000 men are employed in the 150 mines belonging to this district, exclusive of those engaged in coking, river and rail transport service. The capital invested is estimated at over \$16,000,000, and the present annual product is valued at nearly thirteen millions of dollars.

THE COKE BUSINESS.

A very vigorous offshoot from the mining industries of Western Pennsylvania, is the Coke business.

At the very gates of Pittsburgh, and tributary to its commerce, are located the interesting and unique coke-making regions of Western Pennsylvania. It is a district which, like the oil regions of our State, cannot find duplication in the world. The one product of this limited area is coke, a commercial fuel which is sought for by iron founders and smelters from Lake Champlain and New York on the east to Salt Lake and Omaha on the west, and from Canada to the Gulf of Mexico. Coke is the product of slow combustion applied to the soft bituminous coal of the region. This coal is a well defined portion of the "Pittsburgh coal basin," the vein varying in thickness from 8 to 11 feet, and worked at all depths below the surface of the ground down to 300 feet. The entire deposit of coal lies to the southeast of Pittsburgh, and varies in width from 2 to 12 miles, with a length of about 40 miles, the northern end of the basin or deposit being near the town of Latrobe, Pa., and its southwestern limit extending into the State of West Virginia. The great and growing demand for this coke is attributed to certain qualities it possesses which are not found in any other similar fuel made in this country. Chief among these is the high percentage of fixed carbon—90 per cent.—and the sustained structure combined with open texture during the process of combustion of the article. The latter attribute renders the fuel invaluable in blast and cupola furnaces, where great loads of metal, limestone and ore must be mingled, loads which crush ordinary coals, and so impede draft. Thus the use of coke increases the output of an anthracite blast furnace 50 per cent., as compared with anthracite fuel alone. Our local blast furnaces show the largest outputs of any in the world. These well-established facts,

which have made the greatest impression among metallurgists, have invested the coke business with an importance never dreamed of twenty years ago. Mining engineers have explored every coal-bearing region of the country for a coal identical with our Connellsville coking coal. Though the discovery would be worth untold millions, their efforts have been in vain. Within a few miles from Pittsburgh are 12,000 coke-making "ovens" of the industry. From these constantly arise clouds of smoke and volumes of gas and noxious fumes. The ovens are of simplest form and construction, merely a "bee-hive" of fire-brick, with an aperture at the apex and a small doorway at one side of the base. In the former is dropped the coal as it comes from the pit, and from the latter is "drawn" the finished coke. A "charge" of coal fills one-third or one-half the interior space of the oven, and the heat from the previous charge converts this coal, in forty-eight hours, to a mass of glowing coke. The access of air during the combustion is retarded by almost closing the doorway during the coking process. The mass, after being cooled by water, is drawn out in large irregularly-shaped fragments and placed in cars for shipment. A coke oven is 12 feet in diameter at the base, $6\frac{1}{2}$ feet high at the center, and is constructed of fire-brick.

Late computations of the coke trade give nearly 100 separate establishments possessing over 12,000 ovens, and representing an investment of nearly thirteen millions of dollars. The number of men employed, exclusive of mining, transportation, etc., is over 6,000.

It may be added, that the trade has by no means yet reached its limits, since the use of coke as a domestic fuel, for which it offers many attractions, such as cleanliness, absence of smoke, steadiness of heat, and economy as compared with its natural brother, anthracite, has only begun in the western cities and towns. It is claimed that this branch of the trade has a great future.

Our coke is *sui generis* in this, that there is no other commercial commodity which will stand like it, a transportation charge of twenty-fold its prime value to reach its most distant consumers.

PITTSBURGH AND THE SOUTH AMERICAN COAL TRADE.

The following paper was written by Colonel T. P. Roberts, the well-known civil engineer, and presented to the Pittsburgh Chamber of Commerce:

The International Exposition at New Orleans naturally directs attention

to the possibilities of the extension of our commerce, not only with the southern States of the Union, but also with Mexico and the nations of South America.

Western Pennsylvania with her natural resources, and Pittsburgh with its diversified industries, have more interests to be benefited by the development of such a commerce than might at first sight appear.

Pittsburgh is already more largely interested with New Orleans by reason of its coal trade alone, than any one of the other cities of the Mississippi Valley, and it is chiefly by reason of this developed and growing traffic as a basis, that we can effect exchanges in other products, natural as well as artificial.

We can at least speak confidently on the subject of coal, because, first, we are sure that we have a good article in great abundance ; and, second, we know that from New Orleans to Patagonia, and from the Atlantic to the Pacific, no fairly merchantable gas or steam coal is found. In all this wide field, embracing many gas-lit cities of the first magnitude, supporting navies and fleets of merchant steamers, and railroad systems rapidly becoming important, there is but one competitor with us for the supply of the indispensable article, coal.

The brilliant carbon crystal, or diamond, has made known to the world the empire of Brazil, now thoroughly awakened from its past lethargy, and by means of its rapidly expanding railroad system opening its multitudinous resources to the world. So it is to be through the agency of the Brazilian jewel's brother, the black diamond of Western Pennsylvania, that American commerce can be made to spread its wings over the waters of the Gulf of Mexico, the South Atlantic and Pacific Oceans.

We are accustomed too much to sneer at what we term the weak republics of the South, and call the Brazilian empire an effete monarchy, whose commerce with us is of little moment. But when we come to review the history of our trade with those countries, most of us will be astonished at its magnitude.

All are familiar with the question of the balance of trade, for or against us, with England and France, and we congratulate ourselves that in recent years we have been able to hold our own against Europe ; for in fact we have made Europe to a large extent financial debtors for articles of prime necessity to her people ; but it is not so with our trade to the continent to the south of us.

Here is a tabulated statement of the commerce of the United States with Brazil for a period of twenty-one years, recently copied from a Brazilian newspaper :

The Commerce of Brazil with the United States from 1859 to 1879.

| YEAR. | Value of Brazilian Exports to the United States. | Value of American Exports to Brazil. | Balance in Favor of Brazil. |
|------------------------|--|--|-----------------------------------|
| 1859..... | \$22,419,818 | \$6,018,901 | \$16,400,917 |
| 1860..... | 21,204,803 | 6,021,727 | 15,183,076 |
| 1861..... | 18,100,456 | 4,973,828 | 13,126,628 |
| 1862..... | 12,747,230 | 3,858,994 | 8,888,236 |
| 1863..... | 10,945,476 | 4,940,171 | 6,005,305 |
| 1864..... | 14,388,899 | 5,354,755 | 9,034,144 |
| 1865..... | 9,784,312 | 6,580,161 | 3,204,151 |
| 1866..... | 16,816,803 | 5,691,659 | 11,125,144 |
| 1867..... | 19,100,800 | 5,099,387 | 14,000,913 |
| 1868..... | 23,595,740 | 5,695,404 | 17,900,336 |
| 1869..... | 24,837,403 | 4,866,604 | 18,970,799 |
| 1870..... | 25,161,219 | 5,774,323 | 19,386,896 |
| 1871..... | 30,551,215 | 6,013,733 | 24,537,482 |
| 1872..... | 30,122,384 | 5,912,783 | 24,209,601 |
| 1873..... | 38,540,376 | 7,197,722 | 31,342,654 |
| 1874..... | 43,888,647 | 7,702,156 | 36,186,491 |
| 1875..... | 42,027,863 | 7,742,359 | 34,285,504 |
| 1876..... | 45,446,381 | 7,346,380 | 38,100,001 |
| 1877..... | 43,498,041 | 7,581,813 | 35,916,228 |
| 1878..... | 42,968,973 | 8,686,704 | 34,282,269 |
| 1879..... | 39,375,441 | 8,194,370 | 31,181,071 |
| Total in 21 years..... | \$575,521,780 | \$132,253,934 | \$443,267,846 |

It will be seen that in twenty-one years our imports of Brazilian products exceeded our exports to the same country by the enormous sum of \$443,267,846.

During the same period of twenty-one years, how was it with England in her trade with Brazil? While the aggregate of her commercial transactions was even larger than ours, viz.: \$1,319,000,000, counting trade both ways, with exchange against her about half the time, Great Britain, nevertheless, managed to rather more than hold her own, leaving Brazil in her debt to the amount of \$15,104,579.

France, also, with a total of \$660,000,000 business, in the twenty-one years with Brazil, succeeded in coming out \$38,000,000 ahead in the transactions.

Exchange has, therefore, been made by the United States constantly in favor of Brazil, and as England handled all the money, she has no doubt

shaved everything to her advantage which has passed through her hands.

We have not the figures of our commerce with other South American countries, all of which rounds up in London for settlement, but, no doubt, the grand aggregate would be really startling.

The remedies to be applied to reverse the conditions of our trade with South America, or at least to more nearly equalize it to the general advantage, are the same which placed us on equal terms with Europe, and that is an increase of our exports.

Already we send to Brazil all of the limited quantities of flour, lard, turpentine and pine lumber that she requires, but the eastern merchants appear to have stopped with those items, as if that was the extent of our national resources. The South American trade is at present nearly all in the hands of Baltimore and New York merchants, although formerly Richmond was a favorite shipping port from which "Southern flour" was exported to the sub-equatorial regions. Southern flour at one time was believed to be the only brand which would stand a tropical voyage, but this idea was rudely dispelled during the war when Richmond was hermetically sealed.

The writer recollects once in 1864, in crossing the Mantiquerra Mountains, in the province of Rio Janeiro, he overtook a troop of mules, each animal being laden with two barrels of flour, and driven in sets of nine by *trooperias*, or half-naked Africans. He had had quite a wearisome ride, and felt somewhat lonesome, but happening to notice on the ends of the barrels, "Pearl Steam Mills, Allegheny," his heart bounded with pleasure, for he was reminded of boyhood days and his residence for three years directly opposite the old Pearl Mill. There is not much poetry in a flour barrel, but it is certain that that day they created the liveliest emotions, and I was loath to leave the struggling mules behind. This was the only occasion in a three years' residence in Brazil that the writer saw any of Pittsburgh's manufactures, except refined petroleum.

The petroleum of Western Pennsylvania lights all of South America away from the cities where gas is used. But in addition to it there are articles of glass manufactured in this city, which can compete abroad with the products of Belgium and England. We also manufacture certain articles of hardware, such as door locks, and cutlery, in some grades, and edged tools, which need fear no rivalry. Other items might be mentioned of industries peculiar to Pittsburgh and Cincinnati, notably bacon and lard, which seldom, if ever, reach South America from first hands.

It is absurd for interior American cities to seek to develop intercourse with Mexico and South America by way of the railroads, the Allegheny

Mountains, and the seaboard, when we have a nearer, more natural and cheaper entree to those dominions by way of the Ohio and Mississippi rivers and New Orleans.

But the day is passing away—or rather the day is dawning,—when the foreign commerce of the United States is no longer to be left to the direction of English ship owners. Whether with or without subsidies, protection or non-protection, our 55,000,000 of people are going to burst their overflowing granaries and dispose of their surplus manufactures. Our education, intelligence, patience, perseverance, and untiring industry, our ingenuity and our native resources, must all be counted for naught if we cannot hold our own with the Spanish and Portuguese Americans. We should do something to enlarge the field of our commerce, or else suffer the chronic glut—or “over-production,”—which is intermittent, with its business chill every ten years.

Just at the present time, however, England sweeps the seas, her vessels loading in South America—unloading their coffee, etc., in Baltimore and New York—thence refilling with grain for Europe, and return to South America with English manufactures, completing their great triumphant triangular voyage fully laden all the time.

Our eastern merchants look on year after year, wondering when American vessels are going to enter the trade. Well, we of the Mississippi Valley can tell them, never, so long as they have nothing to ship in return for the coffee and sugar they receive. *Those English vessels return to England to load with coal.* They have coal as paying ballast, and whatever they can carry on top of the coal is clear profit all the time. The Pennsylvania Railroad made use of its coal trade to attract the cattle business from its northern rivals, and no vessel need ever depart from the British Islands for South America empty handed. But so great is the demand for coal in the far South, that many vessels ply regularly in the trade from Swansea and Cardiff, returning frequently in ballast from Brazil, all of which proves that the business must be profitable to them.

The price of coal varies in Rio Janeiro—and the same is true of Pernambuco, Bahia, Maranhão, Santos, Montevideo and Buenos Ayres—from \$8.50 to \$11.50 per ton aboard ship.

Pittsburgh coal can be delivered in New Orleans, and with the aid of elevators transferred to colliers for 10 cents per bushel, or \$2.60 per ton. At New Orleans the coal is several thousand miles nearer Rio Janeiro than are the English mines.

Suppose we assume the case of a vessel and cargo of coal—the average capacity of a collier, 1,200 tons, worth \$35,000—what will it cost to send the coal to Brazil?

The time for sailing vessels from New Orleans to Rio is about 30 days, as compared with 60 days from England. We have, therefore :

| | |
|--|------------|
| Interest 1 month on \$35,000..... | \$180 |
| Insurance, 15 per cent..... | 430 |
| | — \$610 00 |
| Wages—Captain, \$100 ; 14 men at \$20, 1 month, \$280..... | 380 00 |
| Boarding 15 men 1 month..... | 210 00 |
| Piloting and incidentals..... | 300 00 |
| | \$1,500 00 |
| Duty on coal, assumed, at \$1.00 per ton..... | 1,200 00 |
| | \$2,700 00 |

We have, therefore, added to the cost of the coal about \$2.00 per ton. Even if it cost three dollars to transport a ton of coal from New Orleans to Rio, the entire charges and first cost would be only \$5.60. As before stated, the selling price varies from \$8.50 to \$11.50.

