OHIO:

THE FUTURE GREAT STATE.

HER MANUFACTURERS

AND A HISTORY OF HER COMMERCIAL CITIES,

CINCINNATI AND CLEVELAND,

WITH

PORTRAITS AND BIOGRAPHIES OF SOME OF THE OLD SETTLERS, AND MANY OF THE MOST PROMINENT BUSINESS MEN.

BY

W. J. COMLEY AND W. D. EGGVILLE, M. D.

SPLENDIDLY ILLUSTRATED.

CINCINNATI AND CLEVELAND:
COMLEY BROTHERS MANUFACTURING AND PUBLISHING COMPANY, PUBLISHERS.
1875.

Sold to subscribers only by appointed and authorized agents.

PRICE, FIVE DOLLARS.

For sale by leading booksellers throughout the United States and Canada.

Dedication.

TO THE INHABITANTS OF OHIO

This Book is Respectfully Dedicated

BY THE AUTHORS.

Citizens of Ohio, Greeting:

It is the custom of most nations to have a Patron Saint, for the purpose of protection and conciliation, and most books have some powerful Mæcenas to introduce them to the world under favorable auspices. To you we dedicate this book, and claim you as our patrons. It is you who have developed the resources, and built up the cities, of this Western State. It is you who have given it its wealth, its fame, and its business. You have given it reputation abroad and prosperity at home. You have made it also famous for its hospitality, and the pilgrim and the stranger feel conscious, when they enter the grand Buckeye State, that there are warm hearts and friendly hands to welcome them. Ohio is still young, though in growth a Titan, and this history shall record many of your names as being instrumental in carving out its progressive destiny. There is scarcely a family in it but, in turning over the pages of this book, will see the name of some friend or relative who have acted well their parts, and shall have honorable mention in this record. And since Ohio has become worthy of a history, through the enterprise of her citizens, it is good and proper that "Ohio and her Commercial Metropolis" be dedicated to the citizens located in her boundary.

PREFACE.

In laying before the public a new work, designed to present the growth and importance of the commerce and manufactures, and the developments of the agriculture and mineralogy of Ohio, it is not to be expected that a plan so entirely new, and so ambitious, should be executed with either the precision or the completeness that may be attained by those who travel in a beaten path.

That the task has been adequately performed, is an assertion which it is left for other and less deeply interested persons to make. Yet it is not our purpose to offer one word of apology for faulty arrangement, or for imperfections the causes of which are as patent as the blemishes themselves.

The history of trade, like the history of any other of the transactions in human affairs, can only be intelligently presented to the mass of readers by seizing upon such facts as most fully illustrate its character, and holding up a series of pictures which constitute a congruous whole.

All candid minds must pronounce at once upon the impossibility of elaborating in every detail, in a single volume, the workings of the wonderful engine of trade which is operating continually in our midst. Such a result has not even been attempted, but in its place it has been sought to give a series of outlines, presenting the most prominent features of the relations of Ohio, with her tributary country, in such manner as to best convey an idea of the magnitude and direction of her commerce, and the requirements it has to supply.

The biographical feature of the work is not new, since biography in some form is inseparable from the relation of any human action; yet, in its treatment in the book, the history of men is interwoven with the record of their affairs, in the same intimate connection which they sustain in the daily current of commercial life. Business affairs do not transact themselves; therefore it seemed eminently proper that their history should be blended with the life struggles and triumphs of the men who are charged with the responsibility of their movement.

While not deprecating honest criticism, I will yet express the hope that the difficulties, inherent in such a task as we have undertaken, will meet with due consideration, when the value of the work itself is being estimated.

TABLE OF CONTENTS.

OHIO TO-DAY.

THE superiority of Ohio as a State for capital and skill must be familiar to those in any degree acquainted with its natural advantages and treasures. Her valley and uplands, containing inexhaustible deposits of iron and coal, multiply the population and wealth, adding daily to the fame of our vast natural resources. Coal veins, varying from four and a half to ten feet in thickness, are placed by bountiful nature where the simplest mechanical contrivances, united with comparatively trifling manual labor, enables the manufacturer to avail himself freely of the greatest aid in reducing the valuable ores to every form and condition required to supply the needs of civilization. The benefits derived from this treasure bed of coal which abounds in our State can scarcely be estimated. Its presence suggests and its use is synonymous with economy. It has been aptly remarked that the secret of wealth and progress of more than one modern nation may be found in the statistics of this mineral. Some idea of the influence exerted by its possession may be inferred from the fact that it is equally essential to the successful operation of the factory, the steamer, or the locomotive, and from the fact that Ohio produced over 110,000,000 bushels of coal in 1872. As it would be impossible to convey any idea of the variety and extent of the important manufactures of Ohio in an article of this nature, we have confined ourselves to some of the leading features which render us peculiar as a manufacturing State. The products of our manufacturing establishments enter into countless articles, from the commonplace trifles in domestic use to the grandest and most beautiful achievements of human ingenuity and art.

The iron from her mills is handled in every hamlet in the Western country. Her oil is at once a necessity in millions of households. Her coal contributes comfort to countless firesides, reduces the valuable ores, conduces to successful operation in the factory, and illuminating cities, while the product of her refineries is in demand in

remote cities and villages in Europe. No State in the Union possesses greater natural advantages, greater resources, or better facilities for transportation, than Ohio. Her natural position, her inexhaustible coal fields, her river, lake, canal, and railroad transportation, her central location, and her proverbial industry, combine in rendering her the foremost in manufacturing in the Union.

DEVELOPMENT AND EXTENT OF COAL TRADE.

One of the greatest aids to civilization is to be found in a single mineral deposit—coal. At the present day coal may be termed the real staple wealth of all manufacturing and commercial countries. Through the aid of this magical mineral we derive the comfort of artificial light and heat. It is the great aid in reducing the valuable ores to every form and condition required to supply the needs of civilization. In a word, the genii of modern industry and progress. If we may be guided by the past, the future fame and wealth of a country may be measured by the character and extent of the area of its coal fields. In this connection, the "reports from Her Majesty's Secretaries of Embassy and Legation respecting coal" can not fail to be interesting. According to these reports the proportion of the whole area covered with coal in the following countries, is as follows: British Islands, 1-10; Belgium, 1-22; France, 1-100; United States, 2-9; Prussia, 1-90; British North America, 1-20; Bohemia, 1-20; Spain, 1-52. Since these reports were published, discoveries have been made in the Western States showing that upward of one-fourth of the whole area of the United States is covered with coal! What a future is involved in this single statement. The same reports inform us that the production of coal in the United States amounted to, in 1865, 17,417,617 tons. The total production of the United States at the present time is about 25,000,000, or twice the amount produced in France; more than six times the amount produced in Austria, and over a third more than the average annual product of Prussia. The average annual product of England is given at 80,000,000 tons. France imports from six to seven million tons of coal annually. Russia, although the banks of the Donetz are rich in coal, also imports a large amount; and Spain, notwithstanding

her internal resources, depends upon England for her coal. While England is rapidly consuming her mineral treasure, we have scarcely begun to develop our immense resources. Take, for instance, the treasure bed surrounding Pittsburg, embracing 15,000 square miles, equal to 8,600,000 acres of coal, which has scarcely been tapped. This immense coal field contains two seams, the upper seam averaging the thickness of eight feet, which, valued at two dollars per ton, would amount to $107,032,860,000. All of the coal contained in this huge deposit is of the best quality, being admirably fitted for open fire-places and manufacturing purposes. It is to this soft, bituminous coal, that the greater portion of the western and south-western cities are indebted for their gas. It is also an indispensable aid to the manufacturer; owing to its freedom from sulphur, the coke made from it has obtained a national reputation.

The coal fields of Ohio are second in importance only to the great coal fields of Pennsylvania, and comprise an area 10,000 square miles, or 6,500,000 acres. The estimated yield of twenty-seven cubic feet to the ton would give the coal deposits in Ohio, as here estimated, to be 209,733,333,340 tons. It would require 51,200 years to exhaust these mines, were they operated at the same rate they are now being mined; or, it would supply the entire demand at present made upon the colliers of the United States for 4,560 years; or, it would supply Great Britain with coal for 1,600 years, with a production equal to that mined at the present time. From a volume entitled "Coal Regions of America," we find the following brief outline of the coal seam in Ohio:

"The coal basin is bounded on the west by a continuous but crooked line from the Ohio River, in Scioto County, to the Pennsylvania line near Sharon, within a line running from that place to Ravenna, Akron, Wooster, Dover, Brownsville, Logan and Hanging Rock; or, to follow the line of outcrop more particularly, we have in the north, in Trumbull County, the boundary of the coal field from where the Pymatuning Creek crosses the State line, curving southward, and the other side of the curve being on Mahoning Creek, at Youngstown. Thence the line is westward, nearly along the north line of Mahoning County, from the north-west corner of which it puts out a long, slender cape through Portage into Geauga County, its west boundary being near the Cuyahoga River, until it enters Summit County. From Ravenna the line is nearly south-west to the north line of Holmes County, except a well-defined cape running into the south-east corner of Medina County. Thence southward it follows near the east line of Holmes and Knox Counties, and includes the south-east corner of Licking County. It then

passes near the line between Fairfield and Perry Counties, with a deep indentation at the Hocking River Valley, extending to the west line of Athens County. Thence westward and south-west to include the south-east part of Hocking County, three-fourths of Vinton, nearly all of Jackson, and the eastern part of Scioto Counties. The counties wholly covered with coal are Mahoning, Columbiana, Stark, Holmes, Tuscarawas, Carroll, Jefferson, Harrison, Belmont, Guernsey, Coshocton, Muskingum, Perry, Noble, Morgan, Monroe, Washington, Athens, Meigs, Gallia, Lawrence, and nearly all of Jackson. All the counties of which the eastern or south-eastern parts only are covered with coal are Trumbull, Portage, Summit, Medina, Wayne, Licking, Fairfield, Hocking, Vinton and Scioto. There are also some outliers, or small detached basins, in Wayne, Ashland, Richland and Knox Counties."

The discovery of mineral coal and its uses is an event of the present century. Coal was known to exist at various points in Northern Ohio when the forest was first penetrated by the early settlers. The first coal mining in Northern Ohio was done about the year 1810. The coal was dug from a pit near Talmage, in Summit County, and used for many years for blacksmithing purposes. About the year 1819 or 1820 Messrs. Asaph Whittlesey and Samuel Newton opened a bank near that place, which was followed, a few years later, by the opening of other mines. The coal, as yet, had never been tested for heating purposes, and, aside from blacksmiths, there was no demand. Coal was known to exist by the settlers in the Mahoning Valley, and as the country became more thickly settled and wood began to be more scarce, coal was taken from the outcrops and used by blacksmiths and also for fuel; a more systematic method of mining was soon adopted, and coal was teamed in large quantities to other places. In 1840, David Tod was operating a mine at Brier Hill, and upon the completion of the Pennsylvania and Ohio Canal from Akron, Ohio, to Beaver, Penn., he shipped a couple of boat loads to Cleveland, for the purpose of introducing it as fuel on lake steamers, which was not easily accomplished, there being considerable hostility manifested toward it by engineers and firemen. Mr. Tod, however, was not to be discouraged by these difficulties, and finally succeeded in making a successful experiment, and, in 1845, coal supplanted wood on the steamers on the lower lakes. Large quantities were subsequently mined and shipped to Cleveland from the Mahoning Valley by Mr. Tod, and but a few years elapsed until the mining and shipping of coal became a prominent industry; later, the opening of the Cleveland and Mahoning Railway from Cleveland to Youngstown—traversing the heart of the coal region—gave fresh impetus to the mining interests.

The discovery that the coal in the Mahoning Valley could be used in reducing ores without coking was the result of mere accident, in the year 1845; and then the iron made from the use of the raw coal proved to be of a superior quality to that produced by the use of coke. This discovery was of incalculable benefit both to coal operators and iron manufacturers, and extensive operations were soon entered into for the mining and shipping of coal and the erection of manufacturing establishments, which consumed large quantities at home in manufacturing iron and its products. The State Geologist, in his report of the geological survey of Ohio, says:

"The coal of the Mahoning Valley, nearly all of which is a first-class coal, is superior to that from any other coal field in the State, and not excelled by any bituminous coal mines any where. The coal is generally remarkably free from sulphur and other impurities, containing a small per cent of ash and a large per cent of fixed carbon. As the analysis of specimens taken from various openings, and published in the chemist's report, will show, it is generally a dry, open burning coal, its mechanical structure causing it to take fire rapidly through the center of the largest pieces, especially adapting it to the smelting of iron.

"The coals in this valley were the first bituminous coals mined in the country for the reduction of iron ores without coking—a fact which made them widely known, and gave them, at the time, a reputation above all other bituminous coals. Notwithstanding continuous explorations have largely increased our knowledge of the coals of the country, and have brought to notice of manufactures many varieties of great excellence, these still maintain the reputation thus acquired. They are still the standard with which iron-making coals are to be compared."

The coal mines in the Mahoning Valley are principally located in the townships of Brookfield, Liberty, Vienna, Hubbard, Weathersfield and Houland, in Trumbull County, and Austintown, Youngstown and Coitsville Townships, in Mahoning County. In our exhibit of the coal trade in this region, we had hoped to give a complete report. In this, however, we are somewhat disappointed, as there are some mines in operation from which we could get no statistics. We give reports from works located contiguous to Youngstown, and, as great care was used in gathering the data, it may be considered a fair report. The total number of men employed in these mines is 3,480, to whom are paid for labor $1,821,480 per annum. There was 507,375 tons of coal mined in 1873, employing a capital of $1,670,000. The number of acres of coal land being worked is 6,680, which is valued at nearly $5,000,000.

MINERAL STATISTICS.

COAL.

The amount of Coal reported as mined in Ohio in the last year is 22,644,514 bushels less than that reported for the year previous.

The amount mined in the State for a series of years was reported as follows:

	BUSHELS.		BUSHELS.
1840	3,513,409	1867	46,703,820
1850	8,000,000	1868	55,264,392
1860	50,000,000	1869	54,955,057
1863	26,887,899	1870	47,584,792
1864	40,527,291	1871	55,316,666
1865	34,290,359	1872	110,438,754
1866	42,130,021	1873	87,794,240

In the following table is given the amount of coal mined in the several counties in the year 1873:

	BUSHELS.		BUSHELS.
Athens County,	7,803,637	Morgan County,	17,450
Belmont County,	2,889,266	Muskingum County,	1,679,169
Carroll County,	210,300	Noble County,	245,600
Columbiana County,	6,728,570	Perry County,	9,979,056
Coshocton County,	891,100	Portage County,	221,600
Guernsey County,	1,895,500	Scioto County,	91,266
Harrison County,	600,768	Stark County,	10,002,642
Hocking County,	4,287,276	Summit County,	5,395,444
Holmes County,	115,000	Trumbull County,	8,217,248
Jackson County,	2,307,736	Tuscarawas County,	1,715,300
Jefferson County,	2,024,300	Vinton County,	1,120,682
Lawrence County,	4,029,773	Washington County,	316,690
Mahoning County,	3,937,676	Wayne County,	5,189,018
Medina County,	92,000		
Meigs County,	5,757,203	Total,	87,794,240
Monroe County,	32,970		

IRON.

In the following tables are given the amount of iron ore mined, and pig iron made, in Ohio in the last two years, as reported by the assessors, and the amount of pig iron made in the same time and in the first six months of 1874, as learned from the manufacturers, except eight blast furnaces not reported for the last six months of 1873 and the first six months of 1874. These reports show as follows:

Years.	Tons ore mined.	Tons pig iron manufactured.
1872,	336,758	426,626
1873,	332,972	394,751
Difference,	3,786	31,875

IRON ORE MINED.

	TONS.		TONS.
Columbiana County,	10,000	Scioto County,	27,576
Fairfield County,	700	Stark County,	30,500
Hocking County,	8,987	Trumbull County,	1,500
Jackson County,	71,288	Tuscarawas County,	36,850
Lawrence County,	105,724	Vinton County,	31,084
Muskingum County,	3,407		
Perry County,	13,356	Total,	332,972

The amount of pig iron made in the first half of 1874, by all the blast furnaces in the State, as reported to this office by the manufacturers, except eight furnaces not reported, is 199,149 net tons. The production of pig iron in Ohio, in a series of years, was as follows:

	TONS.		TONS.
1840,	25,950	1868,	207,746
1850,	52,658	1869,	211,074
1860,	105,500	1870,	309,033
1863,	50,704	1871,	353,000
1864,	62,536	1872,	*426,626
1865,	63,991	1873,	*394,751
1866,	81,790	1874, first 6 months,	*199,149
1867,	167,591		

* These amounts were obtained from the manufacturers by correspondence from this office.

Rolling Mills in Ohio in 1874.

LAKE COUNTIES.	Annual capacity in tons.
American Sheet and Boiler Plate Company's Works, Cleveland,	6,000
Ashtabula Rolling Mill Company's Works, Ashtabula,	2,500
Cleveland Boiler Plate Manufacturing Company's Works, Cleveland,	3,756
Cleveland Iron Works, Cleveland,	40,000
Cleveland Rolling Mill Company's Works, Cleveland,	58,000
Lake Erie Iron Works, Cleveland,	12,000
Nes Silicon Steel Works, Sandusky.	30,000
Otis Iron and Steel Company's Works, Cleveland,	
Union Iron Works, Cleveland,	25,000
Valley Iron Company's Works, Cleveland,	
MAHONING VALLEY.	
Akron Iron Works, Akron,	6,500
Alliance Rolling Mill, Alliance,	31,000
Cherry Valley Iron Company's Works, Leetonia,	10,000
Enterprise Iron Works, Youngstown,	6,000
Falcon Iron and Nail Works, Niles,	10,500
Girard Rolling Mill, Girard,	3,600
Hall Iron Works, Hubbard,	4,000
Leetonia Nail and Bolt Company's Works, Leetonia,	2,600
Mahoning Iron Work, Youngstown,	
Massillon Coal and Iron Company's Works, Massillon,	
Niles Iron Works, Niles,	12,000
Wm. Richards and Sons' Works, Warren,	
Ridgway Iron Works, Youngstown,	36,000
Youngstown Rolling Mill, Youngstown,	5,500
INTERIOR COUNTIES.	
Columbus Iron Works, Columbus,	
Columbus Rolling Mill, Columbus,	30,000
Dover Rolling Mill, Canal Dover,	
Zanesville Iron Works, Zanesville,	7,500
OHIO RIVER COUNTIES.	
Etna Iron and Nail Company's Works, Bridgeport,	
Belfont Iron Works, Ironton,	8,750
Bellair Nail Works, Bellaire,	6,500
Bloom Forge Iron Works, Portsmouth,	7,500

	Annual capacity in tons.
Burgess Steel and Iron Works, Portsmouth,	5,000
Cincinnati Railway Iron Works, Cincinnati,	
Globe Rolling Mill, Cincinnati,	6,000
Ironton Rolling Mill, Ironton,	9,000
Jefferson Iron Works, Steubenville,	9,000
Lawrence Iron Works, Ironton,	8,000
Licking Rolling Mill, Newark,	
Marietta Rail Mill, Marietta,	30,000
Newark Rolling Mill, Newark,	
Ohio City Iron and Nail Works, Martin's Ferry,	5,000
Pomeroy Iron Works, Pomeroy,	10,500
Vulcan Rolling Mill and Tube Works, Cincinnati,	

Rail Mills.

The following list comprises all the rail mills in Ohio in 1874:

Ætna Iron and Nail Company, Bridgeport. Light T rails and flat rails.
Akron Iron Works, Akron Iron Company, Akron. Light rails.
Alliance Rolling Mill, Alliance Rolling Mill Company, Alliance.
Cincinnati Railway Iron Works, Cincinnati Railway Iron Company, Cincinnati.
Cleveland Iron Works, Cleveland Iron Company, Cleveland.
Cleveland Rolling Mill Company, Cleveland.
Lake Shore and Newburgh Mills.
Columbus Rolling Mill, Columbus Rolling Mill Company, Columbus.
Girard Rolling Mill, Girard Rolling Mill Company, Girard. Light rails.
Lawrence Iron Works, Lawrence Iron Works Company, Ironton. Light rails.
Marietta Rail Mill, Marietta Coal and Iron Company, Marietta.
Nes Silicon Steel Works, Nes Silicon Steel Company, Sandusky.
Newark Rolling Mill, Newark Iron Company, Newark.
Pomeroy Iron Works, Pomeroy Iron Company, Pomeroy. Light T Rails and flat rails.
Ridgeway Iron Works, Wick, Ridgeway & Co., Youngstown.
Zanesville Iron Works, Ohio Iron Company, Zanesville. Light rails.

HANGING ROCK IRON REGION.

THIS region includes Lawrence, Jackson, Gallia, Vinton, Hocking, and part of Scioto Counties, in Ohio; Greenup, Boyd, Carter, and Lawrence Counties, in Kentucky. It is a portion of that ore belt which, continuing in a north-east direction from the Hocking Valley, embraces parts of Perry, Muskingum, Licking, Coshocton, Tuscarawas, Holmes, Stark, and Wayne; thence gradually curving to the east, parts of Mahoning and Columbiana Counties in Ohio. Continued east into Pennsylvania, it forms the iron district north of Pittsburg; from thence, south-east, then south, it finally assumes a south-west course west of the Monongahela River, and extends through West Virginia. This iron and coal belt thus traced forms the margin of "the great Ohio coal basin," as it is found in Ohio, Pennsylvania, West Virginia, and Kentucky. The region takes its name from a large projecting cliff upon the Ohio River, situated just back of the village of Hanging Rock. This is one of the oldest settlements of the region, and within its hallowed precincts cluster the memories of the early days of pioneer iron-masters. It was the headquarters for the iron men of the region, and the shipping point for nearly all of the metal produced upon the Ohio side until 1849. Now but one furnace ships at its wharf, and Ironton has become the principal center for business transactions upon the river. In early times, James Rodgers, John Campbell, Robert Hamilton, and Andrew Ellison,* for many years made Hanging Rock their home. The many iron works which they have left to perpetuate their memories link their names with that of "Hanging Rock" in the region's history. These pioneers, with others, built the "Old Hanging Rock Forge," about the year 1833. Speaking of this forge and the rock, Dr. S. P. Hildreth's "Geology of Ohio" has the following: "Four miles above the mouth of the Little Sandy, on the Ohio River, and in the midst of the iron region, is the celebrated cliff of sandstone, called the 'Hanging

* The "Ohio His. Coll.," by Howe, 1845, in reference to Mr. Ellison, says: "Some years since, a wealthy iron-master was buried at Hanging Rock, in compliance with his request, above ground, in an iron coffin. It was raised about two feet from the ground, supported by iron pillars resting on a flat stone. Over all was placed an octagonal building of wood, about twelve feet in diameter, and fifteen feet high, painted white, with a cupola-like roof, surmounted by a ball." It was afterward removed by his relatives, and his remains buried near the spot.

Rock.' The upper portion of the cliff, which is nearly four hundred feet high, projects over the mural face of the rock, like the cornice of a house. It is extended, also, for some distance up a small creek, which here puts into the river. The Ohio flows close to its base, while beneath and under its projecting walls is a forge for the refining of iron. The blasts of its immense bellows, added to the thundering noise of its tremendous hammer, weighing more than a ton, echoing and reverberating under the walls of the cliff, afford no inapt emblem of the labors of the Cyclops under the caverns of Mount Ætna. An abundance of iron ore is found in the vicinity, and a few miles back in the hills a furnace called 'the Ætna' furnishes the pigs for the anvils of the modern Cyclops. Bar iron, of excellent quality, is manufactured at this interesting spot. Near the top of the cliff is a bed of aluminous slate, through which the water filtrates from above, and, slowly evaporating below, forms stalactites of alum, impregnated with sulphate of iron. In other parts of this deposit, more sheltered from the weather, and more dry, the sulphate of magnesia is formed in transparent, acicular crystals, of one or two inches in length." Great interest attaches to the first attempt at iron production in this region, the history of which is as follows: In the vicinity where "Old Pactolus" furnace now stands, in Greenup County, Ky., lived one Richard Deering,* a farmer, but who, at times, engaged in salt-boiling. Noticing the iron ore in his fields and upon the hill-sides, he conceived the idea of smelting iron as he had seen it done near his old home in Pennsylvania. Being a man of considerable ingenuity, and skilled in mechanical work, in 1815 he constructed a cupola, and "gathered in iron stone" for smelting. His attempt in this new direction proving quite satisfactory, he procured four or five molders, men more experienced than himself, to run his iron into hollow-ware. The success of this crude attempt induced him, in 1818, with David and John Trimble, to erect the "Argillite Furnace." This was the first furnace in the Hanging Rock iron region. It was located in Greenup County, Ky., six miles south-west from Greenupsburg, upon the left bank of Little Sandy River. The stack, twenty-five feet high and six feet "bosh," was cut solid in a cliff of black slate, hence called Argillite, with only two sides for tymp and tuyere arches. A dam, thrown diagonally across the river,

* Richard Deering attempted pumping salt water by steam by placing one kettle over another, bolting them together—one hole for steam-pipe, and another for water. It burst after running some two or three months. This was the first use of steam in the region. Mr. Deering also built "Enterprise" forge in 1824, upon Tygert Creek.

with a massive undershot water-wheel, furnished power for the blast. The iron produced was made into hollow-ware on week-days, and run into pigs on Sundays. The blast-cylinder and water-wheel were made by John Deering,* whom his brother had engaged for this purpose. The experiment of the cupola, in 1815, was a small but most memorable beginning. Sixty years have passed, and now the fires of over one hundred furnaces, mills, and factories, light up the valleys and ravines, which were then covered with forests. When we consider that these results have been attained by a region whose mineral resources are, as yet, apparently untouched, and anticipate, therefore, what the future may accomplish for it, the retrospect of this first crude effort at iron manufacture impresses one the more with the significance of the event.

The second furnace in the region was the Pactolus, built in 1824, by M'Murty and Ward; the Hopewell Furnace, built in 1832, originated in the Ward Forge, which was erected in 1824; the third furnace was "Old Steam," built by the Shreeves Brothers in 1825, and the fourth, Belfonte, was built the same year, by A. Paull and others. Previous to the first smelting of iron in this region, "Brush Creek Furnace," in Adams County—the first erected in the State of Ohio—was in blast. It was built by Ellison, James, and Col. Paull.† The firm name of Brush Creek Furnace Company, by which it was known, was changed, in 1826, to Messrs. James T. Claypoole & Co. This was the first furnace erected in the United States which was run by steam. Their engine was built by the "Pitts Steam Engine Co.," who sent Mr. James Rodgers to attach it to the furnace. In passing to and fro upon the river, Mr. Rodgers learned from the several furnaces in blast in this region of their success, and this induced him to prospect for a furnace site here also. Being a man of capital and energy, he readily found a locality, six miles from Greenupsburg, abounding in ores and timber, where, in 1826, he, with others, built Union Furnace, under the firm name of James Rodgers & Co. In 1827, Rev. Daniel Young, from the New England States, having settled in this region, with others built the Franklin Furnace. In 1828 Scioto Furnace was built by Wm. Salters,

* Rev. John Deering then lived upon the Big Sandy River, and invented what was known to old boatmen as the "double L" pump.

† The third settlement in the State of Ohio was made at Manchester, Adams County. The Ellisons, with others, came from near Belfast, Ireland, direct to this point, and joined Col. Massie in founding the town in 1790. They became interested in this pioneer furnace, which was built by Ellison, James, and Col. Paull in 1810, and in Steam Furnace, of that county, erected by James Rodgers, Andrew Ellison, and the Pittsburg Steam Engine Company in 1816. In after years, many who migrated to the Ohio Valley became interested either in these furnaces or the forges common to the country.

and in 1829 Lindsey Poague and others erected Amanda Furnace. The year previous Robert Hamilton and Andrew Ellison had erected Pine Grove Furnace, back of Hanging Rock, and afterward built the Hanging Rock Railroad, extending three miles to their coal mines.

"In 1837 a new era dawned upon the iron business—the introduction of the use of a heated blast. Some three or four furnace men met at Vesuvius Furnace, and there agreed that they would test the hot blast principle, to employ a man to put up a hot blast at Vesuvius, and, if it proved to be a satisfactory experiment, Hurd, Gould & Co. were to pay all expenses; but if a failure, the expense was to be divided among the agreeing parties. Wm. Firmstone put up the hot blast. It proved satisfactory to all parties, notwithstanding it was contended by those opposed to the principle that the iron would be weakened by the hot blast, and made unfit for casting purposes. The result proved that it was the very kind of iron that foundries wanted."

In 1841 Mr. John Campbell, at Mount Vernon Furnace, made an advantageous change by placing the boilers at the tunnel head of furnace stack and applying the waste gas to the production of steam—a plan now generally adopted by the charcoal furnaces of the region and other portions of the United States.

"In 1840 Mr. Robert Hamilton became the sole owner of Pine Grove Furnace. Having the furnace entirely under his control, he made an experiment which he had long determined to try; namely, the stopping of the furnace upon the Sabbath. That it would not succeed was predicted to him by many of those he considered his friends; yet he was resolved to try it, cost what it might. He took down the old stack, erecting a new one, which shows for itself the work of a master workman. These improvements consumed the greater part of the year 1844, and from the 20th of December in that year dates the stoppage, for the first time, of a furnace upon the Sabbath." This custom, at this day, is very generally adopted throughout the region.

NOTE.—FIRST FURNACES OF THE COUNTIES IN THE REGION.

Name of County.	Name of Furnace.	Builders.	Name of County.	Name of Furnace.	Builders.
Greenup, Ky.	Argillite ...	Deering and Trimble.	Jackson, O..	Jackson ...	Hurd, Young and others.
Boyd, Ky.....	Amanda ...	L. Poague and others.	Scioto, O.....	Franklin...	Danl. Young and others.
Carter, Ky ..	Mt. Savage	R. M. Biggs and others.	Vinton, O...	Eagle.....	A. Bently and others.
Lawrence, O.	Union.....	Jas. Rodgers and others.	Hocking, O.	Logan	Not informed.
Gallia, O.....	Gallia	John Campbell and others.			

The number of furnaces in the region had increased rapidly up to this date; new towns were founded which had a permanent growth, and older ones were stimulated to increased activity. Among the latter is Portsmouth, Ohio, which is the first that is met in passing up the river. Although not properly within the ore belt, yet it is the headquarters and shipping point for the Union Iron Company's and other furnaces upon the Portsmouth Railroad. The wholesale houses there do a heavy business with these iron works. The Gaylord Rolling Mill Company, and the Burgess Iron and Steel Works Company, have their establishments located at this place. It is the county-seat for Scioto, and has some 15,000 of a population. It is one of the oldest towns of the region, and is more metropolitan in its character than the others. In the early settlement of the country Alexandria was founded at the mouth of the Scioto River, just opposite Portsmouth, but did not prosper. The first iron works at Portsmouth was an old-fashioned forge, erected by Mr. Henry Steece.

The next place is Greenupsburg, Ky.,* which is located in the midst of the furnaces, and has served as a shipping point for many of them. It is the county-seat for Greenup, and has 1,000 of a population. The older furnaces of that county, together with those of later years, give to Greenupsburg a slow but steady growth. Farther up the river is Riverton, Ky., which is the terminus of the railroad belonging to the Eastern Kentucky Railway Company. This road is thirty-two miles in length, and does the shipping for a large number of furnaces. It was extended, within a short time, to Willard, a place at which ores and coal are mined by the Ætna Iron Works and Belfont Iron Works, of Ironton, Ohio. The company also operate two furnaces; namely, Pennsylvania and Hunnewell, late Greenup.

Six miles above Greenupsburg is Hanging Rock, Ohio. A short railroad, three miles in length, terminates here, which serves for shipping the iron from Pine Grove Furnace and the coal mined at a small settlement among the hills, called Newcastle. The Excelsior Foundry, owned by Mr. Samuel B. Hempstead's estate, and the one owned by Martin, Henderson & Co., are located here. The latter was built by Messrs. Peebles, Wood & Co., and employs a capital of $18,000, and produces such wares as stoves, fronts and grates, and marbelized iron mantels. They employ about thirty workmen,

* The Hanging Rock region was once the hunting ground of Daniel Boone, who built a cabin one mile above Greenupsburg. He afterward removed to Missouri, but his son Jesse remained for several years. Jesse Boone built the first brick chimney in the region, the remnants of which were still standing in 1851.

and have a good custom, both from Ohio and other States. However, the village improves but slowly, and is interesting only as one of the early settlements of the region.

Three miles above this village is the city of Ironton, Ohio, a place of many furnaces, rolling mills, foundries, and iron factories. The town was laid out in 1849, and has increased at a rapid rate, varying only with the fluctuations of iron. Iron is the basis of its wealth, as well as it is of its name. The Ohio Iron and Coal Company, which founded the town, was organized by Mr. John Campbell, who has continued as its President. The charter for this company was secured through the efforts of Dr. Caleb Briggs,* who was sent to Columbus for that purpose. On the 20th of June, the same year, the first sale of lots was made, and Ironton started upon its career of prosperity. The Iron Railroad, leading north from Ironton, was built within the three following years, and is now twenty miles in length. It transports the products and supplies of Olive, Center, Howard, Mount Vernon, Buckhorn, Ætna, Lawrence, Vesuvius, Belfont, Grant, Alice, Blanche, and the Iron and Steel Company's furnaces, besides carrying the Tunnel coal to the various iron works at Ironton. The hills through which it passes are filled with the minerals necessary for iron manufacture, and support a large population. The county-seat was removed from Burlington to Ironton in 1851. Hanging Rock was desirous of becoming the county-seat at that time, and Mr. Robert Hamilton, of that place, offered $10,000 to the county as an inducement to locate it there; but Ironton received the larger number of votes. The population, which in 1870 was 5,700, is now 9,000. The place enjoys the benefit of water-works, gas, and such other improvements as generally pertain to a small city.

The large number of iron works located directly at this point give to it great wealth, and requires a large amount of capital to carry them on. The First and Second National, and Wm. D. Kelly's Exchange Banks, afford ample monetary facilities to the iron men in their business transactions. The principal iron works are mentioned below. The Belfont Iron Works Company have a blast furnace, rolling, and nail mill combined. The firm was known as Peters, James & Co., until 1863, when Messrs. E. M. and G. W. Norton organized the present company. At their furnace,

* Dr. Caleb Briggs was one of the State geologists of Ohio in the survey made in 1838, and also served in the same capacity for Virginia and New York. It was in conversation with Dr. Briggs that Mr. John Campbell gave the town the name of Ironton. He had expressed a desire to give the town a name which should incorporate the word *iron* and show the place to be essentially an iron town. Dr. Briggs then suggested to call it Iron-Town, but Mr. Campbell objected to the length of the word, and, upon further thought, called it *Ironton*.

the Missouri and native (red hematite variety) ores are smelted into mill iron, using the bituminous coal of the region for fuel, principally from the Ashland and Sherridan vein. Just above the Belfont, upon the bank of the river, is the Grant furnace, owned by Messrs. Wm. D. Kelly & Sons. It is of the old style, charcoal, using altogether native ores. Situated in the western part of the city are the Lawrence Iron Works, complete in its appointments. The present firm was incorporated in 1867. Their principal salesrooms are in Cincinnati, though they ship largely on orders directly to their works. "The Olive Foundry and Machine Shop of Messrs. Lambert & Gordon was erected in 1852, and employs a capital of $80,000, producing finished work of the yearly value of $150,000. Near to these works is located the extensive foundry of Mears, Olhaber & Co. This establishment was erected by Campbell, Ellison & Co. in 1850, and was afterward owned by Woodrow, Mears & Co. Stoves, with brands of these firms, are to be found in all parts of the Mississippi Valley." The Iron and Steel Co.'s works were built in 1852, and the principal stock has always been owned by iron men at this point. The firm was first known as Ironton Rolling Mill Co., then as H. Campbell & Co., and again as Ironton Rolling Mill Co. Their works occupy one square, with fine wharfage upon the river. They own one of the largest and most substantial stone-coal furnaces in the region. It is erected adjacent to their works, and the waste gases of the ore are utilized by the other. One of the most distinguishing features of their works is the manufacture of steel by the introduction of chemicals when the iron is in a melted state. About one mile above the Iron and Steel Co.'s works are situated the Ætna Iron Works, the largest and finest in the United States. The "Ferrie Process," by which the coal is coked and the ores calcined at the top of furnace-stack, has been adopted, together with the most modern improvements in iron smelting. The smoke-stack, which, by its draught, returns the waste gas from tops of the furnace-stacks to the ovens and boilers, is one hundred and ninety feet in height. This plant consists of two furnace-stacks, each ninety feet in height, with eight "Whitewell Ovens," for heating the blast; five engines, and two immense stock houses, with railways passing through them for depositing the coal, ores, etc. The gases are conducted under ground, through large flues, ranging from five to ten feet in diameter. Four elevators, worked by steam, are used in connection with the furnaces, and inclined railways serve to load and unload stock and iron at the river's edge. The company's properties give employment to some fifteen hundred men, and the mills which they propose building, will

give work to many more. Mr. Geo. Willard is president of this company, and Mr. J. P. Witherow is the builder of the works.

Four miles above Ironton is the town of Ashland, Ky., which is also an iron center. The founders of this place obtained a charter in 1854, under the name of The Kentucky Iron, Coal, and Manufacturing Co., with a capital of $400,000. Though a Kentucky town, the heaviest subscribers to the stock of the company were Ohio men. A portion of the capital was invested in the Lexington and Big Sandy Railroad, the route of which was changed so as to strike the Ohio River at Ashland. This road is now seventeen miles in length, and transports the products and supplies for the Mt. Savage, Buena Vista, Ashland, and Norton furnaces; it also transports the coal which is mined at the village of Coalton. Ashland furnace was built by the Lexington and Big Sandy Railroad Company in 1869. It uses the native and Missouri ores, with the native bituminous coal. The coal upon this side of the river has been more developed, and is valuable for its use in iron smelting. Both the Ashland furnace and the Norton Iron Works furnace smelt their ores with it. The latter company was organized by Colonel E. M. Norton, of Ironton, Ohio, for whom the works were named, and to whose energy and judgment belongs the credit of their successful completion in 1873. In connection with the furnace is a rolling and nail mill, which have been in operation since their erection.

Just opposite to Ashland is Petersburg, Ohio, where is located the Monitor charcoal furnace, owned by Mr. John Peters and others. A short distance up the river, and on the Ohio side, are the Sherridan Coal Works. The vein worked is the same as that opened at Coalton, Ky. This company intend, within a short time, to erect a large bituminous furnace directly at their mines.

Jackson C. H., Ohio, is another iron center for the interior furnaces. The old salt works at this place were known as far back as 1755. In 1797 the whites first made salt there, and the State, in 1804, set apart six miles square for the public benefit, which included the town of Jackson. The remains of a mastodon were found in this locality, and the indications are that it had been the resort for wild animals in centuries past, as it certainly was a famous hunting ground for the Indians. There are three workable veins of coal, two of which are particularly valuable to this place. These are known as the "Jackson Hill" and the "Jackson Shaft" coal. The coal ranks as high, if not higher, than any other in the State, and is employed in the blast furnaces here. The charcoal blast furnaces of the county have these coals

underlying their lands, and are of great value in consequence. There are some eight bituminous blast furnaces at or near Jackson C. H.; namely, Fulton, Globe, Huron, Milton, Ophir, Orange, Star, and Tropic. The population of the town is about three thousand five hundred.

The Hanging Rock region owes much of its prosperity to its happy location upon the Ohio River, which affords cheap transportation for its products to all parts of the West and South. Those furnaces which are directly upon the banks of the river present a striking view to travelers, and give a good idea of what the region contains—the ones enumerated above constitute but a small portion of the eighty-five within the boundaries of this extensive region, located at the most favorable points. The charcoal furnaces of the interior use native ores alone, and first won for the iron of the region its high reputation. The tests* made of the products from one of these, the cold blast "Hecla," were equaled only by results obtained from two furnaces, respectively located at Toledo, Spain, and in Asia Minor. The region is one hundred and fifteen miles in length, extending seventy-five miles north, and forty miles south, from the Ohio River. That portion of the ore belt which it embraces is eighteen miles in width, making in all an area of two thousand square miles that is included in the region. The region has added great wealth to the States of Ohio and Kentucky, but comparatively little, however, with what may be expected from it in the future. The railroad facilities of the region are limited; and when navigation on the Ohio is checked by the ice at one season, or the low water at another, the iron interests are seriously embarrassed. Hence, the advent of the Chesapeake and Ohio Railroad is anticipated with much anxiety, as it would be beneficial not only to the region, but prove of much advantage to the Cincinnati and other iron markets.

---

* These tests were made for the Government with reference to ordnance, by Captain Q. M. Wade, U. S. A., prior to the late war.

List of Blast Furnaces in the Hanging Rock Iron Region.

Name of Furnace.	County.	When built.	By Whom Built.	Daily ton Capacity.	Fuel.
Argillite	Greenup	1818	Richard Deering and Trimble Bros.	1	Charcoal.
Ashland	Boyd	1869	Lex. and Big Sandy Railroad Co.	40	Bituminous coal.
Amanda	"	1829	Lindsey Poague and others	5	Charcoal.
Alice	Lawrence	1875	Ætna Iron Works	60	Bituminous coal.
Bellefonte	Greenup	1826	A. Paull, George Poague, and others	14	Charcoal.
Blanche	Lawrence	1875	Ætna Iron Works	60	Bituminous coal.
Belfont	"	1867	Belfont Iron Works	45	" "
Buena Vista	Boyd	1848	Wm. Foster and others	15	Charcoal.
Buckhorn	Lawrence	1833	James & Findley	15	"
Buffalo	Greenup	1851	L. Hollister, Ross & Co.	15	"
Buckeye	Jackson	1851	C. Newkirk and others	12	"
Bloom	Scioto	1832	John Benner and others	15	"
Boone	Carter	1856	Sebastian Eifort and others	12	"
Cambria	Jackson	1854	D. Lewis & Co.	12	"
Caroline	Greenup	1833	Henry Blake & Co.	3	"
Center	Lawrence	1842	Wm. Carpenter and others	16	"
Cincinnati	Vinton	1853	M'Clanberg and others	13	"
Clinton	Boyd	1830	Poague Brothers	2	"
Clinton	Scioto	1832	M'Collum and others	11	"
Etna	Lawrence	1832	James Rodgers and others	16	"
Eagle	Vinton	1852	A. Bentley and others	15	"
Empire	Scioto	1846	Glidden Brothers	7	"
Enterprise	Greenup	1832	— Clingman	3	"
Fulton	Jackson	1865	Lewis Davis and others	12	Bituminous coal.
Franklin	Scioto	1827	Daniel Young and others	7	Charcoal.
Gallia	Gallia	1847	John Campbell and others	15	"
Globe	Greenup	1833	George Darlington and others	3	"
Globe	Jackson	1872	Watts, Hoop & Co.	20	Bituminous coal.
Grant	Lawrence	1869	W. D. Kelly & Sons	16	Charcoal.
Howard	Scioto	1853	John Campbell and D. T. Woodrow	15	"
Hope	Vinton	1854	Col. Putnam and others	14	"
Hopewell	Greenup	1832	— Ward Forge, 1824	.....	"
Hecla	Lawrence	1833	R. B. Hamilton & M'Coy	10	"
Harrison	Scioto	1853	Eifort, Spellman & Co.	12	"
Hamden	Vinton	1854	L. C. Damarin and others	16	"
Hunnewell { lately Greenup }	Greenup	1844	J. Campbell, J. Peters, J. Culbertson	16	Bituminous coal.
Huron	Jackson	1874	Huron Iron Company	12	" "
Ironton	Lawrence	1875	Iron and Steel Company	40	" "
Iron Hills { now Charlotte }	Carter	1873	Iron Hills Fur. and Mining Co.	.....	Charcoal.
Jackson	Jackson	1838	J. Hurd, Young and others	12	"
Jefferson	"	1854	Jefferson Furnace Company	14	"
Junior	Scioto	1832	Young Brothers and others	.....	"
Keystone	Jackson	1849	John Campbell, S. M'Connell & others.	15	"
Kenton	Greenup	1856	John Warring and others	13	"
Latrobe	Jackson	1854	W. M'Ghee, H. F. Austin and others	12	"
Laurel	Greenup	1848	Wurtz Brothers	12	"

Name of Furnace.	County.	When built.	By Whom Built.	Daily ton Capacity.	Fuel.
La Grange	Lawrence	1836	Hurd, Gould & Co.	.....	Charcoal.
Lawrence	"	1834	J. Riggs & Co.	15	"
Limestone	Jackson	1855	Evans Walterhouse and others	12	"
Lincoln	"	1853	S. Baird and others	12	"
Logan	Hocking	1853	.....	15	"
Madison	Jackson	1854	John Campbell, J. P. Terry and others	14	"
Milton	"	1873	Milton Furnace and Coal Co.	.....	Bituminous coal.
Monitor	Lawrence	1868	John Peters and others	13	Charcoal.
Mount Vernon	"	1833	R. Hamilton, J. Campbell, W. Ellison.	16	"
Mount Savage	Carter	1848	Robinson M. Biggs and others	14	"
Monroe	Jackson	1856	Jno. Campbell, Wm. M. Bolles & others	20	"
New Hampshire	Greenup	1848	S. Seaton and Boyd Brothers	.....	"
Norton	Boyd	1873	Norton Iron Works	45	Bituminous coal.
Oakland	"	1834	Kouns Brothers	.....	Charcoal.
Orange	Jackson	1864	Watson and others	16	Bituminous coal.
Ophir	"	1874	Hon. H. S. Bundy and others	12	" "
Olive	Lawrence	1846	John Campbell, John Peters	16	Charcoal.
Oak Ridge	"	1856	Prof. W. W. Mather, Gen. O. M. Mitchell	.....	"
Ohio	Scioto	1845	David Sinton, T. W. Means	15	"
Pine Grove	Lawrence	1828	Robert Hamilton, A. Ellison	16	"
Pennsylvania	Greenup	1848	Wurtz Brothers	12	"
Pactolus	"	1824	M'Murty & Ward	.....	"
Pioneer	Scioto	1856	W. Colvin, U. Tracy and others	12	"
Raccoon	Greenup	1833	D. Trimble, J. T. Woodrow and others	12	"
Richland	Vinton	1854	Westfall, Stewart and others	17	"
Star	Jackson	1866	Isaac Brown and others	17	Bituminous coal.
Star	Boyd	1847	A. M'Cullough and Lampton Brothers	.....	
Sandy	Greenup	1847	D. Young, Gilruth and others	.....	Charcoal.
Steam	"	1824	Shreeves Brothers	1	"
Scioto	Scioto	1828	Wm. Salters and others	12	"
Tropic	Jackson	1873	Tropic Furnace Company	.....	Bituminous coal.
Union	Lawrence	1826	James Rodgers & Co.	.....	Charcoal.
Union	Hocking	1854	.....	14	"
Vesuvius	Lawrence	1833	Hurd, Gould and others	10	"
Vinton	Vinton	1853	Jno. E. Clark, Jno. Culbertson & others	20	Coke and bit. coal.
Washington	Lawrence	1853	John Campbell, John Peters and others	17	Charcoal.
Wellston Twin Furnaces	Jackson	1875	Wellston Coal and Iron Company	15	Bituminous coal.
Zaleski	Vinton	.....	Wafers and others	.....	
Projected	Lawrence	.....	Sheridan Iron and Coal Company	.....	Bituminous coal.
Projected	"	.....	H. Campbell & Sons	.....	" "

The first iron smelted in the region was at a cupola built in 1815, by Richard Deering.