We have in Pittsburgh coal merchants able to establish lines of colliers in this trade. Here, also, are located the largest coffee roasting establishments in the world ; here, also, we produce petroleum, glassware, hardware, flour, bacon and lard to “ top off ” the loads of coal.

Here, then, in Pittsburgh—favored above all American cities—should begin the rejuvenation of our decayed commercial marine. No other city can furnish *paying ballast*. First on the waters of the Mississippi Valley, largely interested on the lakes, Pittsburgh, if she exerts herself, can take a leading position on the highway of nations.

NATURAL GAS.

The novel fuel supplied by natural gas claims the very first consideration in any review of the industries of Pittsburgh and Western Pennsylvania. The faith enterprise has in the continuance of the supply is shown in the fact that over three millions of dollars have been expended in providing pipe lines for the conveyance of natural gas to Pittsburgh and the minor manufacturing centres of the neighborhood. Such pipe lines aggregate now a total length of five hundred miles, including the service pipe to individual points of consumption. The change of fuel from coal to gas is so radical that it is simply impossible to indicate even the chief consequences of the same ; for economy, great as is the saving, is not even

the leading element. In most processes of manufacturing carried on here, the use of natural gas has brought with it either greater facility of carrying on work, or a decided improvement in the product, or an increased quantity of the same. Every branch of work, for some one or more of these reasons, has in addition to the saving of the cost of fuel, been anxious to introduce the subtile calorific. Nor should we forget its superb attractions as a domestic fuel; the cleanliness and comfort with which the heating of dwellings is now effected; the radical change stops not by any means within doors—the cities and towns, hitherto enveloped by a pall of coal-smoke, which covered everything with a surface of soot and dirt, are already perceptibly improved in appearance. No one, not familiar with the never-ending struggle of washing and cleaning as witnessed hitherto in Pittsburgh and Allegheny city, can form a remote idea of the change brought about by the introduction of natural gas into private houses. The wear and tear of textile fabrics of all sorts, furniture, etc., caused by the all-pervading soot, and consequent cleaning, runs into millions annually; and estimating a saving, for each domicile, of only one hundred dollars per annum, the reader may figure out for himself how much a population of nearly 500,000 may save in future.

A glance at the map accompanying this volume, will show the principal utilized natural gas wells, and the gas mains laid to Pittsburgh and Allegheny city, up to the month of July, 1885. Numerous gas wells that are known to exist are not laid down on the map, since their use is limited to strictly local supply of some works, or for the manufacture of lamp black, or goes to waste. The latter category is really larger than most persons are aware of. It was stated at a meeting of the Chamber of Commerce that the waste of gas within "piping" distance of Pittsburgh, was over seventy millions of cubic feet per day. As each 1000 cubic feet of gas represents an equivalent of about a bushel of bituminous coal (or 76 lbs.), the daily waste may be calculated at over thirty-five hundred dollars.

The three hundred miles of gas mains in operation deliver to the manufacturing establishments of Pittsburgh and vicinity, and private dwellings, etc., a heating power about equal to that supplied by the consumption of two millions of bushels of coal per month, or almost one million tons per annum. This is equal to more than one-third of the local consumption of coal a year or two ago.

The following is a list of the natural gas companies having established pipe lines to Pittsburgh and Allegheny:

Penn Fuel and Fuel Gas Consolidated Companies Lines, from Murraysville to Pittsburgh :

- 3 Lines of 5½ inches diameter,
- 1 " " 8 " "
- 1 " " 10 " "

Philadelphia Company Lines :

- 1 Line of 10 inches diameter from Tarentum to Pittsburgh and Allegheny,
- 2 Lines of 8 inches diameter from Murraysville to Pittsburgh and Allegheny.

Ford and Nelson Lines :

- 1 Line of 5½ inches diameter from McGuighan Wells, Washington County to Pittsburgh,
- 1 Line of 8 inches diameter from McGuighan Wells, Washington County to Pittsburgh.

Chambers Line :

- 1 Line of 10 inches diameter from Washington County to Pittsburgh.

Carpenter Line :

- 1 Line of 8 inches diameter from Murraysville to McKeesport and Pittsburgh.

Acme Gas Company Line :

- 1 Line of 8 inches diameter from Murraysville to Braddock and Homestead.

National Tube Works Line :

- 1 Line of 8 inches diameter from Murraysville to McKeesport.

Spang, Chalfant & Co.'s Line :

- 1 Line of 6 inches diameter from Butler County to Sharpsburg.

Hite Line :

- 1 Line of 8 inches diameter from Tarentum to Hulton and Allegheny city.

Quite a number of new companies are in process of formation, having awaited the passage of the new law providing for the incorporation of Natural Gas Companies on the part of the legislative powers of Pennsylvania. Such a law was enacted and signed by the Governor May 25th, 1885, and it is expected that this form of corporate enterprise will become quite popular throughout Western Pennsylvania. From fifteen to twenty towns are already supplied with facilities of the kind, and the terms at which fuel is now provided may be judged by those of the town of Clarion, which we give :

| | |
|--------------------------------------|---------|
| Cook Stove per annum, | \$26.66 |
| “ “ and one Heating Stove, | 40.00 |
| “ “ “ five “ “ | 66.66 |

The rates charged in the cities of Pittsburgh and Allegheny have hitherto been purely experimental; it is quite probable that in the near future low pressure gas will be furnished at not more than six or seven cents per thousand cubic feet.

The gas mains enumerated above form a total length of over three hundred miles; the distributing pipes, laid three or four feet under the grade of the streets, etc., and the branches to points of consumption number at least two hundred miles more. There is no doubt but that by the 1st of January next a network of at least six hundred miles of iron pipes will be found conveying the novel fuel to the manufacturing centres of Pittsburgh and Allegheny city and their suburbs.

The difficulties formerly encountered in laying pipes, and in either preventing leakage, or providing that the same shall do no harm, have been successfully overcome by a number of novel devices which it would be impossible to specify here. These difficulties are such as to make it quite certain that this means of conveyance of natural gas is limited to a distance not much greater than has already been accomplished. The friction of the gas fluid reduces the pressure at the rate of about seven pounds per mile; that is to say, an original pressure of even two hundred pounds at the well will be reduced to nothing in a distance of thirty miles, and the delivery of gas will, of course, be in the same ratio. This pneumatic law is often lost sight of by those who suggest the possibility of taking our subtile fuel to the cities along the seaboard, and point to the pipe lines laid for the conveyance of petroleum. While it costs only ten cents to pump a barrel of petroleum to the Atlantic coast, the futility of doing the same with hydrocarbon gas, of which twenty-five cubic feet weigh only one pound, should be obvious to any intelligent inquirer.

The conclusion which every such, whether resident of this region or coming here from other parts, has been compelled to come to, is that:

1. There is an abundance of natural gas in Western Pennsylvania; its exhaustion cannot now possibly be counted upon, at either a near or a remote point of time; and,

2. That this fuel to be utilized, must be consumed within a radius of thirty to forty miles from the supplying wells; and,

3. That it is not safe to plant any manufacturing establishment dependent on a single well, but that reliance can only be placed on supply by a pipe or pipes.

4. That, by the use of natural gas as a fuel, a saving of from thirty-three to fifty per cent. may be effected as compared with the cost of coal fuel in other manufacturing centres of the United States.

These axioms are incontrovertible, in fact, sanguine men go much further, but, satisfied with these, it is easy to see what a conspicuous influence the new system of fuel and of heating will exercise in the near future.

Manufactories of all sorts will be drawn here, to Western Pennsylvania, especially those in which the cost of fuel is at all considerable. The abundance of skilled labor, healthful climate, cheapness of transportation, both by river and rail, are reinforced by natural gas, so as to make the region of prime attractiveness to most forms of manufacturing.

FARMING WITHIN A HUNDRED MILES.

We have been desirous of introducing the present chapter that we might give a comprehensive view of the operation of the national laws, designed to foster the development of our industries, on agriculture in general. We desire to show the nature and value of the meaning of the words, "home market," so familiar in public discussions on the subject. We desire to bring out the sharp contrast to be found between the farmers of this region, and those really dependent on the export trade of agricultural products. This "home market" has attractions and advantages quite its own, and is duly appreciated by those who enjoy it. Established and steady in character and extent, the farmer in Western Pennsylvania and Eastern Ohio is sure of always getting a fair price for his produce, within a day's ride from home. He is uninfluenced by those sudden and mysterious fluctuations that seize the export market so often, and which, unexpected and unaccountable, are doubly aggravating in that they reach the producer early only when adverse, while those that might be advantageous he hears of only when it is too late to profit by them. Our agriculturists seldom find themselves in such a dilemma.

The territory embraces eight counties of Ohio, twenty counties of Pennsylvania, and three counties of West Virginia, or a total area of almost twenty thousand square miles. No point is further from Pittsburgh than two hundred miles; yet the boundlessness of Nature's gifts to be found in the region, stamps it pre-eminently as one of the most favored on the globe.

To collate its agricultural resources: over one million tons of hay are produced in its bounds, for the quarter of a million of horses kept on farms, besides the one hundred and fifty thousand employed in the towns and cities. The wool clipped annually weighs about eleven millions of pounds. The county of Washington, Pa., is the leading county in the United States in this respect. There are over one hundred thousand farms, worth nearly five hundred millions of dollars, and producing annually fifty-five millions of dollars worth; and closely identified with the metropolis of the region, buying from it the multiform articles required in the household, wearing apparel, tools and machinery of all sorts, and selling to the same the results of its soil.

| COUNTIES. | Area Square Miles. | Population. | Value of Farms. | Annual Products. | Indian Corn. Bushels. | Oats—Bushels. | Wheat—Bushels. |
|-----------------|-----------------------|-------------|--------------------|------------------|--------------------------|---------------|----------------|
| Allegheny, Pa | 757 | 355,870 | \$40,412,000 | \$3,666,000 | 804,600 | 923,000 | 356,000 |
| Armstrong..... | 612 | 47,641 | 13,578,000 | 1,772,000 | 753,600 | 792,400 | 228,800 |
| Beaver..... | 452 | 39,605 | 12,596,000 | 1,412,000 | 531,900 | 470,300 | 201,900 |
| Blair..... | 510 | 52,740 | 8,896,000 | 1,032,000 | 474,300 | 193,100 | 273,300 |
| Butler..... | 814 | 52,540 | 20,644,000 | 2,244,000 | 773,400 | 1,095,600 | 192,800 |
| Cambria..... | 666 | 46,800 | 6,214,000 | 1,000,000 | 336,200 | 346,600 | 117,100 |
| Clarion..... | 572 | 40,300 | 10,376,000 | 1,204,000 | 460,000 | 645,200 | 123,900 |
| Clearfield..... | 1,130 | 43,500 | 8,088,000 | 1,202,000 | 645,200 | 352,300 | 147,800 |
| Crawford..... | 1,005 | 68,600 | 21,200,000 | 3,274,000 | 829,400 | 1,128,700 | 232,200 |
| Elk..... | 774 | 12,800 | 1,450,000 | 236,000 | 34,700 | 75,000 | 11,600 |
| Fayette..... | 830 | 58,900 | 20,270,000 | 1,758,000 | 920,900 | 405,500 | 381,900 |
| Forest..... | 431 | 4,400 | 604,000 | 114,000 | 27,900 | 48,700 | 7,300 |
| Greene..... | 620 | 28,300 | 13,748,000 | 1,434,000 | 1,088,300 | 327,000 | 318,000 |
| Indiana..... | 828 | 40,600 | 13,554,000 | 1,810,000 | 914,700 | 775,400 | 309,800 |
| Jefferson..... | 646 | 28,000 | 7,312,000 | 934,000 | 341,100 | 452,400 | 113,400 |
| Lawrence..... | 376 | 33,400 | 12,040,000 | 1,428,000 | 609,600 | 538,400 | 280,100 |
| Mercer..... | 666 | 56,200 | 20,414,000 | 2,342,000 | 795,500 | 985,600 | 328,800 |
| Somerset..... | 1,102 | 33,200 | 11,858,000 | 1,788,000 | 323,400 | 579,500 | 192,900 |
| Venango..... | 658 | 43,700 | 7,958,000 | 1,122,000 | 343,600 | 558,900 | 74,000 |
| Washington.... | 889 | 55,500 | 35,284,000 | 3,672,000 | 1,808,300 | 845,400 | 614,300 |
| Westmoreland.. | 1,046 | 78,100 | 30,550,000 | 2,908,000 | 1,670,900 | 1,134,600 | 722,000 |

| COUNTIES. | Horses. | M. Cows. | Swine. | Wool Clip, In Pounds. | Hay—Tons. | Eggs—Dozens. | Potatoes, Bushels. | Orchard and Garden. |
|-----------------|---------|----------|--------|--------------------------|-----------|--------------|-----------------------|------------------------|
| Allegheny, Pa. | 13,300 | 19,600 | 24,000 | 290,000 | 60,148 | 233,073 | 758,292 | \$714,260 |
| Armstrong..... | 10,350 | 14,160 | 31,000 | 147,000 | 27,878 | 648,174 | 214,347 | 101,345 |
| Beaver..... | 6,850 | 10,900 | 15,900 | 400,000 | 31,079 | 537,125 | 195,043 | 124,318 |
| Blair..... | 4,670 | 5,640 | 10,500 | 141,000 | 12,876 | 222,402 | 154,626 | 99,962 |
| Butler..... | 12,840 | 19,400 | 33,200 | 240,000 | 49,623 | 905,036 | 478,513 | 127,033 |
| Cambria..... | 5,590 | 7,900 | 13,400 | 56,000 | 20,554 | 255,754 | 171,184 | 110,828 |
| Clarion..... | 7,000 | 10,100 | 18,900 | 65,600 | 25,374 | 323,450 | 208,551 | 74,966 |
| Clearfield..... | 5,440 | 7,800 | 15,500 | 58,200 | 17,753 | 343,624 | 161,402 | 105,335 |
| Crawford..... | 17,070 | 31,500 | 18,330 | 270,000 | 7,846 | 54,555 | 63,601 | 19,001 |
| Elk..... | 1,120 | 2,000 | 1,500 | 7,800 | 25,887 | 501,106 | 152,260 | 101,668 |
| Rayette..... | 9,150 | 10,100 | 24,600 | 300,000 | 3,347 | 22,103 | 27,901 | 12,114 |
| Forest..... | 560 | 940 | 1,260 | 6,680 | 17,917 | 603,478 | 57,298 | 50,149 |
| Greene..... | 8,200 | 9,200 | 32,800 | 800,000 | 32,143 | 670,369 | 184,461 | 125,109 |
| Indiana..... | 12,100 | 14,120 | 31,470 | 246,000 | 19,468 | 295,122 | 102,000 | 87,712 |
| Jefferson..... | 5,600 | 7,620 | 15,400 | 72,000 | 33,048 | 384,062 | 115,495 | 37,694 |
| Lawrence..... | 7,270 | 9,350 | 13,000 | 343,000 | 68,755 | 658,430 | 240,767 | 134,015 |
| Mercer..... | 13,000 | 17,600 | 17,320 | 420,000 | 40,770 | 360,612 | 220,478 | 110,013 |
| Somerset..... | 9,480 | 15,150 | 17,100 | 94,100 | 30,222 | 282,348 | 222,490 | 103,623 |
| Yenango..... | 6,410 | 9,690 | 13,130 | 115,500 | 76,385 | 896,488 | 310,792 | 72,327 |
| Washington..... | 13,280 | 16,250 | 38,330 | 2,417,000 | 55,465 | 720,906 | 298,578 | 160,604 |
| Westmoreland.. | 16,500 | 19,220 | 34,380 | 226,300 | | | | |

THE RAILWAY SYSTEM OF PITTSBURGH.

Annexed sketch map of Pittsburgh and its immediate vicinity will give the reader a general idea of the railways centering here. Although accurate figures cannot be given, it is obvious, and generally conceded by those best informed, that Pittsburgh and its coordinate industries create more tonnage than any other city in the country with the sole exception of New York. The total railway tonnage of Pittsburgh per annum may be estimated at over twenty-two millions, or over four thousand millions of tons hauled one mile. This is for strictly Pittsburgh business, and takes no account of "through" freight—such as merely passes through the city over the various roads.

It is a curious fact that the significant phrase adverted to in the introduction, of Thomas Carlyle, of Pittsburgh being the "three-legged place," based upon our river system, may be also applied to the railway systems: both trunk lines, the P. R. R. and B. & O., bifurcate here to the north and west.

The railway system of Pittsburgh is comprised of integral parts of the three great trunk lines of the country, viz: the Pennsylvania Railroad, the Baltimore & Ohio, and the Vanderbilt corporations. The Pennsylvania controls not only its main line from New York, with its branches, the West Penn., the Pittsburgh, Virginia & Charleston and the South Western Pennsylvania, but also the Pennsylvania Company's lines, namely, the Pittsburgh, Fort Wayne & Chicago, the Cleveland & Pittsburgh, Erie & Pittsburgh, as well as the Allegheny Valley Railroad, directed to the north and northwest. Bifurcating with these at this place is the Panhandle system, whose objective points lie west and southwest. In a similar manner the Baltimore & Ohio Railroad has a complete range of lines to the Lake ports via the Pittsburgh & Western and Pittsburgh, Cleveland & Toledo, and another via the Streets Run route and Wheeling to the west and south.

The Pennsylvania system controls more than five thousand miles of railway, the largest in the world under one management. Pittsburgh is the western terminus of the Pennsylvania Railroad, and the eastern terminus of all lines controlled by the Pennsylvania Company, an organization of similar name and in perfect accord with the Pennsylvania Railroad Company, but nevertheless a distinct organization.

The Baltimore & Ohio system reaches the city from the east by the Pittsburgh & Connellsville road, otherwise known as its Pittsburgh Di-

vision, which joins the main line at Cumberland. Its western outlet is by the Pittsburgh & Western Railroad, the transfer being made by the Junction Railroad, about nine miles in length, by which all rail and direct connections are completed to the west, making a second trunk line through this city, and adding largely to this as a railroad centre.

The Pittsburgh & Lake Erie Railroad, a line seventy miles in length, has done a thriving business from the start, but since its connection with the Vanderbilt system it has been extended, at great expense, up the Monongahela and into the coke country by the Pittsburgh, McKeesport & Youghiogheny Railroad, and a still further extension, with its terminus at Harrisburg, is in progress of construction.

THE RIVER INTERESTS.

Two lines of improvement have repeatedly claimed the attention of the Pittsburgh Chamber of Commerce, and their important features may be briefly indicated here.

The extension, on the part of the U. S. Government, of the Monongahela Navigation, and making it a free highway of commerce. A memorial to Congress, adopted by the Chamber, Dec. 15, 1884, formulates the argument in behalf of a free river, benefiting 8,000,000 of our population, and a trade on the Ohio river which rivals in extent and exceeds in importance the entire foreign commerce of the United States. The Monongahela valley furnishes to the lower country over 4,000,000 tons of coal annually, and the existing navigation devices are complained of as being inadequate and an onerous tax on commerce. If Congress could acquire title to them, and so enlarge and modernize the locks and dams that they would meet all reasonable demands of the present and near future, the entire Mississippi basin, with its 16,000 miles of navigation, would positively be benefited by a proportionate cheapening of their fuel and other commodities of prime importance.

The construction of the Kanawha improvement, the purchase of the Louisville canal and locks, have been measures in precisely the same line of development as the action suggested. The Government paid nearly three millions of dollars to make the Louisville canal part of a free national highway, and the same should be done with the hundred miles intervening between Pittsburgh and the West Virginia State line. Government has expended large sums above and below the Monongahela Navigation, to extend the use of water transportation into West Virginia, and to improv the

navigation of the Ohio river. It has expended, or entered into a course of appropriation, \$3,600,000 for the creation of a slackwater traffic on the Kanawha, and a like liberal line of legislation seems to be dictated so far as the interests of the Monongahela region is concerned.

The second branch of improvement to which attention has been drawn of recent years, by the Chamber of Commerce, the public press, and the reports of the War Department, is the construction of two or three dams in the Allegheny river, so as to practically make it an extension of the Ohio, for 30 miles. The vast aggregation of manufactures and work shops of Pittsburgh and adjacent country, really constitute an arsenal for the creation of war material of all sorts, second to no other point in the country. In every war fought by the United States, Pittsburgh has been a vital point of supply—to mention only one item we may say, that over 4,000 cannons have been manufactured here for use of the Government, many of them of the heaviest calibre known at the time.

To complete this grand system of industrial establishments, far exceeding in importance, solely looked upon in view of future wars, any arsenal the country now possesses, the extension of the water-way along the northern frontage is absolutely required, and the expense of so doing need not cost the National Government more than half a million of dollars.

Western Pennsylvania abounds in rivers which under a wise and prosperous government, will in the course of time, all be so improved as to make them navigable for commercial purposes.

Steamboats for general passenger and freight service are built at Pittsburgh, requiring only a draft of water of two feet, and possessing a capacity of tonnage which enables owners to make money at half the tolls customary upon railroads for like service. The great central valley of the Union inhabited by twenty millions of people, itself abounds in streams capable of being made navigable at an expense of less than five thousand dollars per mile of shore. A list, enumerating 126 such creeks and rivers, was once published by one of the numerous conventions held in favor of "Internal Improvements," and those of the Mississippi river and tributaries.

From the date of the construction of the "New Orleans," in 1811, until the present time, steamboat building has been a leading feature of our industries. One steamer per week has been turned out from our shops and boat yards for a quarter of a century, beginning with the year 1842. In most of that period, half the steam fleet navigating western waters was Pittsburgh built, and the progress made in skill and science of construction was largely availed of when the demands of the war required craft of novel designs and purposes.

Incidental thereto was the devising of steamers capable of towing coal boats and barges. Experience has tempted our rivermen, when once the efficacy of lashing boats together rigidly and to the stern-wheeler's front was established, to go on increasing the power of engines and steering apparatus, so that now we have steamers that can take 20,000 tons of coal to markets. This is a cargo greater than the "Great Eastern" ever handled; and what is of far greater importance, is, that the expense of transportation is lower than that by any other system of carrying in the world.

The amount of coal shipped from this port alone is sufficient to place Pittsburgh among the leading ports of the world. The capital invested in the river carrying trade may be inferred from the fact that upwards of 130 steamers are engaged in the coal business alone; all, or nearly all, are owned by the same parties that own the coal mines.

Summary of the Boating interest of Pittsburgh.

| | Ton. '97 |
|---------------------------------------|---------------------|
| 163 Steam Passenger and Towboats..... | 32,914.00 |
| 60 Model Barges | 24,600.00 |
| 2,000 Barges..... | }1,348,000.00 |
| 1,200 Boats..... | |
| 900 Flats | |
| <hr/> | |
| 4,323 vessels, with tonnage of..... | 1,705,514.07 |
| Capital invested..... | \$9,740,000 |
| Employees..... | 3,500 |
| Value of work done..... | \$2,600,000 |

PROGRESS AND PROSPECTS.

Having briefly sketched the characteristics of Western Pennsylvania, as shown in its history, its geographical position, natural resources, commercial facilities by river and rail, we may bestow a glance upon the line of progress and development as it stretches into the immediate future.

This we do in order to show the great, unrivaled opportunities for the employment of capital and labor in the field. Prosperity is based upon the co-operation of a very few and simple forces, such as abundance and cheapness of raw material and fuel, accessibility to markets, business enterprise, adequacy of labor and commensurate technical and commercial skill.

Now, of all these, Western Pennsylvania possesses enough to establish the claim which places it among the most favored regions of the globe.

Our coal formation supplies light and heat to a million of households,

and workshops, mills and factories. We have stated before that coal mining implies the previous expenditure of very little money, and that the cost of coal at the pitmouth is only one-half of that at the same place in England; its excellence is conceded by all who have a choice of fuels. The steady growth of our coal mining and coke interests, the establishment of distant markets, and remembering the enormous figures Great Britain displays in this regard, all point to the conclusion that this part of our industrial system will continue to grow. Investments in coal lands, either for immediate development or for future use, would be as well founded as any venture of like security in the financial markets.

The construction of railroads in the last twenty years has brought into prominence hundreds of thousands of acres of coal lands, and the great difference between these and the mining ventures of the West should also be taken into account. It is simply that here it is exactly known, before investing a dollar, how much coal there is in a certain property. In mining for the precious metals their amounts can only be guessed at after the expenditure of great fortunes.

It is not the purpose or province of this volume to "puff" or favor any particular locality. Its end is attained if the attention of capitalists is directed to the matter at all. Such as may desire further information can easily open correspondence with trustworthy parties through their banks or attorneys. Any one of the banks of Pittsburgh would, we presume, cheerfully point out appropriate agents here.

The lumber resources of the United States are being drawn upon, as all the world knows, to an almost alarming degree. Nothing is more certain than that the forests in the valleys in the upper Allegheny, the Monongahela, the Youghiogheny, etc., containing billions of feet of lumber, will assume an importance, as the century draws to a close, never dreamed of at its beginning. Pittsburgh, Allegheny City and the region roundabout, are great consumers of woods of all kinds. The railways and coal mines require enormous quantities for cross-ties and pit posts. The oil trade produces over 60,000 barrels of fluid every day—one-half of which requires barreling for shipment abroad.

Our nail production, our glassworks, consume quantities the amounts of which it were futile to compute. Our forests are rich in oaks, cherry, white pine, hemlock, ash and birch. Thousands of acres are every year "stripped" solely for their bark, and no account has as yet been taken of the lumber required for building purposes.

As the South recuperates from the wounds of war, as its trade and industries increase, the cities will require building stone, and with our transportation facilities it is simply a question of a few years that the fine

quarries of sandstone abounding here will come into request. A careful estimate indicates that at least five millions of dollars worth of such material can then be disposed of in the Mississippi Valley.