POMEROY REGION.

Pomeroy lies at the apex of a great horseshoe bend of the Ohio, and is the county-seat of Meigs County, which borders on the river for six miles below Pomeroy, and forty-five miles above. Below Pomeroy lies Middleport, a flourishing town, and further down is the village of Lower Pomeroy. Above Pomeroy are Minersville, Carlton, and Syracuse—the latter being four and a half miles from the Court-house in Pomeroy; while still further above Syracuse is the town of Racine. Opposite Syracuse, in Mason County, West Virginia, is New Haven; further down lies Hartford City; and opposite Pomeroy, where the valley is wide, is Mason City, which aspires to become the county-seat of Mason County in the place of Point Pleasant. Below Mason City are Clifton, Newcastle, and West Columbia.

The hills on either side of the river are some three hundred feet high, and in them lies a five and a half foot stratum of coal, nearly horizontal, there being a dip to the south-east of about thirty feet to the mile. The coal lies in Pomeroy at about forty feet above high-water mark. Above the coal rises a stratum of sandstone about sixty feet thick, which, in many parts, is exposed in perpendicular crags. All the water-courses head in caves, at the end of tortuous ravines, in this ledge of sandstone.

The whole region is thus inclosed in walls of rock, except toward the river, and to the east and west where Kerr's Run, in the upper part of Pomeroy, and Leading Creek, below Pomeroy, the latter a considerable stream, connects this valley with the Ohio. Neither of these valleys, however, is available for an entrance into Pomeroy, as the former, although excellently adapted for a road-bed, stretches too far toward the east, while the latter, besides entering the river too far to the west, presents unusual obstacles to the construction of a road-bed. Besides this, apart from the region directly bordering on the river, the peculiar formation of the southern part of Meigs County, with its strata of slippery clay, makes the construction of a cheap road-bed impossible.

The Existing Road-bed.

Fortunately for the prospect of the extension of the Narrow Gauge Railroad to Pomeroy, the immense difficulties above indicated have already in a great part been

overcome, and overcome in such a manner as peculiarly to favor the new enterprise, although in completing that portion of the work which has already been done, the resources of the mineral district have been severely taxed.

The line chosen, after exhaustive surveys by the Directors of the Atlantic and Lake Erie Railroad (Pomeroy to Toledo, three-fourths of which is now graded, and a small portion under iron), is equally available for a road toward the west and toward the north. Indeed, in reaching Mud Fork, the point of junction with the proposed railroad to Jackson County, a distance of thirteen miles, the Toledo line makes nine miles in a westerly direction, and only five toward the north. It enters Pomeroy from the valley of a tributary of Leading Creek through a tunnel (already opened) one thousand one hundred and sixty-seven feet in length, and strikes the river at a point half a mile below the Court-house of Pomeroy, and opposite the western part of Mason City.

It has been supposed by some persons interested in the Narrow Gauge road that to have entered the town by cutting a lower summit to the eastward, over which the county road reaches the river at the Court-house, would have been advisable. This would, however, have necessitated an increased length of one and a quarter miles with heavy embankment for the entire distance—while neither the open space needed at the terminus nor free access to the river by inclined planes could have been obtained, owing to the upper valley being already occupied by buildings.

The locality chosen, in addition to its central position, offers peculiar advantages for the construction of a railroad bridge over the Ohio. It is not improbable that the proposed Narrow Gauge road from Washington to Cincinnati and Chicago, and the Chesapeake and Ohio Railroad as well, in seeking an outlet to Toledo and the North, may find this their most advantageous point for crossing the Ohio.

The road-bed approaches the river in a wide embankment at a height of about thirty feet above high-water mark, while the valley in which it lies offers unoccupied space for depots and yards. On the Virginia side the bank is solid and is never overflowed, while the breadth of the river bottom gives abundant space for the approach from the south.

In passing outward from Mud Fork the line meets with obstacles which, taken together, are only second in magnitude to the tunnel. The way is directly blocked by two high ridges, largely composed of slippery clay, and the valley road itself requires embankments for a considerable distance. Nearly all of the light work on the road-bed

has, however, been done, and a greater portion of the heavy work also; the value of work done amounting to $125,000.00. The work of three miles of the line has already cost about a hundred thousand dollars. A considerable amount, however, remains to be done, especially as the hill has slipped on either side of one of the cuts already begun, and the tunnel, though the excavation is completed, requires to be timbered.

From Mud Fork the Toledo line turns north, while the proposed line to Jackson County follows the even bed of a small creek westward, with easy grades, to a low table-land, the distance to the boundary of Meigs County, opposite Wilkesville, being about seven miles.

In coming to Pomeroy, the proposed Narrow Gauge road will obtain the use of the A. and L. E. road-bed at a low rate; and should the former desire to use the road-bed before it is completed by the A. and L. E. R. R., the value of the work put upon it will be credited in abatement of the rent to be charged.

Population.

By the census of 1870, the population of Pomeroy, a city of the second class, was stated to be five thousand eight hundred and twenty-four; and its extent has largely increased in the five years that have elapsed since that census was taken. Taken with it, the dozen communities, of which Pomeroy is the center, are estimated to number from twenty to twenty-five thousand souls. Of these, the number of those engaged in the mining of coal has been fixed at about three thousand.

Mineral Resources.

The COAL vein lying directly below the sandstone ledge in the hills is the only vein that has been, as yet, worked to any considerable extent. It is, however, known that there are at least two veins of coal within reach by shaft-mining. The amount of coal mined yearly is estimated at about sixteen million (16,000,000) bushels, of which about six millions are consumed on the spot, and ten millions exported.

The SALT brine is of unusual strength and purity, and is pumped from artesian wells of a depth of from nine to eleven hundred feet. There are twenty-six salt furnaces, whose actual annual yield is estimated at from five to seven millions of bushels of salt—their full capacity at from one-third to one-fourth more.

BROMINE, of perhaps an annual value of a hundred thousand dollars, is manufactured from the "bittern" or "bitter-water" remaining after the salt has been extracted

from the brine. If report be correct, the world obtains its chief supply of this invaluable drug from the Ohio River mineral district. An enterprise has also been lately set on foot to manufacture soda and concentrated lye. The "bittern" may itself, indeed, become, in time, an important source of revenue. It contains in great quantity the ingredients which give their efficacy to some of the most famous healing springs. Its curative properties, in cases of rheumatism, are well known. Indeed, a bucketful of bittern, added to a bath-tub half full of pure water, gives a bath almost identical with those of Saint Catherine's, in Canada—a spring which has long been a resort of invalids from all parts of the country.

Other Industries.

Among the prominent manufacturers are the Pomeroy Iron Company, who started under the present style in 1863. They manufacture six thousand tons iron single turn, and forty thousand kegs of nails annually, giving employment to two hundred hands. The Pomeroy Salt Company, with a capital of $75,000, manufacture eleven hundred bushels of common, fine, and coarse grade salts daily, employing twenty-six hands. H. S. Horton, President; H. M. Horton, Secretary and Treasurer. The Sugar Run Furnace, V. B. Horton, President; Geo. B. Grow, Secretary and Treasurer; capital, $30,000; manufacture eight hundred barrels dairy and fine salt daily; employ twenty hands. The Dalwey Salt Company, V. B. Horton, President; E. J. Horton, Secretary and Treasurer; capital, $80,000; manufacture one thousand six hundred bushels of fine, table, and coarse salts daily; employ thirty-five hands. Windsor Salt Company, Minersville, Ohio; V. B. Horton, President; E. J. Horton, Secretary and Treasurer; capital, $50,000; make one thousand five hundred bushels fine and dairy salt daily; employ thirty hands. Minersville Salt Company, Minersville, Ohio; V. B. Horton, President; W. G. Penney, Secretary and Treasurer; capital, $70,000; capacity, one thousand two hundred bushels fine salt daily; employ twenty-five hands. Middleport Salt Company, Middleport, Ohio. Riverside Salt Company, Antiquity, Ohio; R. R. Hudson, President; Robert Stobart, Secretary and Treasurer; capacity, four thousand bushels fine salt per diem; capital, $50,000; employ twenty hands. And other salt works located at Coal Ridge, Sutton, and Syracuse. The Pomeroy Machine Company; E. J. Horton, President; Albin Davis, Secretary and Treasurer; capital, $50,000; employ twenty hands. Pomeroy Coal Company; incorporated 1858; V. B. Horton, President; H. S. Horton, Secretary and Treasurer; capital, $125,000; mine about eight hundred

thousand bushels annually; employ seventy hands. The Gibson House, kept by G. W. Todd, is all that the most exacting traveler could ask; the finest procurable cooked in a manner that makes his guests think they are really at home. Mr. Todd has lived in Pomeroy for twenty-three years, leaving it occasionally to cross the plains in search of gold, though invariably returning in search of eatables, thinking there is no place like home.

Facilities for Shipping.

To those familiar with the navigation of the Ohio, the peculiar advantages of Pomeroy, both for shipment toward Pittsburg and toward Cincinnati, are well known. Lying half-way between these two centers of business, it is itself a terminal point for the more important traffic from Cincinnati, and the nucleus for an extended system of river transportation on light draught boats in either direction.

The mineral district alone supports a fleet of boats and barges, most of which are built along its shores; and its position, with reference to the suddenly arriving and too often suddenly disappearing rises of the Ohio, makes it singularly available as a general shipping point. The rises come, for the most part, from the upper streams, the Youghiogheny and Monongahela and the Kanawhas. By taking the river when the flood reaches this central point transportation is opened in either direction for boats of deep draught for a longer period than from other points; and the facilities are all at hand for making the utmost use of the opportunity. To illustrate, iron shipped from Jackson County to Pomeroy can reach Pittsburg twenty-four hours sooner, and much cheaper, than if shipped from Portsmouth; while in going down on a rise it reaches Cincinnati at the same time as if sent from Portsmouth, and Pomeroy, not being a way station, pays no more for freight than Portsmouth.

The Entire Mineral District One Terminus.

Although the various manufactories above mentioned are dotted along the river banks for many miles on either side of the river, the railroad depots will be easily accessible to them all, except for short periods, when the ice stops all navigation. Along the entire bend of the river, of which Pomeroy is the center, the river-bed is depressed, and forms a pool of such depth that even at the lowest stage of the river heavy freights can be transported from one end of the mineral district to the other. Each important manufactory owns its inclined plane to the river, and the barges and tow-boats are already at hand to transport freights to the inclined planes of the railway freight depots.

THE MINERAL RESOURCES OF SOUTH-EASTERN OHIO,

AND THEIR PROSPECTIVE DEVELOPMENT.

LETTER FROM PROFESSOR E. B. ANDREWS.

Iron Ore.

This valuable mineral is found in greater or less abundance in all the counties of the district through which the lower coal-measures range. These are Muskingum, Licking, Perry, Hocking, Athens, Vinton, Jackson, Scioto, Lawrence, and Gallia. In small quantities, it is found in several other counties. Furnaces are found in all the the counties named except Licking, Perry, and Athens; but they are most abundant in Vinton, Jackson, Scioto, and Lawrence. The ores of the district are generally of great excellence and purity, and the iron made from them has a very high reputation. Full and accurate analyses of many of these ores were made by Prof. T. G. Wormley.

The supply of the best ores is very great, and although not strictly inexhaustible, yet enough to last for many generations at a rate of consumption far greater than the present. For the most part the ores of the district are smelted with charcoal, but this form of fuel must, erelong, be exhausted, and the use of bituminous coal or coke be rendered necessary. Fortunately, the supply of bituminous coals is, proximately, at hand, of a quality which warrants the belief that our ores may be successfully smelted by them. It is not to be expected that the change from charcoal to bituminous coal will be made in all cases without the looked-for transitional trials and failures which almost always accompany great industrial changes; but with good ore and good coal, the iron-maker, who, to a thorough knowledge of the science of iron-making adds good judgment and sagacity, can hardly fail of success.

The Kentucky coal, used so successfully at Ashland and Ironton, Ohio, proved itself to be good furnace fuel from the very first commencement of its use in suitably constructed furnaces. From this we hope that many of our Ohio coals of equal promise will authenticate themselves as furnace coals at the outset. For the proper distribution of these coals there will be needed some additional means of railroad transportation; but as generally the distances are not great, this difficulty is not insuperable.

Coal.

This important element of modern industry and progress is found in nearly all of the counties of the Second District. The productive coal-measures include, in whole or in part, the following counties: Scioto, Lawrence, Jackson, Vinton, Hocking, Perry, Licking, Muskingum, Morgan, Athens, Gallia, Meigs, Washington, Noble, Guernsey, Monroe, and Belmont. The area of coal in a few of the counties is limited, but in none is coal entirely wanting. In many counties coal is found in almost every township, generally lying in accessible seams in the hill-sides. Mining by shafts beneath the general surface is the rare exception in the district. There are coal shafts on the Hocking River, below Nelsonville; at Jackson, in Jackson County; on the Ohio River, above Pomeroy, in Meigs County; in Guernsey County, east of Cambridge; and on the Ohio River, below Bellair, in Belmont County. Generally, there will be found an inexhaustible supply of coal in the hills, which can be mined under the most favorable circumstances.

The coal is every-where bituminous, sometimes, though rarely, appearing in the modified form of cannel. Cannel coal is nowhere extensively mined in the district, and, as a general rule, it is less valuable than the usual bituminous coals.

Caking and non-caking coals are well represented in quantity and quality. The latter we found almost exclusively in the lower coal-measures. For the blast furnace, where coal is to be used without coking, the non-caking must be employed.

Such coal is found in Muskingum, Perry, Hocking, Athens, Jackson, and Gallia, and perhaps in one or two other counties. The lowest seam of coal in the series is generally non-caking in character. Two seams, next above in Jackson County, are also dry-burning. The Nelsonville seam, still higher in the series, is, in most of its range, of the same character, and so, over limited areas, are some of the seams above this. There appears to be almost every possible gradation between the dryest of non-caking coals and those which soften and swell in burning and are in the highest degree caking in quality.

It is impossible to give an estimate in figures of the quantity of coal in the district, but the aggregate is enormous—enough to allow of a rapidly increasing production and use for long ages to come. The quantity is, indeed, so great, that much of it must remain unused for hundreds of years. It will be remembered that ours is not the only coal-field in the West. There are vast supplies of coal in Western Pennsylvania, West Virginia, Kentucky, and Indiana, besides the more distant coal-fields of Illinois, Iowa, Missouri, etc. From many of these States there is already active competition with the Ohio coals.

What can be done with our coal? It is not enough to be the possessor of a raw material like coal; we must be able to *use it* or *sell it.*

It should be used at home so far as possible. There is vast power in coal, which we in Ohio should utilize. Prof. Henry, of the Smithsonian Institution, well says: "No civilization is possible without a concentration of power. The ancients had their power in slaves. The pyramids were built by slave-labor. Athens had four hundred thousand slaves and twenty thousand masters. The civilization of those days was supported by the brute forces of man. The civilization of to-day is supported by the brute forces of nature. The latent force of the coal puts the life of a thousand horses into an engine. One ton of our best anthracite burned in our best engines is estimated as being equal to two years of labor of an able-bodied slave, working ten hours a day; and, counting thirty years for his life, fifteen tons of coal would be equal to the life of an able-bodied slave."

We have so much coal stored away in the hills of Ohio, that figures would hardly give the number of years of human labor it truly represents. How can we best utilize this potential labor in our coal? By manufactures of various kinds. We have scarcely any coal in the State which will not answer well for the generation of steam. With this steam power we should manufacture, in Ohio, the wool grown here, and cotton from the South, which can easily be brought here. Our forests furnish vast quantities of timber, suitable for nearly all the purposes for which wood is used. Our coals should evaporate our abundant brines, burn common and hydraulic lime, make glass, burn fire-brick, etc.

Our purest and best of the dry-burning coals should be used in the manufacture of iron. For this we have vast supplies of superior iron ore, which may be smelted alone or with the ores of Lake Superior and Missouri. Our raw iron should be converted at home, and with our own coal, into its thousand modified forms of cast and wrought iron and steel. Every ton of coal consumed at home adds to the wealth of the State. The exact points in the State where our coals can best be consumed must be determined by circumstances. In some cases the coal may be profitably consumed near the mines; in others, it may be carried to the raw materials which are to be manufactured, or it may meet these materials at some half-way point. This is a question of freights, of labor, of capital, of local markets, and of the best distribution of the manufactured products. For example, iron is now made at Cleveland with coal brought from Mahoning County, with limestone from Kelley's Island, and from iron ore brought from Lake Superior and Northern New York. Cleveland affords a local market and a

fine center of distribution. Under favorable circumstances our coals may be profitably used for manufacturing purposes in cities and towns quite remote from any coal fields.

I have not referred to the great and rapidly increasing demand for coal for household uses. In the agricultural districts coal is more and more taking the place of wood for fuel. While the aggregate amount thus used is large, it is very small compared with the quantity which manufactures will demand.

The natural market of Ohio coal is Ohio and such portions of other States as can be reached in successful competition with the coal of other districts. We may not hope to ship our coals to the Newcastles of other States, unless we can furnish coals of such superior quality as to warrant the increased cost of transportation. For distant competitive trade we must depend upon quality. The Youghiogheny coal of Western Pennsylvania, because of its excellence and popularity, is carried hundreds of miles by water to the markets on the Ohio and Mississippi Rivers, passing on its route vast deposits of other coal in Ohio, West Virginia, and Kentucky. It is believed that there are coals in these States named, hundreds of miles nearer the markets, which, when capital affords the needed means of development, will successfully compete with the coals of Pennsylvania. Coal is now shipped largely from Pomeroy and lower river mines, which is, to a considerable extent, supplying the market for household use and for the generation of steam. The saving of distance by river carriage is, however, relatively a less advantage than the saving of distance by railroad carriage. On the river, the chief gain of shorter distance is in time. This, however, is sometimes very great, since from the lower mines two "runs" may often be made to market on the same rise of water, while from the mines of Pennsylvania only one can be made. By railroad, each additional mile of distance adds a definite sum to the cost of the freight of a ton of coal. The use of the Ohio River is free, and the expense of freighting lies chiefly in the contingents of time, perils of navigation, expenses of tow-boats, barges, etc. Hence, railroad transportation is necessarily far more expensive than by a free river. This expense depends not a little upon the grades of the roads. It is reported that the Reading Railroad, of Pennsylvania, which does an immense coal business, has on its main trunk no grade greater than fifteen feet per mile, and with this grade a thirty-ton engine can move a coal-train of from one hundred and thirty to one hundred and fifty cars. Our Ohio railroads, extending from our coal-fields into the coalless district westward, are subjected to much higher grades, because, as the chief drainage of the State is southward, they must cross the ridges or higher lands which divide the streams. Doubtless some of our roads,

built with limited means, and perhaps with little expectation of such heavy work as a coal trade involves, were constructed with less consideration of grades than would be given to the subject if the roads were now to be built and adequate funds were at command. In the location of some roads, coal, as an element of business, was strangely ignored. For example, the old Sioto and Hocking Valley Railroad, in its northern extension through Hocking and Perry Counties, was located (and largely graded) so as to pass within perhaps five miles to the west of the Straitsville coal-fields—one of the finest coal-fields of the world—skillfully avoiding the coal every-where. It will be within the limits of safety to say that, if there had been years ago a State geological survey of that region, and the quantity and quality of the coal had been authenticated, as they have now been, that railroad would have been located through the great coal-fields of Hocking and Perry Counties, and the road would have been built, and if built, other roads and branches would have been constructed to that field, so that by this time, this part of the State would have had the advantage of fifteen years of stimulated development, and Newark and Columbus, and perhaps other towns and cities, have been doubled in population.

Learning these lessons from the past, the future should be characterized by higher wisdom and an intelligent and penetrative forecast. Our stores of coal, iron ore, salt, etc., are enormous. Our coals must be used for smelting our ores, and such other ores as may be obtained from districts where no coals exist. Secretary Boutwell, in his recent report to Congress, presents the significant fact, and one well worth pondering, that the United States are losing their great maritime carrying trade for the want of cheaper iron for ship building, British iron steamers now having largely displaced the old wooden vessels. We have in the United States, and indeed in Ohio, vast supplies of the raw material needed in iron-making, and are rapidly accumulating the necessary capital for working up these materials. It is true that capital with us is worth a higher rate of interest than abroad, but for all such investments as are safe, and the returns sure, capital is satisfied with rates of interest not very greatly in excess of interest on similar investments elsewhere. It is the uncertainty of return, and the speculative character of so many of our investments that, to a large extent, create high rates of interest. It is the same abroad, but in a less degree, on account of the larger aggregate of capital. Great Britain has capital, science, skill, and cheap labor. The science and skill we certainly can have. The labor question is the only one which presents any very serious difficulty. How far it may be best to make up this disadvantage by duties on foreign iron, or how high such duties should be, I shall not undertake to decide.

The question must press heavily upon our wiser statesmen, who, fully aware of our immense natural resources, are at the same time aware of the great loss to the nation for the want of their development. This development, however, must not be here, as in the Old World, at the expense of an enlightened civilization, through such an underpaid and debased labor system as now constitutes the dark shading of the picture of the wealth obtained from the mining and iron industries of Great Britain, France, and Belgium. If at no distant day the population of Ohio is to be increased one or more millions by the development of her mineral resources, it becomes us to ponder well the history of similar developments abroad, and avoid the evils which are there so deplorable. In the United States our free and beneficent governments, National and State, are based upon the elevation and character of the people, and it were unwise and unsafe for us to attempt to turn our munificent endowment of minerals into wealth if we thereby place any class of our citizens below that standard of humanity which our institutions require as essential to their very continuance. The wives and young children of our people must not be obliged to toil in mines and in iron works, driven to their unsuitable tasks by the conviction that the united earnings of the whole family are absolutely required to keep the family in existence. Abram S. Hewitt, U. S. Commissioner to the Paris Exposition, in his very able report to our Government, thus writes: "In Wales, women are extensively employed in the works (iron) doing the labor for which a man would be required in America, and earning from ten pence to one shilling three pence per day, or rather less than half the wages that would be paid to a man for the same labor which they perform equally well. In Staffordshire, in the north of England, and in Scotland, women and children are still extensively employed above ground about the mines and around the coal heaps at the mouth of the pits, the substantial result of which is that the labor of the whole family is procured for the sum which would be paid to its male head, if he alone labored for the support of the family; of course, at a far lower cost of the resulting production of iron than would otherwise be possible. Restraining laws have of late years been enacted in England in regard to women and children, limiting the number of hours during which they may be employed, and also providing that they shall not be employed during the night, except in certain specified cases. But if the women and children were altogether withdrawn from these occupations, as they are in the United States, it would not be possible to produce iron except at a considerable advance on the present cost."

When work fails or sickness comes, the toiling family must necessarily enter the

crowded ranks of public paupers. How large the army of public paupers in England is may be seen from the figures, taken from an official report to the British Parliament, which show that 872,620 persons, in a district containing a population of 19,886,104, were supported by public charity in the last week of September, 1867. In the same returns I find a table showing that in England and Wales the number of pupils in schools inspected by the Government in 1866 was 871,309, a number smaller than that of the paupers. Such a minimum of education and maximum of pauperism we do not desire to introduce into the New World.

In the iron manufacturing districts of France and Belgium the condition of the laborer is not essentially different from that of England, although in France the darkness of ignorance is even more dense than in the other countries. France, however, does not produce iron enough for her own consumption, while the production of Belgium is only one-tenth of that of Great Britain. The latter country therefore determines the standard of prices, and these prices are regulated by the cheapness of human labor.

It is believed that the day is not far distant when, by increased skill and science, we in Ohio may convert our raw materials into iron with as small an amount of human labor as is required in Great Britain; but can we safely attempt to reduce the standard value of labor below a price which shall meet the just needs of humanity?

As a necessary result of the condition of labor in Great Britain, there has arisen an antagonism between labor and capital, which is causing much anxiety in the minds of the more thoughtful statesmen and philanthropists. This is something far broader and deeper than the mere irritation arising from any single conflict with employers who may have been very unjust. It appears to be an abiding and deeply rooted conviction. This antagonism has doubtless been increased by the virtual law of caste, which almost precludes the hope, as it well-nigh precludes the possibility, of the rising of the laborer above the condition in which he was born. For example, in mining the miner expects to live and die a miner, and that his children will be miners after him. In addition to the oppression of poverty, resulting from poor pay for hard work, he feels himself at such social disadvantage that he well-nigh abandons all hope of bettering his condition, and hence, too often, spends his spare hours, which, under the stimulus of an honorable ambition, might be spent in self-improvement and in the advancement of his family, in idle dissipation. Sometimes such men come to the United States, and some of them bring their Old World ways and antagonisms with them. This is unfortunate to themselves, and unjust to their adopted country. Here the circumstances and

conditions of labor are widely different. The land is wide and free, and the miner can, if sober and industrious, always sell his labor at a remunerating price. With industry and frugality he may himself become a mining proprietor. His children may be educated at the public expense and fitted for usefulness in any walk in life. He is surrounded by incentives to ambition. The conditions of his life being changed, it is unnecessary and unwise for him to resort to former methods by which he sought to force from the British proprietor justice and fair treatment. It is unneccessary for him to reproduce here combinations against employers, such as afforded him in the Old World, if not relief and advantage, at least excitement. Some of these associations are such that he who enters them must surrender his individual judgment and will and all personal control of his own labor. When such associations attempt not only to control their own members, but to control the labor of others, and to enforce the prohibition by menace of personal injury, a menace sometimes brutally executed, it involves a condition of things so utterly repugnant to the fundamental principles of American liberty, and so disastrous to the development of our great mining industries, as to suggest to the State the necessity of legislative interference. It is very doubtful whether the best interest of the miner can be secured by such combinations. The surrender of personal independence tends to prevent that individual development and growth of character which fit a man for the manly duties and responsibilities of American citizenship. But, on the other hand, with more intelligent and broader views of life and duty, the foreigner soon comprehends the demands of a new and growing State, and identifies himself with its progress, and like the ecmhanic and farmer, takes pride in making his adopted country great and powerful.

We may not hope, in Ohio, to make our minerals the basis of a great and successful industry if the capitalist or mining proprietor feels that the labor he employs, in addition to its greater cost, is utterly uncertain, and finds that he can make no contracts for production extending to the future. Our resources, which the Geological Survey is making known and authenticating to the State and to the world, can not be developed, and iron and other manufacturing establishments spring up successfully all over the State to enrich it, if at any moment all mineral supplies may be cut off, and remain cut off for months. by the secession of all laborers from our mines, a secession, voluntary on the part of some, and involuntary and forced on the part of others. With the probability of such a condition of uncertainty, capital will forsake our State, seeking elsewhere wiser and safer investments. *Freedom to make individual contracts, and upon such terms as may be deemed reasonable and just by both interested parties, with such legislation*

as would make the enforcement of such contracts simple and easy, would tend to quiet apprehensions now becoming serious. The laborer need not fear any failure of legal redress; indeed, such, in this country, are the sympathies of juries in favor of the poor and laboring man, that capitalists and corporations would have far more ground for solicitude. Hence, the principle most in accordance with our institutions, that each laborer must be absolutely free, both as against fellow-laborer and against employer, and being thus free, may dispose of his labor as he sees fit, is probably the one which, if adopted, would be most conducive to the best development of the vast mineral resources of the State. His wages should be secured to him. The law should secure for him thorough ventilation of mines, and careful protection from danger. But these and similar safeguards will avail nothing toward the great end of promoting our industries, unless each man is made free to labor, free to make his own contracts, and free in every right of an independent citizen; indeed, a thoroughly individualized man, ready to meet, at the same time, all the responsibilities growing out of his freedom. Any attack upon the freedom of the laborer is, in effect, an attack upon the capital needing that labor, and willing to pay for it, and both assaults are in hostility to the fundamental principles of social order and to the industry of the State.

I have thus briefly referred to the labor question as pertinent to the great problem before the people of Ohio, "What shall we do with our vast mineral resources?" In the first place, we may not wisely expect to run a successful race of competition with the Old World in securing cheap labor by trampling upon the laws of humanity. Great Britain makes more iron than she honorably pays for. She complains of Belgium, because there labor, even worse paid and worse fed than her own, creates a competition which is thought to forbid the elevation of her own working classes. But in this deplorable state of things she goes on, every year increasing the aggregate of her productions, rendering the competition at home and abroad still more close and desperate, and forbidding all hope of better reward to labor. This condition of things is becoming even startling to her own wiser men, and the cause of threatening discontent and revolt among her laboring classes. "The truth is," writes Mr. Hewitt, "that the whole system is false, and now when pressed by the energy and enterprise and competition of the age to its legitimate results, humanity is in rebellion, and there is a general cry from all classes—laborers, employers, philanthropists, philosophers, and statesmen alike—for relief."

It is in the light of these serious facts that we must view the question of the development of our mineral resources. If, having learned the greatness of these resources, we

wisely determine to utilize our minerals and break their long repose during geologic ages by mining and manufacturing industries, we must, under high and patriotic statesmanship, decide how this may best be done so as to avoid disaster from foreign competition, and at the same time preserve our laboring population from the evils of the Old World.

I have also referred to safeguards now needed in our State for the protection of labor, and to give to that labor such independence and manliness as shall secure for it the fullest confidence and the best reward of honorable industry.

Salt.

Of our resources of brine it is enough to state that it may be obtained almost anywhere over a large part of the coal-measures in the Second District. For the most part, the salt wells now in operation are sunk into the upper Waverley sandstone formation. But it is known that several of the sand rocks of the coal measures are charged with good brine. The profitable making of salt in Southern Ohio depends chiefly upon the cheapness of fuel and the facilities for transportation. Salt is one of the great staple products which may be obtained in many portions of the country, and in different geological formations. It can, in many places, be made very cheaply, but its profitable manufacture depends so largely upon the means of cheap distribution, that the question is rather one of business-wisdom and sagacity than of science.

Fire-Clay.

This important material is found in great abundance and of excellent quality in portions of the Second District. It is already largely manufactured in Scioto County. The uses to which fire-clay may be applied are constantly increasing, and the time is not distant when our clays will become an important element of the manufacturing industry of the State. In Europe, fire-clay retorts are largely displacing the old iron retorts used for gas-making. They are found to be more durable, and capable of sustaining a higher heat, than those made of iron. By the higher temperature there is a better generation of gas. The Paris Gas Company manufactures its own retorts, bricks, etc. The articles made by the company annually from fire-clay are: Retorts, 3,000; blocks and tiles, 20,000; bricks, 1,000,000. A Belgian company, whose manufactured retorts, fire-bricks, and tiles were on exhibition at the late Paris Exposition, consumes 20,000 tons of clay annually, employing 220 men, and using 32 large kilns. These are simply illustrations of what is done with fire-clay in the Old World.

AGRICULTURAL STATISTICS.

THESE statistics are obtained by the visitation of each farm, and are supposed to be nearly accurate, especially in respect to the staple products.

Ohio is ranked among the greatest of the agricultural States. Its relative rank among all the States in several important particulars, at the time of taking the last United States census, was as follows:

First—In quantity of Winter wheat produced.
In number of sheep owned.
Second—In estimated value of farms.
In value of all farm productions, including betterments and additions to stock.
In value of all animals slaughtered, or sold for slaughter.
In value of all forest products.
In value of all orchard products.
In value of all horses.
In value of all milch cows.
In value of all butter and cheese.
Third—In amount of improved land.
In quantity of Indian corn.
In value of cattle other than working oxen.
In value of live stock.
Fourth—In amount of land in farms.

Number of acres cultivated, 8,535,917; in pasture, 4,855,425; wood land, 4,085,969; other land, unproductive, 541,022; total amount owned in 1873, as reported, 18,575,239. The correct amount of land owned is probably 36 per cent more than reported. The census report of 1870 gives the amount at 25,312,937 acres.

The six counties having the largest amount of cultivated land are—Richland, 219,363 acres; Seneca, 177,718 acres; Wayne, 169,588 acres; Darke, 152,938 acres; Fairfield, 140,567 acres; and Montgomery, 139,751 acres.

Those having the largest amount in pasture are—Ashtabula, 170,963 acres; Licking, 129,799 acres; Muskingum, 127,879 acres; Trumbull, 122,732 acres; Madison, 113,058 acres; and Guernsey, 112,213 acres.

The largest amount of woodland reported is—in Washington, 118,916 acres; Shelby, 115,400 acres; Mercer, 98,907 acres; Darke, 95,910 acres; Hancock, 88,764 acres; and Seneca, 86,748 acres.

The greatest number of acres of waste land reported is—in Preble, 37,244; Van Wert, 29,920; Hardin, 23,739; Washington, 18,378; Pike, 17,927; and Jackson, 16,862.

Ohio is most favorably situated between the great commercial cities of the East and West, with unsurpassed facilities for transportation. The cost of transportation is a very important one, especially with the farmer. In the West it is found to be most profitable to feed out corn where produced. If fed to milch cows it yields a twofold better result than when shipped to market.

The production of butter and cheese has been greatly increased, and the demand for these nutritious articles of food is constantly increasing in all civilized countries. Cheese factories are built in almost every township in some sections of Ohio, and the official returns show that 36,668,530 pounds of cheese were made in the State in 1873, or 2,264,673 pounds more than in 1872.

The following estimates of crops for 1874, as made by the Department of Agriculture at Washington, though approximately correct, are probably too high:

CORN.—Returns indicate an average condition, throughout the country, of 86. This is an improvement of 3 per cent since the 1st of September, and 2 per cent above the average for October 1, 1873. This general average is made up from returns of average condition for each county in the several States, which indicate the promised rate of yield and quality, but not the quantity of the crop, the acreage not being taken into account. The returns for acreage in July showed a breadth planted fully 2,000,000 acres greater than in 1873. The highest per cent of increase was in the South, but the greatest absolute increase was in the West, while New England indicated a slight decrease. The enlarged acreage, and the slightly improved condition, give promise of an increase in product over last year of something over 60,000,000 bushels; but the returns for November, which report not condition, but product, compared with last year, may considerably modify this estimate.

POTATOES.—Among the States which produce potatoes on a large scale, the returns of condition for October 1, this year and last, respectively, averaged—in New York, 94 and 107; Pennsylvania, 87 and 100; Ohio, 84 and 89; Michigan, 87 and 89; Indiana, 85 and 77; Illinois, 77 and 59; Iowa, 81 and 51; Missouri, 55 and 61; Maine, 101 and 98; New Hampshire, 97 and 98; Vermont, 94 and 108; New Jersey, 86 and 101. Lowest in condition, next to Kansas, are—Nebraska, 43; Arkansas, 46; Kentucky, 51; Mississippi, 54; Maryland and Tennessee, 58; West Virginia, 69. The average condi-

tion for the whole country is 86, against 89 one year ago. The acreage reported in July was about 2 per cent greater than in 1873. These figures indicate that the crop will fall somewhat below that of 1873, though no definite estimate can be made before the November returns, which report actual production compared with the previous year.

WHEAT.—The October returns show that the wheat crop is equal to, or greater than, last year's, in all the States except Maryland, Virginia, Kentucky, Texas, Wisconsin, Minnesota, Iowa, and Kansas. In Connecticut, Delaware, South Carolina, and Illinois, it is about equal to last year's crop. Other States have increased their yield. The New England States reached nearly a million bushels. Maine has increased her yield 33 per cent. The quality of the crop in these States is considerably improved. The Middle States have increased their yield, New York reporting an increase of 16 per cent. Of the South Atlantic States, Maryland falls 1 per cent and Virginia 6 per cent below last year; but this deficiency is more than made up by other States—Georgia showing an increase of 21 per cent. The quality is also improved. Of the Gulf States, Alabama reports an increase of 23 and Mississippi of 2 per cent, and Texas a decrease of 6 per cent. In quality, Alabama improves 29 per cent, and Mississippi declines 9 per cent, and Texas 6 per cent. All four Southern inland States improve their quality from 4 per cent, in Akansas, to 17 per cent, in Tennessee. In quantity, Arkansas increases 50 per cent, Tennessee 29 per cent, West Virginia 23 per cent; Kentucky declines 5 per cent; Illinois equals last year's crop; Wisconsin falls 35 per cent short; Ohio increases her yield 16 per cent, Michigan 22 per cent, and Indiana 9 per cent. All show an improved quality except Wisconsin. In Missouri it is 27 per cent. Missouri increases her yield 29 per cent, and Nebraska 1 per cent; but Minnesota declines 16 per cent, Iowa 2 per cent, and Kansas 5 per cent, Insects have been destructive to Spring Wheat in these States. The quality is below last year's in all except Minnesota, which improves 2 per cent. On the Pacific Coast the crop is fully 50 per cent above the census year. California increases her yield 10 per cent, and Oregon 21 per cent. Oregon equals the quality of last year's crop, and California improves hers by 3 per cent. The increased yield of this section more than compensates for the decline of the North-west.

The number of bushels of corn raised in Ohio in 1873 was 84,049,328 bushels; wheat, 21,974,385 bushels; oats, 20,501,904 bushels; barley, 1,074,906 bushels; rye, 291,829 bushels; buckwheat, 213,074 bushels; potatoes, 5,966,316 bushels; sweet potatoes, 170,370 bushels. Meadow products—1,302,164 tons timothy hay; 651,158 tons clover hay; 5,070,788 pounds flax fiber; 167,510 pounds flax seed; 39,572,558 pounds of tobacco. The wool clip of Ohio in 1873 was 17,175,465 pounds, which is 360,744 pounds less than that of 1872. Wool shorn in the State in the last four years—1870, 20,539,643 pounds; 1871, 16,139,331 pounds; 1872, 17,536,209 pounds; 1873, 17,175,465 pounds.

WINE.

It is a little over fifty years since grape culture was commenced as a business in Ohio, since which time it has steadily increased. It is not so much, however, the *number* of acres planted during the last few years, as it is the more or less favorable results from those in bearing, and the comparative quality of the fruit and wines produced therefrom, which tend to determine the question of superiority of our State above most others.

What little statistical information has been gathered thus far on this subject, and the very imperfect statements and incorrect figures given in the various reports, including that of the U. S. Agricultural Department, make it impossible to give reliable comparisons; but even this last-named report shows that the average produced per acre in Ohio was 3,745 pounds grapes, or 320 gallons wine. A more reliable proof of the superiority of Ohio's grapes over all others we find by comparing the strength of the must by Oechsle's Must-scale, which always comes out in favor of Ohio, even against the most celebrated wine localities of the Union. This is due to climate and soil. One who has given much attention to the investigation of this subject, says: "The two important natural conditions demanded by the grape are climate and soil. Given these two, all the rest will eventually follow from the application of the skilled industry of the vine-dresser. In this portion of the Lake Erie and Ohio Valley districts, we find these two elementary conditions, climate and soil, existing together. That the soil and climate of Ohio are eminently adapted to the growth of the grape is a point too well established to need discussion here. The fact is well known and universally acknowledged throughout the entire district, and, perhaps, I may venture to add, throughout the United States. Compared with other sections of the United States (at least all those east of the Rocky Mountains), so far as their capabilities have been tested, our advantages for the production of wine are certainly superior."

ORCHARDS AND VINEYARDS.

THE number of acres in orchards and vineyards in Ohio, and their products, in 1873, were reported as follows:

Acres in orchards.	385,829
" vineyards.	19,660
" of vines planted in the year,	819
Bushels of apples gathered,	11,343,431
" peaches "	94,516
" pears "	80,033
Pounds of grapes "	6,607,653
Gallons of wine pressed,	208,289

The following counties produced more than 2,500 gallons of wine each in 1873: Ottawa, 79,859; Brown, 20,501; Belmont, 18,320; Clermont, 16,581; Hamilton, 12,266; Monroe, 7,373; Ross, 7,315; Erie, 6,543; Washington, 5,095; Franklin, 3,385; Cuyahoga, 2,891; Holmes, 2,515.

At the Paris Exposition, the American Wine Company's champagne was awarded honorable mention, and diploma sent them on account of its fine flavor, although the French jurors remarked it had *too much* of the fruity taste. The German jurors, accustomed to wines of high bouquet and flavor, were very much pleased with the American wines which possessed these qualities. The American committee, consisting of the Hon. Marshall P. Wilder, Alexander Thompson, William J. Flagg, and Patrick Barry, said: "From what comparison we have been able to make between the better samples of American wines, on exhibition at the Paris Exposition, with foreign wines of similar character, as well as from the experience of many European wine-tasters, we have formed a higher estimate of our own ability to produce good wines than we had heretofore." Wines, which have since repeatedly been sent to Germany from Ohio, have been highly spoken of, and were pronounced very superior wines by the best connoisseurs. It is also a notable fact that the trade in native wines has assumed such proportions in Cincinnati that even her importers of foreign wines, who have heretofore strongly disfavored any others, feel now compelled to buy and keep always on hand

the Catawba, Concord, and Norton's Virginia, Werk's Golden Eagle, and Mills's Sans Pareil.

There are several other varieties that are destined to take high rank, but have not yet been made in sufficiently large quantities to become well known. There are about seventy-five varieties of native grapes in cultivation and on trial in the State. About one-third of this number may be considered as well tested, and more or less successful.

Our Concord wine is becoming more and more popular, and should take the place of imported clarets. It suits the uncultivated taste better than either claret or catawba. The Norton's Virginia, as it becomes better known, is more and more esteemed for its valuable tonic and astringent qualities. As a medicinal wine it is not excelled, probably, by any wine, native or imported. Catawba has generally been considered too acid by those unaccustomed to it; but it makes an exceedingly wholesome and palatable Summer drink, and is especially admired in the form of catawba cobblers. When made into sparkling wine or champagne, it has a very agreeable bouquet, and is preferred by those who become accustomed to it to the best imported champagne. It is purer, contains less alcohol, and is rapidly superseding them.

BENEVOLENT AND REFORMATORY INSTITUTIONS.

Central Ohio Hospital for the Insane.

The first building erected by the State for the insane was begun in 1835, and completed and occupied in 1839. This building was burned in 1868, and a new one is now being erected near Columbus, on a site about three miles west from the old one. The total expenditures for this institution from 1835 to November 15, 1874, have been $2,171,729.45. The land now belonging to the institution, 300 acres, cost $100,000. Land and materials were sold for $215,400. The difference, $115,400, deducted from the total, leaves $2,056,329.45 as the net amount expended for all purposes. Of this, $304,523.53 were paid in 1874; namely, $304,223.78 for building, and $299.75 for current expenses.

The average annual current expenses from 1853 to 1868, inclusive, were $48,074.27. The average daily number treated during that time was 262, and the average current expense per capita 50¼ cents a day.

Northern Ohio Hospital for the Insane.

The State purchased for this institution fifty-six acres of land in 1852 at Newburg for $2,300, and in 1870 fifty acres more for $16,800. The other expenditures to November 15, 1874, were, for buildings and betterments, $1,034,104.43, and for current expenses and repairs, $941,020.78; making the aggregate for all purposes $1,994,225.21. Of this amount, $358,841.67 were paid in 1874; namely, $301,099.72 for buildings, and 57,741.95 for current expenses and ordinary repairs. The whole number treated in the year was 527; the average daily number 253, and the average current expense per capita 62½ cents a day.

The first patients were admitted in 1855. The average daily number treated in the last nine years was 250. and the average current expense per capita for that time 69 6-10 cents a day.

Western Ohio Hospital for the Insane.

This hospital is located at Dayton, where fifty acres of land were donated for it in 1852. In 1862, twenty-four and one-third acres were purchased by the State for $3,750, and in 1872, eighty-two and two-third acres more for $19,705.62; making one hundred and fifty-seven acres, at a cost to the State of $23,455.62. The other expenditures to November 15, 1874, were, for buildings and betterments, $505,597.09, and for current expenses and repairs, $1,100,835.60; making the aggregate for all purposes $1,629,888.31. Of this amount, $99,396.30 were paid in 1874 for current expenses and ordinary repairs.

The first patients were admitted in 1855. The whole number treated in the last year was 960, and the average daily number 526. The average current expense per capita in 1874 was 51¾ cents a day. The reports do not give the data from which the expense per capita for a series of years can be shown.

South-eastern Hospital for the Insane.

The land attached to this hospital, embracing 150 acres at Athens, was donated to the State in 1868.

The total expenditures to November 15, 1874, were $993,913.38. Of this, $899,188.62 were for buildings, permanent improvements, and furniture, and $94,724.76 for current expenses and ordinary repairs. The amount paid from the State Treasury in 1874 was $216,586.34; namely, $98,105.09 for buildings and improvements, $23,756.49 for furniture, and $94,724.76 for current expenses and repairs.

The first patients were admitted in the last year, being 344 males, and 364 females; total, 708. The average daily number was 425⅔. The average current expense per capita for the year was nearly 61 cents a day.

Asylum for the Deaf and Dumb.

Ten acres of land in Columbus were bought by the State for this asylum in 1829, at a cost of $303.00. Three lots were added in 1867, costing $6,000.00, and one lot in 1872, costing $3,750.00, making the total cost of land $10,053.00. The expenditures for buildings and betterments up to November 15, 1874, were $727,237.26, and the current expenses and repairs amounted to $1,004,893.41; making the total for all purposes $1,742,183.67. Of this, $81,781.96 were paid in the last year for current

expenses and ordinary repairs. Buildings for printing and book-binding are connected with this asylum.

The number of pupils in attendance in 1874 was 468—272 males and 196 females; the average daily number 400. The average daily expense per capita was 56 cents.

Asylum for the Blind.

In 1847 the State bought fifteen and one-half acres of land in Columbus for this asylum for $1,760.00, and in 1854 two acres more for $2,500.00; making the whole amount paid for land $4,260.00. Buildings, repairs, and permanent improvements, from 1854 to November 15, 1874, cost $416,853.82. The expenditures by the State for this class of unfortunates began in 1837, and up to November 15, 1874, amounted to $1,099,937.31. Of this there were paid in the last year for building, permanent improvements, and furniture, $80,404.62, and for current expenses, $40,763.23.

The number of pupils in attendance during the last year was 169, of whom 94 were males and 75 females. The average daily number was 109, and the daily expense per capita was $1.02.

The new building—a commodious stone structure—is just completed and occupied.

Ohio State Asylum for Idiots.

From 1857 to 1868, inclusive, the State rented buildings and grounds for the care of the idiotic. In 1864, 130 acres of land were purchased at Columbus for this purpose for $17,550. In 1871, 57⅓ acres more were added, costing $7,713.71, making 187⅓ acres in all, at a cost of $25,263.71. The expenditures for buildings, rents, permanent improvements, and furniture, to November 15, 1874, amounted to $411,844.82, and the current expenses and ordinary repairs, to $420,139.32; making the total for all purposes $831,984.14. Of this there were paid in the last year, for building, improvements, and furniture, $91,381.64, and for current expenses and repairs, $69,903.56.

The number of idiots in the Institution in the last year was 386. The average daily number was 352, at an average expense, per capita, of 54 cents a day.

Ohio Soldiers' and Sailors' Orphans' Home.

The land for this Institution—100 acres, near Xenia—was donated in 1870. There have been expended by the State from 1870 up to November 15, 1874, for buildings and betterments, $245,463.15; for current expenses, $257,507.58; for support of orphans

outside of the Home, $4,490.85; and for woodland, $3,450 (the last two amounts paid in 1874); making the aggregate $510,911.58.

The current expenses in 1874 were $61,051.75, and the amount paid for buildings, improvements, and furniture, $14,575.19; making the total paid during the year, $83,567.79.

The number under instruction at the Home during the last year was 555; the average daily number, 520; and the current expense, per capita, 32 cents a day.

Ohio State Reform Farm.

In 1857 the State purchased for this Institution 1,170 acres of land, near Lancaster, for $15,000. The expenditures to November 15, 1874, for buildings and betterments, were $204,856.24, and for current expenses, improvements, repairs, stock, etc., $536,860.38; making the total for all purposes, $756,716.62. Of this there were paid in 1874, for current expenses and ordinary repairs, $49,000, and for buildings and improvenents, $14,563.26; total, $63,563.26.

The number of boys under instruction in 1874 was 636; the average daily number, 450; and the average expense per capita, 30 cents a day.

Girls' Industrial School.

The State purchased 189 acres of land at White Sulphur Springs in 1869 for $55,000. The expenditures to November 15, 1874, for buildings, and betterments, were $44,904.67, and for current expenses and repairs, $103,299.75; making the total for all purposes, $203,204.42. The amount paid during the last year was, for buildings and furniture, $29,521.89, and for current expenses and ordinary repairs, $20,201.98; total, $49,723.87.

The number of girls present in 1874 was 166; the average daily number, 143, and the average expense, per capita, 38 cents 7 mills a day.

State Hospitals for the Insane.

The reports from the Probate Judges show that 1,018 persons—512 males and 506 females—were sent to the hospitals for the insane during the year ending March 31, 1874, as follows:

Northern, ...	113 males,	117 females.
Central, ...		
South-eastern, ...	98 "	103 "

Western, ...	149	males,	123	females.
Longview, white, ...	108	"	123	"
" colored, ...	5	"	9	"
Lucas County, ...	39	"	31	"
Totals, ...	512	"	506	"

This shows a decrease of 161—96 males and 65 females—as compared with the numbers for the previous year.

It is found by careful investigation that the ratio of curable cases of insanity to the chronic is about 1 to 4. This, of course, varies according to the treatment. Of recent cases, three-fourths will be cured in the first year in well regulated hospitals, while not one-tenth recover in that time, and many more become hopelessly incurable, when confined in jails or county infirmaries. Saying nothing of the humanitary consideration, the gain financially, by the careful hospital treatment, in greatly shortening the average time of insanity, is immense, proving the wisdom of our legislators in so liberally providing for this numerous class of the unfortunate.

About one in every sixteen or eighteen hundred persons in this country yearly become insane. Under our humane hospital treatment three-fourths of these will annually recover, and one-fourth become incurable.

EDUCATION.

THE following is a summary of the school statistics of Ohio for the year ending August 31, 1874:

Number of primary schools,	14,356
" high schools,	412
" teachers in primary schools,	21,664
" teachers in high schools,	711
" scholars enrolled in primary schools,	683,644
" scholars enrolled in high schools,	24,299
Amount paid teachers in primary schools,	$4,196,408 20
" " " high schools,	408,101 25
" " for sites and buildings,	1,472,100 95
" " for fuel and other contingent expenses,	1,328,462 00
" " on bonds and interest,	516,603 20
Making the total amount paid,	8,072,167 65
Total enumeration of youth, six to twenty-one years of age,	988,180
Average am't paid for all school purposes for each youth enumer'd	$8 16
Number of universities and colleges,	36
" academies, normal schools, etc.,	44
" schools of theology,	12
" schools of law,	3
" schools of medicine,	11

NEW STRUCTURES.

THE reports made to this office by the County Recorders show that 19,441 new buildings, valued at $12,293,365, were erected within the year ending April 30, 1874, being a decrease of 309 in the number erected, and an increase of $170,004 in value, as compared with the report for the previous year.

The summary for the year 1874 is as follows:

Kind of Buildings.	Number.	Cost.
Dwellings,	15,479	$7,928,182
Hotels,	29	318,820
Mills,	99	221,455
Depots,	7	14,250
Machine shops and factories,	107	367,910
Iron furnaces,	9	169,500
Rolling Mills,	3	50,000
Stores, shops, etc.,	796	1,120,355
Churches,	81	753,500
School-houses,	165	429,043
Public halls,	12	67,725
Miscellaneous,	2,654	852,625
Totals,	19,441	$12,293,365

CORPORATIONS.

CHARTERS have been granted during the year to three hundred and ten corporations, with an aggregate capital stock of $46,520,066; twenty-five companies increased their capital $9,126,000 in the aggregate; two reduced their capital $190,000; making the net authorized capital during the year, $655,456,066. Twenty-four amended and supplementary certificates and miscellaneous papers were filed and recorded under the corporation laws.

RAILROADS.

THE following items are abstracted from reports made by the railway companies in Ohio to the Commissioner of Railroads and Telegraphs for the year ending June 30, 1874:

Increase of mileage, main track (being 164.525 miles less than that for the year previous),	211.475 miles.
Length of main line and branches,	4,374.442 "
Length of sidings and other tracks,	1,142.046 "
Total track laid with rail in Ohio,	5,516.488 "
Amount of capital stock paid in,	$147,902,160 98
Amount of funded and other debt,	$151,029,300 86
Total of stock and debt,	$298,931,461 84
Number of passengers carried,	14,886,294
Tons of freight carried,	26,199,435
Gross earnings on 4,195.31 miles operated	$37,177,129 74
Net earnings,	$10,182,894 24

The increase of mileage within the year, new line, and including corrections, resulting from remeasurements, etc., is as follows:

Baltimore, Pittsburg, and Chicago Railway—new,	94.80
Cincinnati and Springfield Railway—correction,	.30
Cincinnati and Whitewater Valley Railroad—new,	2.10
Cleveland, Columbus, Cincinnati, and Indianapolis Railway—correction,	.75
Cleveland and Mahoning Valley Railway—correction,	2.35
Cleveland, Mt. Vernon, and Delaware Railroad—additional,	2.66
Cleveland and Pittsburg Railroad—additional,	.02
Gallipolis, M'Arthur, and Columbus Railroad—Vinton Furnace Railroad,	2.34
Iron Railroad—additional,	2.50
Lake Erie and Louisville Railway—additional,	8.41
Lake Shore and Tuscarawas Valley Railway—additional,	.77
Lawrence Railroad, 12.70; less reported 1873 by Pittsburg, Fort Wayne, and Chicago Railway Company, 7.40—additional,	5.30
Mahoning Coal Railroad—additional,	3.58

Mansfield, Coldwater, and Lake Michigan Railroad—additional,		27.485
Marietta, Pittsburg, and Cleveland Railway—additional,		19.
North Columbus Railway—new,		3.81
Ohio and Toledo Railroad—new,		10.50
Painesville and Youngstown Railroad—additional,		39.30
Toledo and Maumee Narrow Gauge Railroad—new,		7.00
Toledo, Tiffin, and Eastern Railroad—additional,		1.06
Total,		234.035
Less Ashtabula, Youngstown, and Pittsburg Railroad—correction.	.90	
Chicago and Canada Southern Railway—correction	2.50	
Cincinnati and Baltimore Railway—correction,	.40	
Cincinnati, Sandusky, and Cleveland Railroad—correction,	2 00	
Columbus, Chicago, and Indiana Central Railway—correction,	1 00	
Columbus, Springfield, and Cincinnati Railroad—correction,	.63	
Columbus and Xenia Railroad—correction,	.58	
Dayton and Union Railroad—correction,	.04	
Lake Shore and Michigan Southern Railway—correction,	.98	
Little Miami Railroad—correction,	1.03	
Carrollton and Oneida Railroad—taken up,	12.00	
Pittsburg, Cincinnati, and St. Louis Railway—correction,	.50	
		22.56
Net increase,		211.475 m's

Among the principal roads owned and operated in our own State are:

CLEVELAND, COLUMBUS, CINCINNATI, AND INDIANAPOLIS RAILWAY.

J. H. DEVEREUX,	President.
H. B. HURLBUT,	Vice-President.
GEO. H. RUSSELL,	Secretary and Treasurer.
E. S. FLINT,	General Superintendent.
FRANK FORD,	Chief Engineer.
A. ELY,	Auditor.
LUCIEN HILLS,	General Freight Agent.
S. F. PIERSON,	General Ticket Agent.
L. S. YOUNG,	Master Mechanic.
W. F. SMITH,	Master Car Builder.

HISTORY OF ORGANIZATION.—The Cleveland, Columbus, and Cincinnati Railroad Company was chartered March 12, 1845; was completed, and trains run through from Cleveland, on Lake Erie, to Columbus, Ohio, February 22, 1851, 138 miles. In the year 1861, the Cleveland, Columbus, and Cincinnati Railroad Company acquired by purchase that portion of the Springfield, Mt. Vernon, and Pittsburg Railroad between Delaware, Ohio, and Springfield, Ohio, 50 miles. The Indianapolis, Pittsburg, and

Cleveland Railroad, extending from the city of Indianapolis, in the State of Indiana, eastward, to Union City, at the State line of Indiana, 84 miles, and the Bellefontaine and Indiana Railroad, extending eastward from Union City to Galion, Ohio, 119 miles, were consolidated under the name of the Bellefontaine Railway Company, in the year 1864, pursuant to the laws of the States of Ohio and Indiana. In April, 1868, the Cleveland, Columbus, and Cincinnati Railroad Company was consolidated with the Bellefontaine Railway Company, under the name of the Cleveland, Columbus, Cincinnati, and Indianapolis Railway Company, pursuant to the laws of the States of Ohio and Indiana—making the total length of the Cleveland, Columbus, Cincinnati, and Indianapolis Railway, 391 miles. On the 24th day of January, 1871, the Cleveland, Columbus, Cincinnati, and Indianapolis Railway Company, pursuant to the laws of the State of Ohio, became the lessees of the Cincinnati and Springfield Railway, extending from the city of Cincinnati, Ohio, northward to the city of Springfield, Ohio, 80½ miles. Total length of road owned and operated by the Cleveland, Columbus, Cincinnati, and Indianapolis Railway Company, 471½ miles.

Indianapolis Cincinnati, and Lafayette Railroad.

GENERAL OFFICES, CINCINNATI.

OFFICERS.		DIRECTORS.	
M. E. Ingalls, President,	Cincinnati, O.	Wm. A. Booth,	New York City.
E. F. Osborn, Treasurer,	" "	George Bliss,	" "
George L. Barringer, Sup't,	" "	Charles G. Landon,	" "
H. J. Page, Gen'l Freight Ag't,	" "	Thomas H. Perkins,	Boston, Mass.
F. B. Kennedy, Gen'l Ticket Ag't,	" "	M. E. Ingalls,	Cincinnati, O.
John Egan, Gen'l Passenger Ag't,	" "	S. J. Broadwell,	" "
J. S. Patterson, Master Mechanic,	" "	Moses Fowler,	Lafayette, Ind.
C. H. Booth, Secretary,	New York City.	W. F. Reynolds,	" "

The Indianapolis, Cincinnati, and Lafayette Railroad is the great popular passenger line between Cincinnati and the West, running numerous trains each way daily *via* Indianapolis and the Vandalia route. The I., C., and L. R. R. is the only line running through cars from Cincinnati *via* Indianapolis, Peoria, and Burlington, to Omaha, and *via* Indianapolis, Danville, and Quincy and Kansas City, without change. The Kankakee line is the popular route to Chicago from Louisville and the South, and the only line under one management, between Cincinnati and Chicago, and positively the only line running parlor cars on its day trains, and Pullman palace

sleepers on all night trains. The new arrangements of this company enable them to offer much better facilities, both for passengers and freight, than was possible under the old management. The officers of the road are bending every attention to the great object of making the road the most popular route to the West, in every respect. Their trains are all run on exact time, missing no connections, and the rolling stock is all that could be desired, either for day or night travel, while the servants of the company do all in their power to make the journey a pleasant one. Particular attention is paid to freight, to forwarding promptly, handling carefully, and delivering in first-class order.

The officers of the I., C., and L. R. R. are among our most energetic railroad men, and their management of every part of the vast system of that perfect character which can only be attained by a persevering central control of several well-organized departments.

The Treasurer's Statement for the year ending June 30, 1875, shows the gross earnings for the past year to be $1,767,231.41, the operating expense $1,056,312.43, making the net earnings $710,918.98. This is indeed healthy in these days of general depression, and of itself speaks volumes for the management.

CITIES AND INCORPORATED VILLAGES

ON THE 13th DAY OF NOVEMBER, 1874, WITH POPULATION IN 1870

Cities of the First Class.

	Population.
Cincinnati, Hamilton County,	216,239
Cleveland, Cuyahoga County,	92,829
Toledo, Lucas County,	31,584

Cities of the Second Class.

	Population.		Population.
Akron, Summit co.,	10,006	Massillon, Stark co.,	5,185
Bellair, Belmont co.,	4,033	Mount Vernon, Knox co.,	4,876
Canton, Stark co.,	8,660	Newark, Licking co.,	6,698
Chillicothe, Ross co.,	8,920	Piqua, Miami co.,	5,967
Circleville, Pickaway co.,	5,407	Pomeroy, Meigs co.,	5,824
Columbus, Franklin co.,	31,274	Portsmouth, Scioto co.,	10,592
Dayton, Montgomery co.,	30,473	Sandusky, Erie co.,	
Delaware, Delaware co.,	6,861	Springfield, Clarke co.,	12,652
Fremont, Sandusky co.,	5,455	Steubenville, Jefferson co.,	8,107
Gallipolis, Gallia co.,	3,711	Tiffin, Seneca co.,	5,648
Hamilton, Butler co.,	11,081	Urbana, Champaign co.,	4,276
Ironton, Lawrence co.,	5,686	Warren, Trumbull co.,	3,457
Lancaster, Fairfield co.,	4,725	Wooster, Wayne co.,	5,419
Lima, Allen co.,	4,500	Xenia, Greene co.,	6,377
Mansfield, Richland co.,	8,029	Youngstown, Mahoning co.,	8,075
Marietta, Washington co.,	5,218	Zanesville, Muskingum co.,	10,011

Incorporated Villages.

Aberdeen, Brown co.,	871	Arcadia, Hancock co.,	288
Ada, Hardin co.,		Arcanum, Darke co.,	450
Adamsville, Muskingum co.,	280	Archibald, Fulton co.,	373
Adelphi, Ross co.,	417	Ashland, Ashland co.,	2,601
Albany, Athens co.,	480	Ashley, Delaware co.,	454
Alexandria, Licking co.,	303	Ashtabula, Ashtabula co.,	1,999
Alliance, Stark co.,	4,063	Athens, Athens co.,	1,696
Antwerp, Paulding co.,	717	Attica, Seneca co.,	370

	Population.
Avondale, Hamilton co.,	
Bainbridge, Ross co.,	647
Baltimore, Fairfield co.,	489
Barnesville, Belmont co.,	2,063
Batavia, Clermont co.,	827
Beallsville, Monroe co.,	
Bedford, Cuyahoga co.,	828
Bellbrook, Greene co.,	369
Belle Center, Logan co.,	276
Bellefontaine, Logan co.,	3,182
Belleville, Richland co.,	720
Bellevue, Huron co.,	1,219
Berea, Cuyahoga co.,	1,628
Bethel, Clermont co.,	634
Beverly, Washington co.,	814
Blanchester, Clinton co.,	513
Bloomfield, Jefferson co.,	146
Bloomingburg, Fayette co.,	312
Bluffton, Allen co.,	489
Boston, Clermont co.,	
Bowling Green, Wood co.,	906
Bridgeport, Belmont co.,	1,178
Brooklyn, Cuyahoga co.,	648
Bryan, Williams co.,	2,284
Bucyrus, Crawford co.,	3,066
Burbank, Wayne co.,	258
Butlerville, Warren co.,	191
Cadiz, Harrison co.,	1,435
Calais, Monroe co.,	126
Caldwell, Noble co.,	318
Caledonia, Marion co.,	419
Cambridge, Guernsey co.,	2,193
Camden, Preble co.,	648
Canal Fulton, Stark co.,	1,048
Canal Winchester, Franklin co.,	633
Canfield, Mahoning co.,	640
Cardington, Morrow co.,	918
Carroll, Fairfield co.,	187
Carrollton, Carroll co.,	813
Carthage, Hamilton co.,	

	Population.
Cass Town, Miami co.,	241
Catawba, Clarke co.,	318
Cedarville, Greene co.,	753
Celina, Mercer co.,	859
Centerville,	
Chagrin Falls, Cuyahoga co.,	1,016
Chardon, Geauga co.,	885
Charleston, Lorain co.,	
Chesterville, Morrow co.,	282
Clarington, Monroe co.,	728
Clarkesville, Clinton co.,	389
Clifton, Hamilton co.,	
Clinton, Huron co.,	
Clyde, Sandusky co.,	
College Hill, Hamilton co.,	
Columbiana, Columbiana co.,	870
Columbus Grove, Putnam co.,	578
Commercial Point, Pickaway co.,	
Congress, Wayne co.,	309
Conneaut, Ashtabula co.,	1,163
Convoy,	
Coolville, Athens co.,	334
Copley, Summit co.,	1,233
Carey, Wyandot co.,	692
Cortland, Trumbull co.,	
Coshocton, Coshocton co.,	1,754
Covington, Miami co.,	1,010
Crestline, Crawford co.,	2,279
Cridersville, Auglaize co.,	167
Crown City, Gallia co.,	
Cumberland, Guernsey co.,	319
Cuyahoga Falls, Summit co.,	1,861
Dallas, Highland co.,	
Dalton, Wayne co.,	412
Darbyville, Pickaway co.,	233
Deersville, Harrison co.,	306
Defiance, Defiance co.,	2,750
DeGraff, Logan co.,	624
Delphos, Van Wert co.,	640
Delta, Fulton co.,	753

	Population.
Dennison, Tuscarawas co.,	828
Donnelsville, Clarke co.,	
Dover, Tuscarawas co.,	1,593
Doylestown, Wayne co.,	551
Dresden, Muskingum co.,	1,156
Duncan's Falls, Muskingum co.,	194
Dunkirk, Hardin co.,	
East Cleveland, Cuyahoga co.,	5,050
Eaton, Preble co.,	1,748
Eden, Delaware co.,	191
Edgerton, Williams co.,	690
Elmore, Ottawa co.,	1,131
Elyria, Lorain co.,	3,038
Enon, Clarke co.,	
Fairfield, Greene co.,	397
Fairview, Guernsey co.,	377
Farmersville, Montgomery co.,	312
Fayette, Fulton co.,	
Fayetteville, Brown co.,	397
Felicity, Clermont co.,	955
Findlay, Hancock co.,	3,315
Fletcher, Miami co.,	306
Flushing, Belmont co.,	206
Forest, Hardin co.,	
Fostoria, Seneca co.,	1,733
Frankfort, Ross co.,	
Franklin, Warren co.,	1,832
Frazeysburg, Muskingum co.,	
Fredericksburg, Wayne co.,	539
Fredericktown, Knox co.,	690
Galion, Crawford co.,	3,523
Gambier, Knox co.,	581
Garrettsville, Portage co.,	658
Geneva, Ashtabula co.,	1,090
Genoa, Ottawa co.,	558
Georgetown, Brown co.,	1,037
Germantown, Montgomery co.,	1,440
Gettysburg, Darke co.,	228
Gilboa, Putnam co.,	315
Glendale, Hamilton co.,	1,780
Glenville, Cuyahoga co.,	
Grand Rapids, Wood co.,	
Granville, Licking co.,	1,109
Graysville, Monroe co.,	199
Greenfield, Highland co.,	1,712
Green Springs, Seneca co.,	
Greenville, Darke co.,	2,520
Grove City, Franklin co.,	143
Groveport, Franklin co.,	627
Hanover, Licking co.,	322
Harmar, Washington co.,	1,511
Harrisburg, Franklin co.,	153
Harrison, Hamilton co.,	1,417
Harrisville, Harrison co.,	258
Hartford, Licking co.,	229
Haskins, Wood co.,	243
Harveysburg, Warren co.,	388
Hayesville, Ashland co.,	576
Hebron, Licking co.,	478
Higginsport, Brown co.,	530
Hilliard, Franklin co.,	282
Hillsboro, Highland co.,	2,818
Hopedale, Harrison co.,	359
Hubbard, Trumbull co.,	1,126
Hudson, Summit co.,	1,200
Huntersville, Miami co.,	233
Huntsville, Logan co.,	322
Huron, Erie co.,	697
Ithaca, Darke co.,	150
Jacksonburg, Butler co.,	127
Jackson, Jackson co.,	2,016
Jamestown, Greene co.,	532
Jefferson, Madison co.,	577
Jeffersonville, Fayette co.,	212
Jeromeville, Ashland co.,	328
Johnstown, Licking co.,	241
Kalida, Putnam co.,	290
Kent, Portage co.,	
Kenton, Hardin co.,	2,610
Kingston, Ross co.,	345

	Population.
Lafayette, Allen co.,	337
La Rue, Marion co.,	
Lebanon, Warren co.,	2,749
Leesburg, Carroll co.,	
Leesburg, Highland co.,	508
Leetonia, Columbiana co.,	1,200
Lewisburg, Champaign co.,	733
Lewisburg, Preble co.,	391
Lexington, Richland co.,	482
Liberty Center, Henry co.,	
Lima, Stark co.,	
Limaville, Stark co.,	204
Linwood, Hamilton co.,	
Lithopolis, Fairfield co.,	394
Liverpool, Columbiana co.,	2,105
Lockland, Hamilton co.,	1,299
Logan, Hocking co.,	1,827
London, Madison co.,	2,066
Loudonville, Ashland co.,	811
Louisville, Stark co.,	
Lowell, Washington co.,	
Lucas, Richland co.,	312
Lynchburg, Highland co.,	476
Madison, Lake co.,	757
Maineville, Warren co.,	290
Malta, Morgan co.,	513
Malvern, Carroll co.,	269
Manchester, Adams co.,	942
Marion, Marion co.,	2,531
Marseilles, Wyandot co.,	251
Marshallville, Wayne co.,	322
Martinsburg, Knox co,	
Martin's Ferry, Belmont co.,	1,835
Martinsville, Clinton co.,	264
Marysville, Union co.,	1,441
Mason, Warren co.,	387
Matamoras, Washington co.,	406
Maumee City, Lucas co.,	1,779
M'Arthur, Vinton co.,	861
M'Comb, Hancock co.,	319

	Population.
M'Connellsville, Morgan co.,	1,646
Mechanicsburg, Champaign co.,	940
Medina, Medina co.,	1,159
Mentor, Lake co.,	416
Miamisburg, Montgomery co.,	1,425
Middleburg, Noble co.,	116
Middlebury, Summit co.,	
Middleport, Meigs co.,	2,236
Middletown, Butler co.,	3,046
Middletown,	
Milan, Erie co.,	774
Milford Center, Union co.,	372
Milford, Clermont co.,	620
Millersburg, Holmes co.,	1,457
Milton, Mahoning co.,	
Miltonsburg, Monroe co.,	176
Milton Center, Wood co.,	
Mineral Ridge, Trumbull co.,	
Minerva, Stark co.,	
Minster, Auglaize co.,	868
Monroeville, Huron co.,	1,344
Montgomeryville, Putnam co.,	
Morristown, Belmont co.,	423
Morrow, Warren co.,	708
Moscow, Clermont co.,	443
Mt. Eaton, Wayne co.,	296
Mt Airy, Hamilton co.,	
Mt. Blanchard, Hancock co.,	
Mt. Gilead, Morrow co.,	1,087
Mt. Pleasant, Jefferson co.,	563
Mt. Sterling, Madison co.,	389
Mt. Union, Stark co.,	315
Mt. Washington, Hamilton co.,	
Mutual, Champaign co.,	
Napoleon, Henry co.,	2,018
Navarre, Stark co.,	
Nelsonville, Athens co.,	1,080
Nevada, Wyandot co.,	828
Neville, Clermont co.,	422
New Albany,	

	Population.
New Alexandria, Jefferson co.,	767
New Athens, Harrison co.,	354
New Bremen, Auglaize co.,	528
New Carlisle, Clarke co.,	802
Newcomerstown, Tuscarawas co.,	791
New Concord, Muskingum co.,	488
New Holland, Pickaway co.,	326
New Lexington, Highland co.,	242
New Lexington, Perry co.,	953
New Lisbon, Columbiana co.,	1,569
New London, Huron co.,	678
New Madison, Darke co.,	452
New Market,	
New Paris, Preble co.,	
New Petersburg, Highland co.,	216
New Philadelphia, Tuscarawas co.,	3,143
New Richmond, Clermont co.,	2,516
New Salem, Fairfield co.,	177
New Straitsville, Perry co.,	
New Vienna, Clinton co.,	573
Niles, Trumbull co.,	
North Amherst, Lorain co.,	
New Lewisburg, Champaign co.,	733
Norwalk, Huron co.,	4,498
Oakfield, Perry co.,	
Oak Harbor, Ottawa co.,	
Over Bremen, Auglaize co.,	423
Oberlin, Lorain co.,	2,888
Olmsted Falls, Cuyahoga co.,	383
Orangeville, Trumbull co.,	260
Orrville, Wayne co.,	745
Osborn, Greene co.,	639
Ottawa, Putnam co.,	1,129
Oxford, Butler co.,	1,738
Painesville, Lake co.,	3,728
Patriot, Gallia co.,	
Patterson, Hardin co.,	
Peninsula, Summit co.,	
Perrysburg, Wood co.,	1,835
Piketon, Pike co.,	638

	Population.
Plain City, Madison co.,	
Pleasant Hill, Miami co.,	324
Plymouth, Richland co.,	703
Poland, Mahoning co.,	453
Portage, Wood co.,	
Port Union, Ottawa co.,	
Port Jefferson, Shelby co.,	410
Port Washington, Tuscarawas co.,	425
Port Williams, Clinton co.,	184
Quaker City,	
Quincy, Logan co.,	320
Racine, Meigs co.,	560
Ravenna, Portage co.,	2,188
Reading, Hamilton co.,	1,575
Recovery,	
Republic, Seneca co.,	481
Reynoldsburg, Franklin co.,	457
Richmond, Jefferson co.,	405
Richwood, Union co.,	436
Ridgway, Hardin co.,	177
Ripley, Brown co.,	2,323
Riverside, Hamilton co.,	
Rochester, Warren co.,	155
Rock Creek, Ashtabula co.,	491
Roseville, Muskingum co.,	426
Rushylvania, Logan co.,	310
Rushville, Fairfield co.,	406
Russellville, Brown co.,	359
Sabina, Clinton co.,	
Salem, Columbiana co.,	3,700
Salineville, Columbiana co.,	1,429
Sarahsville, Noble co.,	256
Savannah, Ashland co.,	394
Senacaville, Guernsey co.,	376
Seville, Medina co.,	597
Seville, Wayne co.,	
Shane's Crossing, Mercer co.,	246
Shawnee, Perry co.,	
Shelby, Richland co.,	1,807
Shiloh, Richland co.,	297

	Population.
Shreve, Wayne co.,	479
Smithfield, Jefferson co.,	515
Somerset, Perry co.,	1,153
Somerville, Butler co.,	389
South Bloomfield, Pickaway co.,	283
South Charleston, Clarke co.,	818
South Solon, Madison co.,	
Sparta, Morrow co.,	197
Spencerville, Allen co.,	364
Springborough, Warren co.,	477
Spring Hills, Champaign co.,	172
St. Clairsville, Belmont co.,	1,056
St. Louisville, Licking co.,	166
St. Mary's Auglaize co.,	1,370
St. Paris, Champaign co.,	548
Stockport, Morgan co.,	289
Sugar Grove, Fairfield co.,	254
Summerfield, Noble co.,	
Sylvania, Lucas co.,	
Tarlton, Pickaway co.,	407
Taylorsville,	
Tippecanoe City, Miami co.,	1,204
Troy, Miami co.,	3,005
Union City, Darke co.,	792
Upper Sandusky, Wyandot co.,	2,564
Urichsville, Tuscarawas co.,	1,541
Utica, Licking co.,	384
Van Buren, Hancock co.,	157
Vandalia, Montgomery co.,	313
Vanlue, Hancock co.,	
Van Wert, Van Wert co.,	2,625
Vermilion, Erie co.,	721
Versailles, Darke co.,	
Wadsworth, Medina co.,	949
Waldo, Marion co.,	247
Wapakoneta, Auglaize co.,	2,150

	Population.
Washington, Washington co.,	
Washington C. H., Fayette co.,	2,117
Washingtónville, Mahoning co.,	232
Wauseon, Fulton co.,	1,474
Waverly, Pike co.,	1,202
Waynesburg, Stark co.,	425
Waynesville, Warren co.,	745
Wellington, Lorain co.,	1,281
Wellsville, Columbiana co.,	2,313
West Cleveland, Cuyahoga co.,	
Western Star, Summit co.,	
Westerville, Franklin co.,	741
Westwood, Hamilton co.,	
West Alexandria, Preble co.,	455
West Elkton, Preble co.,	156
West Liberty, Logan co.,	741
West Milton, Miami co.,	455
West Salem, Wayne co.,	713
Weston, Wood co.,	
West Union, Adams co.,	486
West Unity, Williams co.,	537
West Zanesville, Muskingum co.,	1,744
White House, Lucas co.,	
Williamsburg,	
Williamsport, Pickaway co.,	514
Willoughby, Lake co.,	867
Willshire, Van Wert co.,	268
Wilmington, Clinton co.,	2,023
Winchester, Adams co.,	416
Winchester, Preble co.,	430
Woodsfield, Monroe co.,	753
Woodstock, Champaign co.,	300
Worthington, Franklin co.,	356
Yellow Springs, Greene co.,	1,435
Zanesfield, Logan co.,	282

CINCINNATI.

Topography.

Cincinnati, the largest city of the West, is situated in a gradual bend of the Ohio River, on its northern bank, and immediately opposite Newport and Covington, Kentucky. Its latitude was determined by Colonel Jared Mansfield in his topographical surveys, 39° 6′ 30″ north, and its longitude 7° 84′ 26″ west. It is nearly central between Pittsburg, at the head of the Ohio, and Cairo, at the junction of that river with the Mississippi, being about 465 miles from each point. Its distance by land traveling is—from Columbus, 115 miles; Indianapolis, 120 miles; Lexington, 90 miles; Nashville, 270 miles; and Pittsburg, 298 miles. By steamboat conveyance—from Louisville, 138 miles; St. Louis, 655 miles; Natchez, 1,335 miles; and New Orleans, 1,631 miles. By stage route it is 502 miles from Washington, 518 miles from Baltimore, 617 miles from Philadelphia; and, *via* Lake Erie and the Erie Canal, 650 miles from New York.

The upper plane of Cincinnati is 540 feet above tide-water at Albany, and 25 feet below the level of Lake Erie—low water-mark of the Ohio River here being 432 feet above tide water at Albany, or 133 feet below Lake Erie. The descent of the upper part of Cincinnati to low water-mark is, therefore, 108 feet. The city is almost in the eastern extremity of a valley of about twelve miles in circumference—perhaps the most delightful and extensive on the borders of the Ohio. The platform of the city is composed of two parts, the second table rising considerably above the level of the first, affording, under a regular system of city grading, that desirable medium of slope which permits the drainage to pass off freely, while it affords from the city landing an easy ascent.

The hills which surround this extensive valley present to the eye of the beholder one continued ridge, irregularly elevated, and of diversified configurations. They exhibit, under no circumstances, an aspect of grandeur, but are always beautiful and picturesque. Their average elevation above the plain is about three hundred feet, and, instead of the bold and rocky declivities which characterize the freestone regions of the Ohio, they present gentle and varying slopes, which are mostly covered with native forest-trees. The aspect of the valley from the surrounding hills is highly beautiful.

It is various in its character, as it is seen at different seasons and from different points.* In approaching Cincinnati by water, whether ascending or descending the river, the view is neither extensive nor commanding.

Historical Sketches.

The Miami Country, on whose Ohio River front this city is nearly a central point, was early known to the whites, and an object of admiration for its great fertility. In 1751 Christopher Gist, agent for the old English Ohio Company, explored the Great Miami River about one hundred miles, and in 1752 the English had built a fort or trading station among the Piankashaws—a tribe of the Twigtwees, or Miamis—whose hunting grounds were in the adjacent region, on what is now called Loramie's Creek, forty-seven miles north of Dayton. This post was attacked and taken by the French in the course of the same year. The Miami valleys were subsequently examined by Daniel Boone, while captive to the Shawanees, in 1778, and by the war parties which Bowman and Clark led against the Indians on the Little Miami and Mad Rivers. But Kentucky, at this period, was barely able to maintain its own various stations or posts, and had neither leisure nor men to spare for effecting a lodgment in the neighborhood of this tribe of Indians, already well known to be one of the most efficient and inveterate enemies of the Kentucky settlers. Treaties with the various savage tribes having been made or renewed in 1784, 1785, and 1786, by which the country upon the Muskingum, Scioto, and the Miamis was ceded to the whites. Among others whose attention was directed to the settlement of the new country was Benjamin Sites, of Redstone—now Brownsville—Pennsylvania. He visited New York, to purchase from Congress, for himself and associates, a tract on the Miamas, and there proposed to John Cleves Symmes, a member of Congress from New Jersey, to unite in the enterprise, relying, probably, on his official influence to effect the purchase. Mr. Symmes decided on seeing the country before entering into any contract, and, on his return, completed the arrangement in his

* One of the views most worthy, perhaps, of attention, may be had at an early hour on one of the foggy mornings of August or September. A spectator, under such circumstances, placed upon one of these hills, will find himself elevated quite above the dense vapors of the river. He will behold the sun rising free from all obscurity, while the plane below him is lost in one unbroken sheet of fog, presenting the appearance of an unruffled lake As soon, however, as the rays of the sun fall less obliquely upon this expanse of vapor it dissipates, and, assuming the appearance of fleecy clouds, passes away to rarer regions, gradually disclosing the city, the river, the villages, the numerous steamboats, and all the various objects of the valley.

own name. The tract thus purchased was supposed to contain one million acres of land upon the Ohio, and lying between the Miamis. On actual survey, however, this extent was reduced to less than six hundred thousand acres. Of this purchase ten thousand acres at the mouth of the Little Miami were shortly after sold by the patentee to Mr. Stites, and in January, 1788, the entire section No. 18 in the fourth township and first fractional range, and the fraction No. 17 lying between it and the river, were purchased by Matthias Denman, of New Jersey. These, with the fractional section No. 12 in the same township and range, compose the present site of Cincinnati.

In the Summer of 1788 several emigrating parties left New York and New Jersey for the settlement of the "new purchase," as it was called. Among these was Denman and his associates, who reached Maysville—then Limestone—Kentucky, in August, and an arrangement was entered into there between Denman, Col. Robert Patterson, and John Filson, of Lexington, by which the three became jointly interested in the project of laying out a town and establishing a ferry opposite the mouth of Licking, being the ground purchased by Denman. The old Indian war-path from the British garrison at Detroit crossed the Ohio at this point, which was also the usual avenue by which the savages on the northern side of the Ohio approached the Kentucky stations.

As an inducement to settlers, the new proprietors agreed to give an in lot, six rods by twelve, being nearly half an acre, and an out lot, being an entire square in the plat, and about four acres in extent, to each of the first settlers, on condition of their making certain improvements to promote the growth of the place.

The proprietors took possession, accordingly, in the latter part of September, 1788. On this occasion, among others who came to see the country or to settle in it, were Symmes, Israel Ludlow, and others. They here separated, Symmes, Patterson, and Filson, with a part of the company, going farther back from the river to examine the country, while Denman, with Ludlow, who was a surveyor, and a few others, followed the meanders of the Ohio between the Miami Rivers, and up the Great Miami about ten miles. Three days being thus spent, the two companies met on the site of the future Cincinnati, when it was found that Filson was missing. He was never heard of afterward, and had doubtless been surprised and killed by Indians.

The Denman party then returned to Limestone, where a new agreement was made in October, to which Ludlow became a party in Filson's place, and was, besides, empowered to act as agent for the others, in all things relating to the town. The plat of the proposed town was made at this time, dedicating for religious and municipal uses

the square between Fourth and Fifth and Main and Walnut Streets, and for public purposes what now constitutes the City Landing, reserving only to the proprietors in this last grant a ferry right. Denman returned at once to New Jersey, and Patterson soon after to Kentucky, leaving the new settlement in the hands of Ludlow. Some few years afterward, Joel Williams purchased the remaining interest of Matthias Denman, as did Samuel Freeman that of Patterson, and the proprietors, for the first time, were now all residents of Cincinnati.

On the 28th of December, 1788,* Israel Ludlow, with about twenty other persons, landed and commenced a settlement. They erected three or four log cabins, the first of which was built on Front, east of and near Main Street; and in the course of January following was completed the survey and laying off of the town, then covered with sycamore and sugar trees in the first or lower table, and beech and oak upon the upper or second table. Through this dense forest the streets were laid out, their corners being marked upon the trees. This survey extended from Eastern Row, now Broadway, to Western Row, and from the river as far as to Northern Row, now Seventh Street. The population of the place had become by this time eleven families, besides twenty-four unmarried men dwelling in about twenty cabins, principally adjacent to the present landing. The larger part of the trees in the bottom between Walnut Street and Broadway were cut down, but remained on the ground for several years.

At this period an abundant supply of game and fish made good the failure of the provisions brought by the settlers. The Indians, although unfriendly, had as yet committed no hostilities or even depredations.

About the first of June, 1789, Major Doughty arrived with one hundred and forty men from Fort Harmar, on the Muskingum, and built four block-houses nearly opposite the mouth of Licking. When these were finished, within a lot of fifteen acres, reserved by the United States, and immediately on the line of Third Street, between Broadway

* It is not possible, amid varying and conflicting testimony, to arrive at certainty as respects this date. Israel Ludlow and Colonel Patterson, in their deposition in a chancery case years afterward, state that they landed opposite the mouth of Licking in the month of January, 1789; while William M'Millen, one of the same party and a very intelligent man, testifies in the same case, "that he was one of those who formed the settlement of Cincinnati on the 28th of December, 1788." Mr. Denman, in the case "Lessee of the city of Cincinnati *vs.* First Presbyterian Church," speaks of the settlement as having occurred late in December, 1788. It is agreed by all that the party left Limestone on the 24th December; and the fact that the river was full of ice at the time, renders all conclusions founded on probability unavailable.

and Lawrence Street, he commenced the construction of Fort Washington. This building, of a square form, was simply a fortification of logs hewed and squared, each side about one hundred and eighty feet in length, formed into barracks two stories high. It was connected at the corners by high pickets, with bastions or block-houses, also of hewed logs, and projecting about ten feet in front of each side of the fort, so that the cannon placed within them could be brought to rake the walls. At the center of the south side or front of the fort was the principal gateway, a passage through this line of barracks about twelve feet wide and ten feet high, secured by strong wooden doors of similar dimensions. As an appendage to the fort, on its north side and inclosed with high palisades extending from its north-east and north-west corners to a block-house, was a small triangular space, in which were shops for the accommodation of the artificers. Extending along the whole front of the fort was a fine esplanade about eighty feet wide, and inclosed with a handsome paling on the brow of the bank, the descent from which, to the lower bottom, was sloping about thirty feet. The exterior of the fort was white-washed, and at a short distance presented a handsome and imposing appearance. On the eastern side were the officers' gardens, finely cultivated, ornamented with handsome summer-houses, and yielding in their season abundance of vegetables. The site of this building is that part of Third Street opposite the Bazaar, now Mechanic's Institute, and extending an average breadth of about sixty feet beyond the line of the street on both sides.

Fort Washington was completed by November. On the 29th of the succeeding month, General Harmar arrived with three hundred men and took possession of it.

In the course of this year, several log-houses and one frame were built, and some of the out lots, north of Seventh Street, cleared. The legal title to the ground on which the town was built being still in John Cleves Symmes, the patentee, all the deeds for the original in and out lots were made in his name. In 1790, the lots on fractional section No. 12 were laid out by Mr. Symmes as an addition to the town plat. General Arthur St. Clair, at this time, was the governor of the north-western territory, and, in January, 1790, arrived at the village for the purpose of organizing the county, which, at the suggestion of Mr. Symmes, was called Hamilton, in compliment to the then Secretary of the Treasury. This county covered, it is believed, the whole territory west of the Muskingum; and Cincinnati was then, as it ever since has been, its seat of justice. The town had an increase of forty families this year, and about as many cabins were erected; two frame buildings were also added during the same time. Fifteen or twenty

of the inhabitants were killed by the Indians in the course of 1790. The increase at Columbia, near the Little Miami, was rather greater; and a new station, called Colrain, seventeen miles north-west of Cincinnati, on the Great Miami, was laid out. Four or five other stations around the village, and generally within five or six miles, were also erected. At these places General Harmar stationed a few regulars for their defense. The Indians were constantly prowling around the neighborhood, and those who ventured outside their forts did it at the peril of their lives.

All his preparations for a northern campaign having now become completed, General Harmar commenced his march from Fort Washington on the 30th September, with three hundred and twenty regulars, and eight hundred and thirty-three militia from Kentucky and Pennsylvania. In four days the army reached the Indian town Chillicothe, on the Little Miami, sixty miles from Cincinnati. The principal object of General Harmar was to destroy the Maumee fort and village at the confluence of the St. Mary and St. Joseph's; and, learning that the enemy had concentrated their forces at this post, dispatched Colonel Todd to Kentucky for a further supply of troops. In a few days, six hundred volunteers joined the army. Harmar then proceeded to Fort Loramie, about fifty miles, and marched within a few miles of the Maumee fort. Here he encamped, sending forward Colonel Hardin with a detachment of four hundred and eighty men, with orders to surprise the enemy by night and storm the fort. When the detachment arrived, they found the fort and village abandoned. These they set on fire. The main body arriving, they pushed on to another Indian post on the St. Mary's, three miles distant. Colonel Hardin moved forward with his corps to reconnoiter, and the Indians, who were lying in covert near the borders of a prairie, through which the troops had to pass, suddenly attacked the detachment with such impetuosity as to break its ranks. Great numbers were killed in the action, and also in their retreat to the main body. General Harmar, next morning, gave orders for the army to return to Fort Washington, and, after a march of eight miles, halted for the night. Here Colonel Hardin, desirous of retrieving the misfortunes of the day, solicited and obtained permission of the commander-in-chief once more to give the enemy battle. He returned next day to the site of Maumee town with six hundred militia and sixty regulars. On their approach, the Indians retreated. A severe battle ensued, in which the enemy was driven across the St. Joseph. Major Fountain, pierced with eighteen balls, and Colonel Willis, two brave officers, were among the slain. The detachment then returned to the main body, and the next morning the army resumed its march. The Indians

followed in sight of the army, almost to Fort Washington, without, however, committing any serious depredations.