A large variety of clays crop out in our valleys, and as their value depends on the cheapness of fuel, a positive development of potteries and other fictile wares may be looked for. A good example of what may be expected is furnished by the enterprising town of East Liverpool, 30 miles below Pittsburgh, on the Ohio river, where several thousand workmen are very profitably engaged in the manufacture of porcelain and stoneware. Tiles (encaustic) and terra cotta have also begun to engage the attention of our people—their mechanical aptitude needs only to be supplemented by a more liberal culture in decorative arts to establish industries rivaling our glass production in extent and profitableness. Over two-thirds of the china, stoneware, pottery, etc., used in this country, are imported, and their manufacture within our own border would add largely to the field for employment now open to the female sex, at its most remunerative point. A factor, almost decisive in this regard, is the use of natural gas, so greatly superior to other known sources of heating, or rather firing. Great progress in output, both as to quantity as well as quality, may be looked for by this means, in the opinion of those competent to judge or to observe.

No practical or applied science can desire a finer field for operations than that offered to chemistry by Western Pennsylvania. The hydro-carbon gas, so lavishly spouted up from the mysterious depths, is itself a chemical agent of as yet dimly recognized capabilities. Over seventy millions of cubic feet of natural gas now go to waste every day, and the sustained energy of supply, paralleled by the continued great outpouring of petroleum, loudly calls for its more conscientious use. Gas wells, each equal in heat-producing qualities to those furnished by a thousand tons of coal per day, light up the sky for miles around, which should be sources of wealth and employment to hundreds, nay thousands of men.

We are told, by an authority, that other things being equal, cheap coal will invariably draw the manufacturing chemist to its neighborhood. Over 700,000 tons of coal are used annually in the chemical productions of the country, and it is entirely safe to say, that more than half the cost can be saved in fuel expense by any factory locating in Western Pennsylvania. It is a humiliating fact, that by far the larger part of chemicals used in the country is imported, and considering the probability that most of these are very profitable to make and to sell, the attention of enterprising men is directed to this field. Less than

100,000 pounds of aniline colors are made annually in the U. S., and seven times as much consumed; and a hundred times as much of the crude material from which it is made goes to waste. In soda salts, of which nearly four hundred millions of pounds are consumed annually, the disproportion between foreign and home make is even larger. Pittsburgh produced in the census year the following kinds and amounts :

| | |
|--------------------------|-----------------|
| Sulphate of Ammonia..... | 540,000 pounds. |
| Bromine..... | 90,000 " |
| Soaps..... | 730,000 " |
| Dry Colors..... | 2,000,000 " |
| White Lead..... | 15,635,000 " |
| Salts of Lead..... | 910,000 " |
| Sulphuric Acid..... | 8,155,000 " |

As will be seen, these figures are quite respectable in amounts, and mostly represent fields of labor ripened by local experience. Of the salt works, not included in the above table, it need only be said that some have been established since the beginning of the century, and the manufacture bids fair, with the introduction of natural gas, to attain still greater proportions.

The chief industries of Pittsburgh, glass, iron and steel, speak for themselves. Their extent is sufficiently described in this volume to show that they are of national importance. Hitherto attention has mostly been directed, in glass manufactures, to window glass, bottles, vials, lamp chimneys, etc., and the finer grades of tableware and of decorative wares are beginning to be introduced. The exhibit made at the New Orleans Exposition is full of promise for the future. Skilled artisans can easily find employment in Pittsburgh for almost every specialty now turned out in the Old World, and the growing and wide-spread desire for fine goods all over the great West and the reviving South, are important elements in the calculation of those who consider the fact that these regions have for years been in the habit of looking to Pittsburgh for their glassware. These subdivisions should naturally cluster around the main body of glass-making. Where the window glass for a quarter of a million of houses is made, where ninety millions of bottles and vials, twelve millions of tumblers, forty millions of lamp chimneys, are manufactured every year, there is also the place for the production of colored and cut glasses to rival Murano, Belgium and Bohemia.

To show how large the field is for industrial development, we shall best avail ourselves of an interesting table, constructed from one made by

Joseph Nimmo, Esq., statistician of the U. S. Treasury Department. Our table shows the consumption per annum of manufactured articles by the people of the United States, giving the leading lines of labor, in approximate figures:

Annual Consumption of Manufactured Articles in the United States.

| | |
|---|--------------|
| Coke..... | \$ 6,000,000 |
| Brooms and brushes..... | 10,000,000 |
| Plated ware..... | 11,000,000 |
| Cordage..... | 13,000,000 |
| Earthen, stone and chinaware..... | 14,000,000 |
| Books and publications..... | 14,000,000 |
| Oils, mineral..... | 15,000,000 |
| “ vegetable..... | 15,000,000 |
| “ animal..... | 8,000,000 |
| Sewing machines..... | 15,000,000 |
| Clocks and watches..... | 16,000,000 |
| Fruits, preserved..... | 18,000,000 |
| Malt..... | 20,000,000 |
| Musical instruments..... | 20,000,000 |
| Manures..... | 24,000,000 |
| Coffee and spices..... | 25,000,000 |
| India rubber and gutta percha..... | 25,000,000 |
| Brass..... | 28,000,000 |
| Cars, R. R..... | 28,000,000 |
| Glass and glassware..... | 29,000,000 |
| Sugar, refined candy and confectionery..... | 32,000,000 |
| Carpets, wool..... | 33,000,000 |
| Jewelry, etc., of gold and silver..... | 33,000,000 |
| Brick, tile, terra cotta, drain pipe, etc..... | 34,000,000 |
| Marble and stone..... | 34,000,000 |
| Hats, wool, fur and silk..... | 35,000,000 |
| Spirits, distilled..... | 40,000,000 |
| Flax, hemp and jute..... | 43,000,000 |
| Metals, metallic compositions and manufactures..... | 53,000,000 |
| Steel..... | 62,000,000 |
| Bread and biscuits..... | 66,000,000 |
| Agricultural implements..... | 67,000,000 |
| Silk and silk goods..... | 73,000,000 |
| Chemicals, drugs and medicines..... | 75,000,000 |

| | |
|--|---------------|
| Carriages, carts and wagons. | \$ 77,000,000 |
| Furniture, wooden, household..... | 77,000,000 |
| Beer and ale | 102,000,000 |
| Tobacco and cigars..... | 120,000,000 |
| Sugar and molasses..... | 162,000,000 |
| Paper and stationery..... | 181,000,000 |
| Leather..... | 210,000,000 |
| Boots and shoes..... | 250,000,000 |
| Woolen goods, except carpets..... | 271,000,000 |
| Cotton..... | 293,000,000 |
| Woodenware and other manufactures, exclusive of furniture... | 381,000,000 |
| Flour, wheat, rye, cornmeal, etc..... | 470,000,000 |
| Iron, inclusive sheet, nails..... | 615,000,000 |

The people of the United States consume about five thousand millions of dollars worth of manufactured articles, or a little less than \$100 per capita per annum.

IRON AND STEEL.

The commencement of the manufacture of iron in Western Pennsylvania dates back to the year 1790, when George Anshutz built the first furnace at what is now known as Shady Side, on the Pennsylvania R. R., some four miles from Union Station, Pittsburgh. About the same time, John Hayden started Fairfield furnace, on George's Creek, seven miles south of Uniontown, in Fayette County, and Turnbull and Martin planted a furnace on Jacob's Creek; Dunbar furnace was put in blast in March, 1791. Seventy years elapsed until the second blast furnace was built in Allegheny County, the "Clinton," erected in 1859. Unlike the first venture noted, the pig iron industry of Pittsburgh has been highly successful in the last quarter of a century, so much so that Allegheny County is now the banner county of the Union, and not only this, but the "centre of production" for the whole continent now lies within its borders, and, very probably, within the limits of the city of Pittsburgh. Calculations made by the mathematicians of the U. S. Census for 1880, placed this centre near Apollo, 22 miles N. E. of Pittsburgh, but those conversant with the development of the industry, hold that the industrial centre has been moved at least as many miles towards the "Iron City" as indicated.

The following is a list of the blast furnaces of Western Pennsylvania, and their capacity:

Blast Furnaces in Western Pennsylvania.

| | Stacks. | Capacity. |
|-------------------------------------|---------|-----------|
| Douglas, Sharpsville..... | 2 | 50,000 |
| Ella, Sharon..... | 1 | 28,000 |
| Etna, New Castle..... | 1 | 36,000 |
| Fanny, Sharon..... | 1 | 14,000 |
| Henderson, Sharpsville..... | 1 | 15,000 |
| Keel Ridge, Sharon..... | 1 | 12,000 |
| Mabel, Sharpsville | 2 | 50,000 |
| Mount Hickory, Erie..... | 2 | 30,000 |
| Neshannock, New Castle..... | 1 | 50,000 |
| Raney & Berger, New Castle..... | 1 | 40,000 |
| Rosena, New Castle..... | 1 | 36,000 |
| Sharon, Sharon..... | 1 | 20,000 |
| Sharpsville, Sharpsville..... | 1 | 9,000 |
| Spearman, Sharpsville..... | 2 | 60,000 |
| Stewart, Sharon..... | 2 | 62,000 |
| Wampum, Wampum..... | 1 | 7,000 |
| Westerman, Sharon..... | 2 | 40,000 |
| Carrie, Pittsburgh..... | 1 | 40,000 |
| Clinton, Pittsburgh..... | 1 | 12,000 |
| Edgar Thomson, Pittsburgh..... | 5 | 250,000 |
| Edith, Pittsburgh..... | 1 | 30,000 |
| Eliza, Pittsburgh..... | 2 | 55,000 |
| Isabella, Pittsburgh..... | 2 | 150,000 |
| Lucy, Pittsburgh | 2 | 100,000 |
| Shoenberger, Pittsburgh..... | 2 | 50,000 |
| Soho, Pittsburgh..... | 1 | 45,000 |
| Cambria, Johnstown..... | 7 | 255,000 |
| Charlotte, Scottdale | 1 | 22,000 |
| Dunbar, Dunbar..... | 2 | 52,000 |
| Erie, Erie..... | 1 | 14,000 |
| Fairehance, Fairehance | 1 | 10,000 |
| Lemont, Lemont | 1 | 14,000 |
| Mahoning, Mahoning..... | 1 | 5,000 |
| Oliphant, Oliphant..... | 1 | 9,000 |
| Rebecca, Kittanning..... | 1 | 25,000 |
| Redbank, Clarion Co | 1 | 8,000 |
| Stewardson, Armstrong Co | 1 | 4,000 |
| Total number of blast furnaces..... | 58 | |

In 1874 there were 11 blast furnaces in Pittsburgh, producing 144,000 tons. In 1880, 15 furnaces turned out 300,000 tons of pig iron. In 1883, 16 furnaces had an output of 593,000 tons, and in the year 1884, 17 stacks gave us 487,000 tons.

The production of pig iron in Western Pennsylvania, according to a memorandum kindly furnished by Mr. James M. Swank, the secretary of the American Iron and Steel Association, outside of Pittsburgh, for last year, was 350,870 tons.

A glance at the figures, derived from the same authority, gives the following :

The 31 rolling mills of Allegheny County turned out in 1884, of iron rails, bar, angle, bolt, rod and hoop, 316,091 tons. The product in sheet and plate irons was 68,670 tons ; kegs of nails, of 100 lbs. each, 459,512. This gives a total of rolled iron of 407,737 tons ; an increase of 50 per cent. in ten years.

Western Pennsylvania produced in the same time :

| | |
|--|--------------|
| Iron rails, bar, hoop and shaped iron..... | 29,295 tons. |
| Plate and sheet iron.. | 20,145 " |
| Nails (equal to 230,830 kegs)..... | 11,541 " |

In Allegheny County there were 20 steel works in operation last year (1884), with a product, in crucible steel ingots, of 38,885 tons, and of all other steel, including Bessemer, of 289,376 tons, or a total of 328,261. Ten years previously, the total production of steel in Allegheny County was only 23,915 tons.

The balance of Western Pennsylvania made:

| | |
|-------------------------|-----------|
| Of crucible steel..... | 605 tons. |
| Of all other steel..... | 211,392 " |

In order to show the importance of these industries—iron and steel—of this region, it may be stated that the output for the whole United States of pig iron in '84, was somewhat less than five millions of tons ; rolled iron, two millions, and Bessemer steel about one million of tons.

The amount of capital invested in blast furnaces in Western Pennsylvania, Pittsburgh included, is estimated to be nearly nine millions of dollars, and the pig iron produced may be estimated, even at the present low prices, at over fifteen millions of dollars.

The following condensed statement of the iron and steel interests of Pittsburgh, may be taken as a criterion for those of the region adjoining:

| | Capital. | Employees. | Product. |
|---|--------------|------------|--------------|
| Blast furnaces..... | \$ 5,240,000 | 2,430 | \$10,800,000 |
| Rolling mills..... | 22,000,000 | 21,000 | 36,000,000 |
| Steel works..... | 12,000,000 | 8,100 | 18,300,000 |
| Forges..... | 680,000 | 560 | 830,000 |
| Spike and nail works..... | 650,000 | 350 | 1,840,000 |
| Tube works..... | 2,100,000 | 1,800 | 6,300,000 |
| Founders, machinists, engine build's | 6,800,000 | 4,100 | 8,630,000 |
| R. R. supplies..... | 2,600,000 | 1,840 | 5,060,000 |
| Iron and steel bridge works..... | 1,120,000 | 1,050 | 1,950,000 |
| St'm boil's and tankage for petrol'm. | 1,650,000 | 1,300 | 2,280,000 |
| Axe, saw, shovel, tool manufactories | 1,860,000 | 1,710 | 2,640,000 |
| Stove foundries, ranges, grates, etc.. | 582,000 | 680 | 816,000 |
| Iron roofs, railings, cornices, etc.... | 320,000 | 280 | 520,000 |
| Hardware, hinge and butt works... | 1,420,000 | 1,700 | 2,230,000 |
| Bolt and nut works..... | 480,000 | 420 | 820,000 |
| Miscellaneous | 1,840,000 | 2,950 | 2,975,000 |

THE GLASS INDUSTRY.