On the 8th of January, 1791, John S. Wallace, John Sloane, Abner Hunt, and a Mr. Cunningham, who were exploring the county west of the Great Miami, fell in with a large body of Indians. Cunningham was killed and Hunt taken; the other two escaped to the station at Colrain. This station consisted of fourteen inhabitants, under the protection of Col. Kingsbury, with a detachment of eighteen regulars. On the morning of the 10th the Indians, about three hundred in number, made their appearance before the station and demanded a surrender, which was promptly refused. A fire was instantly commenced from the garrison and returned by the Indians. An express was sent to Cincinnati for a re-enforcement. Captain Truman, with thirty regulars and thirty-three volunteers, reached the station next morning about 10 o'clock, but before he arrived the Indians, who had continued the attack until about 9 o'clock of the same day, had departed. Hunt, who had three days before been taken by the Indians, was found a short distance from the station, with his legs and arms extended and fastened to the ground, his head scalped, his body mangled, and a blazing fire-brand placed in his bowels. During the attack, the bullets in the garrison being expended, the women supplied the deficiency by melting their spoons and plates and casting them into balls.

Various attempts to negotiate with the Indians were resorted to, but having all failed, another body of troops, under the command of General St. Clair, was raised for the defense of the frontiers. St. Clair, after repairing to Lexington to obtain the assistance of the Kentucky militia, reached Cincinnati on the 15th of May, 1791. His expedition against the Indians was protracted till late in the season by the slowness with which recruits were raised, their delay in descending the Ohio in consequence of low water, and, as it was alleged, an unpardonable negligence of the quartermaster and commissary departments. On the 7th of August all the troops which had arrived, except the artificers and a small garrison for the fort, moved to Ludlow's Station, six miles north of Cincinnati, in order to obtain forage from the woods, which was entirely consumed about Fort Washington, and to await the arrival of the troops which were expected. The army, amounting to 2,300 non-commissioned officers and privates, moved from Ludlow's Station on the 17th of September to the Great Miami, where they erected Fort Hamilton. Having placed a small garrison in the fort, the army then proceeded on its march, and, by the 12th of October, reached the site, where they built Fort Jefferson, about forty miles north of Fort Hamilton. These posts were intended as places of deposit and of security either

for convoys of provisions which might follow the army, or for the army itself, should any disaster befall it.

On the 14th the army, consisting of 1,700 non-commissioned officers and privates fit for duty, again commenced its march, with not more than three days' supply of flour. Many of the horses died for want of forage, and on the 31st sixty of the Kentucky militia deserted in a body.

On the 3d of November the army reached a creek, fifty miles from the Miami villages, and encamped on a commanding piece of ground in two lines, having the creek in front. The right wing, composed of Butler's, Clark's, and Patterson's battalions, commanded by General Butler, formed the first line; the left, consisting of Bedinger's and Guthrie's battalions and the Second Regiment, commanded by Colonel Darke, formed the second line. The right flank was supposed to be secured by the creek, by a steep bank, and a small corps of troops. Some of their cavalry and their pickets covered the left flank. The militia were placed over the creek about a quarter of a mile in advance, and encamped in the same order. At this place the General determined to throw up a slight work for the security of the baggage, and, when joined by Major Hamtramck, who had been detached to protect the convoys of provisions and prevent further desertion, to proceed immediately to the Miami villages. But both these designs were defeated, for next morning, about half an hour before sunrise, an attack was made upon the militia, who very soon gave way, and, rushing into the camp through Major Butler's battalion, threw it into great confusion. The greatest exertions of the officers were ineffectual to restore order. The Indians pursued the flying militia and attacked the right wing with great fury. The fire, however of the first line for a few minutes checked them, but almost instantly a much heavier attack began upon that line, and shortly was extended to the second. The great weight of it was directed against the center of each, where the artillery was placed, and from which the men were repeatedly driven with great slaughter. Finding no great effect from the fire, and confusion beginning to spread from the great numbers falling in every quarter, it became necessary to try the effect of the bayonet. Accordingly, Col. Darke, with part of the second line, was ordered to charge the left flank of the enemy, which he executed with great spirit. The Indians instantly gave way, and were driven back three or four hundred yards; but for want of a sufficient number of riflemen to pursue this advantage, Col. Darke soon returned, and, in turn, was obliged to give way. At that moment the enemy entered the camp by the left flank, having pushed back the troops that were posted there. Several charges were then made

with uniform success; but in all of them great numbers were killed, particularly the officers. Major-General Butler was dangerously wounded, and every officer of the Second Regiment, except three, fell. The artillery being silenced, and all their officers killed except Captain Ford, who was badly wounded, and half the army fallen, it became necessary to retreat, which was done very precipitately. The camp and artillery were necessarily abandoned. The Indians pursued the remnant of the army about four miles, when, fortunately, they returned to the field to divide the spoils. The troops continued their retreat to Fort Jefferson, where they found Major Hamtramck with the First Regiment. As this regiment was far from restoring the strength of the morning, it was determined not to attempt to retrieve the fortune of the day. Leaving the wounded at Fort Jefferson, the army continued its retreat to Fort Washington. In this unfortunate battle, which lasted three hours and fourteen minutes, thirty-eight commissioned officers were killed upon the field, and five hundred and ninety-three non-commissioned officers and privates were killed and missing. The wounded amounted to two hundred and fourteen.

General St. Clair, on his arrival at Cincinnati, gave Major Ziegler the command of Fort Washington, and repaired to Philadelphia. Soon after, Col. Wilkinson succeeded Major Ziegler, and, with the regulars under his command, and about one hundred and seventy militia under Major Gano, marched to the field of battle and buried the dead. Great numbers of the slain were found upon the road near the battle-ground. After interring the dead in the best manner possible, Col. Wilkinson returned to Cincinnati, with nearly one thousand stand of arms and one piece of artillery, which the enemy had not taken from the field.

This year Cincinnati had little increase in its population. About one-half of the inhabitants were attached to the army and many of them killed. The unfortunate event of the campaign not only alarmed the citizens for their safety, but so discouraged several of them from persevering to make their settlements, that they removed to Kentucky. No new manufactories were established, except a horse-mill for grinding corn.

On the 5th of March, 1792, Congress passed another law, making further and more effectual provision for the protection of the frontiers of the United States. This Act directed that the battalion of artillery should be completed according to its establishment; that both the two regiments of infantry in service should be filled up to the number of nine hundred and sixty; and that three additional regiments should be raised, for a for a time not exceeding three years. A discretion, however, was given the President

to raise the whole or part of the three regiments, and to discharge them at pleasure. On the 7th of April General St. Clair resigned the command of the army, and Anthony Wayne was appointed to succeed him.

The recruiting service was commenced and carried on with much activity. Commissioners were again sent to treat with the Indians, and, if possible, to bring them to an amicable negotiation; but they treated every offer with disdain, and cruelly massacred all but one of the commissioners. Such a flagrant outrage called upon the nation for redress by the most exemplary exertion of its power.

The enemy frequently attacked convoys of provisions, and killed great numbers. The troops at Fort Jefferson, under the command of Captain Shaler, and of Major Adair, who succeeded him, had several skirmishes with the enemy, in which many were slain.

About fifty persons were added by emigration this year to the population of Cincinnati. Several cabins, three or four frames, and a Presbyterian house of worship, were erected. This building stood on Main Street, near the site of the present First Presbyterian Church, and is still in existence, although removed to Vine, below Fifth Street. It is now occupied as a place of worship by a society of German Methodists.

The troops, which had been recruited for Wayne's army, assembled at Pittsburg during the Summer and Autumn of 1792, and encamped for the Winter on the Ohio, about twenty miles below that place. They descended the river the next Spring (1793), under the command of General Wayne, and landed at Cincinnati. Here the general made an encampment, where he remained for two or three months, and then marched to the spot where he established Fort Greenville. The army remained at the fort during the Winter, and until July following. In the Fall of this year, soon after the army left Cincinnati, the small-pox broke out among the soldiers in Fort Washington, and spread through the town with such malignity that nearly one-third of the soldiers and citizens fell victims to its ravages.

In July, 1794, the army left Fort Greenville, and built Fort Adams, Fort Defiance, and Fort Deposit. At the latter place the heavy baggage of the army was deposited, as a general engagement with the enemy was shortly expected. Accordingly, on the morning of the 20th of August, the army advanced to meet the enemy, and, after marching about four miles, the Indians, who were secreted behind fallen trees and high grass, made a sudden attack upon the mounted volunteers under Major Price, who were compelled to retreat to the main body. The army was immediately formed in order of battle, having the Miami on the right, a thick wood on the left, and the fallen

timber, among which the Indians were secreted, in front. The savages were formed in three lines, within supporting distance of each other, and extending nearly two miles at right angles with the river. It was soon discovered, from the weight of the enemy's fire and the extent of their lines, that they were endeavoring to turn the left flank of the American army. The second line, therefore, was ordered to advance with trailed arms and rouse the Indians from their coverts at the point of the bayonet, and, as soon as that was effected, to deliver a close fire upon their backs, followed by a brisk charge, so as not to give them time to load again. Major Campbell was ordered to turn the left flank of the enemy near the river. The orders of the commander-in-chief were promptly obeyed; and such was the impetuosity of the charge of the first line, that the enemy, consisting of Indians, Canadian militia and volunteers, were driven from their coverts in so short a time that, notwithstanding every exertion was used by the second line and Generals Scott, Todd, and Barbee, of the mounted volunteers, to gain their proper position, only part of each could get up to participate in the action; the enemy being driven, in the course of an hour, more than two miles. From the best accounts the enemy amounted to two thousand, while the American troops actually engaged against them were less than nine hundred. The savages, with their allies, abandoned themselves to flight, and left the Americans in quiet possession of the field of battle.

The army remained several days near the battle-ground, during which time they destroyed all the houses and corn-fields for a considerable distance above and below Fort Miami. In this decisive battle thirty-three American officers and privates were killed, and one hundred wounded. On the 28th the army commenced its return to the Auglaize, by easy marches, destroying in its route all the villages and corn-fields within fifty miles of the river; from thence up the Miami to the junction of the St. Joseph and St. Mary's, where they erected Fort Wayne. They then proceeded to Loramie Stores, seventy miles south-east from Fort Wayne, and erected Fort Loramie, and marched from thence to Greenville, which they reached about the 20th of November, and went into Winter quarters.

In this battle the Indians received a chastisement so severe, and lost so many of their leading warriors, that they began to fear the American power, and to exhibit a disposition favorable to peace. This disposition was promptly reciprocated by our Government, and, accordingly, on the 3d of August, 1795, a treaty was made by General Anthony Wayne at Fort Greenville with all the warlike tribes, which put an end to their unprovoked, protracted, and sanguinary hostilities.

This event was hailed by the infant settlements as the era of peace and security. They now looked forward to an exemption from ravage, danger, and distress, and all the horrors of savage warfare. The return of peace gave them new ambition and new hopes. They removed from their forts into the adjacent country, selected farms, built cabins, and began to subdue the forest. They were soon joined by other emigrants, who, upon the news of peace, began to flock across the mountains in great numbers.

In 1799, the legislative power of the governor and judges was superseded by that of a General Assembly, composed of a House of Representatives, elected by the people, and a Legislative Council, appointed by Congress. By this General Assembly, a delegate was chosen to represent the territory in the National Legislature. A division of the territory was made, and the boundaries of Ohio determined in 1802, when Congress passed a law enabling the people of the State to form a constitution; and, in 1803, the State Government went into operation. In January of the year preceding, the Territorial Legislature incorporated the town of Cincinnati.

The whole Miami country, with the exception of Cincinnati and its vicinity, at the time of Wayne's treaty, was one interminable forest. In 1795 the town contained ninety-four cabins, ten frame houses, and about five hundred inhabitants. In 1800 the population was estimated at seven hundred and fifty, and, in 1805, at nine hundred and sixty only. This period of ten years has exhibited the least proportional increase of any equal term of years since the settlement of the place. This was owing to the fact that the recent treaty afforded peace and security to settlers, who preferred spreading themselves over a newer country, where land could be obtained more cheaply.

From this period, Cincinnati has proceeded with a steady and rapid growth to its present population and improvement.

In 1808, the United States reservation around Fort Washington was sold by direction of the Secretary of the Treasury.

The war with Great Britain, declared in 1812, by paralyzing the enterprise of the Atlantic United States, sent out vast numbers to the West; and, though that section of the Union suffered in many respects by the immediate consequences of that rupture, yet it was the means, to a great extent, of filling the country with population and money disbursements, which developed more rapidly its natural wealth and resources. But the most important event in the history of the West was the introduction of steamboats on its waters. At once the vast interior of Ohio became a competitor, in market, with older and less productive regions. Of all these advantages, as the outlet for the

Miami country, Cincinnati had its full share; and an impulse was given to commercial and manufacturing enterprise, which is even yet felt.

In 1819 a charter was obtained from the State Legislature, by which Cincinnati was incorporated as a city. This charter, since repeatedly amended and altered, forms the basis of its present municipal authority.

Early Annals of Cincinnati.

These extracts, compiled from the early newspaper press by Charles Cist, commence with the *Western Spy and Hamilton Gazette*, reaching as far back as the origin of that press in 1799; Mr. Joseph Carpenter, the editor and proprietor, commencing it as a weekly print, and issuing the first number on May 28th of that year. This was not, however, the first newspaper published in Cincinnati, Freeman's *Journal* and Maxwell's *Gazette* having successively preceded it. I have not been able to obtain either of those prints thus far, although they are believed, at least in scattered numbers, still to exist; but except as curiosities, they are probably of little value. They were both published very irregularly, and neither lasted for any length of time. The *Spy* itself, although published in what may be termed a more advanced state of society, was occasionally intermitted in its publication, as the mails—then once a week at oftenest—failed in their arrivals, or a supply of printing paper run out, or the proprietors had a job of public printing on hand. How little had newspapers, in that day, approximated their present importance and interest, which renders thousands so dependent on them as to feel the failure of the morning news a privation as great as the loss of their breakfast.

May 17, 1799. "Post-Office.—Notice is hereby given that a post-office is established at Chelicotha. All persons, therefore, having business in that part of the country may now have a speedy and safe conveyance by post for letters, packets, etc."

This was, of course, carried on horse, there being no wheel route, nor any thing more than an Indian trace through the woods, at that time.

Our respected fellow-citizen, Griffin Yeatman, figures among the active scenes of the early days of Cincinnati. His advertisement, same date, runs thus:

"Observe this Notice.—I have experienced the many expenses attending my *pump*, and any family wishing to receive the benefits thereof for the future, may get the same by sending me twenty-five cents each Monday morning."

Ye who growl at paying ten dollars a year for the use of wholesome, palatable river water, delivered into your hydrants at your doors, how would you relish it, like your predecessors, to pay thirteen dollars per annum for the nauseous well-water, of which specimens may still be found in parts of the city, and constrained at that to carry it yourselves to your own house, frequently at a great distance?

The militia figured here, as every-where else in new settlements:

"BATTALION ORDER. *May* 13, 1799. The Lieutenant-Colonel again calls on the officers of every grade to exert themselves in exercising and teaching the men the necessary maneuvers as laid down in Baron Steuben's Instructions, etc. And it is hoped that the delay of the battalion muster may produce a good effect; that is, that the industrious farmers may have time to put in their Summer crops, and the industrious officers, at their company parades, may improve their men in exercising them, so that they may be distinguished when the battalion is formed, which will be on the Fourth of July next.

"By order, DANIEL SYMMES, *Lieutenant and Adjutant.*"

Two excellent reasons, certainly, for postponement. A doubt, however, might naturally arise in the minds of some—myself among the number—whether much progress could be made by the farmers in military science while getting in their crops. Possibly they were taught, like the farmer's son in the "Poor Gentleman," who sowed his three acres of wheat before breakfast to the tune of "Belleisle's March," to mark time in cutting their grain, and keep step with their horses in wagoning it home.

In due season, as appears by "a spectator," in the *Spy*, "the battalion paraded accordingly; two or three companies on foot were in uniform, and a troop of horse, about thirty in number, *mostly* so also; the whole being reviewed by his excellency, William Henry Harrison, Governor of the Territory," *pro tempore.*

Thomas Goudy, of Mill Creek, at the close of a long advertisement, in which the capacities and facilities of his mill are fully set forth, adds, "As to the despatch of business, I need say no more than that Mr. Jessup had 3½ bushels of corn ground on her in precisely eight minutes. I hope to gain a general custom; but she is absolutely idle for want of work at present."

June 18. "NATCHEZ AND NEW ORLEANS PRICE-CURRENT.—It may be depended on. Markets very much glutted at Orleans and this place (Natchez). Whiskey, 50 to 60 cts. per gall. Iron, 11 dollars per 100. Castings, 8 to 9 dollars ditto. Tobacco, ready sale from 9 to 10 dollars per hundred. Flour, from 5.50 cts. to 6 dollars per bbl., and very

dull sale. Bacon, 8 to 10 cts. per lb. Cordage, very dull sale—E. Craig just arrived with three boat-loads with it. Much complaint of the scarcity of cash."

Again, June 25th, among other prices at Natchez, whisky is quoted at 5 to 6 bits—62½ to 75 cts.; castings and iron, same as last; untared cordage, 18 to 20 cts. per lb.; nails, 25 to 33⅓ cts. per lb.; cotton, 20 to 21 dollars per hundred.

Many of these articles do not vary much from modern prices. Iron and castings have been reduced one-half by our improved facilities of manufacture and transportation. These were articles which went down the river; we shall presently see the astonishing disparity of prices—past and present—on what was carried up the Ohio.

Cotton was then just becoming an item of produce—the most far-reaching mind unable to have anticipated its future value to the country—and while it was so far short of an adequate supply to the wants of the people, was not, perhaps, higher in price than might be expected. Cordage was double its present rates. The price of nails—wrought nails, I presume—serves to point out the value of cut nails, an article of such daily use and indispensable necessity, and which, even at their reduction to one-fourth the price quoted here, constitute a heavy share in building expenses.

The business of the city appears to have been done principally on Main, below Second—then Columbia—Street, so called from leading to the town of that name, Front Street facing the landing, and Sycamore, a short distance from Front Street.

Robert Park—the first hatter in the place—at the corner of Main and Second, the ground now occupied by Bates's drug-store, advertises hats for cash or country produce; buys furs, and wants an apprentice on good terms, which, like others, he prefers to get from the country.

We are all apt to speak of the weather, in comparison of other periods, as the hottest or the coldest we have ever known. What shall we say of the sufferings of the early settlers under what must have been an unprecedented degree of heat here, in June, and uncommon in that month every-where.

June 25th. "We have, within these few days, experienced a greater degree of heat than was ever known in the country. On Thursday, the 20th, the mercury rose to 103 in the shade, four degrees higher than was ever known before; Friday, 21st, 100; Saturday, 22d, 96; Sunday, 23d, 100; Monday, 24th, 101."

Notices of marriages ran thus in the newspapers: Married, on the — January, Mr. Henry —— to the *amiable* Miss ——; or the *amiable* and *accomplished* Miss ——.

This was a form common also in Philadelphia, as I well recollect, about the same period, superseded there as here in the progress of a purer taste.

As an illustration of fashions, I notice at this period advertisements in the *Spy* of hair-powder and fair-top boots.

July 4, 1799, the first recorded celebration in Cincinnati of our national anniversary:

"The morning being ushered in by a Federal salute from Fort Washington, and the first battalion Hamilton militia paraded at the muster-ground, in the vicinity of this place, they went through the customary evolutions and firings. As to their performance, we need only refer our readers to the Governor's general orders. After the battalion was dismissed, the Governor, the Federal officers from Fort Washington, the officers of militia, and a large number of respectable citizens, dined under a bower prepared for that purpose. Captain Miller having furnished a piece of artillery, which, with Captain Smith's company of militia, accompanied by martial music, made the woods resound to each of the following toasts," etc.

The toasts are in good spirit and taste, but are too long to insert here.

"In the evening, the gentlemen joined a brilliant assembly of ladies, at Mr. Yeatman's, in town; it is impossible to describe the ecstatic pleasure that appeared to be enjoyed by all present," etc.

Then follows the general order, referred to, of the Governor, in which he highly compliments the battalion on the ease and exactness of their evolutions and firings; which, he adds, would not discredit regular soldiers. Governor St. Clair—these general orders and other publications being testimony—appears to have understood, with Cromwell before his day, and Napoleon since, both of whom he resembled in his exercise of authority, that the greatest degree of familiarity with the rank and file of the people is not incompatible with the most arbitrary conduct toward those just below his own degree in political and social influence.

July 11. "Thomas Gregg has opened a new tavern in the town of CHELICOTHA, at the sign of the Green Tree. Travelers and others supplied with every thing necessary for their accommodation, and supplied for their *journey through the wilderness.*"

The wilderness, I suppose, comprehended the whole country north and west of that place, north to the lakes, and west to the Mississippi.

DUNS. *August* 6. William Austin's *patience being almost* exhausted, calls the attention of those indebted to him, etc.

"OBSERVE. The undersigned having a particular call to go to the Atlantic States, requests his customers to pay off, etc. In so doing they will not only be considered *honest men*, but particular friends of their very humble servant,

"*August* 19, 1799. C. AVERY."

It seems, by a note, that many of these accounts were of *five years'* standing. Long credits are the besetting sins of an early state of society, which its progress always finds matter, both of necessity and interest, to correct.

On the 22d of the next month, Mr. Avery again makes his compliments to the reader and his debtors in the following terms:

"*My generous friends*, it may seem like an absurdity to give you another call to assist me to perform my journey to the Atlantic States. One moment's reflection to men of sense, as I know you all are, will be sufficient to show you that it is out of my power to bring out *my family* to this place *without a considerable sum of* MONEY, etc.

"Gentlemen, you are to say whether I shall go to the Atlantic States or not. I flatter myself that there is not *one man* among you but what will *exert every nerve* to accomplish my wishes this time. Your distressed friend and very humble servant."

Here is a dun from some meeker and more subdued spirit:

"The subscriber requests all persons indebted to him to call and settle immediately, as he intends to start for the Atlantic States in two weeks.

"*September* 13, 1799. THOMAS FRAZER."

Levi M'Lean, who figures at different periods as jailer, pound-keeper, butcher, and constable—four pretty hard-hearted trades—and teacher of vocal music—a softer one—makes his *debut* at this period, in a call on his debtors whom, by way of contrast to the title given by Mr. Avery, he calls "my *un*generous friends."

But the most pathetic dun is the following:

"Those indebted to Dr. Homes are desired to remit him the sums due—he being confined to jail *deprives him of the pleasure of calling personally* on his friends; they will therefore particularly oblige their unfortunate friend by complying with this request without loss of time.

"*Hamilton County Prison, October* 29, 1799."

"Look sharp! last notice. THOMAS THOMPSON.

"*January* 15, 1800."

Thomas Frazer, whose courteous notice has been already referred to, complains, February 12th, "that little attention has been paid to his former notice, and requests all

persons indebted to him to come forward before the 10th of March next, as he is going to Pennsylvania."

February 19. "No mail this week." It seems that the good people of Cincinnati had received but one mail for the last four weeks. As they had but one newspaper, and that of weekly issue, such frequent failures were of much more importance than our present mail delinquencies, which leave us sometimes three successive days without a mail beyond Wheeling, The disappointments in those days appear not to have excited as much growling as in ours.

February 19. Michael Brokaw calls on his debtors for immediate payment *or else!*

March 4. The Rev. James Kemper advertises "his farm of one hundred and fifty-four acres at seven dollars per acre." Mr. K. resided on the premises for more than thirty-five years afterward, and lived to see this ground worth five hundred dollars per acre.

March 12. The President appoints Charles W. Byrd Secretary of the territory of the United States north-west of the Ohio.

August 27. We have, under this date, a speech delivered by sundry Indian chiefs to Major Simeon Kinton—Simon Kenton, doubtless—and published by him to allay apprehensions of Indian troubles in this region.

William and M. Jones advertise "that they still carry on the baking business, and as *flower* is getting cheap, they have enlarged their loaf to four pounds, which is sold at one-eighth of a dollar per loaf, or flour, pound for pound, payable every three months." O, rare and conscientious dealers! a pound of bread for a pound of flour, and at three months' credit too. What would our friends of the hot oven think of this arrangement nowadays? As flour is now a cash article, the credit on the bread, however, should be dispensed with. I knew a worthy German in Philadelphia who had made a fortune by baking for the Continental service; he delivered to the commissary bread for flour, pound for pound, saying that no honest man ought to ask more.

The Legislature of the North-western Territory, October 3, 1799, appointed "Wm. Henry Harrison, Esq., to represent the Territory in the Congress of the United States."

October 7. We have here some insight into Cincinnati prices of that day. Imperial or Gunpowder tea, $3 per pound; hyson, $2.25; Hyson-skin, $1.50; Bohea—a meaner article than the *clover* tea, which, under the name of Pouchong, etc., is now the fashionable article of modern times, at $1 per pound; loaf sugar, 44 cents; pepper, 75 cents; allspice, 50 cents. Dear tea-drinking and sweetening in those days.

October 17. Wm. M'Farland commences a manufactory of earthenware, probably the first factory of any kind in the place; certainly the first of that description of goods.

Schools appear to have been of early establishment. James White advertises a day and night school. Evening school, $2 per quarter—the scholars finding fire-wood and candles. Writing, arithmetic, etc., taught. October 21, 1799.

January 15. No mail this week. This fact is given without note or comment. What would be said in these days to be a whole week without news?

The "Territorial Laws" published, and by subscription, being the first volume ever published in this place.

January 28. No mail this week.

February 5. Aaron Cherry's advertisement, "Whereas, a certain woman, who calls herself Mary, and has for a long time passed as my wife, but who is *not*, as we never were lawfully married, has eloped from my bed and taken with her my property to a considerable amount; I hereby forewarn all persons not to trust her on my account, as I will pay no debts of her contracting." He was determined, I suppose, that she should not make *two bites of* A. CHERRY.

February 1. A funeral procession in Cincinnati in honor of the memory of General Washington.

The troops from the garrison at Fort Washington, under Captain Miller; the town military, including a troop of dragoons under command of Captain Findlay; the civil authorities, and the Masonic Order, with the community at large, united in the pageant. Governor St. Clair delivered an interesting address on the occasion.

February 12. "A good schoolmaster wanted on the Great Miami. One with a family will be preferred."

March 12. "We have the pleasure of informing our readers that a post route is now established between Louisville, at the falls of the Ohio, and Kaskaskia, to ride once every four weeks. There is also one established between Nashville and Natchez. This will open an easy channel of communication with those remote places, which has heretofore been extremely difficult, particularly from the Atlantic States."

Here follow complaints of husbands against wives, in various forms; and notices not to trust the wife on the husband's account.

"INJUSTICE!—Whereas, my wife Margaret has left my bed and board, etc.

"DANL. GOBLE."

John Bentley, Sergeant 1st Regiment U. S., advertises his wife Mary as having not only left his bed and board without just cause, but also taken up with a fellow named Sylvanus Reynolds, etc.

March 25. A DUN.—"*Take a friend's advice.* M. Brokaw having repeatedly solicited those indebted to me to settle up their accounts, and little or no attention being paid to the same; Now *know all persons whom it may concern*, that, unless due attention is paid to the notice, the next will be Hamilton ss."

April 9. "Owing to the pressing necessity for publishing the laws of the Territory, there will no paper be published for three weeks. etc."

This is rather a better excuse than that of the Arkansas editor, who stated that he should attend a great squirrel hunt, and, therefore, no paper would be issued that week; or of the Alabama editor, who apologized for the non-appearance of his paper on account of a sudden attack of a severe toothache. The three weeks stretched from the 9th of April to the 28th of May, a period of fifty days.

"NOTICE.—Refrain from Gambling! The Vice and Immorality Bill goes in force on the first of May next."

April 26. "*The year* 1800 *has arrived*, and all persons are notified not to deal with or credit my wife Susannah, as I will pay no debts of her contracting.

"ANDREW WESTFALL."

To such as may not perceive the connection between the new century and Westfall's paying no more debts on account of his wife Susannah, it may be suggested that he thought proper, probably, with the new year, and especially with the new century, to turn over a new leaf in the chapter of accounts.

June 18. "ADVERTISEMENT. The following articles may be had *at the landing place* in Cincinnati, at the most reduced prices, at Mr. Mahoney's boat: Imperial, Young Hyson, Hyson-skin, and Bohea tea; coffee, loaf-sugar, gun-flints, brandy, etc."

July 9. "William Ludlow advertises a farm of between thirty and forty acres, in Springfield Township, Hamilton County; in part pay for which he will take a breeding mare, etc."

Much of the early supply of manufactures for city consumption was made in the country. Lyon & Maginnes advertise at their shop, eleven miles out on the Hamilton Road, desks, escritoires, dining-tables—plain and veneered, etc.

A correspondent who deals in statistics of fashion, remarks in the close of his article:

"It has been ascertained that within the last year, throughout the United States, from the present fashion of muslin undresses, as many as eighteen ladies have caught fire, and eighteen thousand have caught cold; both classes of accidents terminating in death."

"BEEF! BEEF!—David J. Poor informs the inhabitants of this place, that he still carries on the butchering business, etc. He expects his customers to settle up with him every Saturday, to enable him to furnish beef of the first quality, for money is the TRADE that will fetch it. He has also candles for sale."

"'Tis strange, 't is passing strange, 't is WONDERFUL. Was taken up, FLOATING on the Ohio, on Saturday last, *a blacksmith's anvil.* The owner, by proving *its brands* and *earmarks* and paying the charges, may have it again.

"*July* 16, 1800. THOMAS WILLIAMS."

OBITUARY.—"Died, on Saturday, the 25th October, at his father's, on Beaver Creek, Mad River Settlement, Mr. Edmund Freeman, printer, formerly of this place."

Mr. F. was the earliest printer in Cincinnati.

Wm. M'Millan, of Cincinnati, chosen by the Territorial Legislature Delegate to Congress for the residue of the term of William H. Harrison, and Paul Fearing for the term of two years next succeeding.

November 19. Town of Williamsburg, in Clermont County, and its first seat of justice, laid out.

Andrew Dunseth, the first gunsmith here, opens his shop at Captain Vance's, on Market Street.

Wm. Henry Harrison appointed Governor of the Territory of Indiana.

The Territorial Legislature, sitting at Chillicothe, addresses Governor St. Clair, whose reply is also published. Of the names which appear to these documents I notice but one survivor—John Reily, Esq., of Hamilton—who still remains in the full vigor of intellect, and, at a green old age, a resident of Hamilton, Butler County, Ohio. He was Clerk to the first Legislature of Ohio.

"TO COUNTRY SUBSCRIBERS.—The printers want some turnips and potatoes, for which a reasonable price will be allowed."

Great Cities.

Great cities grow up in nations and in states as the mature offspring of well directed civil and commercial agencies, and in their natural development they become vital organs in the world's government and civilization, performing the highest functions of human life on the earth. They grow up where human faculties and natural advantages are most effective. They have a part in the grand march of the human race peculiar to themselves in marking the progress of mankind in arts, commerce, and civilization; and they embellish history with its richest pages of learning, and impress on the mind of the scholar and the student the profoundest lessons of the rise and fall of nations. They have formed in all ages the great centers of industrial and intellectual life, from which mighty outgrowths of civilization have expanded. In short, they are the mightiest works of man. And whether we view them wrapped in the flames of the conqueror and surrounded with millions of earnest hearts yielding, in despair, to the wreck of fortune and life at the fading away of expiring glory or the sinking of a nation into oblivion; or whether we contemplate them in the full vigor of prosperity, with steeples piercing the very heavens, with royal palaces, gilded halls, and rich displays of wealth and learning, they are ever wonderful objects of man's creation—ever impressing, with profoundest conviction, lessons of human greatness and human glory. In their greatness they have been able to wrestle with all human time. We have only to go with Volney through the Ruins of Empire, to trace the climbing path of man from his first appearance on the fields of history to the present day, by the evidences we find along his pathway in the ruins of the great cities—the creation of his own hands. The lessons of magnitude and durability which great cities teach may be more clearly realized in the following eloquent passage from a lecture of Louis Kossuth, delivered in New York City:

"How wonderful! What a present and what a future yet! Future? Then let me stop at this mysterious word—the veil of unrevealed eternity.

"The shadow of that dark word passed across my mind, and, amid the bustle of this gigantic bee-hive, there I stood with meditation alone.

"And the spirit of the immovable past rose before my eyes, unfolding the picture-rolls of vanished greatness, and of the fragility of human things.

"And among their dissolving views there I saw the scorched soil of Africa, and upon that soil, Thebes, with its hundred gates, more splendid than the most splendid of all the existing cities of the world—Thebes, the pride of old Egypt, the first metropolis

of arts and sciences, and the mysterious cradle of so many doctrines which still rule mankind in different shapes, though it has long forgotten their source.

"There I saw Syria, with its hundred cities; every city a nation, and every nation with an empire's might. Baalbec, with its gigantic temples, the very ruins of which baffle the imagination of man as they stand, like mountains of carved rocks, in the deserts where, for hundreds of miles, not a stone is to be found, and no river flows, offering its tolerant back to carry a mountain's weight upon. And yet there they stood, those gigantic ruins; and as we glance at them with astonishment, though we have mastered the mysterious elements of nature, and know the combination of levers, and how to catch the lightning, and how to command the power of steam and compressed air, and how to write with the burning fluid out of which the thunder-bolt is forged, and how to dive to the bottom of the ocean, and how to rise up to the sky, cities like New York dwindle to the modest proportion of a child's toy, so that we are tempted to take the nice little thing upon the nail of our thumb, as Micromegas did with the man of wax.

"Though we know all this, and many things else, still, looking at the times of Baalbec, we can not forbear to ask, "What people of giants was that which could do what neither the puny efforts of our skill nor the ravaging hand of unrelenting time can undo through thousands of years?"

"And then I saw the dissolving picture of Nineveh, with its ramparts now covered with mountains of sand, where Layard is digging up colossal winged bulls, large as a mountain, and yet carved with the nicety of a cameo; and then Babylon, with its beautiful walls; and Jerusalem, with its unequaled temples; Tyrus, with its countless fleets; Arad, with its wharves; and Sidon, with its labyrinth of workshops and factories; and Ascalon, and Gaza, and Beyrout, and, farther off, Persepolis, with its world of palaces."

The first great cities of the world were built by a race of men inferior to those which now form the dominant civilization of the earth, yet there are many ruins of a mold superior, both in greatness and mechanical skill, to those which belong to the cities of our own day, as found in the marble solitudes of Palmyra and the sand-buried cities of Egypt. It is true, however, that ancient grandeur grew out of a system of idolatry and serf-labor, controlled by a selfish despot or a blind priesthood, which compelled a useless display of greatness in most public improvements. In our age, labor is directed more by practical wisdom than of old, which creates the useful more than the ornamental; hence, we have the Crystal Palace instead of the Pyramids.

But, leaving the ancient cities, we are led to inquire, "Where will grow up the

future great city of the world?" At the very outset of this inquiry, it is necessary to clearly comprehend a few underlying facts connected with the cities of the past and those now in existence, and note the influence of the more important arts and sciences that bear upon man's present intellectual and industrial interests, and, if possible, to determine the tendency of the world's civilization toward the unfolding future.

The first great fact we meet with is, that the inevitable tendency of man upon the earth has been to make the circuit of the globe by going westward, within an isothermal belt or zodiac of equal temperature, which encircles the earth in the north temperate zone. Within this belt has already been embraced more than three-fourths of the world's civilization, and now about 850,000,000 people. It is along this belt that the processions of nations, in time, have moved forward, with reason and order, "in a predetermined, a solemn march, in which all have joined; ever moving and ever resistlessly advancing, encountering and enduring an inevitable succession of events."

"It is along this axis of the isothermal temperate zone of the northern hemisphere that revealed civilization makes the circuit of the globe. Here the continents expand, the oceans contract. This zone contains the zodiac of empires. Along its axis, at distances scarcely varying one hundred leagues, appear the great cities of the world, from Pekin in China, to Cincinnati in America.

"During antiquity this zodiac was narrow; it never expanded beyond the North African shore, nor beyond the Pontic Sea, the Danube, and the Rhine. Along this narrow belt civilization planted its system, from Oriental Asia to the western extremity of Europe, with more or less perfect development. Modern times have recently seen it widen to embrace the region of the Baltic Sea. In America, it starts with the broad front from Cuba to Hudson's Bay. As in all previous times, it advances along a line central to these extremes, in the densest form, and with the greatest celerity. Here are the chief cities of intelligence and power, the greatest intensity of energy and progress. Science has recently very perfectly established, by observation, this axis of the isothermal temperate zone. It reveals to the world this shining fact, that along it civilization has traveled, as by an inevitable instinct of nature, since Creation's dawn. From this line has radiated intelligence of mind to the North and to the South, and toward it all people have struggled to converge. Thus, in harmony with the supreme order of nature, is the mind of man instinctively adjusted to the revolutions of the sun, and tempered by its heat."

> "Through the ages one increasing purpose runs,
> And the thoughts of men are widened with the process of the sun."

It is a noteworthy observation of Dr. Draper, in his work on the "Civil War in America," that within a zone, a few degrees wide, having for its axis the January isothermal line of forty-one degrees, all great men in Europe and Asia have appeared. He might have added, with equal truth, that within the same zone have existed all those great cities which have exerted a powerful influence upon the world's history, as centers of civilization and intellectual progress. The same inexorable but subtle law of climate which makes greatness in the individual unattainable in a temperature hotter or colder than a certain golden mean, affects in like manner, with even more certainty, the development of those concentrations of the intellect of man which we find in great cities. If the temperature is too cold, the sluggish torpor of the intellectual and physical nature precludes the highest development; if the temperature is too hot, the fiery fickleness of nature, which warm climates produce in the individual, is typical of the swift and tropical growth, and sudden and severe decay and decline of cities exposed to the same all-powerful influence. Beyond that zone of moderate temperature the human life resembles more closely that of the animal, as it is forced to combat with extremes of cold, or to submit to extremes of heat; but within that zone the highest intellectual activity and culture are displayed. Is it not, then, a fact of no little import that the very axis of this zone—the center of equilibrium between excess of heat and cold—the January isothermal line of forty-one degrees—passes nearer to the city of Cincinnati than to any other considerable city on this continent? Close to that same isothermal line lie London, Paris, Rome, Constantinople, and Pekin; north of it lie New York, Philadelphia, and Chicago, and south of it lies San Francisco. Thus favored in climate, lying in the very center of that belt of intellectual activity beyond which neither great man nor great city has yet appeared, Cincinnati may, with reason, be expected to attain the highest rank, if other conditions favor.

A second underlying fact that presents itself is, that nearly all the great cities of the world have been built upon rivers, whether in the interior or near the ocean's edge—such as Babylon, on the Euphrates; Thebes, on the Nile; Nineveh, on the Tigris; Rome, on the Tiber; Paris, on the Seine; London, on the Thames; New York, on the Hudson; St. Louis, on the Mississippi; Cincinnati, on the Ohio; and Constantinople, on the Bosphorus; while Carthage, St. Petersburg, Chicago, and Cleveland, belong to interior waters, and Palmyra and the City of Mexico to the interior country.

A third fundamental fact is, that the arts and sciences do more to develop interior cities, and multiply population upon the interior lands, than upon the sea-boards or

coast lands. Steam-engines, labor-saving machines, books, the value and use of metals, government, the enforcement of laws, and other means of self-protection—all have tended more to make the people of the interior more numerous, powerful, and wealthy than those who dwell along the shores of the oceans.

A fourth fundamental fact is, that, to all modern civilization, domestic transportation by water and rail is more valuable to nations of large territorial extent than ocean navigation. This fact is founded not only upon the assumption that a nation's interests are of more importance to itself than to any other nation, and it hence necessarily does more business at home than abroad, but also upon the fact that the exchanges of domestic products within this country, it is estimated, already exceed in value six thousand millions yearly, while the whole value of all foreign exchanges is less than one thousand millions a year. With every year, as the country advances in population and industry, its domestic exchanges gain upon its foreign; and those cities, like New York, which must depend largely upon foreign trade, are overtaken in the race for commercial supremacy by inferior cities more favorably located for transacting the far greater business of domestic interchange.

Cincinnati, like ancient Rome, once with its 10,000,000 population, is destined to be flanked and surrounded with a galaxy or cordon of continental cities. Memphis, Lexington, Covington, Evansville, Dayton, Springfield, Terre Haute, and Indianapolis, are a part of these satellites, that in the future are to pay tribute to this center—taking in view the fact of their vast material resources, and these being the center of the great fruit, agricultural, and wine belt of the continent.

The people—the Teutonic and Celtic races—are the pioneer people in all the departments of human industry, politics, culture, theology. We apprehend that the most acute vision, even were that mind in harmony with the spirit of the times, and enabled through that means to look back through the dim geologic history of the past, when the economic laws were piling the iron, atom by atom, in these iron mountains, growing the dense flora of the coal-plants, repleting the veins of lead, zinc, copper, tin, silver, and gold, and at the same time comprehend the ridge, valley, spring, prairie, timber, and river systems, and was enabled to go back in the ethnography and heraldry of these populations, and could fuse these elements or facts in the future, and at the same time realize the grandeur of the empires of the past—the Persian, under Cyrus; the Macedonian, under Alexander the Great; the Roman, under the Republic and the twelve Cæsars—that the truth would be forced upon the mind, that in the future this

great Valley of the Mississippi will include the center of an empire before which, in wealth, power, and grandeur, all these shall pale; that Cincinnati, sitting like a queen on the banks of the great Ohio, will be the central city of this people, the tidal waves of whose civilization will roll to China and Japan on the West, and to the Bosphorus on the East; and with her continental railroad system, her telegraphs over mountains and under oceans, her vast water communication, will radiate law and order, and become the leading national, mining, and commercial metropolis of the western hemisphere.

Cincinnati, though in its infancy, is already a large city. Its length is about ten miles, and its width from three to four. Suburban residences, the outposts of the grand advance, are now stationed ten and twelve miles from the river, and will soon be twenty. In 1874 the real and personal property of the city was assessed at $168,000,000, and its debt is $17,000,000, $10,000,000 of which is for the Southern Railroad.

Cincinnati is a well-built city; but its architecture is more substantial than showy. The wide, well-paved streets, the spacious levee and commodious warehouses; the mills, machine shops, and manufactories; the fine hotels, churches, and public buildings; the universities, charitable institutions, public-schools, and libraries; the growing parks, the well-improved and unequaled zoölogical gardens, constitute an array of excellencies and of attractions of which any city may justly be proud. The appearance of Cincinnati from the southern bank of the Ohio is impressive. At Covington the eye sometimes commands a view of one hundred steamboats lying at our levee. A mile and a half of steamboats lying at the wharf of a city 1,600 miles from the ocean, in the heart of a continent, is a spectacle which naturally inspires large views of commercial greatness. The sight of our levee, thronged with busy merchants and covered with the commodities of every clime—from the peltries of the Rocky Mountains to the teas of China—does not tend to lessen the magnitude of the impression.

These thoughts of the growth and commerce of Cincinnati could easily be extended to a discussion of the wealth and industry of our continent; but the amplification would be of no avail to a people whose minds, like their eyes, are accustomed to range over large extents, and are not content to sit down and rest satisfied with limited acquisitions.

Population.

When we come to a consideration of the population of our city we find a mass of information of the most exact and satisfactory character. The records of the past, with careful deductions from the facts which they present, are sufficient to prove to any

candid person that the present population of Cincinnati is not less than 300,000 souls. The first record of an enumeration to be found dates in the year 1788—eighty-seven years ago. The enumeration for 1800, and the succeeding increase at different periods, is shown in the following statement:

Years.	Population.	Years.	Population.
1800,	800	1840,	46,382
1810,	2,320	1850,	115,436
1820,	9,602	1860,	162,000
1826,	16,230	1870,	250,000
1830,	24,831	1875,	300,000

It will be seen that the increase for the decade ending in 1870 is not proportionately as great as those ending in 1860 and in 1850. This is to be attributed almost entirely to the effects of a desolating and paralyzing war.

However sanguine may be any of our people about the present growth of Cincinnati, they must learn that it is only in its infancy, when compared to what it will be in the future—even within five years. It is our purpose to represent Cincinnati as she is to-day, and show her to be the commercial metropolis of the Ohio Valley. This is easily shown by a full and fair statement of her commerce and manufactures, founded substantially on her river and railway systems, in comparison with other leading cities.

Nature and civilization are both pledged to make Cincinnati one of the great cities of North America—the commercial heart of the great valley of the Ohio and the South.

The River System of the West.

The river system, with which Cincinnati is directly connected, is incomparably the grandest and most extensive that the world affords. Before man had learned to harness steam for service on an iron road, there was here laid down those great natural highways, stretching in every direction through a valley of unexampled extent and fertility, which determined the location of the metropolis, and which will, with constant force, augment her trade and her resources.

The 40,000 miles of river navigation of which Cincinnati can send her boats, and the growing needs and population of her tributary country, assure her against the commercial changes that other cities have felt, and fix with no uncertainty her commercial supremacy.

The following tabular statement, prepared by Humphrey and Abbot, in their great work on the "Survey of the Ohio, Mississippi, and Missouri Rivers and their Tributaries," presents some very important facts connected with the larger streams of the great river system of the interior basin of North America:

Rivers.	Distance from Mouth.	Height above Sea.	Width at Mouth.	Downfall of Rain.	Means discharge per second.	Area of basis.
	Miles.	Feet.	Feet.	Inches.	Cubic feet.	Square Miles.
Upper Mississippi	1,330	1,680	5,000	35.2	105,000	169,000
Missouri	2,908	6,800	3,000	20.9	120,000	518,000
Ohio	1,265	1,649	3,000	41.5	158,000	214,000
Arkansas	1,514	10,000	1,500	29.3	63,000	189,000
Red River	1,200	2,450	800	39.0	57,000	97,000
Yazoo	500	210	850	46.3	43.000	13,850
St. Francis	380	1,150	700	41.1	31,000	10,500
Lower Mississippi	1,286	416	2,470	30.4	675,000	1,244,000

While it is true that the rivers given in the above list do not include one-half, and but little more than one-fourth, of the navigable waters of the Mississippi Valleys, they are the main branches that form the distinct drainage system that collects the waters of the great valleys, and through which they are sent forth to the Gulf of Mexico.