One of the surprising results in the investigation instituted by one of the mercantile agencies in the country recently, was, that the glass industry suffered less, so far as indicated by reduced earnings of workmen, in the depression of business, than any other of our manufactures. Reduction of wages has been the order of the day in most lines of employment, those of glass making excepted, in which the advances made in some departments covers the reductions made in others.

This would show that the industry is certainly on a healthy footing, and it is a matter full of comfort to all interested in the prosperity of Western Pennsylvania, a region that produces forty per cent. of the glass made in the United States.

About thirty million dollars worth of glass and glassware is consumed every year, four-fifths of which is made in the United States. There is also nearly, or about, one million of dollars worth exported. Due weight should be given to this fact; it will appear the more significant if we compare it with the general movement of our exports. Less than eleven per cent. of our agricultural production is exported; of American manufacture, less than two per cent. leaves the United States, while of our glass, almost four per cent. are consumed abroad.

Glass, aside from its wide range of uses, extending from the most bar-

barous to the most luxurious and civilized of men, is one of the most curious and interesting of manufactured articles. Composed of materials that are, by themselves, opaque and unattractive, it is translucent, brilliant, and of most beautiful polish. Perfectly transparent, unless impure, and transmitting light freely, it may be readily obscured or ground so as to soften and diffuse the light. It can be cut in various forms, increasing its richness and brilliancy; it may be engraved in most charming and delicate tracery and figure work, or it may be tinted with any color, either opaque or transparent, without the least loss of brilliancy or polish. Though not malleable, its ductility is so great, that it may be spun in a moment into filaments as fine as a spider's web, and miles in length, or blown to such gauze-like thinness as to float upon the air. The synonym of brilliancies itself, its elasticity as spun glass permits of its being readily bent and woven into cloth, and even tied into knots, while a ball of glass dropped upon an anvil will rebound two-thirds the distance of its fall. Though hard and brittle when cold and incapable of being wrought, when heated it is softened, tenacious and pliable, and is capable of being molded into any form, while it retains, in cooling, its beautiful polish.

The manufacture of glass was established in Pennsylvania by Baron von Stiegel, at Manheim, in Lancaster County, in 1762, and in 1797 the first two works, those of Albert Gallatin, at New Geneva, and those constructed by Mr. Peter William Eichbaum, for Messrs. Craig and O'Hara, in this city, were started almost at the same time. The Pittsburgh venture was, in addition, remarkable in that it was the pioneer also, in the United States, in the use of coal as fuel. From that date to the present, glass making has steadily grown in extent as well as in the improvement of quality.

In fact, we are now supplying new shapes to both France and Austria, manufacturers in those countries having placed orders with our mold-makers and glass press manufacturers for molds and presses, and have engaged a number of Pittsburgh workmen to go over and instruct them in their use. Each of the leading flint tableware factories now keeps an artist constantly employed in devising new designs, ranging through all classes of articles produced, so that there are novelties constantly offered to the trade. There are twenty-nine factories engaged in the production of flint and lime glassware, their specialties ranging from the highest forms of ornamental and table glassware to prescription vials, including such novelties as glass cloth, feathers, etc.

Of window glass factories proper, there are twenty-nine in operation in the city and suburbs, and one devoted to the manufacture of plate glass.

The total product of these twenty-nine furnaces, with their 276 pots, has an annual value of \$3,000,000. The output averages 3,400 boxes of fifty feet to each box, or 838,400 boxes of an average value exceeding \$3 per box. Some of our Pittsburgh factories are making a fine article of window glass which is rapidly superseding the use of French cylinder glass in all the chief markets of the country. The Pittsburgh Plate Glass Company is having remarkable success in its specialty, and produces an article in every respect equal to the foreign plate glass. At this factory natural gas is used in all its processes, melting and annealing glass of remarkable purity and durability.

The manufacture of glass lamp chimneys has always occupied an important rank, ever since the discovery of petroleum in Western Pennsylvania, and its use as an illuminator, Pittsburgh furnishing at least seventy-five to eighty per cent. of the chimneys used in this country, besides exporting considerable quantities to Central and South America, Mexico and Cuba, in competition with the cheap labor of Europe. For a time factories multiplied rapidly and the market was largely overstocked, but this evil has now been overcome and the trade is in a healthful condition. The number of chimneys made here is estimated at 42,500,000 per year.

In glass bottles the consumption yearly shows a marked increase, but the capacity of the local factories is equal still to the demands upon them, which call annually for about 85,000,000 bottles and vials.

The amount of capital invested in the manufacture of glass of all kinds in Pittsburgh is estimated at \$6,470,000; the number of hands employed at 6,700, and the value of the annual product at \$7,500,000.

MISCELLANEOUS MANUFACTURES.

The extent and variety of the labor forces of Western Pennsylvania can be suitably indicated by giving those of Pittsburgh somewhat in detail. Pittsburgh's enterprise first developed the copper region of Lake Superior away back in the forties, and copper smelting, rolling and working the same into useful shapes is still carried on here to an annual value of product of over a million of dollars. Lead ore is also brought to Pittsburgh from Colorado and other points, to be smelted, and in consequence, amongst our bye-products gold and silver may be counted.

White lead manufacturers have invested a million and a half here, and

they turn over 10,000 tons of lead into their works, deriving therefrom nearly two millions of dollars per annum by the sale of white lead, etc.

Several hundred locomotives are built in Pittsburgh every year, ranging in weight from fifty tons down to five tons; and for steel springs, elliptic and coiled, some fifty tons of steel are consumed daily.

Nearly two thousand iron tanks, used for the storage of petroleum, and aggregating in capacity over forty millions of barrels, have been furnished by Western Pennsylvania for the oil regions, besides over 2,000 miles of pipes for the conveyance of the precious fluids to refineries and shipping points.

About 60,000 saws of all kinds are made in the district annually, and over 150,000 dozens of picks, mattocks, hoes, axes, shovels, scoops, rakes, etc.

One hundred thousand dozen of locks, as many door knobs, and hundreds of miscellaneous articles of domestic hardware are sent over the entire country yearly. In that period of time, our brass foundries consumed 500 tons of copper, 400 tons of scrap brass, 200 tons of lead, 100 tons of tin and 60,000 pounds of antimony.

Over 1,500 hands are employed in the lumber business. Saw mills, sash, keg and box factories of the two cities and vicinity, using up over 125,000,000 of feet of lumber. Nearly one million of barrels and kegs are made here every year.

A grand summary, to be found in the last report of the Pittsburgh Chamber of Commerce, enumerates 3,583 industrial establishments of all kinds, mining included, showing 101,200 employees; capital invested, \$132,478,000, and an average annual production of \$181,014,000. This is strictly limited to business located in Pittsburgh, Allegheny City, and immediate suburbs, or controlled by parties resident therein. Agricultural pursuits are not embraced.

WHOLESALE AND RETAIL TRADE.

The commercial operations of the district, aside from those incidental to the furnishing of material for the mining and manufacturing interests, and marketing the latter, may be said to be strictly limited to supplying the necessities and luxuries of the resident population. The demands of over two millions of people—mostly in prosperous circumstances

or earning liberal wages—are varied and of surprising extent. Hence we find our stores better stocked and doing a larger business than would be supposed under the circumstances. This is especially true as regards the manufacturing and mining towns with which the region is studded. The city merchants pride themselves in stores of metropolitan character and appointments, and have nothing to fear, in comparison with those of cities showing a population of equal extent. Even the most exacting and fastidious customers have found that there is no necessity for going to the eastern cities for their household furnishment, personal wear, and the requirements of their *cuisine*. All such can be suited in Pittsburgh or Allegheny just as well, and sometimes even better and at more reasonable prices than are often demanded by those classes of dealers in New York, Boston or Philadelphia. A wholesome local pride has been developed on this point, of recent years, that must be mutually profitable.

A competent estimate made of the wholesale and retail trade of Pittsburgh and Allegheny City, shows a capital invested of \$36,504,000; of employees, 17,232, and an amount of annual average business of \$135,387,000.

BUSINESS OF PITTSBURGH, ALLEGHENY AND VICINITY, (EXCLUSIVE OF AGRICULTURE.)

| CLASS OF BUSINESS. | Capital. | Employees. | Product and Earnings. |
|--|----------------------|----------------|-----------------------|
| 1. Manufrs., Mining and Mechan. Indust's | \$132,478,000 | 101,261 | \$181,014,000 |
| 2. Commercial Bus., Wholesale and Retail. | 36,504,000 | 17,232 | 135,387,000 |
| 3. Transportation—Rivers | 9,740,000 | 3,500 | 2,600,000 |
| Railroads, Expr's, Telegraph, Teamsters | 26,500,000 | 6,400 | 10,400,000 |
| 4. Professional and Personal Service..... | 6,250,000 | 12,140 | 14,500,000 |
| Totals..... | \$211,472,000 | 140,533 | \$343,901,000 |
| 5. Sales by merchandise brokers, per annum..... | | | \$ 11,000,000 |
| 6. Sales of real estate, exclusive of inheritance..... | | | 8,000,000 |
| 7. Sales of stocks, bonds, etc..... | | | 29,000,000 |
| 8. Sales at Oil and Petroleum Exchanges..... | | | 600,000,000 |

SPECIAL NOTES ON COUNTIES AND TOWNS.

On preceding pages we have given the agricultural features of the twenty-one counties that make up Western Pennsylvania. The following notes of a number of towns in the region will illustrate in detail the special features of each, and thus give a better view of the general characteristics :

INDIANA COUNTY.—Next to agriculture, the leading industry of Indiana County is lumbering. The chief varieties of timber, named in the order of their extent, are white oak, pine and hemlock, and of these it is estimated there are 250,000,000 feet standing.

At a rough estimate, there were 27,000,000 feet cut in 1884, of which about 15,000,000 feet were run out in logs down the Susquehanna and Allegheny rivers. The remaining 12,000,000 feet, a large proportion being oak of good quality, were sawed in the county. A large amount of the workable timber is along Two Lick, Black Lick and Yellow creeks, and is operated by chartered companies, controlling the streams and floating the lumber to the Indiana Branch of the P. R. R., where it is manufactured and shipped by rail.

Coal is cheap and found in all parts of the county, but is afforded mainly by the Lower Productive Measures. The Pittsburgh coal bed, the base of the Upper Productive Measure, is found at Blairsville and Saltsburg, on the southern border of the county, but only in comparatively small patches. The mines at these towns are the only ones in the county supplying more than local consumption.

Sandstone, for building purposes, and limestone are found in abundance. The iron ores have never been thoroughly investigated, but it is probable there are no deposits in the county extensive enough to be workable.

“The clays include not only some excellent varieties of fire clay, but also some valuable surface deposits, from which good bricks for building purposes have been made. The fire clays, although existing in great abundance in all parts of the county, have as yet been developed only along the lines of railroad communication. At these points the clays worked are of excellent quality, the bricks and retorts made from them being well and favorably known.”

Gas of superior quality was struck in 1883 at depth of 2600 feet, in Canoe township, near the northern border of the county, and during the

past winter (1884-5) has been used both for heating and lighting purposes at Punxsutawney, Jefferson County, 2½ miles distant. Wells are now being drilled at Indiana and Saltsburg.

TOWN OF INDIANA.—Indiana, the county seat, largest and chief commercial town of Indiana County, has a population of about 3,500, and is located at the terminus of the Indiana Branch of the P. R. R., 19 miles north of Blairsville Intersection, and 72 miles by rail northeast of Pittsburgh. It is supplied with good public buildings, eight churches, excellent public schools, the State Normal School, nine hotels, three banks—First National, Deposit and Farmers; and five weekly newspapers—*Messenger*, *Progress*, *Times*, *Democrat* and *News*.

The manufacturing establishments comprise three planing mills, two foundries, two flour mills, a tannery, brewery, distillery, brick works, coffin works, and straw board mill. It has a large trade extending beyond the county, and being the shipping station for almost the entire county, exports large quantities of lumber, bark, railroad ties, grain and livestock. The town is pretty, contains many fine private residences, has wide streets and excellent pavements, is lighted with gas, has a fire department equipped with one hand and two chemical engines and a hook and ladder truck, has real and personal property worth \$1,000,000, and is entirely free from bonded debt.

WAYNESBURG, sixty miles south of Pittsburgh, county seat of Greene County, population, 3,000. People principally engaged in farming and stock raising. Coal and limestone in abundance; numerous quarries of good building stone. A new woolen mill will soon be in operation. Carter & Kozer manufacture the "Success" engine. Other manufactories are, two buggy factories, one wagon factory, two planing mills, two foundries, one Bank. A new process steam flouring mill is being erected, with a capacity of 100 barrels per day. Gas and oil have been struck in small quantities by the Peoples' Heat and Light Co. The Dunkard oil well pumps about fifteen barrels per day of superior heavy oil. Connected with the outer world by the W. & W. R. R., with an extension in contemplation to Carmichaels, a point on the Monongahela, about 26 miles above Brownsville.