But whether we enumerate them as eight or thirty makes no difference in the discussion. Cincinnati is alike central in either case to the great river system of the grand valleys. And were there not a railway on the continent, she would command, by means of these navigable waters, the commerce of every State between the Alleghany and Sierra Nevada Mountains. Steamers are constantly plying to and from her wharf, up and down the streams, ramifying every section of the country to bear away the rich products of the farm, the shop, and the mine.

The area of water covered by the harbor of Cincinnati may be stated at about 3½ *square miles.*

The following table shows the whole number, with the tonnage, of steamboats and barges built at this place the past year:

Names.	Tonnage.	Names.	Tonnage.
Andy Mack (Barge),	210	Rising Sun (Barge),	75
Cherokee,	463	Robert Lusk (Barge),	243
Charlie Gordon (Barge),	243	Royal G. Hart (Barge),	290
John A. Conn (Barge),	253	Star of the West,	31
Lillie (Barge),	243	Thos. Dodsworth (Barge),	75

Names.	Tonnage.
Vint Shinkle,	415
Willie,	148
ON STOCKS.	
Albert Steins (St'r),	900
Freiberg Workum (St'r),	125
No Name (St'r),	75
Total Tonnage,	3,789
Total last year,	8,124
Decrease this year,	4,335

The following table shows the whole number, with the tonnage, of steamboats and barges built at this port for each of the last twenty-seven years:

Years.	Number.	Tonnage.	Years.	Number.	Tonnage
1847-48	29	10,233	1861-62	4	1,745
1848-49	23	7,281	1862-63	43	12,590
1849-50	16	4,500	1863-64	62	20,117
1850-51	31	8,206	1864-65	44	10,878
1851-52	33	8,896	1865-66	33	9,405
1852-53	29	10,252	1866-67	18	6,734
1853-54	31	9,858	1867-68	11	5,136
1854-55	27	8,698	1868-69	11	4,224
1855-56	33	11,526	1869-70	34	13,570
1856-57	34	10,600	1870-71	25	12,758
1857-58	14	5,334	1871-72	20	7,761
1858-59	11	3,735	1872-73	25	8,124
1859-60	28	6,113	1873-74	15	3,789
1860-61	11	3,327			

MANUFACTURES.

A CLASSIFIED STATEMENT OF THE VALUE OF PRODUCTS OF THE MANUFACTURING INDUSTRY IN CINCINNATI, FOR 1874.

Iron,	$17,129,224
Other metals,	4,871,362
Wood,	13,776,066
Leather,	7,651,113
Food,	24,071,077
Soap, Candles, and Oils,	9,527,343
Clothing,	13,329,914
Liquors,	24,231,273
Cotton, Wool, Hemp, etc.,	1,562,160
Drugs, Chemicals, etc.,	3,937,593
Stone and Earth,	$3,916,401
Carriages, Cars, etc.,	1,941,396
Paper,	1,687,290
Book-binding and Blank Books,	838,800
Printing and Publishing,	5,930,304
Tobacco,	4,745,688
Fine Arts,	694,114
Miscellaneous,	4,363,253
Total,	$144,207,371

STATISTICS OF PORK SLAUGHTERING AND PACKING, RECEIPTS AND SHIPMENTS, PRICES, ETC., IN CINCINNATI, FOR 1874.

No. of Hogs packed,	581,253	Pork, tierces received,	13,140
Av'ge weight, pounds,	280.75	" tierces shipped,	80,092
" price, per cental. net,	$4.5824	" barrels received,	7,122
" yield of Lard, per hog, lbs.,	39.7	" barrels shipped,	57,310
" price, Mess Pork, per bbl.,	$16.68½	" boxes shipped,	18,444
" price. Lard, per pound,	9.8	" pounds received,	28,999,404
" price, Bacon Shoul's, per lb.,	7.4	" pounds shipped,	36,553,997
" Bulk Sides. per pound,	8.3	Lard, barrels received,	54,440
" Shoulders, per pound,	6.5	" barrels shipped,	134,059
Pork and Bacon, hhds. rec'd,	2.296	" kegs received,	1,967
" " " " shipped,	59.925	" kegs shipped,	38,938

NUMBER OF GALLONS OF BEER MANUFACTURED IN CINCINNATI DURING EACH MONTH OF 1874.

January,	900,209	August,	1,418,684
February,	876,711	September,	1,432,045
March,	1,076,568	October,	1,216,750
April,	1,123,843	November,	940,726
May,	1,276,766	December,	952,227
June,	1,649,882		
July,	1,479,785	Totals,	14,344,196

NUMBER OF GALLONS OF DISTILLED LIQUORS MANUFACTURED IN CINCINNATI DURING EACH MONTH OF 1874.

January,	760,769	August,	636,013
February,	603,507	September,	680,996
March,	547,145	October,	856,227
April,	550,894	November,	815,516
May,	537,501	December,	868,539
June,	594,839		
July,	621,772	Total,	8,073,718

The number of cigars manufactured during 1874 was 86,283,600; the number of pounds of fine-cut and plug tobacco was 4,898,670½, and 14,947½ pounds of snuff. The tax paid on cigars was $431,418; on manufactured tobacco, $979,734.10; and on snuff, $4,783.20.

CLEVELAND.

For the records of the first fifteen or sixteen years of the history of Cleveland—what may be styled its pioneer history—the local historian will hereafter be indebted to the work of Col. Whittlesey, where every known and reliable fact connected with the period of Cleveland's history is hereafter carefully preserved.

The city was originally comprised in lands purchased by the Connecticut Land Company, and formed by a portion of what is termed the Western Reserve. This company was organized in 1795, and in the month of May in the following year it commissioned General Moses Cleveland to superintend the survey of their lands with a staff of forty-eight assistants. On the 22d of July, 1796, General Cleveland, accompanied by Augustus Porter, the Principal of the Surveying Department, and several others, entered the mouth of the Cuyahoga from the lake. Job P. Stiles and his wife are supposed to have been with the party. General Cleveland continued his progress to Sandusky Bay, leaving enough men to put up a storehouse for the supplies and a cabin for the accommodation of the surveyors. These were located a short distance south of St. Clair Street, west of Union Lane, at a spring in the side hill, in the rear of Scott's warehouse. During the season a cabin was put up for Stiles on Lot 53, east side of Bank Street, north of the Herald building, where Morgan & Root's block now stands. This was the first building for permanent settlement erected on the site of the city, although huts for temporary occupancy had been previously built in the neighborhood.

On the return of the party from Sandusky, Mr. Porter prepared the outlines of the city. He says: "I surveyed a piece of land designed for a town; its demensions I do not recollect—probably equal to about a mile square—bounding west on the river, and north on the lake. I made a plat of this ground, and laid it off into street lots. Most or all the streets I surveyed myself, when I left it in charge of Mr. Holley to complete the survey of the lots." The survey of the city was commenced on the 16th of September, and completed about the 1st of October, 1796. Holley's notes state that on Monday, October 17th, he finished surveying in New Connecticut—weather rainy—and on the following day he records: "We left Cuyahoga 3 o'clock 17 minutes, for home. We left at Cuyahoga Job Stiles and wife and Joseph Landon, with provisions for the

Winter." Landon soon abandoned the spot, and his place was taken by Edward Paine, who had arrived from the State of New York for the purpose of trading with the Indians, and who may be considered the first mercantile man who transacted business in Cleveland. Thus, during the Winter of 1796–7, the population of the city consisted of three inhabitants. During the Winter a child is reported to have been born in the cabin, which had only squaws for nurses.

Early in the Spring of 1797, James Kingsbury and family, from New England, with Elijah Gunn, one of the surveying party—all of whom had continued at Conneaut during the Winter, where they had endured incredible hardships—removed to Cleveland. His first cabin was put up on the site of the Case Block, east of the Public Square, but he subsequently removed to a point east of the present city limits, somewhere in a line with Kinsman Street. Here he remained until his death.

The next families who were attracted to this settlement were those of Major Lorenzo Carter and Ezekiel Hawley, who came from Kirtland, Vermont, the family of the Major being accompanied by Miss Cloe Inches. In the Spring of the following year (1798), the former gentleman sowed two acres of corn on the west side of Water Street. He was also the first person who erected a frame dwelling in the city, which he completed in 1802; but an unfortunate casualty proved fatal to the enterprise, for when he was about to occupy the residence, it was totally destroyed by fire. In 1803, however, he erected another house on the site of the destroyed building; but on this occasion he confined himself to hewn logs.

The fourth addition of the season was that of Nathan Chapman and his family, who, like the patriarchs of yore, traveled with his herd, and marched into the Forest City at the head of two yoke of oxen and four milch cows, which were the first neat stock that fed from the rich pasturage on the banks of the Cuyahoga.

In the Summer of 1797, the surveying party returned to the Western Reserve and resumed their labors, with Cleveland as headquarters. It was a very sickly season, and three of the number died, one of whom was David Eldridge, whose remains were interred in a piece of ground chosen as a cemetery, at the corner of Prospect and Ontario Streets. This funeral occurred on the 3d of June, 1797, and is the first recorded in the city. Recently, while making some improvements to the buildings now occupying that location, some human bones were discovered. Less than one month after the first funeral occurred the first wedding. On the 1st of July, 1797, the marriage was solemnized of William Clement, of Erie, to Miss Cloe Inches, who had

come to this city with the family of Major Lorenzo Carter. The ceremony was performed by Mr. Seth Hart, who was regarded by the surveying party as their chaplain.

In the beginning of the following year (1798), the population had increased to fifteen. No other immigration is recorded until that of Rolphus Edwards and Nathaniel Doane and their families, in 1799, the latter consisting of nine persons. They journeyed from Chatham, Connecticut, and were occupied ninety-two days in their transit—a longer period than is now necessary to accomplish a voyage to the East Indies.

In 1799 the Land Company caused a road to be surveyed, and partially worked, from Cleveland to the Pennsylvania line, about ten miles from the lake, which was the first road opened through the Reserve. In the Spring of that year Wheeler W. Williams, from Norwich, Connecticut, and Major Wyatt erected a grist mill at the falls at Newburg. In 1800 a saw-mill was also built by them—a substantial proof that sufficient corn and wheat were grown, and lumber required, to warrant the speculation. The desire of moral culture and education did not relax in this lonely region, and in 1800 the township school was organized, and the children were taught by Sarah Doane. The site of the school was near Kingsbury's, on the Ridge Road. Cleveland received two additions in 1800, in the persons of David Clarke and Amos Spafford, the former of whom erected a house on Water Street. The first sermon preached in Cleveland was delivered in that year by Rev. Joseph Badger, an agent of the Connecticut Missionary Society.

The years 1798, 1799, and 1800 were remarkable for the early commencement of genial weather. Pinks were in bloom in February, and peach-trees were in full blossom in March. In 1801 the first distillery was erected by David Bryant. The memorable Fourth of July of the same year was celebrated by the first ball in Cleveland, which took place in Major Carter's log house, on the slope from Superior Street to the harbor, and was attended by thirty persons of both sexes. The first village school was held in Major Carter's house, in 1802, and the children were taught by Anna Spafford.

In 1803 Elisha Norton arrived in Cleveland with a stock of goods, principally adapted to the Indian trade, which he exhibited for sale in Major Carter's house. The State of Ohio was this year admitted into the Union; and the first election was held at James Kingsbury's. The first post-office was established here in 1804, when letters were received and transmitted every seven days.

In 1805 the harbor was made a port of entry, and classed with the Erie District. In the same year the territory on the west side of the Cuyahoga was ceded to the State by treaty. During the negotiations for that treaty, one of the commissioners—

Hon. Gideon Granger — distinguished for enterprise and forethought, uttered to his astonished associates this bold, and what was then deemed extraordinary, prediction: "Within fifty years an extensive city will occupy these grounds, and vessels will sail directly from this port into the Atlantic Ocean." The prediction has been fulfilled, though the latter portion of it required an extension of time, of a year or two, to make the fulfillment literal.

In 1806 Nathan Perry and family, and Judge Walworth, removed to Cleveland, the latter from Painesville. In the same year the first militia training occurred. The place of rendezvous was Doane's Corner, and the muster amounted to about fifty men.

In 1809 the county of Cuyahoga was formed, Cleveland chosen as the county-seat, and Amos Spafford was elected Representative. The same year Abraham Hickox commenced business as a blacksmith, under the euphonious cognomen of "Uncle Abram."

On the 5th of June, 1810, the first Court of Record was held in a frame building erected by Elias and Harvey Murray, on the north side of Superior Street, of which Judge Ruggles was President, assisted by three associate judges. George Wallis and family arrived this year, and opened a tavern. Samuel and Matthew Williamson began business as tanners. Dr. David Long commenced practice as a physician, and Alfred Kelley as the first attorney in Cleveland. Elias and Harvey Murray opened a store this year in Union Lane, and may be termed the first general merchants.

In 1812 was the first trial for murder, and the execution in Cleveland, that of the Indian O'Mic, for the murder of two white trappers near Sandusky City. In the same year the court-house was built. The first brick house erected in the city was that of J. R. & I. Kelley, on Superior Street. It was built in 1814; but the bricks were very unlike those of the present day, being more than twice their size. They were made in Cleveland. This edifice was soon succeeded by another of the same material, built by Alfred Kelley, on Water Street.

In 1815 Cleveland was incorporated by the Legislature, with a village charter, and Alfred Kelley was the first President. In 1816 the first bank was established in the city, under the title of "The Commercial Bank of Lake Erie," of which Leonard Case took the management. In that year the number of vessels enrolled as hailing from the port of Cleveland was but seven, and their aggregate burden, 430 tons.

In 1817 the first Church was organized, which was the Episcopal Church of Trinity; but it was not until 1828 that the edifice was erected on the corner of Seneca and St. Clair Streets. On the 31st of July, 1818, the first newspaper was printed in this city,

the *Cleveland Gazette and Commercial Register.* On the first of September, in the same year, the first steam vessel entered the harbor. The *Walk in the Water*, commanded by Captain Fish, from Buffalo, putting in on his way to Detroit. It was three hundred tons burden, and had accommodations for one hundred cabin, and a greater number of steerage passengers, and was propelled at the rate of eight or ten miles per hour. Its arrival and departure was greeted with several rounds of artillery, and many persons accompanied her to Detroit.

In 1819 Mr. Barber built a log hut on the west side of the harbor, and may be considered the first permanent settler in Ohio City. In 1820 was established the stage conveyance to Columbus; and in the Autumn a second proceeded to Norwalk. In 1821 these efforts were followed by others, and two additional wagons were started, one for Pittsburg, and the other for Buffalo. In 1825 an appropriation was made by the Government for the improvement of the harbor, being the first government aid received for that purpose. The water in the river was frequently so shallow that it was customary for vessels to lie off in the lake and transfer passengers and freight by boat. On the 4th of July, in that year, ground was broken at Licking Summit for the Ohio Canal, to connect the waters of Lake Erie at Cleveland with those of the Ohio River at Portsmouth.

In 1827, Mr. Walworth, the harbor-master and Government Agent, proceeded to Washington, and, after the most strenuous exertions, succeeded in obtaining a further grant of $10,000 for the improvement of the harbor. In the same year, the Ohio Canal was opened to Akron, and the first importation of coal to Cleveland made. In 1828, a new court-house was erected on Public Square. The light-house, on the bluff at the end of Water Street, was built in 1830, the lantern being one hundred and thirty-five feet above the water level. In 1832 the Ohio Canal was finished, and communications between the lake and the Ohio River opened. In the same year, a new jail was built.

In 1834 some of the streets were graded, and the village assumed such importance that application for a city charter began to be talked of. The population of the city had grown in 1835 to 5,080, having more than doubled in two years. There was at this time an immense rush of people to the West. Steamers ran from Buffalo to Detroit crowded with passengers, with a fare of eight dollars—the number on board, what would now be called small boats, sometimes reaching five hundred to six hundred persons. The line hired steamers, and fined them one hundred dollars if the round trip was not made in eight days; the slower boats not being able to make that time with any certainty, frequently stopped at Cleveland, discharged their passengers, and put back to

Buffalo. It sometimes chanced that the shore accommodations were insufficient for the great crowd of emigrants stopping over at this port, and the steamers were hired to lie off the port all night that the passengers might have sleeping accommodations. In that year, fire destroyed a large part of the business portion of Cleveland. At the same period, James S. Clark built, at his own expense, the old Columbus Street Bridge, connecting Cleveland with Brooklyn Township, and donated it to the city. Two years later, this bridge was the occasion of a scene of the famous "Battle of the Bridge."

In 1836, Cleveland was granted a charter as a city. Greatly to the mortification of many of the citizens, the people across the river received their charter for the organization of Ohio City before that for the city of Cleveland came to hand; and Ohio City, therefore, took precedence on point of age. This tended to embitter the jealous rivalry between the two cities; and it was only after long years this feeling between the dwellers on the two sides of the river died out. The settlement on the west side of the river had been made originally by Josiah Barber and Richard Lord. Soon after, Alonzo Carter purchased on that side of the river, and kept tavern in the "Red House," opposite Superior Street. In 1831 the Buffalo Company purchased the "Carter Farm," which covered the low lands toward the mouth of the river and the overlooking bluffs. They covered the low grounds with warehouses, and the bluffs with stores and residences. Hotels were erected, and preparations made for the building up of the city that should far eclipse the older settlement on the east side of the river. The company excavated a short ship-canal from the Cuyahoga to the old river bend at the east end; and the waters being high, the steamboat passed into the lake through a natural channel in the west end. When it was proposed to get a city charter for Cleveland, negotiations were entered into between the leading men on both sides of the river with the purpose of either consolidating the two villages into one city, or at least acting in harmony. The parties could agree neither on the terms of consolidation nor on boundaries. The negotiations were broken off, and each side started its deputation to Columbus to procure a city charter, with the result we have already noticed. Ohio City was ambitious to have a harbor of its own, entirely independent of Cleveland, and to the advantages of which that city could lay no claim. The old river bed was to be deepened, and the channel to the lake at the west end reopened as a preliminary to this ignoring of the Cleveland harbor entrance of the Cuyahoga. A canal was cut through the marsh from opposite the entrance to the Ohio Canal to the old river bed, which was thus to be made the terminus of the Ohio Canal.

In 1837 city rivalry ran so high that it resulted in the "Battle of the Bridge." Both sides claimed jurisdiction over the Columbus Street bridge, built by Mr. Clark and donated for public use. Armed men turned out on either side to take possession of the disputed structure; a field-piece was posted on the low ground on the Cleveland side, to rake the bridge; guns, pistols, crowbars, clubs, and stones were frequently used on both sides. Men were wounded of both parties—three of them seriously. The draw was cut away, the middle pier and the western abutment partially blown down, and the field-piece spiked by the Westsiders. But the sheriff and city marshal of Cleveland appeared on the scene, gained possession of the dilapidated bridge, which had been given to the city of Cleveland, and lodged some of the rioters in the county jail. This removed the bridge question from the camp and battle-field to the more peaceful locality of the courts.

In 1840 the population increased to 6,071, so that, notwithstanding the city had been suffering from depression, there was an influx of at least 1,000 persons in the last five years.

In 1841 the Pennsylvania and Ohio Canal was completed, connecting the Ohio Canal at Akron, and the Ohio River at Beaver, Pennsylvania, thus forming water communication with Pittsburg. The United States Marine Hospital, pleasantly situated on the banks of the lake, was commenced in 1844, and not completed until 1852. It is surrounded by eight acres of ground, and is designed to accommodate a hundred and forty patients.

In 1845 the city voted to loan its credit for $200,000 toward the construction of a railroad from Cleveland to Columbus and Cincinnati; and subsequently the credit of the city was pledged for $100,000 toward the completion of the Cleveland and Erie, or Lake Shore line. In 1851, the 23d of February, the Cleveland, Columbus and Cincinnati Railroad was opened for travel; and on the same day forty miles of the Cleveland and Pittsburg Railroad was likewise completed. These circumstances produced great rejoicings, for during the period of their construction the city had been almost daily adding to the number of its inhabitants, so that it nearly doubled in the last six years—its population being now 21,140; and in the following year (1852) it added 87 persons per week to its numbers, being then 25,670. In 1858 the new court-house was built, and the old one on the Public Square was taken down.

We have thus glanced at a few of the leading incidents of the city. In 1860 the population for combined city was 43,838; in 1866, 67,500; in 1870, 100,000; and to-day Cleveland contains not less than 140,000 inhabitants.

EUCLID AVENUE OPERA HOUSE, CLEVELAND, O.

COR. EUCLID AVENUE AND SHERIFF STREET

W. J. Morgan & Co. Lith. Cleveland, O.

EUCLID AVENUE OPERA-HOUSE, CLEVELAND, O.

On another page we present a fine lithograph of the Euclid Avenue Opera-house, of Cleveland, Ohio, and it is sufficient to know that Cleveland has now one of the most completely appointed places of amusement that has ever been erected in America. In design of exterior, in location, and in finish and furnish of interior, there is nothing that surpasses it. The main entrance is from Euclid Avenue, and we are ushered into a vestibule forty feet wide, the floor of which is laid with tessellated and mosaic marble. Midway in the grand entrance is the box-office, which is of itself a model. Every thing about it is arranged for convenience and the rapid dispatch of business. Next comes the grand auditorium. On the first floor is the orchestra and the orchestra circle. The seats are of the latest and most approved patterns of chair, upholstered in crimson plush. The main lobby is also on this floor, wide, airy, and upholstered with the best Brussels carpeting. Ascending an easy flight of stairs to the balcony, we find the seats arranged in order similar to the orchestra floor, the lobby being lighted with two large chandeliers and several side brackets. Another easy staircase leads us to the family circle, where one finds the seating better than has ever before been placed in this portion of a theater in this country. The view is equally as good as from any part of the house, and it is a favorite resort. The house has no gallery. The private boxes are marvels of beauty and elegance, and they are fitted up in the most luxurious style. The seating capacity is over sixteen hundred. The frescoing is admirable, especially the dome, which contains four groups, representing Music, Comedy, Tragedy, and Poetry. The stage has had extraordinary pains taken with it, and there is nothing known to the machinist of modern times that has not been investigated, and the best of all adopted. The drop-curtain is of garnet satin, trimmed with gold and black, and the grand prismatic reflecting chandelier is the largest in the country. The heating apparatus is perfect. In fact, every detail has had a master head superintending it. Mr. John A. Ellsler has been the master spirit in the enterprise, and through his perseverance and indomitable will are the citizens of Cleveland indebted for their amusement palace.

BIOGRAPHIES.

Biography is the most important feature of history, for the record of lives of individuals appears to be invested with more vitality and interest than the dry details of general historical narrative. In biography the attention is not distracted by a multiplicity of leading and disconnected events, but every incident that is related serves to illustrate the character of some eminent person, and is another light by which we can see more clearly the elements which form their being.

The gentlemen whose biographies make so large a portion of this work have not been selected on account of their wealth, their social position, or their particular avocation, but from other and more worthy motives. In the number are embraced the professions and most of the other callings of life, and they find a place in this book from the circumstance that they excel in their respective vocations—are men of sterling virtue, and in their efforts to establish position and fortune they have given wealth, stamina, and character to the State of Ohio. We have no favorites to support, no political or sectarian interest to advance, but in choosing the subjects of these biographies, have been guided by a sense of duty, and a wish to pay some tribute to well deserved merit.

Biographies of those who have become identified with the progress of the great State—who have guided and directed its business currents year by year, swelling with the elements of prosperity, and who have left the impress of their genius and judgment upon the legislative enactments of our State—must be sought after with avidity, and must be fraught with useful information.

It will be a source of satisfaction to the reader to know that the biographies of individuals who adorn this work are not drawn by the flighty imagination from airy nothingness, but represent the lineaments of men, nearly all of whom are living, who have achieved lofty positions, are still active in the busy, bustling world, and afford standing examples of business excellence and moral and social virtues.

In writing the lives of these men, the author has not attempted to swell facts beyond their proper magnitude, for the incidents which make up the biographies are of sufficient importance in themselves to vest them with interest without the adventitious aid of the imagination.

DAVID SINTON.

THERE are some men whose characters are so nobly planned by nature, and so plentifully adorned with those virtues which ennoble humanity, that it is a duty and a pleasure to write their biographies and hand them as memorials to posterity for its benefit and instruction.

DAVID SINTON was born in the north of Ireland, though he is purely Anglo-Saxon, and, on his mother's side, a direct descendant from Marshal M'Donald, celebrated in the army of Napoleon, and, on his father's side, from the Swintons of England. The subject of this sketch was brought to America when only three years old, and ten years later found him paving his own way and earning his own living. After seven years of business experience he started to the Hanging Rock Iron Region—his worldly possessions being $13.25—there took a position as clerk in the river storehouse of the Union Iron Works, selling their productions, such as hollow ware, etc. He also accompanied the flat boats to Cincinnati, Louisville, etc., and helped dispose of their wares. Two years later, from his peculiar aptitude and acquirements, he was appointed manager of the Union Furnace—the first furnace built in the region—and this may be marked as his first step in the iron interests. Little by little did he creep onward till he became one of the largest producers, though not without passing through all the viscissitudes and fluctuations attendant upon such careers, till he has now reached a position and amassed a fortune that would content the extravagant requirements of royalty.

David Sinton has liberally dispensed his charities, and seen and enjoyed the fruits of them while living. His good works live around him, and he can enjoy them. He has the love and respect of zealous, admiring friends, and thousands of young hearts who are educated by his bounty, breathe his name with gratitude.

David Sinton

V. B. Horton

HON. VALENTINE B. HORTON.

Valentine B. Horton was born in Windsor, Vermont, January, 1802, and was educated at the Military Academy, Norwich, Connecticut, after which he read and studied law at Middletown, Connecticut, commencing the practice at Pittsburg in 1830, afterward in Cincinnati. In 1835 he moved to Pomeroy, Ohio—his present residence—and immediately became a member of the original firm of Pomeroy, Sons & Co., Mr. S. Wyllys Pomeroy, the senior member of the firm, being among the original owners in the Ohio Company's purchase of the central tract on which the city of Pomeroy now stands.

For many years Mr. Horton has retired from the legal profession, and devoted himself to developing the resources of that portion of the salt and coal country in which he is so largely interested, besides being the largest and most successful farmer in Meigs and Hamilton Counties, owning and raising a deal of blooded stock. He has also been noted for introducing many implements in his interested agricultural districts to cheapen and facilitate production.

It is often asserted—but without a shadow of reasonable support—that if a man have genius and talent he will become eminent in the sphere he moves in, even if he has not the advantages of proper previous training. Examples are not often given of men who, by the mere force of intellect, without its being strengthened by proper training and preparation, become lights in the various avocations and professions of life. Fortunately for Mr. Horton, he had received all the adventitious assistance of thorough training in mental exercise previous to commencing the study of the law, and when he had mastered his profession, he possessed an untold advantage over those who had been deprived of a suitable preparatory education. His polished eloquence, the fund of knowledge which he could draw from a thousand sources to strengthen and adorn it, and his suavity of manner, soon won him hosts of friends and made him eminent in the community. It was not to be supposed that a man of Mr. Horton's ability and popularity should not receive from the public some demonstration of its confidence by serving them in some important position; so in 1849 he was elected a member of the Ohio Constitutional Convention, held at Cincinnati, to remodel the State laws. He also represented his constituents in Congress three times; namely, 1854, 1856, and 1860, and in him was found a bitter enemy of the Legal Tender Act. In 1860 and 1861, in company with Salmon P. Chase, he represented Ohio in the National Peace Congress.

In 1832 he married Miss Clara, daughter of S. Wyllys Pomeroy—so well known in the annals of Pomeroy—having five children. He has been successful in all of his business pursuits, from a rare combination of industry and judgment, and has gained the confidence and respect of the community by at all times exhibiting a rectitude of character which never wavered from the proper direction. His age sits lightly on him, and his health gives promise of many years of usefulness in the positions he has so long occupied.

DAVID TOD.

Hon. David Tod was born at Youngstown, Trumbull (now Mahoning) County, in this State, on the 21st of February, 1805. His father, the Hon. George Tod, settled in Ohio in 1800, having left his native State, Connecticut, with many other of the early pioneers who settled the Western Reserve. At the death of his father in 1841, David Tod was then practicing law with great success and ability, having been admitted to the bar at the age of twenty-two, in 1827, and having opened an office at Warren, where he followed his profession for fifteen years. As a lawyer, none were more successful. As a criminal lawyer he won such renown as to extend his reputation throughout the West.

From his youth he had a strong love of politics, was an ardent admirer of Jackson, and, in consequence, of the Democratic party, for whose success he cast his first vote. In 1838 he was elected to the State Senate over Hon. John Crowell, now of Cleveland, his Whig competitor.

In 1840 he took the stump for Martin Van Buren, and won a reputation as a speaker, which at once gave him prominence among the great orators of the State.

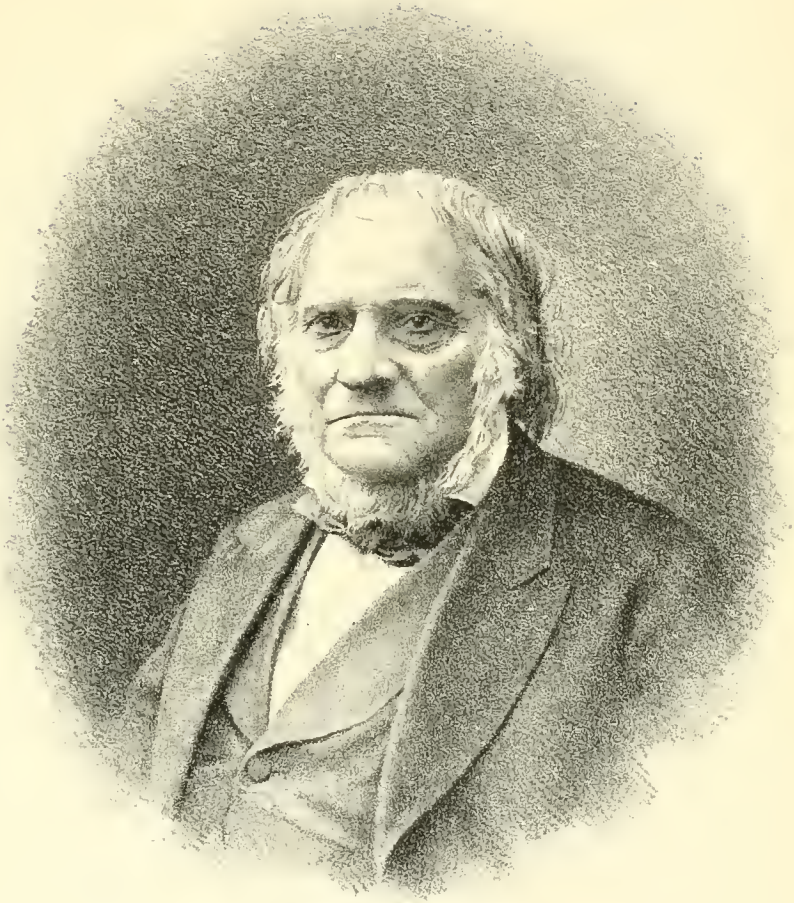
Such was his popularity with his own party that in 1844 he was brought out as their candidate for Governor, receiving a unanimous nomination; and in that struggle, though the Whig party had an overwhelming majority in the State, his opponent's, Bartley, majority was only about one thousand; while Clay's, the following month, over Polk, was six thousand. About this time, Colonel Tod retired from his profession to his farm at Brier Hill, and for the next three years devoted himself to agricultural pursuits.

In 1847, President Polk, unsolicited, tendered him the appointment of Minister to the Court of Brazil, which position he held till 1852.

On his return and during the Presidential canvass, Colonel Tod did effective service in the campaign which secured the election of Mr. Pierce. He also participated in the canvass of 1856. In 1860 he was delegate to the Charleston Convention, and a strong Douglas man; though in 1861 he was elected, on the Republican ticket, Governor of the State, a position he filled the two following years with credit to his party.

To Mr. Tod more than any other man belongs the honor of inaugurating the steps which led to the development of the vast coal mines of the Mahoning Valley. Mr. Tod warmly advocated the peace measures before and after the meeting of the Peace Congress in February. He was nominated and elected by the Republicans in 1868 as one of the electors of President for the State at large, but his sudden demise on the 13th of November, 1868, prevented his meeting the Electoral College at Columbus, and casting his vote for General Grant. Such was the respect and esteem for ex-Governor Tod, and the feeling entertained toward him, that his funeral was attended by a number estimated at twenty thousand people. The inhabitants of the Mahoning Valley, and the citizens of Youngstown especially, of all classes, have long mourned the loss to them of David Tod, their cherished friend, adviser, and benefactor.

Alexander Todd



Wm Kirkup

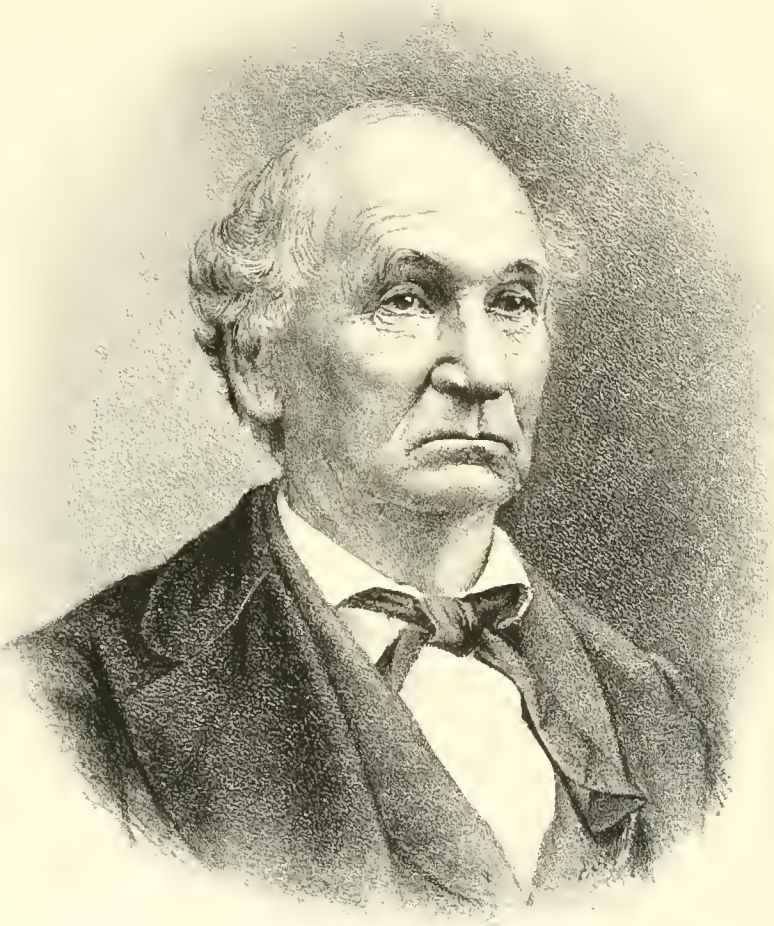
WILLIAM KIRKUP.

The subject of this sketch was a native of the city of Carlisle, north of England, though he left there in 1834, and four years later came to Cincinnati, arriving in the Queen City of the West on the last day of June, 1838. Nine years later, Mr. William Kirkup commenced the brass founder's business, in connection with Messrs. Joseph Garrett and George Peck, in a small way, on Front Street, near the Little Miami depot. The building occupied was fifteen by fifty, two stories in height, in which three or four men were given employment. Business was continued here for three years, when a removal was made to the buildings 290 East Front Street, where greater facilities were afforded for carrying on the constantly growing trade of the firm. These buildings were two in number, four stories in height, thirty by twenty-eight feet, and sixty-six by twenty-eight feet in width and depth, respectively, and were furnished with all the tools necessary for the successful prosecution of the business. In 1870 a final removal was made to Nos. 119 and 121 East Pearl Street, where a building, four stories in height, with basement, and having frontage on the street of thirty-three feet, with a depth of ninety feet, was purchased by Mr. Kirkup to meet the demands of his trade. In this place he now has one of the most complete and convenient brass foundries in the State, and, it shall be added, under his sole control, he having, in the year 1850, purchased the interest of Mr. George Garrett, and, in 1854, that of Mr. Peck, in the business. In 1850 his son was admitted to partnership; but the decease of that gentleman, about eight years ago, threw the whole responsibility upon his shoulders, and those of Mr. B. F. Stanley, who assists in the management of the business. It is unnecessary to add that his management is an able and shrewd one, as the continued and increasing prosperity of the business is ample proof of that. It may be proper to state in this connection that the firm and name still remain William Kirkup and Son. From the small foundry on Front Street, to the present extensive works, a great stride has been made. The cause is found, however, in the great industry, energy, and business tact which Mr. Kirkup has brought to bear upon the business. By his personal efforts he has caused the business to increase until it has reached its present proportions, and he has reason to feel proud of his success, which is making his foundry among the most prominent business manufacturing establishments in Cincinnati.

JOHN CAMPBELL.

Mr. John Campbell, of Ironton, Ohio, is one of the few remaining pioneers of the Hanging Rock Iron Region. He has done more toward developing its resources, and at present controls more real estate and iron interests, than any other one man of the Region. The following is a synopsis of the many branches of iron industry in which he has engaged:

In 1833 he was employed in building the old Hanging Rock Iron Forge—long since demolished. Afterward a rolling mill was erected upon the same site, but it has now for many years been abandoned. The same year he, together with Andrew Ellison, built Lawrence Furnace for J. Riggs & Co. These were the first iron works in which he engaged; but it was a beginning that gave to him the experience so needful in the many enterprises he afterward originated and controlled. In connection with Mr. Robert Hamilton he built Mount Vernon Furnace in 1834. The following year he left Hanging Rock to manage this furnace. It was from Mount Vernon that grew up the large iron interests which were, for a period of over thirty years, known as Campbell, Ellison & Co., of Cincinnati. In 1837, through the guarantee against any loss by Mr. Campbell and others, Vesuvius Furnace was induced to erect the first hot blast in America. In 1841 he made the change of placing the boilers and hot blast at the top of furnace stack. The Iron Region was destined to become one of the most important in the country, and none appreciated this fact more than did Mr. Campbell. Mr. Hamilton and he were the heaviest capitalists of the Region. While the former built a railroad from Hanging Rock to his coal mines at Newcastle, Mr. Campbell was investing in other furnaces. In 1844, with Mr. John Peters, he built Greenup Furnace, Kentucky, and in 1846, Olive Furnace, Ohio. In 1847 he built the Gallia Furnace. Mr. Campbell then proceeded to organize the Ohio Iron and Coal Company, of which he became President and owned one-third of the stock. This Association, composed of twenty-four members, twenty of whom were iron masters, bought up lands above Hanging Rock, and founded the city of Ironton. Mr. Campbell gave the new town its name—the first of some five towns afterward so called in the United States. The propriety of the name becomes more and more apparent as time passes. While the town was thought to be of much importance, yet it was looked upon as but an auxiliary to the Iron Railroad. This latter enterprise, in which Mr. Campbell owned over one-third of the stock, was carried on by nearly the same individuals who founded the town. In 1849, with others, he built Keystone Furnace, but gave his attention principally to the new town and railroad. In 1850 he removed from Hanging Rock to Ironton, and with the Ohio Iron and Coal Company purchased Lagrange Furnace. The same year he built the stove foundry of Campbell, Ellison & Co., and in 1851 was one of the founders of the Iron Bank of Ironton,



John Campbell

now known as the First National Bank. In 1852, besides taking large stock in the Ironton Rolling Mill—now known as the Iron and Steel Company—he subscribed to one-half the stock for building the Oliver Foundry and Machine Shop. He also purchased the celebrated Hecla cold blast furnace. In 1853 he became one of the largest stockholders in the Kentucky Iron, Coal and Manufacturing Company, which founded the town of Ashland, Kentucky. With Mr. D. T. Woodrow he built Howard Furnace, to which has since been added the Buckhorn Furnace, under the firm name of Charcoal Iron Company, and with Mr. John Peters he built the Washington Furnace, upon the Portsmouth Railroad. In 1854, with S. S. Stone, of Troy, New York, and others of Ironton, he built a large establishment for the manufacture of the iron beam plow. The same year, with others, he built the Madison Furnace, and also became one of the heaviest stockholders in the erection of the Star Nail Mill—one of the largest in the Region, and now know as the Belfont Iron Works. In 1855, through the influence of himself at Ironton, and Hon. V. B. Horton at Pomeroy, first telegraphic communication was established between these towns and Cincinnati. In 1856, with Col. Wm. M. Bolles and others, he built Monroe Furnace—the largest charcoal furnace in the Region. This and the Washington Furnace are now under the firm name of Union Iron Company, of which Mr. Campbell is President. In 1857 his rolling mill interests extended to Zanesville, Ohio, where he was one of the incorporators of the Ohio Iron Company. The Oak Ridge Furnace was operated by him at this date, but for a short time only. The stress upon the iron market which followed was relieved by the high prices obtained during the war. During the war his course was marked by intense loyalty to the Government. Although constantly devoted to business, he is known as a very public-spirited citizen. Of the fourteen furnaces in which he has been engaged, he retains controlling interests in eight, and has lately been interested in the erection of the Ironton Furnace. This is the eleventh furnace that he has assisted to build.

He is of large, massive frame, and has inherited a strong constitution, which gives to him an energetic, active old age. Although his parents were wealthy at their decease, yet they were of but little assistance, and his life exhibits what can be accomplished by industry and integrity, combined with good judgment. His parentage is Scotch-Irish, his ancestors having removed, in 1612, from Inverary, Argyleshire, Scotland, into Ulster, near Londonderry, Ireland. Their descendants, in 1740, removed to Augusta County, Virginia. From these were descended many who attained to civil and military distinction in the States of Virginia, Tennessee, and Ohio.

Mr. Campbell's grand-parents came from Virginia to Bourbon County, Kentucky, in 1790; and from thence, in 1798, to the part of Adams now called Brown County, Ohio. At the date of his birth—January 14, 1808—Staunton, now known as Ripley, was not laid out; but in early life he engaged in business with an uncle at that place; from thence he came to Hanging Rock.

HENRY B. CURTIS.

Henry B. Curtis was born near the village of Champlain, N. Y., on the 28th of November, 1799. His parents were New England people. His father, Zarah Curtis, was born in Litchfield County, Conn., in 1762, and at a very early age entered the Continental army. His mother, Phalley Yale, eldest daughter of Aaron Yale and Anna Hosmer, whom his father married in 1785, was born in Hartford, Conn., in 1762. She claimed a distinguished ancestry, tracing the lines of the two families a very remote period, embracing distinguished persons in the reign of Henry VIII, and in the early history of New England. They moved to Charlotte, Vermont, thence on a farm on the west side of Lake Champlain, and, in 1809, removed to Ohio, settling at Newark, in Licking County. His father subsequently purchased a farm on the waters of the North Fork of Licking, Washington Township, where he died in 1849, beloved and respected as a Christian minister, in the eighty-eighth year of his age. Henry B. Curtis was but nine years old when his father moved to Ohio. At that time Newark afforded small chances for education. Yet there were those who instructed even in the higher branches of English education, and the subject of this article took judicious advantage of every facility offered. At the age of seventeen he left home with one year's savings in his pocket, and joined his brother at Mt. Vernon, who was then a practicing lawyer, and who procured for his brother a position in the Clerk's office, where his ready skill soon secured for him the official appointment of "Deputy Clerk" of the Court. Time familiarized him with the courts and legal forms of proceedings, and in this way his mind was naturally directed to the law as a business for life. He entered his brother's office as a law student early in the Fall of 1820, and was admitted to the bar December, 1822. During the earlier years of his professional career, his circuit embraced a large territory aside from Knox County. On the ninth day of January, 1863, Henry B. Curtis was admitted to the bar of the United States Supreme Court, Washington City.

In December, 1872, he celebrated the fiftieth anniversary of his admission to the bar, by giving a bar supper at his home at "Round Hill" to the resident members of the professions, with invitations to, and attended by, many old-time friends from adjacent counties. It was a happy occasion, bringing back pleasant reminiscences of the past. He then announced to his guests and brethren that hereafter he would decline all new retaining fees, leaving the field to the younger ones. And here ended, professionally, a career that was crowned with success from first to last. Could it have a happier or brighter conclusion? On the second of July, 1823, Henry B. Curtis was married to his present wife, *née* Miss Elizabeth Hogg, of Mt. Pleasant, Jefferson County, Ohio; and of this marriage have been born eight children, three only of whom now survive—two daughters and one son. Though now seventy-six years old, Mr. Henry B. Curtis is hale and vigorous, and early hardships appear not to have affected his iron constitution.