UNIONTOWN, AND FAYETTE CO.—Uniontown, the county seat of Fayette County, was laid out in 1770 by Henry Beeson, and was known as Beesontown until 1786, when it was changed to its present name. This

town has a population of over 5,000 inhabitants, has four newspapers, viz. : *Genius of Liberty*, *Republican Standard*, *Uniontown Democrat* and *Western Pennsylvanian* ; has one of the finest water reservoirs in the State, situated four miles east of town, and half way up the mountain side, the water, after running through four miles of pipe, reaches the highest point in the borough with a force of 160 pounds. Three lines of railroad connect here, and freight and passenger trains are passing and repassing all hours of the day ; there are three banks, four insurance companies, three planing mills, two foundry and machine shops, one gun works, one artificial gas company, one incorporated electric light company, one natural gas company, &c., &c.

This county is rich in coal, iron, limestone and fire clay ; the coal is here yielded which makes the typical coke, hundreds of tons of which is shipped weekly from this point. The Blue Lump Iron ore found here in extensive quantities, contains from 39 to 42 per cent. of metallic iron, with 07 to 08 per cent. of phosphorus, and 01 to 04 per cent. of sulphur. There are five iron furnaces in this county, viz. : two at Dunbar, one at Lemont, one at Oliphant and one at Fairchance. Coal, ore and limestone being so easy of access in this county, it has therefore great advantages over many other iron producing localities ; for instance, iron can be made here profitably when selling at a price which would bring bankruptcy to the great majority of furnaces elsewhere. Limestone and fire clay are abundant and can be found in any part of the county in paying quantities.

The natural gas companies have not sunk any wells yet in this part of the county, but all prospectors who have examined the land say that gas is here in abundance.

WASHINGTON, PA., the county seat of the county bearing the same name, contains a population of five thousand ; is within a little over an hour's communication by rail with both Pittsburgh and Wheeling, and located in a wonderfully healthy region. Gas and oil have recently been discovered, wells producing both being located within a short distance of the borough. The residences of the town are now supplied with fuel by the former. Limestone quarries, from which stones for the streets are taken, abound in this section. Sandstone for building purposes are also quite extensively quarried. The greater portion of the county is underlaid with an excellent quality of bituminous coal. Millions of bushels are annually shipped to other markets. This is a great wool growing district, the county producing annually from 2,500,000 to 3,000,000 pounds of

the very best quality. The land of Washington County is very fertile, producing large crops of grain, hay, &c.

WEST NEWTON.—Lying in the Youghiogeny Valley, about 31 miles south of Pittsburgh, is West Newton, on the southwestern slope of a hill descending abruptly to the Youghiogeny river, in the midst of a diversified and fertile country. By the B. & O. R. R. and the P., McK. & Y. R. R., communication is made easy in every direction. Its principal industry is the paper mill, owned and operated by the West Newton Paper Co.; also a planing mill, the property of Latimore & Scholl, which gives employment to a number of mechanics. West Newton is situated almost in the very heart of the bituminous coal region, several coal works being in operation in the vicinity. There are several extensive stone quarries in the vicinity, where the best of building and flag stone can be procured at a very small outlay. West Newton has a population of 2,000, an increase of 500 since the last census, and it continues to grow, notwithstanding the business depression all over the country. An offer of several acres free of cost has been made, and the offer still holds good, to capitalists who mean business, to come here and erect a manufacturing establishment which will give employment to over a hundred men.

BROWNSVILLE is a thriving town of 3,000 inhabitants, including the adjoining borough of Bridgeport. In way of manufactories it has two boat yards, three foundries, one glass works, three planing mills and three grist mills. The land surrounding Brownsville is rich in coal, limestone, flagstone and freestone. The coal along the Monongahela river is the same as the Connellsville bed, which is the typical coke and gas coal. There are two beds. The lower bed which is mined is nine feet thick, and the upper bed five feet thick. The coal is the best quality, and remarkable hardness for bituminous coal. The mining of this coal is one of the great interests of Brownsville, there being four mines, giving employment to 500 men, near the town. The men are the better class of miners, all being Americans. When the mines are in full operation, they load for the lower river cities, 25,000 bushels per day. The supply of limestone near Brownsville is inexhaustible, and of the best quality for making lime. The limestone crops out on the surface, making the soil one of the richest and most productive in the State. Flagstone is extensively quarried; it is of a good quality and is gotten out in large sizes. Freestone is also abundant. The hills are full of iron ore, but mining for them, near Brownsville, has been abandoned. Two wells are going down for gas with good prospects.

FRANKLIN, the county seat of Venango County, has many natural advantages for manufacturing. The water-power furnished by French creek, which at this place flows into the Allegheny, is unsurpassed in the State. It has never been utilized to any great extent, and Franklin is not what might be called a manufacturing town. The Eclipse Lubricating Oil Works is situated at this place. The works are owned by the Standard Oil Company, and give steady employment to about two hundred men. It is the largest lubricating works in the world. The "Galena," another branch of the Standard Oil Company, makes and sells a fine grade of oil. They deal almost entirely in railroad oils, and supply the majority of the railroads in the country. What is called "Franklin Oil" is produced in the immediate vicinity of Franklin, and is of such a superior quality that lubricating works use it in the manufacture of the finest oils. This field of "Franklin Oil" pays about \$275,000 per year. It is owned almost entirely by residents of Franklin. The oil sells at the wells for \$3.65 per barrel, and the entire field produces less than 6,000 barrels per month. Franklin is not an oil town in one sense, and still the bulk of the money that flows into it comes directly or indirectly from oil.

In the vicinity of Franklin considerable coal is mined, but no veins have been discovered that would lead people to expect any fortune therefrom. The search after natural gas has been persistent, but no wells have been struck that would warrant the laying of a main. There is but little timber left in the vicinity of Franklin, and what does remain is not of a character to warrant the cutting. The other manufactories are merely local in character, and depend for an existence upon the people of the immediate neighborhood.

GREENSBURG, the county seat of Westmoreland County, is a beautiful town of about 6,000 inhabitants, situated 31 miles east of Pittsburgh, on the Penn'a R. R., and the terminus of the South West Penn. R. R., extending to Uniontown, and traversing the wonderful Connellsville Coke Region, with its 12,000 coke ovens and dependent population. This naturally gives Greensburg a commanding position as regards trade and manufactures. The progress of the latter has been measurably retarded by the scarcity of water, but a company has been formed to furnish a supply, and it will not be long before the ancient burg will offer every facility that may be demanded. The location is noted for its healthfulness, its number of fine churches, and the substantial character of its population.

There are two planing mills, two grist mills, and a machine shop in the town, giving employment to about 200 men. The mining interests have

been mentioned in another part of this book, and the total number of miners in and around Greensburg may be estimated at over 1,000. Natural gas is now being drilled for within three miles of the town

The agricultural resources of Westmoreland County are presented in tabular form previously given; they add much to the beauty and prosperity of the county, which is the oldest political organization of the kind west of the mountains, and the parent of all lying south of the Allegheny river.

SOMERSET, the county seat of Somerset County, is a town of about 1,500 people, situate in the centre of a fine agricultural and grazing country; located on the line of the Somerset & Cambria Railroad, ten miles from its junction, at Rockwood, with the Pittsburgh Division of the Baltimore & Ohio R. R., and 35 miles from Johnstown on the P. R. R. The manufacturing interests consist of a dynamite factory, a number of creameries and cheese factories, steam grist mill, roller process, planing mill, woolen mill, phosphate factory, the Somerset Mechanical Works, at which are manufactured dump cars, pit wagons, plows, farm bells, and a general line of castings, and a number of lumber mills. Nearly all the hills surrounding the town are underlaid with a seam of good coal of from four to six feet in thickness. These veins are all easy to work and drain. Fire clay is found in large quantities and of a superior quality; shipments are being made to different iron mills from at least two openings. A few miles south of the town, and immediately adjoining the railroad, several stone quarries, from which a superior quality of sandstone for building purposes is taken, are being worked. Just above one of these quarries the Cambria Iron Company have erected a large rock crushing establishment to supply the sand for their mills. This sand is said to be of the best for the manufacture of glass. The new South Pennsylvania Railroad will pass within two and a half miles of Somerset.

NEW CASTLE, LAWRENCE COUNTY, PA.—This city is the county seat of Lawrence County, and is situated in its centre, on the Shenango river. Its population is about 12,000, and is one of the most enterprising and favorably located cities of Western Pennsylvania or Eastern Ohio. Its railroad connections are full and complete, having direct connection with all the great trunk lines of the country. It reaches the Ohio river and Lake Erie through the Pennsylvania system of railroad. The Pittsburgh & Lake Erie Railroad offers a competing line both to the Lake and the Ohio river, and also forms a connecting link with the New York, Pennsylvania & Ohio, Lake Shore, and New York Central railroads.

Another line is also offered in the Pittsburgh & Western R. R., and through it, connections are made with the Baltimore & Ohio lines.

The Buffalo, New York & Philadelphia R. R. terminates in this city, and embraces a distributing system of 800 miles in the northeastern part of the State.

There are two competing telegraph lines and five express companies. It will be obvious from the above facts, that manufacturers and shippers are offered by this city, systems of distribution seldom equaled and very rarely surpassed. This promising city has great advantages in the manufacture of iron and its products, in being favorably and centrally located in the great coal, limestone, and iron fields of Western Pennsylvania, thousand of tons of which are annually shipped to all parts of the country. Added to these advantages, is the fact that the city is the commercial centre of a large area of a rich and fertile farming country.

In addition to its manufactured gas, natural gas will be introduced in a few months, a company having been formed for that purpose.

With its fine water works system, elegant public buildings, and small debt, a conservative, yet pushing policy, developed in its population, together with its excellent banking system, the city is certainly very promising, and persons desiring to locate a manufacturing industry of any kind would do well to enquire of the officials of the Board of Trade, who will furnish all information required.

MERCER COUNTY.—In the manufacture of iron and steel, Mercer County is ranked among the first-class counties. The average annual product, including iron, blooms and finished material, for the past thirteen years, from the most reliable information gathered from statistics and carefully computed, is 182,881 tons.

There are eighteen firms engaged in the manufacture of iron and steel, with capital invested amounting to \$2,725,284; value of material used per year, \$3,946,881; total amount of wages paid per year, \$896,485; value of manufactured product, \$5,832,729.

There are twelve foundries and machine shops, with a capital of \$129,800; value of material per annum, \$73,472; cost of labor per year, \$40,531; value of manufactured material, \$152,378.

There are nine firms engaged in the manufacture of carriages and wagons, with a capital of \$56,500; material of all kinds used valued at \$52,675; total cost of labor, \$22,942; value of products, \$88,748.

There are eighty-five firms engaged in the manufacture of sawed lumber, with a capital of \$260,080; value of material per year, \$435,640;

wages paid per year, \$64,690 ; value of manufactured material, \$645,640.

Flour and grist mills. In this industry there are thirty-seven firms engaged, with a capital of \$319,300 ; value of material used per year, \$579,261 ; wages paid per year, \$18,986 ; value of manufactured product, \$652,405. The principal firms, those engaged in wholesale trade, ship most of their grain from western markets, while the country firms confine themselves mostly to home manufacture.

There are eighteen firms engaged in producing coal, with an invested capital of about \$540,000. The number of hands employed is about 1,280, whose total yearly wages is about \$38,400. The total production of coal last year in the county, was 400,000 tons, worth about \$400,000. All our home markets are supplied, and a large quantity of coal shipped to foreign markets.

The ore used in the manufacture of iron comes principally from the Lake Superior mines.

The firms engaged in the manufacture of sawed lumber find an abundant supply of material in the county. Our county is heavily timbered with white oak, red oak, hickory, chestnut, ash, poplar and pine.

CONNELLSVILLE is a town of about 5,000 population, situated on the right bank of the Youghioghenny river, in the northern part of Fayette County. It is the centre of the Connellsville coke region, which stretches away to the north and south a distance of 15 to 20 miles either way. It lies at the foot of the mountains, and the country around abounds in native iron ore, limestone, and white sandstone, as well as coking coal. This is the basin of the Connellsville vein, as coal shafts have demonstrated, and the product here made is the best in the market. The stones used for Belgian block are also found in the mountains just east of this place, and two extensive quarries are now in operation. The town is supplied with gas and pure mountain water, and preparations are being made to put in an electric light plant. Connected with the town by a suspension bridge, is the village of New Haven, on the opposite side of the river. The two towns aggregate a population of between 7,000 and 8,000. The principal industries are car shops and coke works' supplies. Three lines of railroad pass through here, viz.: The Pittsburgh Division of the Baltimore & Ohio System, the Southwest Branch of the Pennsylvania System, and the Pittsburgh, McKeesport & Youghioghenny road, a branch of the Vanderbilt System. Upon the completion of the Ohio and Baltimore Short Line, from Connellsville to Wheeling, now in course of construction, the main line of the Baltimore & Ohio road will pass through Connellsville, and

large railroad shops will probably be erected here, ground for the purpose having already been purchased by the company. The people are energetic and public-spirited, and have already formed an association for the substantial encouragement of manufacture.