HENRY B. CURTIS

Yours H B Curtis

H. Blandy.

H. BLANDY.

H. Blandy was born October 26, 1810, at Bristol, England, where his parents lived thirty years. He came to this country with his parents, brothers, and sisters, in 1832, though he returned in the Fall, and came back in the following Spring, and went to Zanesville with his parents and their family, arriving there on a Sabbath morning in May, 1833. In the following February, Henry Blandy married Miss Amanda, the second daughter of Judge Blocksom, and at once started in business with Judge Blocksom, J. T. Fracker, and Lloyd Dillon, under the style of Dillon, Blandy & Co., in the prosecution of furnace and forge business, at Dillon's Falls, Mr. Blandy managing the store department. The business proved a failure, and Mr. B. lost every dollar of his investment. Another investment of a similar kind, and another failure, left Mr. B. $5,000 worse off than nothing. His next business engagement was with his brother and present partner, F. J. L. Blandy, in the foundry business. This proved a success, and enabled them to pay the interest on their borrowed capital and extend their operations. In time, they undertook to build locomotives, and also ventured into another speculation, that of building a rail mill—the latter they located at Ironton, O. Through the failure of their partner, before its completion, and the depression in railroad stocks, almost overwhelmed them, never wavering from integrity and zeal, they waded through their embarrassment, and paid every dollar they owed, principal and interest. They at once concluded to quit building locomotives, and enter the building of portable engines, saw-mills, and other machinery. They succeeded in establishing a fine business, so that when the crisis of 1857 came, they were in good shape. Unfortunately, their Southern correspondents and debtors, when the war came, lost them every debt, though the oil excitement and other channels soon righted them. In 1866 their works burned to the ground, losing $200,000. Fortunately, they owned large shops in Newark, and threw all the labor and extra machinery possible, running day and night, enabling them to hold their trade. They rebuilt their Zanesville works immediately, and since then have done a prosperous business; and during the excitement of 1873 they were panic proof. In 1859 Mr. Blandy lost his first wife, and was again married in 1860 to Miss Amelia Adeline Douglas, of Lowell, Mass., though lost her in 1867. In 1868 he again married, this time a sister of his second wife, Miss Nellie W. Douglas, who proves a devoted wife and mother to her sister's children. Mr. B. is very fond of race-horses, and owns a stud, numbering forty, many among the fastest horses known. The name of H. Blandy, Esq., carries with it a great weight and influence; and the purity of his character and frankness of disposition have endeared him to a large circle of friends.

FREDERICK JOHN LEONARD BLANDY.

Frederick John Leonard Blandy, one of the oldest and most prominent manufacturers and improvers of portable steam-engines and circular saw-mills in America, was born in Bristol, England. He lived with his father, Benjamin Blandy, Esq., until 1835, attending the best academies and receiving a good, sound education. He came with his father's family to New York, and from there to the then small town of Zanesville, Ohio, which his father had previously selected, after many months' travel and observation, as their future home. Henry Blandy, the brother of the subject of this sketch, went into the forge and furnace business, with a large stock of general merchandise to pay the hands with, and Frederick was the clerk and salesman, until its close. From this situation he went to New York and clerked in a large manufacturing establishment, where he accumulated some means. In 1840 his father started him, with his brother Henry, in the foundry business, which, by their united efforts and fidelity to each other, progressed rapidly, and they built up a large trade. The first heavy contracts they made were for the iron work for the Zanesville Water-works and for the Zanesville Gas Light Company. By this time they were well into the machine business, having turned out many steam-engines and other machinery, and had now large and powerful works. They contracted to build a large number of locomotive engines for various roads. About this time, in the Fall of 1851, Frederick married Miss Julia Johnson, of Philadelphia, Penn., and this marriage has been productive of six children—four sons and two daughters. The firm built one of the largest rail mills in the country, but the party in whose interest it was built failed. This, with the universal failure of most of the railroads in Ohio, in 1853, induced them to abandon this branch of their business, and, through perseverance and energy, they preserved their good name and credit untarnished. At this period they commenced to build their celebrated portable engine and saw-mill, invented by Frederick, which has proved the *ne plus ultra*.

In 1863, requiring greater facilities for their increasing trade, they purchased the Newark Machine Works, and in 1865 the aggregate sales reached over $1,250,000. In 1866, when in the zenith of prosperity, their Zanesville works burnt down, incurring a loss of $200,000. Rebuilding commenced before the ruins were cold, and in less than four months the finest and best equipped works in America were in successful operation upon the ruins. At this time Frederick built his present residence, which is considered the finest in the county.

Frederick has great taste for agriculture and horticulture, supervising his three farms within a few miles of the city; owns large coal interests in the Perry County fields and in Muskingum County; is a director and stockholder in various industrial interests, and Vice-President of the Union Bank. Such is prosperity and the legitimate result of well-digested plans properly managed.

F. J. L. Blandy

R. M. Bishop

RICHARD M. BISHOP.

Richard M. Bishop was born in Fleming County, Kentucky, November 4, 1812. His parents removed from Virginia in the year 1800. The ancestral lineage was German on the side of the father, and English on the side of his mother; and many of the peculiar characteristics of both the English and German are strongly marked in him. The subject of this sketch began his business career in Fleming County, Ky., as clerk in a dry-goods store, at the age of seventeen, and before he was twenty-one was taken into partnership by his employer. From 1838 to 1841 he was engaged largely with his brother in the pork business, which proved unfortunate. From that date till 1847 he was in business at Mount Sterling, Ky. On the 1st of May, 1848, he removed to Cincinnati and commenced the wholesale grocery business, under the firm name of Bishop, Wells & Co., which continued until 1855, when Mr. Wells retired, and the firm changed to R. M. Bishop & Co.—the present style—and is composed of the senior member and his three sons.

In April, 1857, Mr. Bishop was elected to the city Council by an overwhelming majority, and presided as the President of that august body. In April, 1859, he was nominated by a Citizens' Convention for the office of Chief Magistrate, and was elected by a handsome majority. How well he filled the position is best acknowledged from the fact that Cincinnati never had a better Mayor.

One of the most brilliant positions ever occupied by Mr. Bishop, was the presidency of the Commercial Convention held in Baltimore, in 1871, and was a fitting tribute to his business worth and ability. He was also a member of the Constitutional Convention of 1873 and 1874, and is at present a trustee of the Southern Railroad.

Mr. Bishop is a member of the Central Christian Church in this city, and through his liberality and devotion, he has been appointed to some of the most responsible and honorable positions in the Church, besides being prominently connected with many other charitable and educational institutions.

Mr. Bishop has amassed a large estate; but we are happy to say that his charities have always increased in the ratio of his growing fortune, and few men have lived who have been of more substantial benefit to society than R. M. Bishop.

LEMUEL CRAWFORD.

Lemuel Crawford was born in Florida, Schoharie County, New York, December 15, 1805. Left without means at the age of fourteen, he chose the trade of molder in the iron business. When twenty-one, he came to Painesville, Ohio, where he was made foreman of the Geauga furnace. Here he remained about six years, having superintendence of the pattern and molding department, filling his position with great skill and credit. At this place, July 29, 1832, he married Louisa Murray, of Willoughby, in the same county, who still survives him. In 1833 Mr. Crawford moved with his family to Detroit, whence, after remaining six years, he removed to Presque Isle, on Lake Huron, where he was first to start the wood trade, for fuel, for our then fast growing steamboat commerce, and at which he remained seven years. In 1846, having confidence in the fact that coal must, sooner or later, supplant wood for fuel, he removed to Cleveland, and at once invested about $40,000 in the Chippewa mines, located in the Mahoning Valley, which contained an inexhaustible supply of the richest coal. These mines he worked for twenty years. Shortly after commencing with the Chippewa, he was found in 1848 to be among the pioneers in the opening up of the beds of Briar Hill coal in the Mahoning Valley, so well known to steamboat men and manufacturers ever since, as being a kind of coal peculiarly adapted for their uses. Here he continued to mine largely at several different localities, selected by him with rare judgment. He also carried on mining extensively at other points, such as on the Ohio below Steubenville; also, in Orange County, Penn., and elsewhere. His chief business and coal depots were at Cleveland; but he had branch establishments at Detroit and Chicago, and at one time was largely interested in vessel property. In 1851 he was one of the earliest to engage in the manufacture of pig iron, he having an interest in the second furnace started in the Mahoning Valley. He was also a large real estate holder, and invested judiciously. He was intensely loyal and liberal during the war, always charitable to the poor, and a warm friend of religion and religious institutions. In the latter years of his life he was frequently an invalid, and in 1867 he, under advice from his physician, went to Europe, and returned with improved health, which, however, gave way, and on June 30, 1868, at the age of sixty-two years, six months, and fifteen days, he died at his beautiful home in Cleveland, surrounded by his wife, family, and friends, deeply mourned; and through all the vicissitudes of a long business life, he maintained a character of the most perfect integrity.

Samuel A. Crawford

Wm B. Maddux

W. B. MADDUX.

WHOEVER achieves fortune and social position by his own efforts, and preserves at the same time an unblemished reputation, is a credit to any community, and is a safe example and guide to succeeding generations.

W. B. MADDUX was born in Woodford County, Ky., May 28, 1828. His first and early education was work in the hemp and tobacco fields. At the age of fourteen he left the home of his youth and started for Rushville, Indiana, where he lived sixteen years. At the age of eighteen he started business for himself, and since that time has tried many pursuits, first as a hat manufacturer, printer, then merchant, and after that as a distiller. In the Spring of 1858 he came to Cincinnati, and, under the firm name of Maddux Brothers, organized the first house in the city who systemized the plan of selling goods to the country merchants by traveling salesmen from samples—a mode of doing business that is now so universally adopted by merchants every-where, in the whole country. In this business W. B. Maddux and his two brothers were very successful, and the house is still running under the same firm name, though the subject of this sketch is not at present a member. In 1868, and while of the firm of Maddux Brothers, Mr. W. B. Maddux put into operation the redistilling house of Maddux, Hobart & Co.—a house that last year did a business aggregating over two millions of dollars.

The business career of Mr. Maddux in Cincinnati has been a most prosperous one. His business talents, his industry, and his energy, would have made him partially successful in any place; but in Cincinnati, where there was such an ample field for their development, Mr. Maddux has reached a position in the business world which must satisfy all his business aspirations. He is the senior partner of the well-known house of Maddux, Hobart & Co., and his name has an influence both in business and in social circles—the result of successful enterprise and exalted merit. Though he has amassed a fortune sufficient to supply all the luxuries which even a devotee of pleasure might require, he still pursues his usual routine of business habits with nearly the same ardor which characterized him in his early years; and his remarkable diligence furnishes a salutary example to the young members of his establishment.

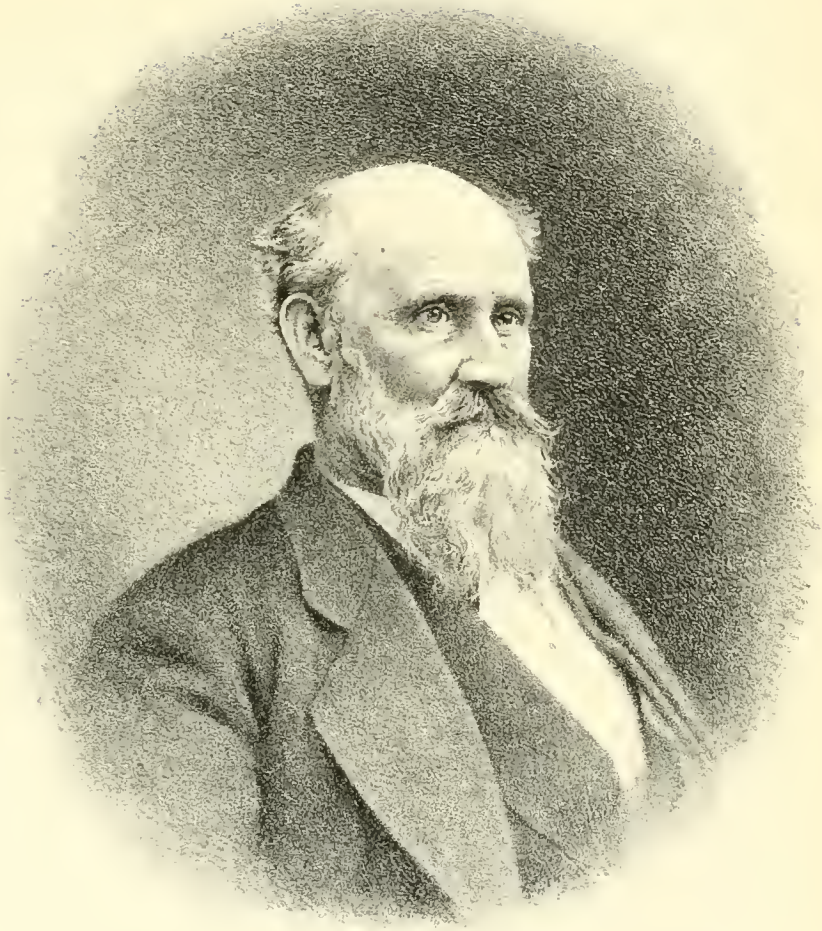
A. J. BEATTY.

The biography of such a man as A. J. Beatty is fraught not only with readable interest, but has a useful moral effect upon the present time and posterity. It teaches youth what industry and moral worth can achieve, and that they can hope for all things if they make honor their guide, and are prompted by honorable emulation.

The subject of this sketch was born in Steubenville, Jefferson County, Ohio, November, 1811. His father and mother—Joseph and Elizabeth Beatty—both resided there during the city's infancy and early history. The early days of the subject of this biography were partially spent at school; but directly he became of size sufficient to make his labor available, and at the age of ten years, he entered a dry-goods store as a boy to do general work, which position he kept for four years, when he entered a drug-store and learned to be a prescription drug-clerk. This he continued till 1833, when a desire for a change presented itself, together with the opportunity; so he entered the service of Mr. Torbull, in the book trade, as salesman. This business did not seem to be his exact ideal, so he made up his mind to try the grocery business, and, accordingly, acted as salesman for Mr. Andrews. This seemed to suit his taste better, for, after learning the trade, he started in the business for himself, which he managed successfully three or four years, when a taste for manufacturing compelled him to give up merchandising, and next we find him producing from the loom woolen jeans. This, in a short time, proved financially disastrous, so much so that it took Mr. Beatty twenty years to work off the indebtedness. And here we find a strong point in his character, by which he has won ultimate success. After this failure he commenced clerking for Beatty & Steelman, glassware manufacturers, and remained in the position till the panic of 1857, when his employers went, with thousands of others. This presented an opportunity for A. J. Beatty to commence once more for himself; so he rented the establishment, and first conceived the idea of turning his attention to the production of one article—tumblers. We need not say that in the production of this one article it allowed him to turn out the greatest number at a minimum cost, and the plan which caused all his neighbors to laugh, proved such a success that in little or no time he was supplying manufacturers cheaper than they could produce, and from that time Mr. Beatty has been one continued success. The business to-day is five times as large as when he first launched out into it.

In 1847 Mr. Beatty married Miss Abby Johnson, who departed this life in 1871. Mr. B. has a family of four children—two sons and two daughters. The sons now have an interest and are active workers in their father's business.

A. D. Beatty



A. C. Richards

A. C. RICHARDS.

Mr. A. C. Richards, one of the best known manufacturers of the West, and, in his specialty, one of the most eminent, was born in London, England, in the year 1820. He came to the United States with his parents in 1826, and settled in Philadelphia, where, at the age of thirteen, he was apprenticed to a cabinet-making firm, and learned the trade with all the remarkable thoroughness which characterized that period. Learning a trade at that time meant an intimate knowledge of all its details in every department, and not a mere branch of the business, as is the style nowadays. How much Mr. Richards has since profited by this early training, his splendid reputation as a designer and manufacturer of elegant furniture conclusively testifies.

In 1843 he came to Cincinnati for the purpose of pursuing his chosen avocation, but, finding business depressed, embraced the first opportunity for employment, which presented itself in a job of pit digging for the veneer mill then about to be erected by Henry Albro. When the mill was completed his services were still in request by Albro, in whose employment he accumulated his first thousand dollars, saving it from his wages at $1.25 per day.

In a mere sketch like this it is not expected to trace the biography of its subject in detail, nor even allude to all the important circumstances which have influenced its results. Mr. Richards was engaged with the Meaders, with Mr. Rammelsberg, and with Mitchell & Rammelsberg, through a long series of years, in a position of great trust and responsibility remaining with the last mentioned house some thirteen years as general overseer and manager of their large manufacturing interests, and enjoying their confidence in probably a greater degree than business firms are accustomed to repose in their most trusted employees.

About ten years ago he purchased a third interest in the establishment he now owns, which is comprised in the large warehouse and salesrooms on Fourth Street, and the extensive furniture factory near the foot of Sixth Street, and at once inaugurated the most important improvements in the manufacture of cabinet furniture for the better class of retail customers, to whom he was well known, and whose preference for his goods have since that time been abundantly justified by the superiority of his designs, the integrity of his mechanism, and the faithfulness with which he has applied the strictest rules of business honor to all his transactions in a large and increasing trade. No man really occupies a more enviable position in the community of which he is a member, nor more clearly exemplifies the legitimate result of well-directed energy, industry, and thoroughness of purpose.

A. E. BURKHARDT.

A MAN who, from an humble position and by his own efforts, has risen to affluence and social position, and through all the events of a checkered life has preserved his integrity unimpeached, well deserves the pen of the historian, and to be held up as a model to posterity.

A. E. BURKHARDT was born in Herschberg, near Zweibrücken, Rhenish provinces, Bavaria, April 26, 1845, and is, therefore, in his thirty-first year. When ten years old, his father died, and he, with his mother and sister, embarked for America the same year, settling with them in Cincinnati immediately after their arrival. In three and a half years after he lost his mother, so, at the age of thirteen, he, with his sister, were left orphans. Mr. Burkhardt attended school in Germany when only six years old, and continued his education in the public-schools of Cincinnati till his mother's death, which occurred in 1859; after which, he entered the employ of Mitchell & Rammelsberg as errand-boy at a salary of one dollar per week. This position he occupied only three months, and left to better himself pecuniarily, having received an offer of one dollar and fifty cents per week from Jacob Theis, retail hatter and furrier; and here was his first step that has resulted in his present colossal business. Commencing at the lowest possible position, he gradually promoted himself by his strict attention to the duties imposed upon him, till after a few years we find him occupying the loftiest position within the gift of his employer, and a fitting reward for his zealous fidelity to his employer's interests. This position he continued until January, 1867, at which time himself and brother-in-law, F. B. Burkhardt, bought out the business from Mr. Theis. The subject of this sketch assumed sole management. What success has attended his exertions and shrewd business management is apodictical to us all, for there are few among our readers who do not know Mr. Burkhardt personally or by reputation as taking the lead in the art as hatter and furrier. His business so soon increased that the demand for more capacious accommodations resulted in his leasing the new and spacious salesrooms at 113 West Fourth Street (Mitchell's Block), where he caters to the wants of his customers, though he still keeps the old stand on Main Street. A. E. Burkhardt & Co. are also large exporters of raw skins, their principal shipping-points being Leipzic and London. They receive consignments from every State in the Union, British and South Americas, and have over three thousand correspondents. On March 1, 1871, Mr. B. was joined in wedlock to Miss Emma Amanda, the only daughter of our distinguished fellow-citizen, Andrew Erkenbrecher, Esq., and we need not add that the result has been a happy one. He has been successful in all of his business pursuits, from a rare combination of industry and judgment, and has gained the confidence and respect of the whole community by at all times exhibiting a rectitude of character which never wavered from a proper direction. He can enjoy the fruit of the seed he has sown, whilst his nature is susceptible of enjoyment, and the stamina of life have not weakened and decayed. He has all the elements of happiness within his reach, and they are of his own creation.

A. E. Burkhardt

Geo Willard

GEO. WILLARD.

THE subject of this sketch was born in 1820, at Plainfield, Sullivan County, New Hampshire, where he lived till he was sixteen years old. In 1836, his father, James Willard, believing that the West offered a better field for the farming interest, removed from New Hampshire with his family to Lake County, Ohio, where, with the assistance of his sons, he engaged largely in farming. Being an intelligent man of the old New England school, he early inculcated in the minds of his children that love for industry, economy, and integrity, which is still a characteristic of New England training, and which qualities Mr. GEO. WILLARD inherited to a marked degree, his career and conduct being guided and governed by them in every relation in life. From this time for a period of thirteen years he followed farming, and then removed to Madison, Lake County, Ohio, where he engaged in merchandising, which business he carried on successfully for seven years. In 1855, at the solicitation of his brother, J. O. Willard, he removed to Ironton, Lawrence County, Ohio. His brother dying soon after, he succeeded him in his position of cashier of the Iron Bank of Ironton, which office he occupied until the bank was reorganized, or merged into the First National Bank of Ironton, soon after which he was elected President, which position he still holds. Up to this time Mr. Willard had no considerable interest in the iron business, but devoted himself wholly and strictly to his business as a banker, which proved to be successful under his administration. The iron interest being a prominent one, he was led to give it his attention; and, in 1856, embarked in the iron business by purchasing an interest in Vinton furnace, Vinton County, Ohio, and followed these interests by assisting and taking an active part in organizing the Belfont Iron Works, and in which he is largely interested, having been a Director from the first. In 1872, Mr. Willard, with others, believing that the great resources of this iron region were not fully developed, and, after giving the subject much thought and attention, conceived the idea of organizing a new furnace company for the better prosecution of the manufacture of pig iron. His idea embraced the consolidation of two furnaces already built (Ætna and Vesuvius), and the construction of plans of furnaces upon an enlarged and improved scale. In January, 1873, the company was organized and incorporated under the name of the "Ætna Iron Works," with a capital of a million dollars, Mr. Willard being elected President. The new furnaces, to the building of which he devoted his whole time and attention, are constructed upon European models, and are almost an experiment in this country.

Amid all the political agitation this country has passed through, Mr. Willard was never allured from his business to take part in factional disputes, but has devoted himself most unremittingly to business—its extensive operations requiring all his time and most watchful attention. He is still comparatively young, and in the prime of physical vigor and matured experience.

JOHN BOUSFIELD.

THE subject of this sketch is the son of Joshua and Charlotte Bousfield, and was born on the 22d of July, 1819, in the county of Chester, England. In the following year his parents moved from Bredbury, where he had previously lived, to Adlington, in the same county, and where his father took charge of a flouring mill. John went to the village school until eleven years old, when he worked on a farm for two years, after which he learned the saddle and harness trade. Coming into possession of a small legacy left him by his uncle, he commenced business for himself, and with the exception of one change he continued this until 1843, at which time he sold out and embarked for America. He landed in New York March 13, 1844, and commenced the manufacture of whips, having brought two experienced men with him as workmen, who, during his absence from the city, sold out his business and returned to England. This left him almost penniless, and, failing to find employment, he started for the West, and landed in Fairport, Ohio, with only a silver quarter. He soon stationed himself at Kirtland, Ohio, where he rented a farm and continued his trade, doing work for the farmers, and they, in return, tilling his land. At this he prospered, and soon bought the farm; also an old water-power flour-mill, in which he commenced the manufacture of pails and tubs on a very small scale; and here, in reality, was the starting-point of his present colossal business. In 1854 he moved to Fairport to increase his business. This proved a failure, and he sold out next year, and, in May, 1855, moved to Cleveland, and organized the Cleveland Wooden Ware Manufacturing Company, which was afterward sold to Greenman & Co., of Massachusetts, John Bousfield remaining as superintendent. In March, 1859, Mr. B. rented a building and again commenced manufacturing, but in five months was burned out. In 1860 he associated himself with J. B. Hervey, and again commenced—this partnership proving very successful—and in 1864 they had to enlarge their works to accommodate the fast growing trade. In 1865 Mr. John Poole was admitted to the firm, and on the 23d of March the old fire king swept down and turned $75,000 capital into ashes. They wasted no time in fruitless sorrow, for in thirty days they were making pails and tubs as earnestly as ever. Mr. Hervey now sold out to Messrs. Bousfield & Poole, who built one of the largest factories in the country, and entered upon the manufacture of wooden ware, matches, sash, doors, blinds, etc. In 1873 it was decided to form a stock company, under the style of Bousfield & Poole Manufacturing Company, of which John Bousfield is President. Mr. B.'s success can be accounted for by his indomitable perseverance, coupled with a remarkable mechanical ingenuity, which has served him to good purpose. He is President of the People's Gas Light Company, Vice-President of the People's Saving and Loan Association, and President of the Ohio Wooden Ware Company.

Mr. Bousfield was married, January 1, 1845, to Miss Sarah Featherstone, of Kirtland, Ohio, formerly of England, by whom he has had ten children—seven sons and three daughters—six of whom are living. The two eldest sons—Edward F. and Alfred E.—are largely engaged in the manufacture of wooden ware at Bay City, Mich.

John Bousfield

Jno G Peebles

JOHN G. PEEBLES.

In speaking of the commercial interests and developments in the manufacturing industries of Ohio by her prominent citizens, it is with pleasure we produce a brief notice of Mr. J. G. Peebles, of Portsmouth, Ohio, one of our well-known and successful operators. He was born near Chillicothe, Ohio, November 30, 1813, his father's and mother's names being John and Margaret Peebles. In 1819 he left Chillicothe with his parents, for Portsmouth, arriving there April 3d, on a keel-boat which came down the Scioto River. Here he received his early training and schooling, finishing his education in 1827, after which he returned to Chillicothe in the Spring of 1828, and entered into the duties of a clerk for his uncle, John M'Coy, who kept a dry-goods store. This he continued for one and a half years only, when he returned to Portsmouth, and helped his father, who was engaged in the commission business, besides being hotel-keeper, making Portsmouth his home till 1843, when he removed with his family to Pine Grove Furnace, near Hanging Rock, Ohio, having accepted, in 1844, the position of manager of Pine Grove Furnace, which position he occupied till 1854, when he, in company with Samuel Coles and Joseph S. Peebles, bought the undivided one-half of Pine Grove Furnace and Hanging Rock Coal Company, which, in 1864, they sold to Thomas W. Means and others, the present owners. In 1860 he was elected President of the Iron Bank of Ironton, at Ironton, Ohio, to fill the vacancy occasioned by the death of James Rogers, which position he held until the First National Bank of Ironton was established, the presidency of which he held until after his removal to Portsmouth, Ohio. While living in this part of the country Mr. Peebles became interested in the Belfont Iron Works Company, also in the Ashland Coal Company, and the eastern division of the Lexington and Big Sandy Railroad, still retaining these interests. In 1865, or one year after selling the Pine Grove Furnace, Mr. Peebles, with his family, returned to Portsmouth. In 1867 he, in connection with Sherman G. Johnson and Benjamin B. Gaylord, built the hub and spoke manufactory, though he has since disposed of all interests once held there to Sherman G. Johnson and Josiah H. Roads. He also became a director in the Portsmouth National Bank, in which he has held stock since its infancy, and last Spring (1875) was elected President to fill the vacancy occasioned by the death of George Johnson, prior to which he was Vice-President for many years.

Mr. Peebles was married, June 10, 1835, to Miss Martha Steele, daughter of Robert and Martha Rose Steele, of Philadelphia. Of the marriage nine children have been born, five of whom are living—three sons and two daughters.

Thus he added to his interests in banks and railroads some important investments in the iron and coal interests, and through his shrewd observation and extensive business knowledge, has managed to make his investments profitable. His tastes are elegant and refined, and since his virtual retirement from the pressing duties of business, he has found enjoyment in the cultivation of those tastes. In manners he is affable and genial, and his disposition frank and generous. In business matters he has always been prompt, and has never allowed his engagements to be unfulfilled or postponed.

THOMAS W. MEANS.

Thomas W. Means was born in South Carolina in 1803. His father, John Means, was a member of South Carolina Legislature, and a strong antislavery man. The only advantage Thomas W. Means enjoyed in the way of education he received from the common-schools of his native town, and which, at that time, were very limited in the degree of education they could impart. However, by his own efforts, he stored his mind with much valuable information, and qualified himself to fill with honor the important positions in life which he has since occupied. In 1819, when only sixteen years old, he moved to Adams County, Ohio, and started to work in a store. Seven years from the date of his leaving home he moved to Lawrence County, at the time when nine-tenths of all the land there belonged to the Government. Here he commenced building a furnace, which was put in blast in 1827, and from that time to the present day he has been largely interested in iron ores, blast furnaces, and coal banks, and now owns large interests in the Buena Vista, Bellfont, Pine Grove, and Ohio furnaces; Norton Iron Works, Ashland, Ky.: also a large property-holder in Ashland, and has stock in the bank there. He is also President of the Second National Bank of Ironton, though he has not been actively engaged for the past eight years, having retired to the quiet seclusion of his home at Hanging Rock, Ohio.

A brief sketch of Mr. Means's life is useful for its practical instruction. He has amassed a fortune that would content the extravagant requirements of royalty; yet he has never risked a dollar in the precarious investment of speculation, but gradually added to his little commencement till its present proportions have been reached—and nothing exists to dim the luster of his life now so near its setting—in the sear of which hosts of friends and family gather round him; and when his spirit will calmly and hopefully glide away from earth, his honored name will not be forgotten.

Thomas W. Means

John A. Mohlenhoff

JOHN A. MOHLENHOFF.

He who has reaped a plenteous harvest in the field where he has labored, and has won an honorable name in the community where he has lived, well deserves a biography, and the events of his life furnish a useful lesson to posterity. The subject of this memoir was born in Wedehorn, in the kingdom of Hanover, Germany, on the 14th day of July, 1833, where he attended the schools of that locality until 1844. In 1845 he was sent to the Pieper Institute at Bassum, and there graduated in the Spring of 1849, and at once left Bremer haven for New York, landing in the latter city in May. After remaining in the metropolis a short time, he left for Cincinnati, where he arrived on the first day of June, 1849. His first business experience was in the retail grocery trade. From there he got into the china and glassware business on Fifth Street, between Vine and Race. On the 10th day of December, 1854, after obtaining a thorough knowledge of the business, and perfecting himself in the manner of conducting business, he started for himself on Fifth Street, between Walnut and Vine, in the Apollo building, where he still remains, and has, by close attention to business, built up a business in his line second to none in the city. He has pursued sedulously his trade, never wavering from the paths of legitimate business, and giving it that attention which insures success. There are some men whose judgment appears almost infallible, and from the success which crowns their every effort one is almost induced to believe that there is some truth in astrology, and that to be born under a fortunate star is to insure success in every undertaking. The ambition of Mr. Mohlenhoff has been to become a thorough business man; and his well-known and enviable reputation is a testimony that he has succeeded in the accomplishment of his wishes. He was one of the projectors of the Zoölogical Gardens, and was elected to the directory immediately after its incorporation. Mr. Mohlenhoff was joined in matrimony to Miss Mary F., daughter of Henry Brandt, on the 25th of October, 1855, the issue of which is a bright family and a happy home, where none enjoy to spend their time not devoted to business better than does the above.

W. WOOD.

The subject of this sketch was born in Dutchess County, New York, September 8, 1808, and was the son of Ebenezer Wood. Until fourteen years old he received his schooling at his native home, after which he came to Cincinnati with his parents, and here finished his education in a private school. His first business experience was serving in the capacity of clerk. In 1831 Mr. Wood was married to Miss Hopper, daughter of Aaron Hopper, of this city. He also engaged in mercantile business the same year, which he continued till 1844, when he bought an interest in the business of E. Conkling, and the firm style changed to Conkling, Wood & Co., manufacturers of white lead and colored paints, the factory being located on the same site as the present works of the Eagle White Lead Company. In 1847 or 1848 Mr. Conkling retired, and in 1867 an Act of Incorporation was obtained under the title of Eagle White Lead Company—capital stock, $200,000; Wm. Wood, President; Wm. C. Wood, Vice-President; J. E. Douglass, Secretary. Mr. Wm. Wood has several machines of his own invention engaged in the works. Their trade has constantly increased, and they now do a business of $450,000 annually, and their first year's business amounted only to $50,000. It is the only organization that has been successful in the manufacture of colored paints, and to-day the only one existing in the Western country. The works give constant employment to sixty hands, and do an enormous business throughout the country, and their Southern and Western trade is simply immense.

A large three-story building is devoted to the manufacture of kegs and half-barrels for white leads, made almost entirely by ingeniously constructed machinery. The company also manufacture their own tinware. They have recently added to the business a department for the refining and bleaching of oils, which has proved a perfect success.

The works are located on Spring Street, occupying one acre in extent, and are well worth a visit from any persons who are interested in this branch of business, which has done so much to build up and adorn our homes.

Wm Wood

A. M. Coates

AMOS W. COATES.

The subject of this sketch was born in Marlboro Township, Stark County, April 12, 1834. He attended school at Marlboro Academy, and graduated with honor at the age of seventeen. In personal appearance Mr. Coates is of average height, compactly built, weighing 142 lbs., light hair, florid complexion, and brown eyes, with a nervous sanguine temperament, indicative of that untiring energy that has marked his success thus far in life, guaranteeing victory over all opposition, whether in the form of talent, money, or energy. In his intercourse with mankind he is affable and courteous, and is universally esteemed by the community in which he lives. It was the wish of his father that he should study medicine, but to this Amos offered serious objections, his inclination not running in that direction. Soon after leaving school he engaged with Snyder & Woodruff, of Salem, Ohio, to learn stove and mechanical molding. After spending about three years in the iron business, he formed a partnership with his brother-in-law, Mr. Joseph Arnold, and, under the firm name of Coates & Arnold, commenced the manufacture of the St. Clair Plow, in Paris, Stark County. In this enterprise they were unusually successful, pecuniarily. Early in 1855 Messrs. Coates & Arnold added to their foundry the manufacture of hay rakes, and in the latter part of the same year introduced the first sulky spring-tooth horse hay rake ever used in this country. At the end of the first season Coates & Arnold disposed of their interest in the "Sanders Patent" to Phillips & Burgett, and for five or six years devoted themselves to the manufacturing of plow and other castings. During this time, commencing in 1858, Mr. Coates occupied the little leisure afforded him in reading law, under the direction of Alexander Bierce, of Canton. Mr. Arnold died in 1860, and Mr. Coates assumed control, purchasing the whole establishment, including the interest of his deceased brother-in-law. In the Fall of 1861 he sold out to Sproat & Brother, and went to St. Louis, where he enlisted in the Freemont Infantry Body Guard. He was soon discharged from the service, however, in consequence of the removal of Gen. Freemont and disbandment of the Guard. Returning home, he took up the study of law in good earnest, and in December, after the most rigid examination by Justices Galloway, Green, and Tilden, was admitted to practice in the Supreme Court of Ohio.

In 1864 he removed to Alliance, and began the erection of a portion of the buildings now occupied by his works, and commenced the manufacture of the White Hay Rake, in connection with the Center Lever Plow and miscellaneous castings. The White Rake, though an improvement on the Sanders, did not give sufficient satisfaction to warrant its manufacture on an extensive scale, and Mr. Coates set his wits to work to improve it. Early in 1866 he invented and applied for a patent on the Lock Lever Rake, but owing to delay in the Patent Office, did not receive his letters until August 27, 1867. Confident, however, that he had at last found what had been so long sought, he entered at once upon the manufacture of his rake, and in 1866 made and sold 300. In 1867 over 1,100 were made and found a ready market, and in 1868

2,600 were not sufficient to supply the demand. In the Fall of 1867, foreseeing the increasing demand for the rake, Mr. Coates determined to increase his facilities for their manufacture, and erected large additions to his buildings. The same was repeated in the year 1868. Their sale is confined to no particular locality, though Iowa, Wisconsin, and Michigan have been the most successful fields of operation. They have found their way to the golden shores of the Pacific and to the fields of the sunny South, as well as to the frozen regions of the North. Some of the rakes have been shipped to Europe and Japan.

Though at first beset with more than a full share of the difficulties which necessarily attend the introduction of a discriminating public, who, not unmindful of former swindles, embarked very cautiously in new inventions, Mr. Coates has, by unremitting attention to business, and the production of an implement which men of honesty and integrity can conscientiously recommend to their trade, built up a reputation for the Lock Lever Rake rarely equaled.

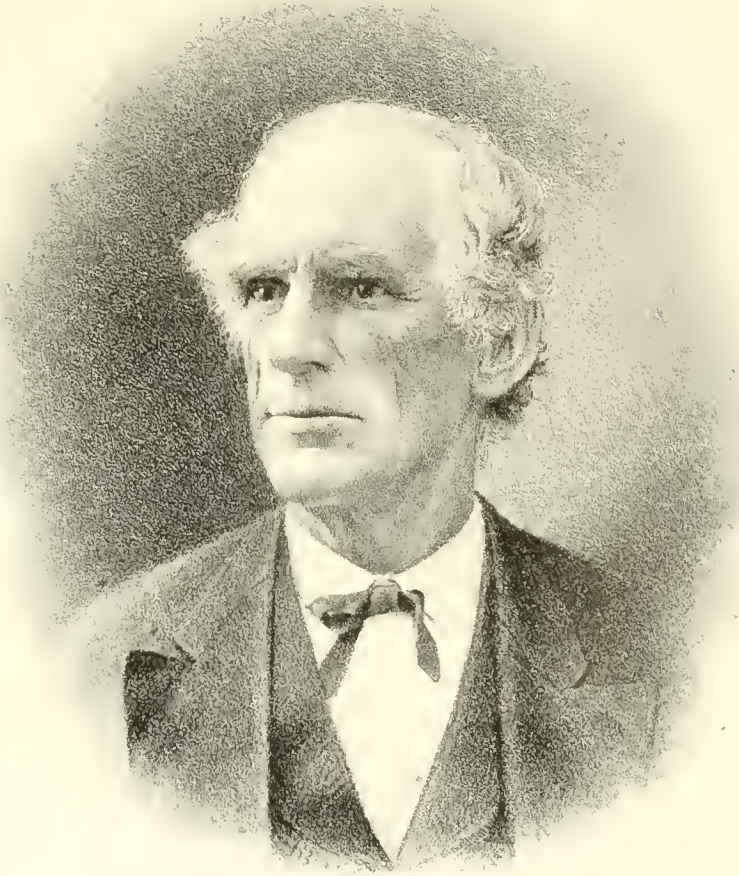
Few citizens of Alliance are aware of the immense advantage derived by their city from this establishment, or of the magnitude of the work here performed. From forty to fifty hands are constantly employed in the various departments, at fair wages. About $60,000 have been expended by Mr. Coates within the past year for labor and material, his trade amounting to $125,000 annually.

Mr. Coates occupies a fine residence on Mount Union Street, furnished in magnificent style. Here he expects to enjoy the competency his enterprise is sure to bring.

JOHN A. DELLENBAUGH.

Captain John A. Dellenbaugh, proprietor of the American Hotel, Salem, Ohio, was born September 11, 1834, in North Georgetown, Columbiana County, and is the second son of Dr. John Dellenbaugh, who immigrated to this State in the year 1826, from the Canton of Baru, Switzerland, who, upon his arrival in New York, met with success in his profession. Six months later he was induced to advance farther in the pioneer settlement, and during a period of twenty-eight years his journals show 258,000 prescriptions and cases. He was subsequently appointed associate Judge, in 1842, under Governor Corwin's administration, and acquitted himself honorably. His charges to the jury, and delineation of the court's ruling, was accepted by all as a complete triumph.

The subject of this sketch did not pursue any profession, but quietly adapted himself to agricultural pursuits for a period of years, and now occupies a noble position in society. During the unhappy rebellion he was commissioned by Governor Tod, and occupied a careful position under Col. Miller. His first principle of duty was to mark fully his position and station in life, and ever pursue properly a common duty to all.



C. Geiter

ELISHA TEETERS.

Elisha Teeters, son of John and Mary Teeters, was born January 11, 1814, in Green Township, Columbiana County, Ohio—that township now composing part of Mahoning County. The homestead of Mr. Teeters lies on the road leading from Salem to Canfield, near the village of New Albany. On this farm he was raised, and received his education in a log school-house. He lived with his parents, working on the farm, until the Spring of 1835, when he purchased a piece of land in Stark County, Ohio, near where Alliance now stands, two miles west of the town. He worked for some time on this land, improving it, and erected a log cabin thereon, and then returned to the home of his youth, where, on the 16th of July, 1835, he was married to Eliza, daughter of Richard and Susanna Webb. On the 28th of August, 1835, the newly married couple moved to their new home in Stark County. The fruits of that marriage were ten children, five boys and five girls, nine of whom are still living. Mr. Teeters has lived in the same locality ever since, being at all times one of the active, energetic, and industrious men of Lexington Township, growing in wealth with the growth of the community and active town of Alliance, which his energy and means so largely helped to build up. On the 16th of January, 1866, his wife, Eliza, died, leaving him with a family of nine children. Mr. Teeters remained single until the 18th of July, 1870, when he again entered into the marriage contract with Miss Sarah K. Hester, with whom he is now living, enjoying the fruits of a well-spent life. In 1866, Mr. Teeters purchased a farm about one mile west of Alliance, and removed on it the same Spring, where he now resides. Anterior to this, he purchased a farm of Abraham Scott, at the junction of the P., Ft. Wayne, and Chicago and the C. and P. Railroads, and, employing Ellis N. Johnson as surveyor, laid out lots on said land, and offered them at public sale. These lots sold as low as twenty-five dollars each—now worth five thousand dollars each.

In 1855, Mr. Teeters was engaged in the dry goods and commission business, which he pursued successfully. Some years since, he erected the block on the north side of Main Street, in which the "Commercial Banking Company" are now doing business, and of which Mr. Teeters is President, his son, R. W. Teeters, being partner and Cashier. Something unusual in a man occupying so many positions in life, Mr. Teeters has always held on to a farm, showing that he understands the value and usefulness of agricultural dependence.

In 1858 Mr. Teeters was elected Commissioner of Stark County, and re-elected two years thereafter, serving the county four years in that capacity with great credit. He is at present one of the Directors of the Lake Erie, Alliance, and Wheeling Railroad. Mr. Teeters stands high in the community as a Christian gentleman, a philanthropist, and in every way beyond the imputation of ever designing wrong to any one with whom he has transacted business during long years of a useful life. The writer has known him long, and most truly can it be said, "he is an honest man," upright and fair in all his associations of life. He is of sanguine temperament, pleasant and affable address, and is one of the actual pioneers of Lexington Township, Stark County, Ohio.

JACOB HEATHERINGTON.

The subject of this sketch was born in 1814, in County Durham, England, of John and Beckie Heatherington, who came to America in 1829, and settled in Pennsylvania. Jacob followed in 1830, and joined his parents. They remained in the coal fields of Pennsylvania two years, when they moved to Ohio in the neighborhood of Bellair, and commenced digging coal for Captain John Fink. In May, 1835, he married Miss Eliza Armstrong, who was born February 7, 1817, a cousin of his employer, and continued his occupation of digging coal till 1837, when, stimulated with a desire to do something for himself and family, he rented from John Fink a coal bank, and commenced operations. The same year, he bought from his old employer eight acres of land, which he worked successfully for seven years, and enabled him to pay for the land. Feeling able to enter larger operations, he bought from Paxton and Wheeling sixty and one-half acres, which is still being worked for coal. This took him four years to pay for. In 1845 he bought again from Captain Fink—this time fourteen and one-half acres, and on which his palatial residence now stands. Thus, little by little has Mr. Heatherington been adding to his eight acre purchase till it has assumed the enormous proportions of 677 acres of farming and coal lands, besides 110 acres of woodland. Nor does this comprise all his property, for he owns thirty houses, besides glass-house and steamboat stocks. In short, from a penniless beginning we find him among the largest tax-payers in Belmont County. His marriage was productive of ten children, all living except two—six of which are sons—they all being interested and engaged in the coal business with their father.

Jacob Heatherington, by his natural business habits, has amassed a large fortune. Yet, though he has been frugal, he never has been parsimonious in his manner of life; and, with a liberal hand, has dispensed his charities. He is a regular attendant at Church, and for many years has been a member of the Christian persuasion. Whatever of wealth and social position he has achieved, he owes it all to himself. He has been the architect of his own fortune, and his life will illustrate the old maxim, "Where there is a will there is a way." Without injuring any one he has accomplished much; and, as a citizen and man, he deserves the esteem of posterity.

JACOB HEATHERINGTON

John Funk

JOHN FINK.

A MAN who, from an humble position in life, and by his own efforts has risen to affluence and social position, and through all the events of a checkered life has preserved his integrity unimpeached, well deserves the pen of the biographer, and to be held up as a model to posterity.

Captain JOHN FINK was born in Pennsylvania in the year 1805. His parents, Alexander and Sarah Fink, when their son was five years old, moved to Zanesville, Ohio, where they resided two years. From Zanesville, John Fink moved to Short Creek, Ohio County, West Virginia, and lived there one year. At the early age of eight, he was put by his parents to learn the cabinet-maker's trade at Wheeling, West Virginia, in the shop of M. Caldwell, and continued in this branch till he was ten years old, when he went to work on his uncle's farm in Ohio County for two years. After serving this engagement, he hired out for two years at four dollars per month; at the expiration of which he worked on the ferry crossing at Wheeling for three years. Next we find him cook on a keel-boat, which lasted one and a half trips, by which time he had learned pushing—this afforded larger pay. He commenced pushing at thirty-seven and a half cents per day, which, in time, was increased to fifty cents. This pursuit he followed three years; after which, he returned again to Wheeling, and worked on the ferry. In 1824 he married Miss Eliza Worley, of Bridgeport, Belmont County, Ohio, the issue of which was seven children, only two of whom are still living. At the time of his marriage his worldly possessions were seventy-five cents, though he soon commenced business for himself, making a flat-boat; this he loaded with coal, and piloted himself to Maysville, Ky., where he sold the whole thing out; the speculation netting him two hundred dollars. We have, on good authority, that this was the first barge of coal that floated for any distance down the Ohio. After returning home, he rented a small farm, and commenced taking coal to New Orleans till after 1832, when he went into the Cincinnati and Louisville trade for six years. In 1833 he commenced keel and steamboating, and, by his attention to business and judgment, soon won the confidence and respect of all who knew him, and he gradually worked himself up the ladder of life till he became captain and owner of a steamboat. He then traded in boats for several years, commanding some of the finest that ran on the Ohio River. He also built several fine boats, the last on the list being the Potomac, that plies between Cincinnati and Portsmouth, Ohio. Having amassed a considerable fortune, he retired from business in 1864, though he can not refrain from still doing something in the shape of work or business, so active is his nature. In 1871 he was again married to Miss Elizabeth A. Scott, formerly of Guernsey County, Ohio, and has had by her three children, one of whom only is living. By an industry that has never wavered, by an integrity that is unimpeached, he has gained esteem, position, and wealth; and if the youth of the rising generation would go and do likewise, they would, in time, achieve what he has done.

WILLIAM G. BARNARD.

William G. Barnard was born May 9, 1813, on the Isle of Wight, England. His parents, Thomas and Mary Barnard, came to America when the subject of this sketch was six years old, and located on Wheeling Island, opposite Wheeling, Va. His father had been trained in horticulture, and at one time was engaged in the grounds and gardens at Osborne, now owned by Queen Victoria. He started horticulture and farming in his new home, and afterward supplied the boats with ice, vegetables, and stores. William G. Barnard, when eight years old, entered school at Wheeling, Va., studying for four years; and for three Winters after that, received lessons from private teachers—in all, received a good common-school education, such a one that allowed him in his youth to attend to his father's business, keep the books, etc., which he did when only twelve years old. When eighteen years old, he left home to take charge of the garden of Noah Zane, which, after one year, went into the hands of Ebenezer Zane, the oldest son of Noah. Young Barnard still continued, and was remunerated for his first two years' labor at the rate of one hundred and fifty dollars per annum, and the privilege to do what he pleased when not engaged in managing the garden—it being his brains and not time that were required of him. In 1834 his wages were advanced to two hundred dollars, and one year later he received for his management one-half interest—the proprietor putting the property against his skill and judgment. This position he continued to retain, though the garden itself underwent different ownerships, proving that whoever became owner, they appreciated his services.

Having previously purchased the tract of land on which he now resides, in 1847 he removed to it, continuing his horticultural pursuits, and afterward having the frontage and a part of the coal on his own land, he obtained the ownership of some five hundred and fifty acres of coal, which he opened and placed in successful working operation. This is only a part of an immense bed of coal, which has been only partially worked, and which furnishes more economical supplies and support for manufacturing than can be found elsewhere, with such great facilities for shipping. It was this fact which, under Mr. Barnard's manipulation, secured the location of the Bellair Nail Works, and their subsequent extension with furnaces, etc. And to Mr. Barnard, probably more than any other one man, was owing the success of this establishment, at the outset, and through his policy in the purchase of coal lands, etc., it has proven to be able to manufacture more cheaply than any other establishment on the Ohio River. The success of these works have aided very materially in the concentration of capital for manufacturing in the same neighborhood, and has, doubtless, added a very important portion to the population and character of Bellair.

In 1862 Mr. Barnard, in conjunction with Messrs. J. H. Sullivan and B. R. Cowen, purchased out the remaining interest in the Harris farm portion of the city. This property had been laboring for ten years under the burden of a heavy mortgage,

Wm G Barnard

JAMES LEFFEL.

and thus delayed the development of the town. As soon as they had paid off the mortgage the young city took a start, and up to this day has moved forward in its career of prosperity more rapidly than any other place in Eastern Ohio. In 1854, the ground upon which the most populous part of the city stands was being cultivated as farm land; and now the city claims a population of seven thousand souls. This brief history shows what straightforward energy, even without the aid of otherwise favoring circumstances, may accomplish. Although born in England, Mr. Barnard has never considered himself any thing but an American. Coming here so young, he does not recognize any tie as binding him to the old country. In private life Mr. Barnard's enterprise, integrity, courtesy, and generous disposition have secured to him the esteem of all whose good opinion is worth having.

JAMES LEFFEL.

A MAN who, from an humble position, and by his own efforts, has risen to affluence and social position, and through all the advents of a checkered life preserved his integrity unimpeached, well deserves the pen of the historian, and to be held up as a model to posterity.

JAMES LEFFEL was born April 19, 1806, in Virginia—his father's name being John Leffel, who emigrated from his native State, bringing his son with him when he was only eight months old, and settled in Ohio near Springfield. In his youth, James Leffel picked up his education in the small district-schools, there being no colleges in Ohio at that time, working at home, when not studying, at millwright and saw-mill business. When still a young man, he moved to Springfield, and started the first foundry in that part of the country, giving most of his own time to inventing, being successful in getting patented many useful and desirable machines, among which was the justly celebrated Leffel water-wheel, which is now known and used all over the civilized globe, and occupies the front rank in the great inventions of the age, conferring a lasting benefit on the manufacturing interests of the country. In place of the overshot-wheel with its ponderous gearing, which were very expensive and a constant source of annoyance, the invention came as a welcome friend. James Leffel died June 11, 1866, in the sixtieth year of his age, after leaving behind him a monument more lasting than that of marble, and a life filled with usefulness, the results of which he bequeathed to the human race. The large fortune he left behind him was gathered together amid toil, fatigue, and danger, and a brief history of Mr. Leffel's life is useful for its practical instruction.

LEOPOLD BURCKHARDT.

Leopold Burckhardt was born at Carlsruhe, Grand Duchy of Baden, Germany, October, 1820. Later in life his father, Christian Burckhardt, moved with his family to Bavaria, near Beyreuth, and from there the subject of this sketch accompanied his father, mother, brother, and sister to America. This was in the year 1833. His father laid out Baden, Beaver County, Pennsylvania, where they continued to reside till 1844, though he, having faith in the future of the great West, moved to Cincinnati with his family, and in the early annals of our city government became quite prominent, and during the excitement over the present school and paid fire department systems, which were then struggling to gain the infancy of their positions, Mr. Christian Burckhardt represented the Second Ward in the City Council, and was a firm supporter of the systems as they now exist.

The subject of this sketch soon after coming to Cincinnati started in the grocery business with his brother Frederick, on the corner of Sixth and Walnut Streets. This business they continued till 1850, when they commenced to manufacture lard oil, on Sycamore Street, between Third and Fourth, at which location they built the four large four-story stone-front brick buildings, which still remain. In October, 1871, Mr. L. Burckhardt withdrew from the oil business, and soon after inaugurated the German Banking Company, with a capital of $250,000. He was elected President—a position he still holds.

Last October Mr. Burckhardt was elected, on the Republican ticket, to represent Hamilton County in the State Legislature, and his nomination gave much strength to the ticket. Being a man of large business interests, and possessing qualifications of the highest order, he will make an efficient representative of the business interests of Cincinnati.

Mr. Burckhardt has been identified with the Cincinnati Zoölogical Gardens from the start, and has been one of the most energetic and prominent agents in bringing to a successful termination that grand enterprise, the result of which the city is so justly proud. Over $60,000 of the stock of the company is owned in the Board of Directors of the bank of which Mr. Burckhardt is President.

Mr. Burckhardt has amassed a large fortune, much of which has been invested in beautifying Mount Auburn with its beautiful homes—he having built many of them. He has done much, and all honorably; and now, dwelling in the affluence and honor gained by his industry and talents, he can look upon the past unsullied career with conscious pride and satisfaction.

Leopold Burckhardt

W W Johnson

JUDGE W. W JOHNSON.

THIS distinguished jurist was born August 26, 1826, in Muskingum County, Ohio. His father emigrated from Litchfield County, Connecticut, and his mother from Brook County, Virginia, early in 1800. They were among the earliest settlers of Eastern Ohio, and doubtless had to endure the hardships incident to that early period, when the only ambition of the pioneer was to convert his new farm in the forest into a comfortable home, and to raise and educate his young family to habits of industry, economy, and integrity. Such a life, though full of hardship, is well calculated to rear up men and women able to fight the battle of life successfully.

The subject of this sketch was raised in the country, having the advantages and subject to the usual incidents of life on a new farm, engaged in clearing up and cultivating it, and going to the log school-house in Winter. Being ambitious of mental culture, he devoted all of his leisure moments to the improvement of the mind; endowed with studious habits, he spent his evenings and rainy days in study and reading, and later in life he taught school in Winter for some five years. In 1849 he spent one session at Muskingum College, in the pursuit of study in mathematics. In April, 1850, he began reading law in Cincinnati, with the late Judge Parker, where he remained only three months, finishing his course in the office of Judge Convers, of Zanesville, a man pre-eminent in that part of the State for his great learning in the law, of which he gave his students the benefit, inspiring them with a portion of his own zeal for the profession. He was admittted to the bar in September, 1852, by Judges Ranney, Stillwell, Jewett, and Alexander, they having examined him in person, without the usual form of appointing a committee. In the Fall of the same year he located in Ironton, Lawrence County, where he has since resided. Filled with an honorable emulation, with a fair field before him, it was not long before he became known as a rising man in his profession. In 1857 he was elected Judge of the second subdivision of the Seventh Judicial District, and was twice re-elected. With an interval of two years at the bar he continued on the bench till 1873, when he resigned, to try the benefits of a change for his health.

In 1874 he was nominated by the Republican Convention to fill the vacancy in the Supreme Court occasioned by the resignation of the late Judge Stone. The nomination was by acclamation, and a marked testimonial to his standing as a judge. He is now in the fiftieth year of his age, and since his resignation has had charge of the Second National Bank of Ironton. He has been a stirring, practical man, both in his public and his private life. He has done much, and all honorably, and now, after years of arduous labor on the bench in his Judicial District to the general satisfaction of the public, he has sought, and enjoys in retirement from public life, the results of his industry; and he can look upon the past unsullied career of his useful life with conscious pride and satisfaction. In the community in which he lives he enjoys the entire confidence of all who know him, regardless of party or condition, as one of the purest of men, reliable in every respect, though modest and retiring, passing for less than his real worth; a man of great attainments, which are sound, substantial.

WM. D. KELLY.

Mr. Wm. D. Kelly was born in Lawrence County, Ohio, January 15, 1815. His father, Joseph Kelly, emigrated from Shenandoah County, Virginia, to this county, at the age of twelve years, being among the early pioneers. Mr. W. D. Kelly's boyhood was spent upon the farm, and among the hills of what is now so extensively known as the Hanging Rock Iron Region. As the country was thinly settled—families living from two to three miles apart—education was confined to the "log cabin" school-house, and "school kept" only occasionally during Winter. Such being the case, Mr. Kelly's education was limited, as he did not attend school altogether more than one year. From the time he was large enough to plow until his majority he was kept at work upon his father's farm. At the age of twenty-one years he commenced work, farming, without capital, for himself. Being industrious and saving, the profits of the farm were encouraging for those times, and the money thus earned was invested in land.

He left his homestead, near the old Ætna Furnace, and removed to the Ohio River, just above the present city of Ironton, purchasing a farm of 200 acres, most of which he at present owns. Mr. Kelly first became interested in iron in 1844, being a partner for three years in the firm of Dempsey, Rodgers & Co., doing business at Ætna Furnace.

In 1849 he became one of the incorporators of the Ohio Iron and Coal Company and the Iron Railroad; also one of the original incorporators of the present city of Ironton, which flourishing little city to-day owes much of its prosperity to his enterprise.

In 1851 he associated himself with Messrs. Chestnutwood & Hartzell, and leased Lagrange Furnace, but was soon afterward compelled to carry out the terms of the lease himself, assisted by his two younger brothers. This lease expired in three years, he being quite successful in the business.

In 1855 he started the Exchange Bank in Ironton, Ohio, with Mr. I. C. Dovel as cashier, which position Mr. Dovel still faithfully holds. During the various branches of business Mr. Kelly has been engaged in, he always took great pride in his farm, giving much of his personal attention to agriculture, horticulture, and floriculture; and so successful were his efforts in this direction that in 1857 he was awarded the first premium by the Ohio State Board of Agriculture, his farm being considered the best improved farm in the State.

In 1862 he again entered into the iron business, leasing Center Furnace property for five years; and in 1865, in company with Messrs. M'Cullough and Douvel, also leased Hecla Furnace, which he operated successfully for four years. At the expiration of Center Furnace lease he purchased the entire property, and in 1869 built the Grant Furnace, in Ironton.

In 1868 and 1869 the leases of Center and Hecla Furnaces having expired by limitation, he then associated in the business at Center and Grant Furnaces his two sons, Lindsay and Ironton Kelly, since which time he has had no other partners, and the furnaces have been, and are now being, successfully operated under the firm name of Wm. D. Kelly & Sons.

Wm. D. Kelly.

John Gould.

JOHN GOULD.

JOHN GOULD, the subject of this sketch, was born in New York, September 20, 1824, of John and Sarah Gould. He enjoyed good educational advantages in his early youth, and, when fifteen years old, came to Cincinnati, and attended Woodward High-school, where he finished his education two years later. He then entered the establishment of Cohoon & Perrin as clerk; and his fidelity to his employers, together with his private business worth, earned for him an interest in the firm. On September 27, 1848, he was married to Miss Eurice A., daughter of Wincott and Annie Stone, of Cincinnati, the issue of which marriage has been five children, only one of whom survives—his son, John Clifford Gould. In 1866 Mr. and Mrs. Gould lost a loved daughter, then sixteen years old; and, to console them in their grief, adopted Miss Laura S. Gould one year later, and she now takes the place of their lost one.

Mr. Gould is now among the foremost business men of our city, and a member of the well-known firm of Perrin & Gould. He possesses all the frankness of manner, cordiality of feeling, and hospitable disposition, expressed so unmistakably in his countenance. He necessarily has become popular in Cincinnati, and numbered among his friends are many of the most influential of her citizens. He has passed through many phases of life, public and private, without reproach; and a retrospect of the past must be associated with the most pleasing reminiscences.

SAMUEL WYLLYS POMEROY.

SAMUEL WYLLYS POMEROY, Senior, was born A. D. 1764, at Wyllys Hill, Hartford, Conn., the seat of his maternal grandfather. This estate was possessed by the Wyllys family for about two hundred years. On it grew the historic "Charter Oak," which fell in 1856. Mr. Pomeroy's father died in early life while on a visit to the French West India Islands. His grandfather, Rev. Dr. Pomeroy, of Hebron, served as chaplain of a Connecticut regiment in its expedition to Canada in 1760.

The subject of this sketch married in 1793 a daughter of Richard Alsop of Middletown, Conn., and resided on his estate near Boston, Mass , until his removal in 1833 to Cincinnati. He had purchased, in 1804, a full share in the "Ohio Company," on a portion of which purchase the village, now city, of Pomeroy was located. In conjunction with his sons-in-law, Charles W. Dabney, of Fayal, Azores, and Valentine B. Horton, and his son, Charles R. Pomeroy, the Pomeroy coal mines were opened in 1833, which have been worked by members of his family since that time. Mr. Pomeroy died in 1841. The inscription on his monument records that "he finished a useful and honorable life in this town, to which his name was given by its inhabitants as a testimony of respect for his character."

D. KINSEY.

D. Kinsey was born October 18, 1819, in Wales, and was brought to this country by his parents when only six months old. Arriving at an age old enough, he had to labor at carting. This was while he lived in New Jersey. At the age of fourteen he came to Cincinnati on a boat, and joined his brother, a silversmith. When the subject of this sketch commenced learning the trade from him, his frugal habits and vaulting ambition to be some one caused him to store by all that was possible out of his earnings; and, with one thousand dollars thus saved, he bought an interest in his brother's business; after which, he became sole proprietor and owner.

In 1843 he commenced business on the corner of Sixth and Walnut Streets, Cincinnati; after which, he moved to his long and well-known stand on Fifth Street. He was also married the same year.

In 1849 he crossed the plains to California in search of one of the most valuable metals used in his own business; during which time he traveled over three thousand miles overland, through a country where the Indian roamed, and where the ax of the pionéer had not been heard. The open prairies were his bed and resting-place. The fruits of these labors and hardships were but poorly rewarded, and, in 1850, he returned *via* the Isthmus; and during this return-trip, in sleeping out on the beach, he contracted the disease which finally caused his death. He left behind him a loving wife and three grown sons—Charles S., Edward W., and Louis A. Kinsey—all of whom are married, and the latter being successor to his father's business, which is still carried on at 28 West Fourth Street, where he moved in January, 1872. The life of D. Kinsey was an eventful one. He always directed his conduct by principles based on the soundest morality. There is not a word of reproach against his character, nothing to sully his fair name, nothing to dim the luster of his life, still left shining as a bright example to be followed. And now that his spirit has calmly glided from this earth, his honored name will not be forgotten.

D. Kinsey.

John Van.

JOHN VAN.

JOHN VAN was born April 15, 1812, in La Asumption, Canada, fifteen miles from Montreal; and though he spent his early years in the latter named city, he received no education whatever, there being no schools there, in those days, to which poor children could be sent. Arriving at the proper age, he was apprenticed to one Lapier, and of whom he learned the trade of tinsmith. In 1829 he was married to Miss Margaret, daughter of Antony De Rouche, of Montreal, the issue of which was twelve children, seven of whom are living. His wife dying in 1868, Mr. Van was again married, in 1869, to Mrs. Louise Bullett, of Cincinnati.

During the rebellion of 1837–38 in Canada, between the people and the Government, in regard to education and oppressive taxation, Mr. Van figured conspicuously. He was arrested as a traitor and condemned to death, but luckily escaped into the United States, where he arrived in Troy in 1838, and was engaged by one John Lockwood, in the stove and tinware business, as foreman, In 1842 Mr. Lockwood moved to Cincinnati, bringing with him his trusty foreman. In 1846 Mr. Van bought out the entire interest of his former employer, and in three years moved to St. Louis, and started business under the firm style of Van & Morgan. This was on the 1st of May, 1849. Seventeen days later occurred the great St. Louis holocaust, destroying, amongst hundreds of others, the store and stock of Van & Morgan, their loss reaching $110,000. In 1855, while in St. Louis, Mr. Van invented and patented the first wrought-iron range. In 1856 he returned to Cincinnati, and engaged in the manufacture of wrought-iron portable ranges, associating Henry Barringer for a period of two years, during which time Mr. Van lost every dollar he possessed. In 1859 he became the silent partner of Redway & Burton, in the manufacture of Van's patent wrought-iron portable ranges, and they moved to his present location, No. 10 East Fourth Street. During the war they did a very large business with the United States Government, Mr. Van's cooking-range for the army and navy having preference over all others. In 1866 the firm changed to J. Van & Sons, and subsequently to J. Van. Branches were established in St. Louis, Chicago, and New Orleans, and agencies in all the principal cities in the United States and Canada; they making and selling more than all other wrought-iron range manufacturers in the United States combined. Mr. Van has obtained twenty letters patent of the United States, since 1855, for various and valuable improvements in cooking apparatus, etc. One of the most important is his celebrated coffee-urn, used in all hotels all over the country. He has also invented a revolving sign, which is quite a novelty in its way, and which he is using in front of his store.

The position which John Van has achieved he owes to his own efforts. By an industry that has never wavered, by an integrity which is unimpeached, he has gained esteem, position, and wealth; and if the youth of the rising generation would go and do likewise, they would in time achieve what he has done. Away from his business, no one more appreciates the quiet enjoyment of domestic happiness.

P. KINNEY.

Colonel P. Kinney, President of the Kinney National Bank of Portsmouth, Ohio, was born in Scioto County, Ohio, near Portsmouth, on the 16th day of December, 1805, to which locality his father had removed from Sunbury, Pennsylvania, in October of the same year, crossing "the mountains" in a four-horse wagon. Colonel Kinney is the oldest born resident of the county now living in it, and his handsome suburban residence and grounds are situated but a few rods distant from where, the surrounding country then being a wilderness for miles around, he was born and passed the years of his infancy and early boyhood. His opportunities for education were limited to the meagre chances afforded by the frontier school of that period; and his occupation as a farmer, which he commenced when quite young, was but little interrupted on that score. In 1820 his father loaded a flat-boat with the products of the farm, and, placing his young son in charge as supercargo, sent him to the New Orleans market, two thousand miles distant by the waters of the Ohio and Mississippi Rivers. Similar annual voyages were made by him for seven consecutive years, his time at home in the intervals being spent in assisting on the farm. In 1829 he engaged in business as a merchant, in the copartnership of Gates & Kinney. In 1832, commenced private banking, and was so engaged for a number of years, in the banking-house of E. Kinney & Co. In 1857, with other enterprising citizens, conceived and carried out the idea of building the Scioto and Hocking Valley Railroad, with its southern terminus at Portsmouth, and was made treasurer of the company, and sold its bonds and purchased the iron for the road, which rapidly developed town and country, and is yet the only real connection the county has. In 1855, having purchased the controlling stock in the Bank of Portsmouth, a branch of the State Bank of Ohio, he was made cashier, and conducted its affairs with eminent ability and success up to 1861. Early in the Fall of that year he received authority to raise a three-years' regiment, which he rapidly accomplished, and, as colonel of the Fifty-sixth Ohio Volunteer Infantry, U. S. A., took the field in season to take part in the important campaign which began with the reduction of Forts Henry and Donaldson, and included in its successes Pittsburg Landing, siege of Corinth, Fall of Memphis, and from thence took his command to Helena, Ark. After two years' service a cancer compelled him to return. Having been treated, he returned to his former position of cashier, and in 1863 merged his bank into the Portsmouth National. He was chosen president. In 1867 he sold his stock, and made a voyage to the Holy Land as an excursionist of the *Quaker City*. On his return home he organized the Bank of Portsmouth, he presiding till 1872, when he organized the Kinney National Bank. He was chosen president, and his son, John W. Kinney, cashier, in which positions they still remain. He was in the City Council twenty-one years, and its president a greater portion of the time. He is still vigorous in his mind and body, attends closely to his business daily, and is widely known as a sagacious and honorable financier and man.

Col J. Kinney

George Barber

GEORGE BARBER.

George Barber, like scores of other successful men in Ohio, is a conqueror of adverse circumstances. In taking a cursory glance at the early history of representative Ohioans noticed in this volume, it will be readily seen that our business enterprises are and have been largely composed of men who, in early life, were compelled to divide their time between work on the farm and attendance at the district school. Much of the debilitating dissipation common in cities has been escaped by them, and hence they have both sound minds to project and vigorous bodies to execute.

The subject of this sketch was born at Hartford, Connecticut, in 1804, his parents, Ezariah and Anna Barber, moving to Onondaga County, New York, when George was one year old, and where he remained till he was 21 years of age. During the Winter months he received a little education at the district school, though most of the time he helped his father on the farm, which was about seven miles from where Syracuse now stands. When eighteen years old he worked at coopering, and this he continued for three years. In 1826, having faith in the future of the great West, he moved to Ohio, and traveled about for some time, selecting no definite spot for his future home. At last he settled down in Middlebury, Summit County, and started in business for himself, as cooper. At the end of one year he moved to Akron, though he returned at the expiration of twelve months, and continued his same business till 1845, when he commenced the manufacture of matches on a very small scale and in a crude way, having no machinery, making them entirely by hand. Soon after this he introduced the manufacture of buttons, which, however, he soon stopped, it being unsuccessful, and after this paid his attention solely to matches, and here we see the start, even so humble, which has grown to the present proportions of the Barber Match Company, treated on in another part of this book. In Mr. Barber's early day a stock of 200 or 300 gross of matches was considered something very large, and the method of disposing of them was to peddle them from wagons, there being no railroads then. Thus the business gradually grew—beginning in an old barn, then moving into a storeroom, then to the building now occupied as a woolen mill, and commenced manufacturing by water power. This was in 1860. The next move was to buy a large building, which was turned into a match factory, and so kept on enlarging as the business required it. Mr. Barber retired from the business July 9, 1872, and now lives in quietness on his farm, in the Sixth Ward, Akron, Ohio.

He was married in the year 1835 to Miss Eliza Smith, of Canton. Four children of this marriage are now living and five dead. His only surviving son—O. C. Barber—is President of the now extensive works at Akron, started by his father, and which bid fair to become one of the largest manufacturing institutions in Ohio.

ALVAH BUCKINGHAM.

Alvah Buckingham, son of Ebenezer and Esther Bradley Buckingham, was born at Ballston Springs, New York, March 20, 1791. In 1794 his parents removed to Cooperstown, New York, and in 1799 they left for the western wilderness, being thus induced from the glowing reports of their two oldest sons regarding that then new country. They located about two miles above the present town of Coshocton. In 1802, finding this location unhealthy, the family removed to Carthage Township, Athens County. Here the subject of this article for the first time had the inestimable privilege of attending school. Out of school he assisted on the farm or indulged in hunting. This latter was his favorite pastime, and at that early date the woods were infested with bear, deer, panther, raccoon, opossum, and wild turkey. In 1812 he moved to Putnam, opposite Zanesville, Ohio, where he assisted his brother Ebenezer in business.

In 1819 Alvah Buckingham married Anna Hale, of Glastonbury, Connecticut, when they purchased, on the banks of the Muskingum River, a very modest homestead of one room. In 1832 the firm of E. Buckingham, Jr., & Co. was dissolved by the sudden and painful death of Ebenezer Buckingham, Jr., Alvah's brother, and the business was continued under the new firm name of A. Buckingham & Co., Solomon Sturges being Alvah's partner. In 1845 the firm name of A. Buckingham & Co. was dissolved, and a new firm name—Buckingham & Sturges—established. In 1851 Alvah Buckingham, in company with R. P. Burlingame, built the first grain elevator in the city of Chicago, and Alvah Buckingham established branch houses in New York City and Toledo, Ohio, for his two oldest sons—Benjamin and Philo. In 1854 Alvah Buckingham sold a third interest in his Chicago Fulton Elevator to his old partner, Solomon Sturges, and shortly after they concluded a contract with the Illinois Central Railroad to do all their grain warehousing business for ten years. The business in Chicago increased so rapidly that Mr. Buckingham moved his family there in 1858. In April, 1865, he removed to New York City, where, with his daughters, he resided at No. 132 Twelfth Street, until his death, which took place October 4, 1867. His wife was stricken down eleven days prior to this, and died of pneumonia, September 24, 1867. Their remains were taken to their first home, Putnam, Ohio, where they repose side by side.

The life of Alvah Buckingham was an eventful one, and most of the large fortune he left was gathered amid toil, fatigue, and danger. He was successful in all of his business pursuits, from a rare combination of industry and judgment, and at all times exhibiting a rectitude of character which never wavered from the proper direction.

A. Buckingham

F. T. Barry

FREELAND T. BARNEY.

Mr. Barney was born in Washington County, New York, July 27, 1805, where, when old enough, he received a common-school education. His first business experience was in 1833, when he held the position of clerk in a dry-goods store. This he continued till 1828. After this, he was at Plattsburg, engaged with Platt, Brinkerhoff & Platt, until 1829 or '30; then with Peter Comstock as general agent until the Spring of 1831, when he engaged in the transportation and forwarding business—the firm being Comstock, Barney & Martin, who became somewhat celebrated as doing a large business for that day—they being the first to introduce a line of packets on the Champlain Canal, their connections generally reaching all points between Montreal and New York. The commercial crash of 1837 crippled their resources, and so deranged their affairs that Mr. Barney became dissatisfied with its management, and sold out his interest in the company to his partners, coming to what was then called the West in 1838, settling in Sandusky, and associating in business with R. J. and Lucius Gibbs, under the firm name of Barney, Gibbs & Co.

In 1836 Mr. Barney was joined in wedlock to Miss Mary, daughter of Wm. A. and Mary Moore, of Port Ann, Washington County, New York, and who still survives to mourn his loss.

Few men possessed the elements of success in business affairs as did Mr. Barney. Promptness in attending to details, rigid economy, patient industry, and strict integrity, were the strong features in his character. Having means beyond the requirements of his mercantile pursuits, he engaged in banking, and at one time was President of the Union Bank; afterward at the head of the banking house of Barney, Hubbard & Durbin, until it was merged into the present Second National Bank. Being the ardent friend of all manufacturing industries, he became the originator of the "Sandusky Wheel Company;" and his object in this undertaking was not to profit more by the labor of operatives than to benefit them in furnishing honest employment. No stain of dishonor ever attached itself to his name or the name of any firm of which he was a member.

Mr. Barney liberally dispensed his charities, and saw and enjoyed the fruits of them while living. His good works live after him; and now the sands of life are all spent, and he has been gathered into his "narrow house," he will be mourned as a public benefactor, and his name will not be forgotten.

JAMES WARD.

James Ward was born November 25, 1813, near Dudley, in the County of Staffordshire, England. When four years old, his parents emigrated to Pittsburg, bringing their son James with them; when old enough he attended school, and received an ordinary school education, which concluded when he was thirteen years old, at which time he commenced to work in earnest; and his first vocation was aiding his father in the manufacture of wrought iron nails. This he continued till nineteen years of age, when he commenced to learn engineering, and remained at said business till 1841, when in his twenty-ninth year. In 1842 he moved to Niles, Ohio, and was connected with the rolling-mill business known as James Ward & Co., continuing the same till his death, July 24, 1864. James Ward was looked upon, even when a boy, by the business men who knew him as possessing all the elements suitable for the avocation he pursued; and many predicted that he would, in time, attain the first rank in his business, and stand at its head. That prophecy has already been fulfilled.

James Ward was married in 1835, at Pittsburg, to Miss Eliza Ditridge, daughter of Elizabeth and William Ditridge, of same place. The issue of this marriage was seven children, all of whom are dead excepting James Ward, Jr.

Mr. Ward is supposed to be the first man to practically use pig iron made from raw coal; also the first who practically used black band ore. The furnace built by him in 1859 is still in use. And he left a name not only known in his immediate vicinity, but as wide-spread as our vast country, as one of the most honorable and liberal of men; and his enterprise and business capacity were undoubted. Still in his prime when cut off, he had already garnered wealth and reputation without creating the envy which so usually accompanies success. He won golden opinions from all; and there are none who knew him but that respect his name and appreciate his character.

James Ward

George Fisher

GEORGE FISHER.

George Fisher, merchant, of Cincinnati, Ohio, was born in Durkheim, Rhenish Bavaria, December 25, 1829. He came to the United States with his father in 1837, and settled in Pittsburg, Pennsylvania, where he enjoyed such educational advantages as were afforded by the schools of that city until 1841. He was then apprenticed to the merchant tailoring business, and continued in that capacity until the expiration of his term in 1845, when he removed to Cincinnati and engaged as a journeyman with Samuel Thomas. He left the employ of the latter in 1847, to enter that of his brother, doing business on Central Avenue, and there continued until 1850, when he formed a copartnership with Adam Epply, under the firm name of George Fisher & Co.; invested all his savings—amounting to seventy-five dollars—in the new enterprise, and embarked in business on his own account. Here he brought to bear his energy and skill, and by the latter part of 1852, when they changed their location to East Pearl Street, his share in the business amounted to $2,800. The firm was dissolved in 1854, and all its indebtedness was assumed by our subject, who paid all liabilities, dollar for dollar, and found himself about even with the world. But he was not to be crushed by misfortune, and, with characteristic energy, set about the restoration of his loss, and engaged in business on his own individual account, at his present store, No. 257 Walnut Street, in Day's Building. Since that time he has pursued a career of uninterrupted prosperity, and by close attention to business, and the strictest integrity, has won a proud position in the mercantile and social community. This success is, in a great measure, due to his adherence to his own legitimate pursuits; for though he has never been wanting in public spirit, nor deaf to the calls upon him as a patriotic and benevolent citizen, his best energies have been given to the furtherance of his business interests, in which, though modest and unassuming in all his operations, he is recognized as the leading house.

MESSRS. STOUT, MILLS & TEMPLE.

The three following portraits represent the individual members of the firm of Stout, Mills & Temple, of Dayton, Ohio, among the largest Turbine Water Wheel and Paper and Flour-mill Machinery manufacturers in the United States.

Atlas L. Stout

Was born in Dayton, Ohio, November 5, 1822.

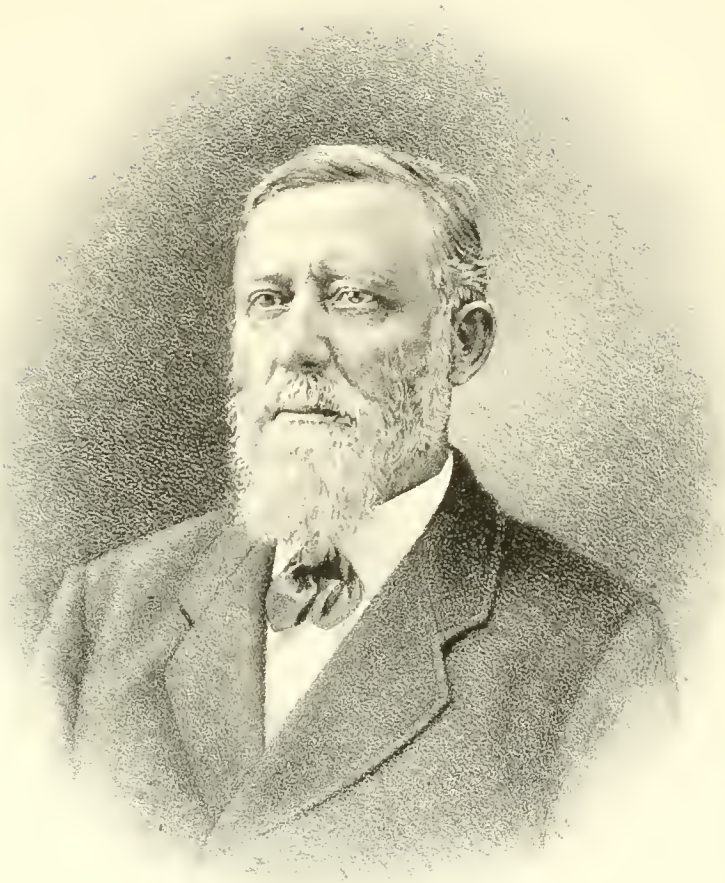
William M. Mills

Was born in Wythe County, Virginia, June 10, 1821.

John Temple

Was born in the Parish of Fintra, Aberdeenshire, Scotland, February 3, 1821; emigrated to Canada in 1843, and to the United States in 1848.

Atlas, L, Stout



W. McMillan

John Temple

Thomas Holliday

THOMAS HOLLIDAY.

The subject of this sketch was born in Batavia, Clermont County, Ohio, August 22, 1820. His father moved to Ohio from Virginia in the early days, coming to Cincinnati on a flat-boat. The education of Thomas Holliday was very limited, and at the age of ten he had to support himself, which he did by working on his grandfather's farm. At the age of sixteen he commenced to learn the cabinet-maker's trade, and worked at it, including apprenticeship, eleven years. After this he commenced making wood-working tools, and this was the initiation of his present large business, which he commenced, nearly twenty years ago, on the north-west corner of Central Avenue and Fifth Street, on a very small scale, when we say that he had no capital; and in this connection we have a very pleasant incident. After Thomas had determined on doing business in his own name he applied to Mr. Probasco, then Cincinnati's leading hardware merchant, for credit. The answer he received was: "Thomas, I could trust you all your life for any thing you want; but should you die I would be minus." Nothing daunted, Mr. Holliday went immediately to the office of the London, Liverpool, and Globe Insurance Company, and secured a policy on his life for $2,000. This he presented to Mr. Probasco, who immediately sold him his first stock. This determination and strength of character, combined with unceasing energy and economy, has placed him in his present condition. After many years' location on the site mentioned, Mr. Holliday moved his business to the south-west corner of the same thoroughfares, and then built on his present site, where he now owns a fine three-story brick building, 37½ x 80 feet; and on the first and second floors of this building is conducted the extensive business of Thos. Holliday & Co., his partners being W. R. & J. G. Attee.

Mr. Holliday was joined in wedlock to Miss Eliza A. Attee, of Cincinnati, in June, 1845, and though they have had seven children, only one son, William A. survives.

Thomas Holliday possesses all the frankness of manner, cordiality of feeling, and hospitable disposition so characteristic of the true Western American. He necessarily has become popular in Cincinnati, and can number as his friends many of the most influential citizens. He has passed through many phases of private and business life without one single stain of reproach, and in the evening of his life a retrospect of the past must be associated with the most pleasing reminiscences.

JOSEPH SUTPHIN.

Joseph Sutphin, senior member of the firms of Joseph Sutphin & Sons, flour manufacturers, and Sutphin & Wrenn, paper manufacturers, was born on a farm adjoining Middletown, December 24, 1817. His father, John Sutphin, was a native of New Jersey, of Holland extraction. His mother, Jane Potter, was a native of Ohio, descended from English ancestors. At the age of seventeen he entered a corps of civil engineers, with a view of adopting that profession for a life-time occupation. After a service of four years, failing health made it necessary for him to resign his position as engineer on the Wabash & Erie Canal. He returned to his native town, and soon after gave his attention to mercantile and manufacturing pursuits.

He was married, in 1840, to Caroline, daughter of the late William Johnston, of Piqua, Ohio, who was prominent in the early history of Ohio as a merchant and Government contractor for supplying the army and Indians with provisions.

In 1853 Mr. Sutphin, in connection with John L. Martin, founded the flour-manufacturing business, with which he is still connected, his partners now being his son, Charles Sutphin, and his son-in-law, O. I. Gunckel. In 1855, in connection with John L. Martin and James B. Cecil, he founded the paper manufacturing establishment, at this time, represented by Sutphin & Wrenn (Joseph Sutphin, A. S. Wrenn, and Charles D. Wrenn composing the firm), extensively engaged in the manufacture of book, blotting, and news-print papers, which find ready market in the large cities of the West.

Upon the organization of the First National Bank of Middletown, Ohio, in 1865, he was elected its president, in which position he served, with credit to himself and profit to the bank, for a number of years.

Mr. Sutphin is of a delicate constitution, his health having been impaired by exposure, when a youth, while serving as engineer in a miasmatic and wilderness country.

His success in business is attributable more to inherent energy, a high sense of honor, and constancy in the pursuit of regular legitimate business, than to bold speculations or adventurous enterprises.

Joseph Sutphin

Geo W Erwin

GEORGE W. ERWIN.

The subject of this sketch was born in the year 1810, near Wilmington, Delaware. His parents, John and Elizabeth Erwin, were members of the Society of Friends, and were engaged in agricultural pursuits. Their son, therefore, first engaged in the active affairs of life in the labors incident to the farm, and so continued during his minority, receiving in the mean time such education as the village schools of that period afforded in the rural districts. In the year 1828, his father, having faith in the future of the great West, emigrated with his family, and settled at Richmond, Wayne County, Ind., where he purchased a farm, and engaged in his old calling, aided by his son, until the latter reached the age of twenty-two years. At this time, he married Miss Catherine A. John, of Lafayette, Ind.; and, about one year later, removed to the latter city, where he was interested in the establishment of an iron foundry, and also in the manufacture of plows, in which business he continued for a number of years. In the year 1844 he sold out his business in Lafayette, and, purchasing a large farm in that vicinity, again engaged in the occupation of his early life until the year 1852, when, disposing of his farm, on account of the failing health of his wife, he removed to Middletown, Butler County, Ohio, only to prolong her life about a year.

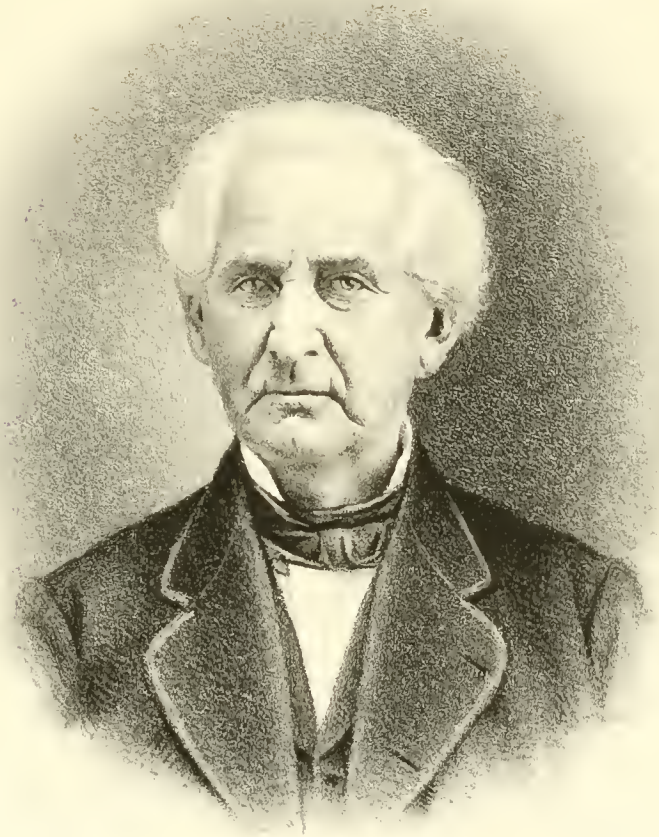
On the completion of the Hydraulic Works, he, in connection with his brothers, built and operated the first two paper mills at that place, under the firm name of John W. Erwin & Brothers. These mills are now owned by Messrs. Oglesby, Moore & Co. About the year 1855 Messrs. Oglesby, Barnitz & Tytus purchased one-half interest in them, when the business was continued under the name of Oglesby, Barnitz, Tytus & Erwin. A short time after, Messrs. Oglesby and Barnitz disposed of a portion of their interest to Messrs. Moore and Harding. And in 1865 Mr. Erwin and Mr. Harding sold out their interests to the remaining partners, and joined together in building the Excello Mills, near Middletown, for the manufacture of writing paper, which they operated until the year 1873. In the year 1872 Mr. Erwin and others, under the firm name of G. W. Erwin & Co., built and put into operation the mills now owned and operated by the Tytus Paper Company, at Middletown. In the beginning of the year 1873 Mr. Erwin disposed of his entire interests in the paper business in the Miami Valley, and, during the Summer of the same year, in connection with his sons, built extensive mills at Elkhart, Ind., for the manufacture of finer grades of writing paper. These mills are now being operated with success under the firm name of Erwin, Lane & Co.

George W. Erwin has thus been instrumental in building and establishing five paper mills, and has thereby contributed largely to the development of the paper trade of the West. His life has been an eventful one, and the fortune which he possesses has been accumulated by incessant toil. He has, through a long course of successful life, proved worthy of the highest esteem for honor and strict integrity; and, at the age of sixty-five years, still living at Middletown, Ohio, has promise of many years in which to enjoy the fruits of his labors—his present wife, formerly Mrs. J. H. Burrows, being a daughter of J. N. C. Schenck, one of the early pioneers of Ohio.

FRANCIS J. TYTUS.

Francis J. Tytus was born the fifth day of February, 1806, at Winchester, Frederick County, Virginia, of Tunis and Elizabeth Tytus. He attended school, and graduated in his native town, and, when fifteen years old, commenced clerking in a dry goods store—a business which he continued for twenty years. When twenty-one years old he left Winchester, and moved to Middletown, Ohio; and, soon after his residence in the latter place, commenced the dry goods business for himself. This was in 1830, and continued in it till 1847, with moderate success. In 1836 he commenced packing pork and curing hams, which business he continued for twenty-four years. In 1854 Mr. Tytus, in company with others, bought out Erwin & Brothers' paper mill, and commenced manufacturing book and wrapping paper, and has continued the business ever since, still owning an interest in the same mills that saw his commencement; and, at present, he is interested in the Tytus Paper-mill Company, Oglesby, Moore & Co., the Harding Paper Company, and the First National Bank.

Mr. Tytus was married in 1830, and has two sons and two daughters. The success of Mr. Tytus has been achieved by a persistent struggle through life and in his early years, with but little aid, but a resolute will and good constitution. And out of the struggle he has come with a spotless reputation, the esteem of his friends, and the respect of his fellow-citizens, and the blessing of good health and undiminished vigor.



F. J. Tytus

Chas. H. Gruenkel

CHARLES F. GUNCKEL.

THE subject of this sketch is the son of Philip Gunckel, Jr., and the grandson of Philip Gunckel, who came to this State from Pennsylvania in the latter part of the last century, his grandfather being extensively engaged in the milling business, and for many years associate Judge; a man of considerable means and influence in the place of his abode, and his name is well known to many in our midst even to-day, it having been handed down, and the reputation of the family preserved, by his descendants.

MR. CHARLES F. GUNCKEL was born in Germantown, Montgomery County, Ohio, January 4, 1837, and continued his residence there till 1858. When he had arrived at the proper age he commenced his education at Spencer's Academy, at which place he received an ordinary academical education. In 1859 he removed to Middletown, where he studied law and was admitted to the bar in 1862. From that time he has been successful in all pursuits of life, and among the great successes he has manipulated have been large real estate speculations in property surrounding Middletown.

In 1872 the Merchants' National Bank of Middletown was started. Mr. Gunckel was called to the executive chair, and has since held the position of President. This same institution has just completed a fine new building, which is an ornament to the city. Mr. Gunckel has been ever averse to the turbulent currents incident to political life, and has ever kept from being drawn into the disturbing excitement, and he has been successful in all of his business pursuits, from a rare combination of industry and judgment, and has gained the confidence and respect of the community by at all times exhibiting a rectitude of character which never wavered from the proper direction.

Mr. Gunckel entered into matrimonial relations in 1859 with Miss Ida A., daughter of Hugh and Jane Vail, of Middletown.

W. W. CRAWFORD.

THE subject of this sketch was born in Detroit, Michigan, June 11, 1836, and was the son of Lemuel and Louisa Crawford. When he was about seven years of age the family moved to Presque Isle, Michigan, remaining there about a year, after which they returned to Detroit. Young Crawford here commenced his education, continuing at school till the age of about sixteen, when he was sent to Gambier College. After completing his studies he assisted his father, who was extensively engaged in the iron and coal business in Youngstown, Ohio, and was taken in as partner in the business in 1858, in the twenty-second year of his age, the firm being changed to L. Crawford & Son. Having sold out their furnaces and interest in the iron business, the firm removed to Cleveland in 1862, continuing in the coal business.

On the death of his father, which occurred in June, 1868, he associated with himself in the business his mother, Mrs. Louisa Crawford, and his brother, Charles L. Crawford, under the style of L. Crawford & Sons, and from that time till his death was largely engaged in the coal business at the well-known place, Crawford's Dock, foot of West River Street. He was President of the Crawford Coal Company, whose mines are located near Massillon, Ohio, and at that and other points contributed largely to the development of the mining interests tributary to Cleveland.