BEAVER FALLS, PA.—This town is very pleasantly situated on the west side of the Beaver river, about five miles from where that stream empties into the Ohio river. It is the principal town in Beaver County, containing between eight and ten thousand inhabitants. Its manufactories are diversified, there being some twenty-nine in all, consisting of two steel works, chemical works, chain, car, cutlery, shovel, file, axe and hoe, saw, flint glass, paper, wire, steel rail, iron bridges, pottery, two stove foundries, brass foundry, grate and fenders, machine shops, four planing mills and two flouring mills. In addition to these are seven breweries and one distillery. The town contains three large and handsome public school buildings and one college (Geneva), and ten churches—Presbyterian, Methodist Episcopal, Methodist Protestant, United Presbyterian, Reformed Presbyterian, Episcopalian, German Lutheran, German Catholic, Baptist and German Reformed. The town is well lighted with gas, and is well supplied with water by two water works, one on the Holly system and the other by the reservoir system. The town is well supplied with fire apparatus and hose. Its buildings for public amusements consist of two large skating rinks, one of which is fitted up for an opera house. The town is well supplied with natural gas for domestic and manufacturing purposes from wells in Raccoon Township, Beaver County; there are some twelve miles of pipe laid through the streets. A street railway will be built and in running order by July, this year. The hills which surround the town abound in excellent building stone, a number of quarries of which are open. Two railroads pass through the town—the P. & L. E. through the east side, and the P., Ft. W. & C. through the west side. Natural gas has been found here in paying quantities, and a number of wells will be put down this summer. Coal is very abundant, a number of mines being in the immediate neighborhood. There is no lack of either fuel or water in this place. The town is situated in the heart of a good agricultural district.

CAMBRIA COUNTY has its eastern boundary along the crest of the Allegheny mountains proper, which divides the waters flowing into the Atlantic from those running into the Ohio and the Gulf of Mexico. The divide has an average elevation of from 2400 to 2600 feet above tide level. The main artery of travel and commerce is the Pennsylvania railroad; and

the largest town, Johnstown, is 82 miles east of Pittsburgh. The lumber resources of Cambria County are considerable, and the business of getting out lumber and working it into merchantable articles is the main support for several important branch lines of the Pennsylvania system. The agricultural productions shown in tabular form, demonstrate that notwithstanding its mountainous character, farming has made great strides since the opening of rail communication, or rather since the construction of the Pennsylvania canal over fifty years ago. The railroad shows from Gallitzin Tunnel to Sang Hollow, that industrial life has been greatly stimulated, nay, created by this famous avenue of trade. In the town of Johnstown, the chief centre of the iron and steel industries may be found in the large establishment of the Cambria Iron Company, which has some of its ore mines adjacent to the works, and in close vicinity to its coal, besides owning coking works in the Connellsville region. It has a large Bessemer steel plant, a large open hearth steel plant, iron and steel and other rolling mills, puddling and heating furnaces, wire mills, etc. The works have a capacity of 300,000 tons of pig iron, and 200,000 tons of steel per annum, and give employment to 9,000 workmen.

BUTLER COUNTY, adjoining Allegheny County on the north, was organized March 12th, A. D. 1800. It contains 814 square miles, and now has a population exceeding 60,000. The soil is fertile and well suited for agricultural and dairy purposes. The chief attraction and the source of its greatest prosperity are its unlimited mineral resources, viz., coal, iron, limestone and petroleum. Also, an inexhaustible supply of natural gas.

The county is underlaid with six persistent workable veins of good coal, to wit, the Upper and Lower Freeport, the Darlington, the Kittanning, the Clarion and the Brookville veins, embracing the entire lower productive coal measures. The Darlington vein at several points develops into fine bodies of cannel coal, equal in quality to the Darlington mines, Beaver County—hence the name. Besides these there is one body of block coal, of 12 feet face. All of these veins are now operated in some portions of the county. The building of railroads into the county recently to reach them is tending to their rapid development.

The entire county is underlaid with a bed of ferriferous limestone, averaging 20 feet in depth. Around the outcrops of this limestone are found numerous beds of iron ore. In former times numerous charcoal furnaces existed, and Pittsburgh received a large percentage of its pig iron from this county.

Yet the greatest attraction of the county, and what has given it its

greatest boom, are its wonderful oil fields. The oil field extends diagonally through the county, from north-east to south-west. The oil is found in pools or belts along this line, generally crossing it. The wells are the largest on the continent, and their product the best in the world. One barrel of Butler County oil will yield three times the quantity of illuminating oil and a better quality than the same amount of Russian oil. The oil is obtained in an open porous sand rock, averaging about 50 feet in thickness. It is divided into two stratas, third and fourth sands. The lower, or fourth sand so called, is the more productive, and is almost invariably found at a depth of 1200 feet below the ferriferous limestone. The oil or sand rock is hermetically sealed, by nature, top and bottom. The oil is obtained by drilling a hole eight inches in diameter to a point below fresh water, usually about 600 feet, when 5½ pipe is inserted and the fresh water excluded. The hole is then drilled with smaller tools 5½ inches in diameter to the oil rock. After the oil rock has been drilled through, the well is treated with an emetic of from one hundred to five hundred pounds of nitro-glycerine. The famous S. P. Armstrong well, Marshall farm, Penn township, Butler county, when drilled through the sand was pronounced a failure, not a vestige of oil appeared. After being shot with 200 pounds of glycerine, she responded at the rate of 12,000 barrels per day—the greatest well ever struck on the continent. As high as five hundred pounds of glycerine have been exploded in a well—an equivalent to 6,000 pounds of gunpowder.

Another great source of wealth, but as yet almost wholly unused, is the everywhere abundant supply of natural gas. This cheap and excellent fuel has been found to exist all over the county in large quantities, and permitted mostly to waste itself in the air.

Butler County has no navigable streams within her borders. Her railroad facilities are excellent. Butler, the county seat, has three competing roads converging there, affording excellent facilities for shipping to all points of the compass. Butler County with its natural gas, coal, ore and limestone, healthful climate, good water, excellent railroad facilities and cheap land, is most certainly an inviting field for manufacturers to consider and investigate.

PITTSBURGH CLEARING HOUSE.

Statement of the Weekly Exchanges and Balances from July 5, 1884, to July 3, 1885.

| | EXCHANGES. | | BALANCES. | |
|---------|-------------|----|-------------|----|
| 1884. | | | | |
| July 5 | \$6,318,009 | 68 | \$1,116,668 | 74 |
| 12 | 7,203,927 | 02 | 1,409,331 | 66 |
| 19 | 7,907,426 | 27 | 1,514,453 | 55 |
| 26 | 7,543,050 | 33 | 1,321,768 | 99 |
| Aug. 2 | 7,519,840 | 54 | 1,211,118 | 79 |
| 9 | 7,705,964 | 22 | 1,794,985 | 86 |
| 16 | 7,221,160 | 03 | 1,384,887 | 80 |
| 23 | 7,693,334 | 64 | 1,409,277 | 37 |
| 30 | 7,713,501 | 84 | 1,644,287 | 05 |
| Sept. 6 | 6,954,929 | 14 | 1,391,265 | 74 |
| 13 | 7,595,848 | 62 | 1,516,455 | 17 |
| 20 | 6,597,011 | 17 | 1,198,928 | 17 |
| 27 | 6,932,776 | 37 | 1,331,822 | 60 |
| Oct. 4 | 8,227,486 | 59 | 1,508,812 | 22 |
| 11 | 7,619,602 | 54 | 1,430,778 | 03 |
| 18 | 8,281,174 | 59 | 1,623,966 | 60 |
| 25 | 8,686,728 | 64 | 1,577,132 | 38 |
| Nov. 1 | 7,324,362 | 24 | 1,207,686 | 85 |
| 8 | 7,849,927 | 06 | 1,521,293 | 59 |
| 15 | 7,182,232 | 01 | 1,528,121 | 53 |
| 22 | 8,363,370 | 14 | 2,052,534 | 00 |
| 29 | 6,287,984 | 44 | 1,354,017 | 83 |
| Dec. 6 | 7,902,852 | 18 | 1,606,368 | 57 |
| 13 | 7,077,580 | 20 | 1,151,787 | 50 |
| 20 | 6,817,280 | 27 | 1,185,020 | 51 |
| 27 | 6,633,786 | 76 | 1,536,114 | 94 |
| 1885. | | | | |
| Jan. 3 | 6,722,445 | 42 | 1,582,346 | 03 |
| 10 | 7,311,207 | 53 | 1,317,103 | 67 |
| 17 | 6,717,052 | 74 | 1,180,555 | 99 |
| 24 | 7,282,188 | 53 | 1,471,576 | 42 |
| 31 | 6,161,634 | 07 | 1,026,988 | 73 |
| Feb. 7 | 6,156,493 | 37 | 1,376,937 | 27 |
| 14 | 5,909,067 | 48 | 1,199,954 | 30 |
| 21 | 5,833,276 | 98 | 1,203,932 | 67 |
| 28 | 6,189,051 | 66 | 1,170,177 | 13 |
| Mch. 7 | 7,036,251 | 79 | 1,411,863 | 00 |
| 14 | 5,986,793 | 17 | 1,176,855 | 82 |
| 21 | 6,448,983 | 91 | 1,476,251 | 07 |
| 28 | 6,502,255 | 15 | 1,389,421 | 32 |
| Apr. 4 | 5,743,967 | 58 | 1,129,321 | 07 |
| 11 | 7,501,424 | 99 | 1,450,228 | 11 |
| 18 | 7,107,565 | 58 | 1,484,810 | 60 |
| 25 | 7,018,148 | 94 | 1,532,412 | 44 |
| May 2 | 6,520,941 | 00 | 1,334,160 | 77 |
| 9 | 6,491,571 | 07 | 1,330,553 | 33 |
| 16 | 6,448,820 | 97 | 1,400,761 | 12 |
| 23 | 7,425,372 | 80 | 2,006,176 | 22 |
| 30 | 6,282,392 | 44 | 1,896,166 | 27 |
| June 6 | 7,042,492 | 88 | 1,508,191 | 87 |
| 13 | 6,865,772 | 09 | 1,847,690 | 91 |
| 20 | 7,276,220 | 39 | 1,846,481 | 73 |
| 27 | 6,907,476 | 65 | 1,420,871 | 81 |
| July 4 | 6,702,544 | 82 | 1,114,194 | 15 |

A FEW FLOWERS.

In common with most plantmen it has been my custom to issue every spring a catalogue of all the different varieties of plants and seeds I have for sale. This catalogue, with the exception of a few novelties offered each season, is necessarily a repetition, and I fear of little interest or value to most plant buyers. It has occurred to me, instead of a general distribution of my catalogue, it would be better to issue pamphlets from time to time, describing a few of the very best and most desirable plants, giving practical cultural directions, suggesting new arrangements for gardens, and doing as much as lies within my ability to increase the beauty and attractiveness of American gardens.

At present I am sending out my new book, "A Few Flowers Worthy of General Culture." It is beautifully printed and illustrated, and in its pages I have endeavored to show how a most beautiful and fascinating garden can be made with hardy plants, and how great a mistake it is the present almost universal custom of using nothing but the so-called bedding-plants, Geraniums, Coleus, etc., for gardening purposes. To give emphasis to this was the object of our recent Flower Show in the Library Reading Rooms and Art Gallery. The book also contains exhaustive articles on Chrysanthemums and Clematis, and their culture; the latter flower is destined to fill a most important place in the future of our gardens. This book is of real merit and beauty, and will be sent free on receipt of 10 cents in postage, or may be had at our store-room.

And while I grow many varieties of plants, I have endeavored to grow a few things well, and think I may safely claim to excel with Chrysanthemums, Roses, Clematis and Carnation Pinks, and of these plants I offer the finest and most complete collection in this country.

I am now offering for the first time, plants of the celebrated New Crimson Tea Rose, "William Francis Bennett." This Rose has greater merit and has attracted more attention than any novelty ever offered in the Floral World. The price, six thousand dollars, paid for the original stock, indicates its remarkable qualities. Truly it is a marvel among roses. Just think of it; it is equal in size and color to rich glowing crimson; to the Hybrid Rose, General Jacqueminot, and surpasses that rose in every other quality. Yet is a true Tea Rose and constant bloomer; its remarkable fragrance exceeds that of the La France; and with all these good qualities it is of the easiest culture, its growth being very strong and healthy.

BENJ. A. ELLIOTT,

54 Sixth Street

PITTSBURGH.



FIRST NATIONAL BANK

OF PITTSBURGH,

Corner of Fifth Avenue and Wood Street.

CAPITAL, \$750,000.

SURPLUS, \$150,000.

COLLECTIONS ON ALL POINTS.

OFFICERS.

PRESIDENT—ALEXANDER NIMICK, 57 Union Avenue, Allegheny.

CASHIER—JOHN D. SCULLY, Second Avenue, Hazelwood.

ASSISTANT CASHIER—CHAS. E. SPEER, Craft Avenue, Oakland.

DIRECTORS.

ALEXANDER NIMICK,

ROBERT S. HAYS,

J. H. MCKELVY,

THOS. WIGHTMAN,

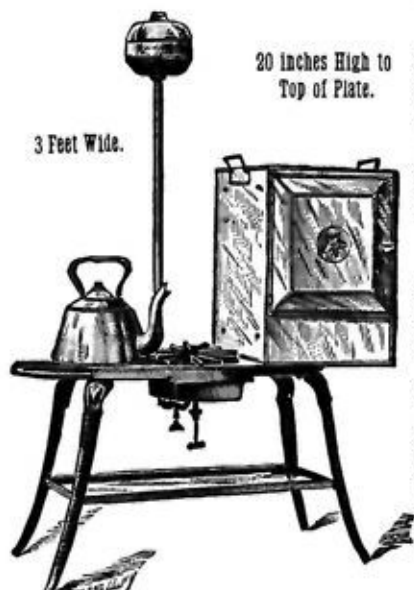
JAS. S. McCORD,

J. H. LINDSAY,

JOHN WILSON,

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WICKLESS OIL COOKING STOVE.

Burns Carbon Oil or Refined Petroleum. No wick, no smoke, no smell. At a cost of $\frac{1}{2}$ cent an hour.

PRICE, WITH FURNITURE, \$10.00

Invaluable for summer use, as it will do all the cooking for a family without heating the room.

Advantages of the Wickless Stove. the only Stove that successfully burns Carbon Oil in the form of vapor.

It will give more heat from one burner than any other oil stove in the market (either with wick or without) will give with two, and will bake or boil, or heat irons, &c. more rapidly, cleanly, and generally satisfactorily.

It will not smoke, smell or clog up as will any other oil stove, with or without wick.

It is safer than any other oil stove, as the reservoir of oil is far from the flame and always cold, and as ordinary Carbon Oil is used, the risks and dangers of Gasoline Stoves are entirely obviated.

It is cheaper, as owing to the oil being burned in form of vapor, it takes less oil; one-half gallon being enough supply, in ordinary cases, for a working day.

MANUFACTURED BY

WICKLESS OIL STOVE CO. LIMITED,

No. 163 Lacock St.

ALLEGHENY, PA.

Tradesmens National Bank,

(UNITED STATES DEPOSITORY,)

PITTSBURGH, PA.

Capital, \$400,000.

Surplus, \$250,000.

A. BRADLEY, President.

ROSS W. DRUM, Cashier.

COLLECTIONS SOLICITED.

L. M. MORRIS,

Successor to MORRIS & MARSHALL,

Iron City Foundry,

GENERAL FOUNDERS.

SPECIALTIES:

BLAST FURNACE CASTINGS AND STEEL MOULDS.

ARCHITECTURAL IRON WORK,

Wrought and Cast, for Building Purposes.

OFFICE, 514 MARKET STREET,

PITTSBURGH, PA., U. S. A.

EXCHANGE NATIONAL BANK

OF PITTSBURGH, PA.

Fifth Avenue, between Wood and Market Streets.

Capital, \$1,200,000. Surplus, \$400,000.

OFFICERS.

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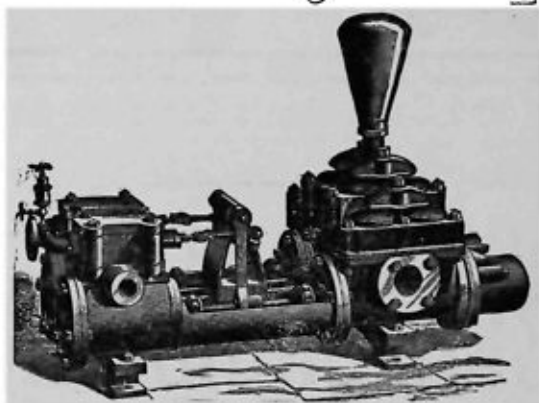
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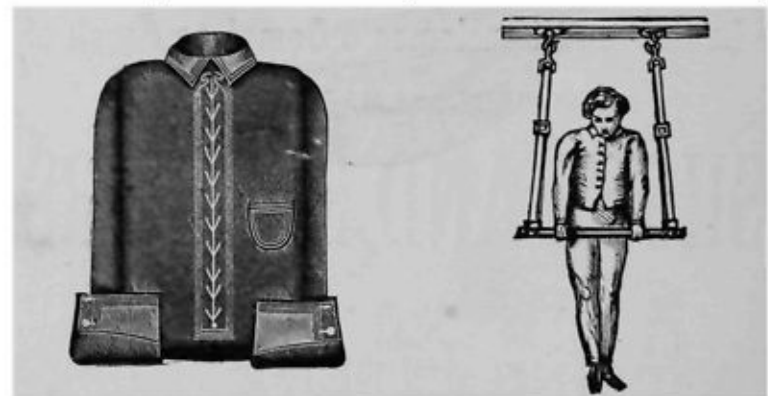
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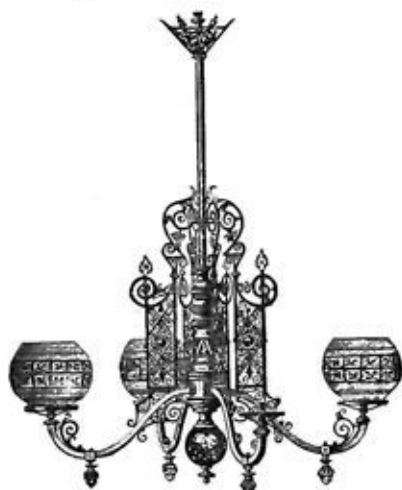
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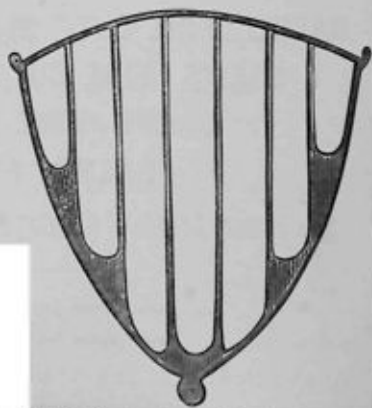
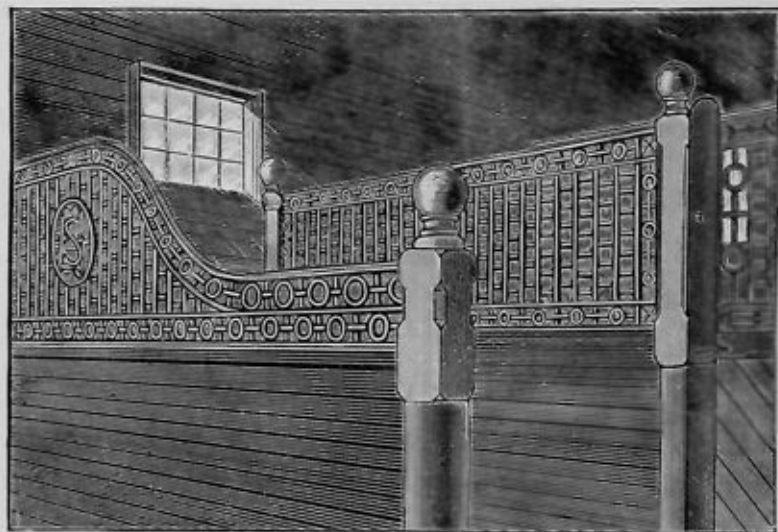
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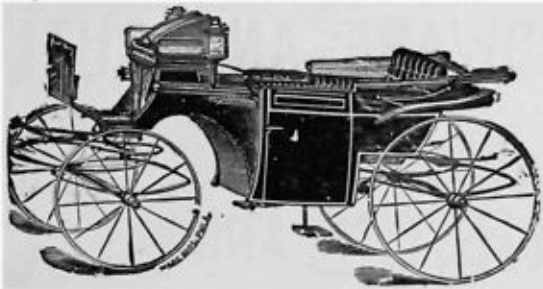
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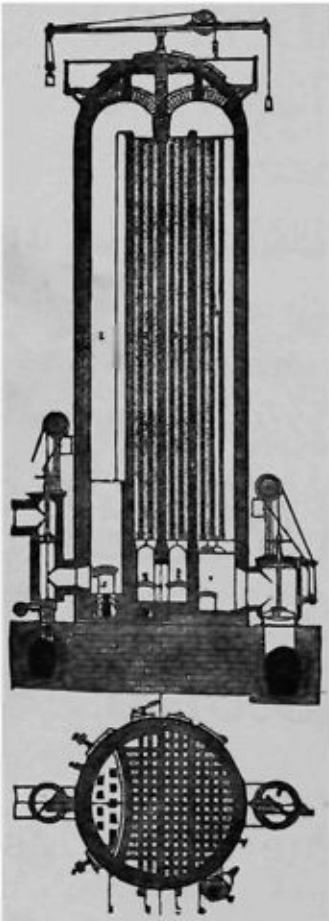
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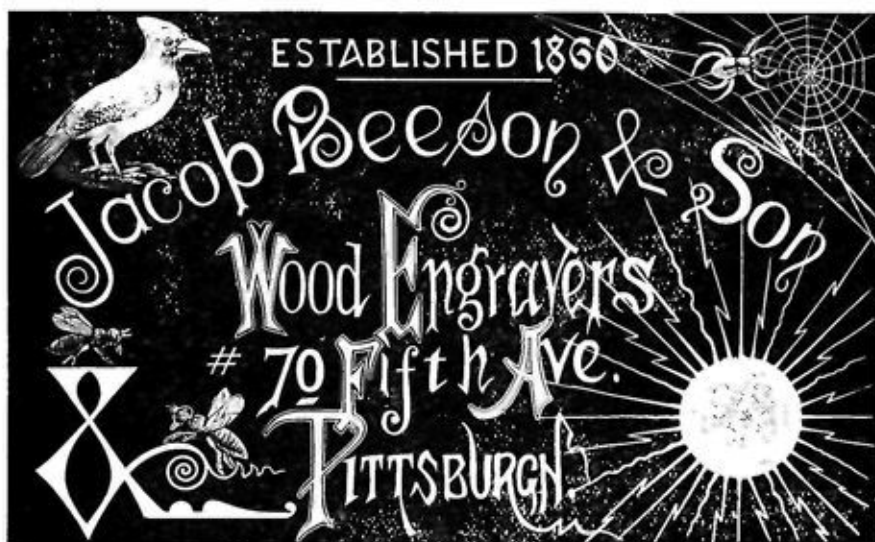
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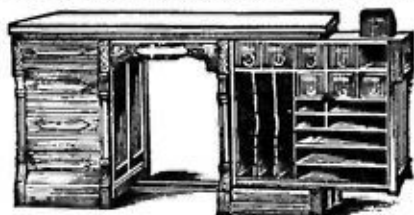
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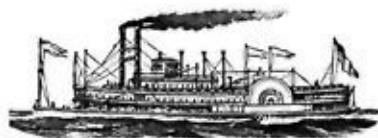
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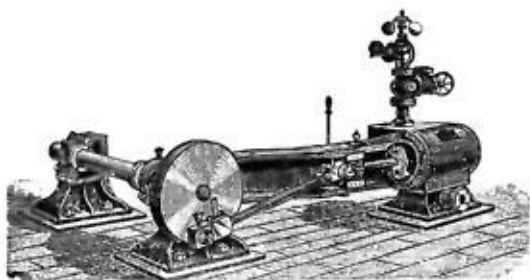
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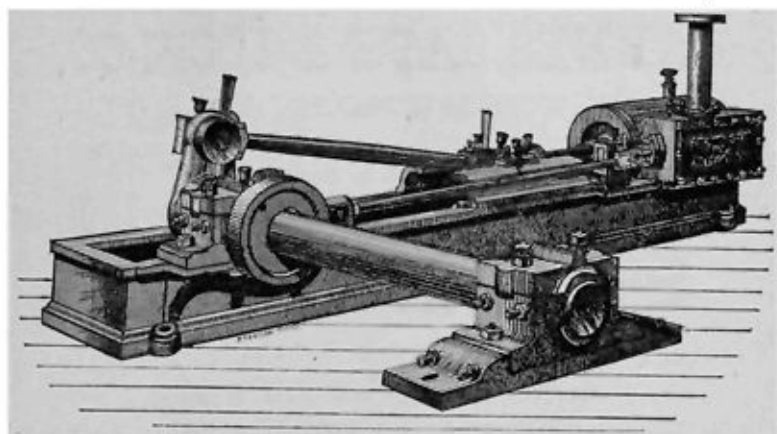
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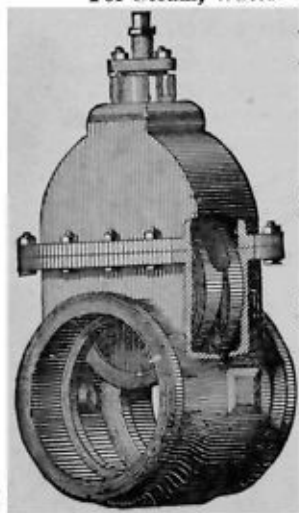
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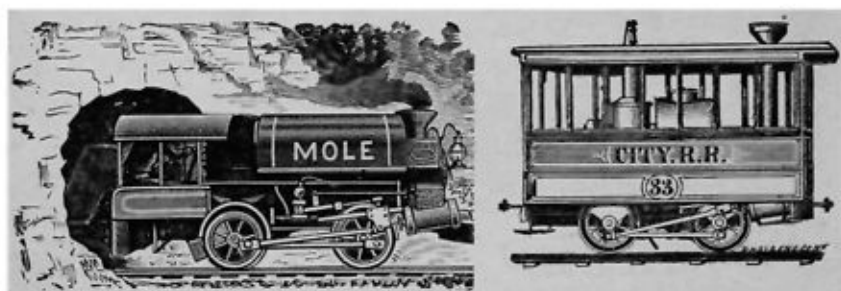
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