W. W. Crawford was one of the leading young business men of Cleveland, and was well and favorably known not only in Cleveland, but at every city on the lakes, where, for thirteen years he had done business. He was taken away in his prime, having departed this life on May 21, 1875, at the age of thirty-nine years. His loss was not only felt by his immediate friends and relations, but by the community at large.

W M Crawford.

J. L. Hibbs

J. L HIBBS.

The subject of this sketch was born in Scioto County, Ohio, on the west side of the Scioto River, six miles from Portsmouth, about the year 1821. His father, Jacob Hibbs, was a well-known farmer in Scioto County, and his mother, Rebecca Lucas, was a niece of Governor Lucas.

In the early days of J. L. Hibbs he helped his father on the farm in Summer and attended school at the district school-house for a short time during the Winter months. When only fourteen years old he managed his father's books, continuing at his father's home and business until eighteen years old, when he left home with the consent of his parents to learn the carpentering trade, and which he carried on for a few years successfully, devoting all his spare time to the acquisition of knowledge. After this he engaged in the farming business, and attended closely to the details of this honorable pursuit for some time, only leaving it to come to Portsmouth and rest. After a respite of two years he, in 1853, entered into the hardware business with Mr. George Hered. This proved successful, and the partnership was continued till the beginning of the war, when Mr. Hibbs purchased the interest of Mr. Hered, and has continued it ever since. In 1866 he went into the shoe business, and two years later merged into the extensive jobbing house of Hibbs, Richardson & Co., his traveling salesmen operating for both the hardware and shoe houses. This, like all other business ventures Mr. Hibbs has engaged in, has proved prosperous, from the fact it has had his personal attention, and he has encircled about him young men whose aim is progress. All through life his mechanical eye and early adoption to mechanical pursuits has followed him so closely that he has built houses, assisted in the erection and improvement of churches, besides building his own business rooms, and there are to-day many living monuments which attest to his ability. He is well known to the citizens of Portsmouth, and in connection with his acknowledged business qualifications, he is highly esteemed for his moral attributes. He is now in the full vigor of manhood, and has already accomplished what most men lay out as the work of a protracted life—wealth, honor, and the good will of all men.

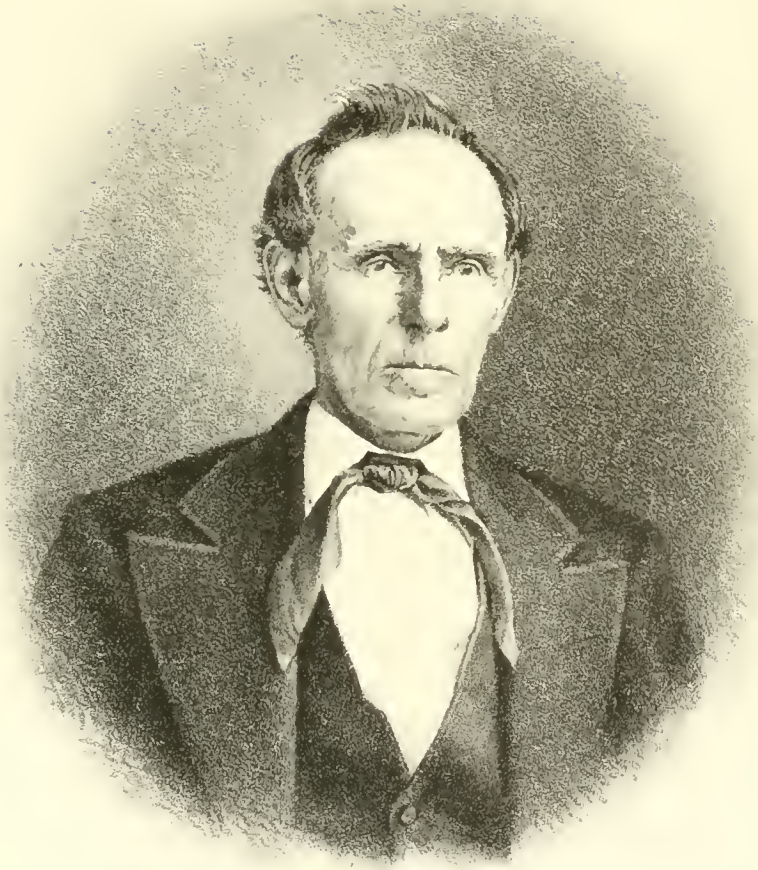
WILLIAM LAMBERT.

William Lambert, the subject of this sketch, was born in 1806, upon the farm on which he still resides, in the suburbs of Ironton, his parents having emigrated from Virginia and settled there as early as 1802. His early life was spent in hard labor in his father's blacksmith shop or in assisting to clear up and carry on the farm, and he has ever since been a good worker, both publicly and privately, for the benefit of the community in which he lives. His public life for the most part is embraced in twenty-four successive years as Township Clerk, six as Justice of the Peace, and six years as Commissioner of Lawrence County.

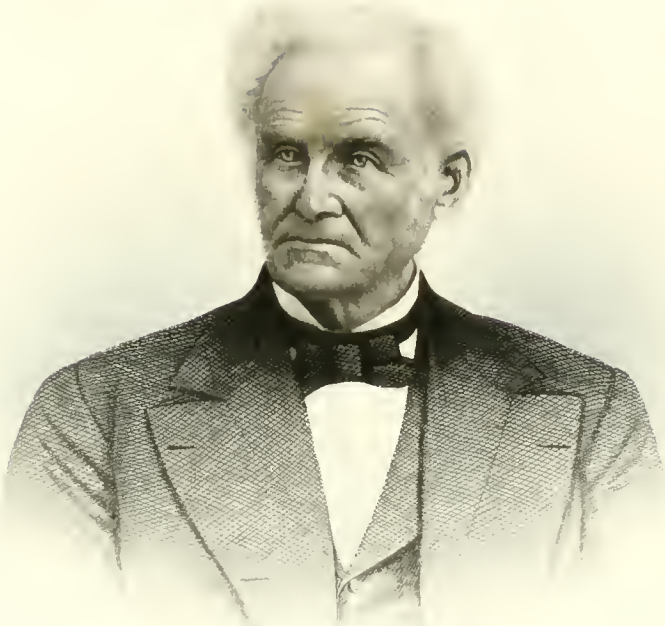
In 1855 he became identified with the manufacturing interests of Ironton by the purchase of an interest in Olive Foundry and Machine Shops, and in 1866 became sole owner of these excellent works, since which time they have been run to their fullest capacity, giving steady employment to from sixty to one hundred and ten men, and making boilers, engines, hot blasts, and heavy and light machinery of all kinds. In 1871 the firm changed to Lambert & Gordon, the present proprietors.

Mr. Lambert was married in 1831, his wife dying in 1846, and was again married in 1849, when, in 1861, he lost his second wife. He has had born to him twelve children—six by each wife—seven of the twelve now living. He has also thirteen grandchildren living.

The fortune that Mr. Lambert has amassed has been made legitimately in the business which he has followed, and he has never strayed into other channels. His motto in life was to excel in all he undertook, and his success in life shows how well he has lived up to the maxim which he set before him as a guide.



Wm Lambert



Samuel P. Chase

DR. JAMES L. CHASE.

THIS eminent physician was born in Litchfield, Connecticut, A. D. 1805. His father was the Rev. Amos Jesse Chase. When the subject of this sketch was ten years of age he moved to Titusville, Penn., where he first received a common-school education; and, while here, commenced the study of medicine. During his training for the honorable profession he purchased a forge and iron works, and naturally received some experience in that branch of industry.

In 1828 Dr. Chase finished his study, and immediately initiated himself in the practice of medicine. Soon after, he went to Philadelphia, and was connected with some of the leading physicians in that part of the country. Though, in 1836, having faith in the future of the West, Dr. Chase moved to Toledo, at which early day there was still located a tribe of Ottawa Indians. He here continued his practice, though moved to Toledo with the express purpose of discarding the profession and entering some other pursuit; but the people who knew him at home and his reputation insisted on his following the profession, which he yielded to, and his practice grew so extensive he found it impossible to attend to any thing else. His early residence in Toledo was in what was called Manhattan, on North Toledo—the whole place being nothing but a wilderness. In 1842 Dr. Chase was joined in wedlock, at Erie, Michigan, to Miss E. J. Gager, of Norwich, Conn., who still holds the position of wife and hostess. One of the effective attributes of his popularity is the purity of his character. It is this which has given him the esteem of all men, and the unbounded confidence of his patients—and all has been his own work.

JOHN A. ELLSLER.

John A. Ellsler was born in the city of Philadelphia, Penn., on the 26th of September, 1822. He entered the profession in 1846, at Peal's Museum, now the Masonic Temple, at Philadelphia. He commenced as utility man. One year after, joined the company of the late William E. Burton, Esq., at the Arch Street Theater, remaining in said theater three seasons. From thence he went directly to New York, engaging for the leading old man at the old Chatham Theater. From there he went to Charleston, South Carolina. After acting a short time there, associated himself with Joseph Jefferson, in management, and for two years continued managing the Southern Circuit—Wilmington, N. C., Charleston, S. C., Savannah and Macon, Georgia. After this, Mr. Jefferson joined Laura Keen's Company, and Mr. Ellsler turned his attention to managing at Utica, Rochester, Syracuse, and New York, and from thence to Cleveland, Ohio, 1853, remaining there until 1858. He then managed Woods's Theater, Cincinnati, for two seasons. From there he returned to Cleveland in 1861, and has continued managing there up to the present time. For the past three years he has also been managing the Pittsburg Opera-house. In 1873 he commenced building the Euclid Avenue Opera-house, of which we give a representation, and of which Mr. Ellsler is sole manager and lessee.

Wm Hessler Jr.

G O Griswold

G. O. GRISWOLD.

G. O. Griswold was born in Meriden, Connecticut, during 1810, and is the son of Jesse and Fannie Griswold. In his early youth he received an ordinary school education at home. When fourteen years old he left school and commenced to learn a trade; the one selected was that of making ivory combs, which he discontinued when nineteen, and associated himself with Mr. A. Hoskiss in the manufacture of coffee-mills, the firm being Griswold & Hoskiss. This he continued till 1838, when he was in his twenty-eighth year. Mr. Griswold now, having concluded to leave his native place, severed his business connections and moved to Aurora, Ohio, where he joined his brother in the tinsmithing business, the firm being Griswold Brothers; and while attached to this undertook, at his advanced age for learning, something new, and thoroughly learned the trade. In 1842 he moved from Aurora to Newcastle, Pennsylvania, and here commenced his career in the manufacture of linseed oil. In 1848 he moved to Warren, Ohio, continuing in the same business, and which business he still gives his whole time and attention. Since his settlement at Warren he has seen over twenty oil mills open and close; but by strict attention to business has kept his mill always running, and we may say his whole experience has been truly successful.

In 1867 Mr. Griswold connected himself with Mr. Truman Dunham, for the express purpose of starting a mill in Cleveland, under the name of Griswold & Dunham, the mill being owned by the same firm, and known as the Cleveland Linseed Oil Works, which is noticed among the oil manufacturers, in another part of this work.

By his business capacity, his integrity, and successful management, Mr. Griswold has always held the respect of those with whom he has encountered in his business operations; and his high moral worth, connected with his business capacity, has given him an influence in the place of his adoption.

Mr. G. O. Griswold is only at the meridian of life, and with his mind stored with information and rich in experience, possessing a constitution both vigorous and healthful, he has the promise of a long future of usefulness.

THOMAS SHARP.

THOMAS SHARP was born in Salem, Columbiana County, Ohio, February 16, 1808. His parents were Quakers, or Friends, who migrated from New Jersey to this place about the year 1795. When Thomas was twelve years old his father died, and he was put to work on a farm, where he remained until he was sixteen. Then he was apprenticed to learn the trade of carpenter and millwright, where he served until he was twenty-one years of age. His opportunity for education was limited to attendance of common schools, after he was old enough to attend them, about three months in a year, ending when he was eighteen. While he was an apprentice he attended school two Winters, three months each, walking each day three miles to the school-house, and, returning, worked in the shop until late at night. When he had served his time as an apprentice, he took his first relaxation from labor by walking seventy miles to Pittsburg, Pennsylvania, to see the city and its mechanical enterprises. Returning, he took passage from Pittsburg to Wellsville, Ohio, on the *Mountaineer*, the first steamboat that ever run on the Ohio River.

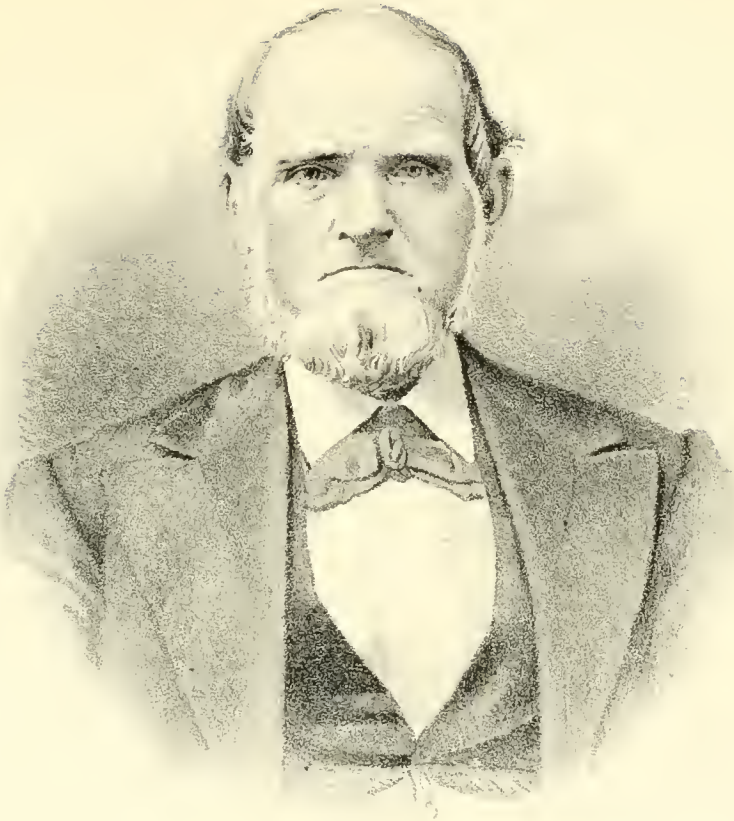
In 1830 he married Sarah Antrim, who was also of the Society of Friends, and who has ever made him a most amiable companion and helpmeet.

From 1829 to 1832 he worked in and about Salem at his trade, then removed to Cleveland, and worked in a ship-yard, working on all classes of vessels at that time used on the Lake. In 1835 he built a saw-mill, and steam-engine driving it, for Leonard Case, and in 1842 returned to his native place, Salem, and established the business he now continues. For years Mr. Sharp made his specialty the improvement of the ordinary slide-valve steam-engine, and his precision of workmanship, mature judgment, and correct perception of the action of steam, has enabled him to bring this class of engines up to a comparative state of perfection. Recently, with the aid of his son, he has arranged an automatic variable cut-off engine, having certain peculiarities that promises to make this the most superior engine of this class, combining strength, simplicity, precision of action, and economy of construction.

The early testimony of the Society of Friends against chattel slavery found a response in the heart of Mr. Sharp, and he became one of the early Abolitionists. Disregarding the denunciation they received for their fidelity to human freedom. In religion Mr. Sharp, first adopting the opinions of the Hicksite Friends, finally became more liberal than they were even, and was branded an infidel. His honesty forbade his denying this appellation, and his courage permitted him to welcome it.

His only son is an active member of the firm of Thomas Sharp & Co., conducting a large and successful business at the "old shop," following in the footsteps and handstrokes of his venerable father. At an age when most men retire from active business, Mr. Sharp remains hale, vigorous, laborious, intelligent, and genial, the same benevolent friend to the poor and industrious he has been for the last forty years, still emphatically showing his faith by his works.

Thomas Sharp



D B, Stewart

DANIEL BERTINE STEWART.

Daniel Bertine Stewart is the son of Daniel Stewart, who emigrated from Litchfield, Connecticut, to Ohio, and settled in Athens County in 1804. Here the subject of our sketch was born, September 26, 1812. His father purchased, in an early day, a large amount of landed estate, adjoining the Hocking River; and the early life of Daniel Bertine Stewart was spent in clearing away the forest. Here he received his early education in energy, perseverance, and economy, which afterward characterized his whole life; also his schooling, which was limited. At the age of eighteen he took charge of his father's grist-mill, and, at twenty-one, purchased the same. He soon sold this mill at an advance, and went into business with his brother Alexander at Rutland, Ohio, where he continued two years, when he removed to Coolville, Athens County, where he was married to Miss Sarah Carter, April 7, 1836. In 1837 he sold his store at Coolville and moved to his father's farm, where he improved the water-power of the Hocking River, and erected a saw-mill. In 1842 he built a large grist-mill; and, two years later, established the first woolen factory in Southern Ohio. This business being very successful, and centered largely at Athens, he moved there with his family Novem- 6, 1867, where he still lives. He has erected, since 1837, a large number of houses, mills, stores, and factories, among which may especially be mentioned his fine brick factory at Athens, which is one of the best in Southern Ohio. Later years railroad enterprises has occupied his attention—the Baltimore Short Line owing much to him. He also projected the building of the Federal Creek Valley Railroad, now nearly completed, terminating at *Stewart*, a town laid out by Mr. Stewart on his old farm, and named in honor of its founder. Last year he erected some forty houses; a planing-mill is in operation, and several stores and shops have been established, and the town promises to be one of thrift and enterprise. He held the office of Justice of the Peace for twenty-one years; was elected County Commissioner in 1853, in which position he was active in the first purchase of the Athens County Infirmary. In 1860 he was chosen and served as one of Abraham Lincoln's electors for Ohio. He has for several years held the position of Director in the Atlantic and Lake Erie Railroad, and is at present one of the Directors of the Baltimore Short Line, and President and Director in the Federal Creek Valley Road. In every position of trust, to which he has been called, he has filled his position with integrity and wise discretion. On the 16th of October, 1874, he was bereaved of his beloved companion. She bore him nine children, six of whom survive her. On the 7th of October, 1875, Mr. Stewart married his second wife, Mrs. Dr. M. E. Pearce, widow of the late Dr. T. J. Pearce, of the U. S. Army—she herself being well known throughout the war for her charitable work. Early in life Mr. Stewart joined the Methodist Episcopal Church, and ever afterward proved an active and efficient member. He was instrumental in establishing Stewart's Chapel at his old homestead. He will long be remembered as one of Athens County's first and foremost benefactors, and for his liberal action and free gifts to all benevolent enterprises.

J. B. WILSON.

J. B. WILSON was born September 22, 1828, at Paris, Ohio. His parents, William and Elizabeth Wilson, gave him a good common-school education—a thing in itself rare in those days—after which he learned the carpentering trade. In 1852, stimulated with the love for gold, and hearing of the success of others, he started overland for California, traveling nearly 3,000 miles through a country where the Indian roamed, and where the ax of the pioneer had not been heard. The open prairies were his bed and resting-place. In 1856 he returned to Paris, Ohio, and commenced to manufacture the celebrated "White" Hay-rake. In 1858 Mr. Wilson was joined in wedlock to Miss Charlotte Koons, also of Paris, and unto them have been born seven children—five girls and two boys—the oldest, a daughter, now being sixteen years of age. In 1865 he concluded Paris too circumscribed to extend his business; therefore, he moved to Canton, Ohio, and bought the property now owned by his widow, and commenced extending his already large business. In 1870 he commenced to manufacture the lock lever rake; and, at the time of his death, August 17, 1873, was doing a large and growing business. His disease was Asiatic cholera, though his health declined since his removal from his native heath. He left his family in comfortable circumstances, the result of industry.

Mr. Wilson, as has been seen, was not born to affluence, but began from an humble commencement, and owes alone to his efforts and industry the position and fortune he left behind. What he has done can be done again, if the same method be used for its accomplishment. Any young man who will copy his perseverance, economy, and industry, and like him be sedulous in preserving his reputation and credit, must attain affluence, and attain a respectable position. Who properly sows in Spring must reap a harvest; and he who in youth commences life with the practice of temperance, industry, and economy, must gather bountifully of the fruit they naturally produce. The subject of this memoir was a man of many virtues, among which was his great love for home and family, who live to mourn his irreparable loss, for he was loved and deeply respected by all who knew him.

Samuel Quincy

SAMUEL QUINBY.

Among the eminent citizens of Warren who have, for the last half century, been honored and esteemed both at home and abroad, no one was more sincerely beloved and respected in all the relations of life than the late Samuel Quinby. His father, the late Judge Ephraim Quinby, was among the early immigrants to the north-western territory, having moved with his family to Warren in the year 1798—two years before the county of Trumbull was organized, and five years before the State of Ohio was admitted into the Union.

He was at an early day appointed Assistant Postmaster at Warren, by General Simon Perkins, the first Postmaster. This was his first office. He was clerk in his father's store from 1814 to 1817, and in the last named year he became one of the proprietors and editor of the *Western Reserve Chronicle*, which position he held till the year 1819. Upon the election of the late John Sloane to Congress from the Sixth District of Ohio, he was appointed, by President Monroe, to succeed him as Receiver of Public Moneys for the United States. Same office at Wooster, in the year 1819, at which time he made Wooster his place of residence. He held this office till 1835; and from 1822 to 1838 he also held the office of Treasurer of Wayne County. In 1840 he returned to Warren, where he resided till his death.

Mr. Quinby was twice married—first to Lucy Potter, daughter of Rev. Lyman Potter, of Steubenville, Ohio, who died in 1833. He was married a second time, in 1847, to Mrs. Emma Brown, of Hartford, Trumbull County, who survives him. Of the six children by the first marriage two only, and of the five by the second, one only, survive him.

During most of his life political discussions were unusually turbulent and stormy, and in the election of 1828 he supported Mr. Adams for President, and when the political tempest broke upon the country which overwhelmed his administration for its alleged extravagance and corruption, and hurled him out, and bore General Jackson into office, he held the position of Receiver of the Land Office at Wooster. But such was his ability, integrity, and purity of character, and the high esteem in which he was held as a faithful public officer at home and in Washington, that the triumphant party did not succeed in displacing him, as it did others, though great efforts were made for that purpose. His well-known hostility to slavery transferred his allegiance from the Whig to the Republican party, and he continued an esteemed and influential member to the close of life. He was twice elected to the Senate of the State—the first time in 1844, and again in 1861.

He was for many years a Director of the Western Reserve Bank, and the associate of Perkins, Parsons, Freeman and others, who gave the institution its good name and reputation.

He was a man of great firmness and decision of character, though modest and unassuming in his manners, and enjoyed the confidence and respect of all who knew him. He was confiding and generous, and contributed to the wants of the poor and needy, by whom he is held in grateful remembrance. He was a prominent and respected member of the Baptist Church in Warren, and in his daily life and conversation he illustrated the virtues of the Christian gentleman. He died February 4, 1874.

JOSEPH WALLACE FOOTE.

Joseph Wallace Foote, the subject of this sketch, is, in his personal appearance, robust physique, generous temperament, and bold and shrewd business capacity, and in many respects is a representative and typical man of the West.

His father, Wesley Foote, was born in Virginia, and moved to Ohio early in life. The son was born July 15, 1825, in Butler County, Ohio. His early education was limited. At the age of five years his father died, and when his mother married again he worked on the family farm until he was fourteen years old, after which period he went to Portland, Fountain County, Indiana, and learned the trade of a cooper, remaining there and pursuing that calling until the death of his mother, when he returned to Hamilton, Ohio. When the Mexican War broke out in 1846, he enlisted in the First Ohio Regiment, his Company being known as the "Butler Boys." The name of Captain Foote will be ever remembered in the hearts of all who cheered the "Butler Boys" as they went out to war.

In 1848 he was married to Miss Margaret Todd, of Hamilton. Five children have been born to this marriage, of whom only two survive. After his marriage he abandoned his trade of a cooper and began, in a small way, to ship produce to Cincinnati. This proved so successful that, in 1855, he removed to Cincinnati and opened his business on Central Avenue, north of Fifth Street, where he has continued ever since, in a plain, straightforward way, to transact a large amount of business, and has succeeded in laying the foundations and building up the structure of a fine business character for honesty and enterprise, and also in securing some steps toward a fair competency for his older years.

Within a few years past Mr. Foote has yielded to a longing desire to give some attention to the growing of plain stock, and has so far indulged his tastes as to secure between 300 and 400 acres of the finest farming land in Illinois, which he has improved with the necessary buildings, including one of the handsomest and most spacious barns in the West, fitted up with all the appointments for successful stock growing; and he is annually sending some of the best of Western cattle and pigs to the Chicago and other Western markets.

Mr. Foote is worthy of more than the usual word in connection with his standing in the various grades of the fraternity of Freemasonry; but we forbear any further notice of him in these relations than to state that the standing of Hanselmann Commandery, No. 16, Knights Templar, is mainly owing to his efficient service as Captain General during a period of four years. He was then elected, and served again by re-election for two years as Eminent Commander, and then was elected by a unanimous vote to the office of Captain General. In these offices, and in all his Masonic relations, he discharges his duties with unswerving integrity and well-deserved honor.

Mr. Foote is an example to the young men of to-day. He is now in the prime of life, and in the strength and activity of his manhood, and he is not living in vain as he pursues his plain path; and the honors of well-doing shall gather around his steps and bless his home with comforts and joys when the days of his active toil shall be past.

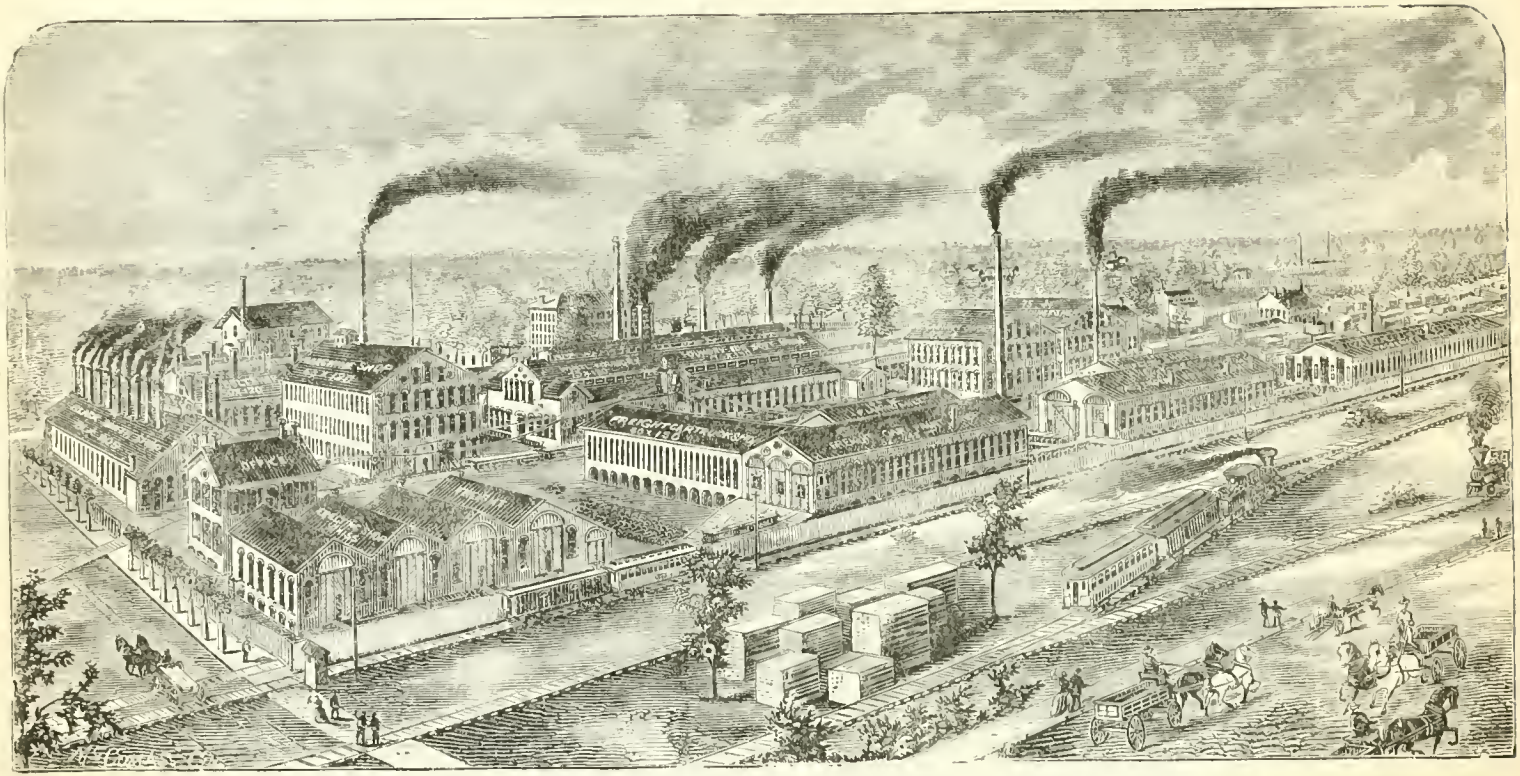
J. M. Foote

OHIO MANUFACTURERS.

THAT manufacturing can be carried on more advantageously in some localities than in others is evident to all. This superiority arises from many causes, among which are the facilities for obtaining the raw material used in manufacturing, the agricultural resources of the locality in furnishing the means of subsistence for the manufacturers, the facilities for transportation of the raw material and the manufactured article, and the access to markets. Ohio presents claims as being one of the favored places. In support of these claims we will make some statements of facts, and leave the decision, based upon those facts, to the reader.

Of the many thriving towns in South-western Ohio, Dayton stands pre-eminent in beauty of situation, population, opulence, and industry. Its wide streets, elegant churches, tasteful and luxurious dwellings, the number and beauty of its women, the elegance and refinement of its society, the excellence of its public and private schools, the extent and variety of its manufactures, have given this city a national reputation. Situated in the heart of the Great Miami Valley, at the confluence of the Miami, Stillwater, and Mad Rivers—perhaps the finest agricultural district in the world—at the junction of nine railways, leading direct to Baltimore, Philadelphia, New York, Toledo, Sandusky, Cleveland, Columbus, Pittsburg, Wheeling, Cincinnati, Indianapolis, St. Louis, and Chicago; on the line of the Great Miami Canal, connecting the Ohio with the Lakes,—Dayton presents peculiar advantages in all the great departments of agriculture, commerce, and manufactures. Its water-power is large and very important, and is improved to the uttermost, scarcely a drop of water passing its hydraulic without paying its passage by turning some of its numerous mill-wheels. For the production of agricultural implements alone there are ten different establishments, five of which make hay-rakes a specialty, turning them out by tens of thousands, and distributing them to all quarters of the globe. There are eleven flouring-mills, mostly large, some of them turning out three hundred barrels each day of the year. There are seventeen foundries and machine-shops, five of which manufacture Turbine wheels, that have a world-wide reputation; four linseed-oil mills, and two varnish manufactories; four large paper mills, and one of the most complete and extensive straw and tar board producing mills in the country.

The principal manufacturing establishment of Dayton, however, is the car works of



VIEW OF THE DAYTON CAR WORKS, BARNEY & SMITH MANUFACTURING COMPANY.

THE BARNEY & SMITH MANUFACTURING COMPANY,

A fine view of which we give, the most extensive and best managed establishment in the West, if not in the whole country. The ground-floors alone of the several buildings cover four acres, and with the second, third, and fourth floors of some of them, eight acres. The buildings are very extensive, substantial, and well arranged for the convenient handling of the very large amount of material used, amounting to over 30,000 feet of lumber and forty tons of wrought and pig iron per day.

In no way can we gain so clear a conception of the rapid increase in the manufacturing interests of the State, as by tracing the history of some one establishment, in a single branch of industry, from its inception to its present magnitude.

In 1849 E. Thresher and E. E. Barney, under the firm name of E. Thresher & Co., began the erection of shops in Dayton, Ohio, for building railroad cars, on what would now be deemed a small scale, and with limited capital. From the first their cars were noted for the excellence of their material and workmanship. In 1854 E. Thresher, from failing health, sold his interest to C. Parker, and the business was conducted for ten years under the firm name of Barney, Parker & Co. During this period their business steadily increased, extending largely over the North-west, West, and South. In 1864, Mr. Parker's health having become impaired from too close and continued attention to business, he disposed of his interest to P. Smith, and the business was continued for three years under the firm name of Barney, Smith & Co. In 1867 the firm was incorporated under the laws of Ohio, assuming the name of The Barney & Smith Manufacturing Company, since which time they have rapidly enlarged their business, erecting new and more commodious brick buildings, and increasing their facilities by greatly improved machinery, until their manufactures amount in value from $1,000,000 to $2,000,000 per year, consuming 8,000,000 to 10,000,000 feet of lumber and 10,000 to 12,000 tons iron each year, giving employment to 1,000 men. The Dayton Car Works, commencing with less than $120,000 capital, have now invested in their business more than $750,000, and have become one of the largest manufacturing establishments in the whole country.

Their buildings and a portion of their grounds, as now arranged, are shown in the cut we present. Railroad tracks are shown south of their grounds, one entering inside of their inclosure on the south side, and one through the center, affording ample facilities for receiving freight and shipping cars.

Passing through the main entrance, the first building shown at the right is the office, 35 x 50 feet, three stories. The basement is used as a store-room; the first floor handsomely fitted up for offices; the upper is occupied by the linen and curtain department of sleeping-cars. South of this is shown the freight-erecting shops, 97 x 155 feet, one and a half stories. The lower is used for storing dressed lumber, and cutting it into suitable lengths for siding and roofing, making grain, side, and end doors, and painting the strips

for double-board roof-cars. In the main room were numerous box-cars in various stages. In one part the lumber, just from the machines, dressed, bored, mortised, and tenoned, was taking shape in form of bodies; in another these bodies were being floored, sided, and roofed; and in still another these bodies, completed, were passing into the hands of the painters,—all moving with the exact system and precision of clock-work, each man attending to his particular branch of the work. In passing through the different shops our attention was often called to workmen who have been employed on one class of work for twenty years and over—some in the fitting, others in the finishing, blacksmith, and foundry shops, etc. By pursuing this system the company have been able to maintain a steady progress in the quality and style of their work.

The next two buildings, set at right-angles, one for freight trucks (50 x 150 feet), and one for painting cars (52 x 245 feet), were filled with trucks and cars. The next building to the right, with transfer-table between (52 x 182 feet), is the passenger set-up or body shop. The two four-story buildings, with tall smoke-stacks, one 82 x 90 feet and the other 63 x 60 feet, forty feet apart, connected by iron bridges, have the two first stories filled with fine wood-working machinery for passenger-car work; the two upper stories are filled with cabinet and carvers' benches and upholster rooms, A fine engine (two hundred horse-power) in one of the rooms furnishes the motive-power for the entire works; wire ropes, shown in the engraving, transmitting the power to the various buildings. Connecting one of these buildings with the passenger-body shop is the baggage-body shop (50 x 60 feet), the roof just showing over the roof of the former. To the left of these, the roof just appearing over the roof of the freight-car paint-shop, stands a building (82 x 165 feet) containing the freight wood-working machinery in great variety, having all the latest improvements.

On the left of the main entrance stands the blacksmith-shop (81 x 205 feet). Next beyond stands the machine-shop (63 x 120 feet), four stories. Still beyond is shown the wheel foundry (75 x 100 feet) and pitting house (30 x 60 feet), capacity 140 wheels per day. A continuation of this building is the soft-iron foundry (75 x 150 feet). Beyond these is shown the sand and coke sheds and stabling. Still further on, hid by the cabinet-shops, is the oil and glass-house (30 x 60 feet), three stories, in the upper part of which the beautiful frescoed head-linings that adorn their passenger-cars are painted. Still further on, for a third of a mile, extends their large lumber-yard, with a railroad track through the middle, and bounded on three sides by the canal. Here and in the adjoining yards is piled lumber for 250 passenger-cars and 1,000 freight-cars—the usual stock carried amounting to 6,000,000 feet of lumber. After examining their ample facililities and immense stock of dry lumber, and noting the care given to the minutest details of their work, we can easily understand why this company have acquired such eminent reputation for the excellent quality of their work.

STOUT, MILLS & TEMPLE, DAYTON, O.

THE Globe Iron Works, whose proprietors are A. L. Stout, Wm. M. Mills, and J. Temple, under the firm style of Stout, Mills & Temple, is a continuation of the second foundry in this State, dating back its origin as early as 1828. They now manufacture the American Turbine Water-wheel, flour-mill and paper-mill machinery, gearing and shafting of every description, French burr mill-stones, and general mill furnishings. The American Turbine Water-wheel has not only gained a national reputation, but is used extensively in foreign countries. The long experience of this company, and their practical knowledge of the manufacturing interests of the country, enable them to keep pace with all new and useful improvements. They are the acknowledged leaders as the inventors and manufacturers of turbine water-wheels, having made them a specialty for the past twenty-two years. The present turbine wheel, made by them, has been the result of over sixteen years of perseverance toward perfection, and in the present high state of usefulness and practicability stands without an equal, both in design, workmanship, and the percentage of the power of water utilized. A very serious defect has long been experienced in adapting turbine wheels to small variable streams of water, in consequence of a wheel of a given capacity not having any mechanical device by which a greater or less amount of water could be applied and used without a very large percentage of loss in the useful effect of water employed. Of the many attempts to remedy this defect in the application of turbine water-wheels, none has, before the invention of the American turbine, patented by themselves, practically succeeded in producing a turbine water-wheel that would produce as high a percentage with partial or with full gates. Many thousands of dollars have been expended in endeavoring to accomplish this much-desired result; and it has been said by many scientific and practical men of acknowledged ability that it never could be attained. The American turbine has demonstrated, beyond the possibility of successful contradiction, that this has been accomplished to the entire satisfaction of hundreds who have had many years' experience in the use of water as a motive power.

The works of this company are on a mammoth scale, and are furnished with the most improved machinery and appliances for the manufacture of every thing in their line. Large illustrated catalogue sent free on application to Stout, Mills & Temple, Dayton, Ohio.

BUCKEYE AGRICULTURAL WORKS, P. P. MAST & CO., SPRINGFIELD, O.

P. P. MAST & CO., SPRINGFIELD, O.

THE above company, who are engaged in the manufacture of grain drills, broadcast seeders, cultivators, cider-mills, plow sulkies, hay-rakes, Anderson steamers, etc., was incorporated in December, 1871, under the State laws of Ohio, with a capital of $500,000, though the history of the organization dates back as far as 1856, when the business was started by Thomas & Mast; and out of this firm, who started the business with $15,000, grew the present company. Few companies, conducting a business of as large proportions as this, make less display in its transactions, or move so quietly forward. The gentlemen at the head of it are progressive and enterprising. They did not consider the achievements of one year a criterion for the future, but looked upon it as an encouragement to try for greater results. They have also shown the same enterprise for improving the working and usefulness of the goods they make, and to this peculiarity of their management is due the prosperity of their business. Each year some new device has been introduced, or a change made in the working of their machinery, which, after tests of nineteen years, have given them their present perfection. Among the well-known products of this establishment is the famous Buckeye Grain-drill; the Buckeye Force-feed Broadcast Seeder, which consists of a positive force-feed, so constructed that you can regulate the quantity anywhere between one-half bushel of wheat and three bushels of oats in an instant, without any extra gears or any change of gears; the latest improved Buckeye Cider-mill and Press; Improved Riding or Walking Cultivator, with four and five shovels; Champion Self-dumping Rake; Buckeye Plow Sulky, which can be attached to any common plow; "Anderson" Agricultural Steamer, for steaming food for stock; Anderson High-pressure Boiler, for running engines, and are of indispensable worth to farmers, printing establishments, warehousemen, cheese factories—in fact, for any purpose where from two to ten horse-power is needed; also Kipp's patent steam-engines, which are the most simple in the market—powerful, direct in action, made of as few parts as possible, and all accessible. The business annually transacted is enormous, and comprises the sale of 4,500 drills, 3,000 broadcast seeders, 3,000 riding or walking cultivators, 2,000 hay-rakes, 1,000 plow sulkies, and 250 portable boilers, which, to manufacture, gives constant employment to 325 hands. The works, a fine view of which we present, have floor-space of about three acres, and two acres of roof. They have just finished another factory for the sole purpose of manufacturing boilers and engines. The buildings front on the railroad, and cover an area of three hundred by sixty feet, with an ell two hundred feet, three stories high, besides engine-room and other buildings. The organization is conducted under the name of Mast, Foos & Co.; and, with the energies of its personel, the prospect of Mast, Foos & Co., for a successful and long career, stands on a par with P. P. Mast & Co.

CLEVELAND ROLLING MILL COMPANY, CLEVELAND.

The above Company was organized in 1864, with a capital of $500,000, though they originally started as a private firm, in 1857, with the same principals. In addition to the original works, new and complete works of enlarged capacity have been erected from time to time, till the ground and works owned and operated by them cover an area of twenty acres, and their capital stock has been increased to $2,000,000, with a surplus of half that amount. They now manufacture, on a very large scale, Bessemer steel rails, iron rails, forgings, bar, spring, tire, steel wire, iron and steel boiler plate, galvanized and black sheet-iron, etc., and their works, which are located principally in the eighteenth Ward, comprise two blast furnaces, each having a capacity of 45 tons daily, one plate mill, situated adjoining other buildings, one steel and one iron rail mill; the former has a capacity for 40,000 tons of steel rails annually, and the latter, which is located on the lake shore, has a capacity of 100 tons of rails daily, double turn, and is furnished with two fine 200-horse power engines, and employs 230 hands; bar, rod, and wire mills, forging hammer and machine shop; the whole consuming 150 tons of coke and 400 tons of coal daily, and give constant employment to 2,700 hands, they producing annually $6,000,000, which is sold principally to railroads and iron and steel merchants all over the Western States. In the completeness, extent, and adaptation of all the tools and appointments required for the production of iron and steel in its different shapes as made by this Company these works are without a rival, while at the same time they possess every facility requisite for the production of every thing from the raw material, saving all the intermediate profits necessarily charged by others.

Sixteen miles from Marquette and sixty-nine from Escanaba are located their large iron ore mines, the products of which yield, from analysis, $66\frac{10}{100}$ metallic iron. These mines employ 400 miners and laborers, exclusive of those enumerated as belonging to the works at Cleveland, who mine 50,000 tons of ore annually, all of which is consumed by the Cleveland Rolling Mill Company. Their ores are considered the finest brought from the Superior Region, and from which they make the best grades of Bessemer metal. Their Bessemer cast spring steel is being largely used for the manufacture of carriage, car, and seat springs, they selling annually 2,000 tons. The better grades of their wire is also sold for spring purposes and for the manufacture of steel screws. The Company attends strictly to quality in all of its productions, and by this perfect system goods are always found to be as expected, and to perform what ought to be required of them.

The officers of the above Company are—A. B. Stone, President; H. Chisholm, Vice-President and General Manager; S. C. Baldwin, Treasurer and General Agent; E. S. Page, Secretary; and the warehouse, offices, and counting-room are located at Nos. 99 and 101 Water Street, Cleveland, where all the business is transacted. The clock-work regularity of this establishment secures the packing and shipping of all goods ordered within the shortest space of time possible. May we witness the growth of hundreds of such establishments, for they bring wealth and reputation to our State.

STANDARD OIL WORKS, CLEVELAND, O.

To give even a faint idea of the immensity of the Standard Oil Works is a difficult task, for the reason that it is almost impossible for the visitor to obtain any very definite idea on the ground. There are shops, and covered ways, and tanks, and paint-houses, and cooper shops, and more covered ways, and more shops, and stills, and tanks, and car-tracks, and more covered ways, and more tanks, etc., until the mind of the visitor is fairly confused, and it seems a perfect labyrinth.

The ground covered is twenty acres, and the buildings and tanks appear to be without number. It is an immense institution, employing nearly 2,500 men and boys; 1,500 are required to furnish barrels alone, and the number of barrels of oil refined daily averages 10,000—nearly one-half the entire oil product of Pennsylvania—the remainder being refined principally at Pittsburg, Philadelphia, and New York. Think of it, 10,000 barrels, or 420,000 gallons, of oil turned out daily from this one establishment—enough to furnish a light for twelve hours for every family in the United States.

In the barrel department every thing is done by machinery—the staves and heading are cut by machinery, a machine puts the hoops on, one cuts the beveled edge, another prepares the head, while still another carries the finished barrel to the top story, where it is painted.

In another building were the paraffine vats, filled with the white, fatty substance which, in a little while, would become the hard, opaque paraffine of commerce, and a little later on would return, after a trip to New York, in the shape of candles. Here were still-houses, where no lights were admitted, giant reflectors being set up at a distance to throw light through the glass fronts of the still-houses. Here a huge tank bubbled and boiled, and fumed and heaved, and rose and fell. This was an agitator, where the oil is mixed with sulphuric acid by pneumatic power, causing the heavy oil to sink with the acid to the bottom, leaving the clear, bluish oil on top. As it rises and falls, foaming and frothing under the influence of the blast, it almost seems to threaten us with a fate similar to Jonah's—only, I believe that it was sperm oil that Jonah got himself into, and not rock oil, although he was "rocked in the cradle of the deep."

The Company have a paid-up capital of $3,500,000, and are governed by a pair of able business men—Mr. J. D. Rockefeller, President, and the General Superintendent, Mr. S. N. Andrews. Three-fourths of the production ordinarily goes to Europe, but at this season as much as 4,000 barrels are daily shipped to the West—a portion as far as San Francisco—while 60,000 barrels are annually shipped to Cincinnati. The oil is brought from the Butler Region of Pennsylvania, and costs about ten cents per gallon at the wells. Although the oil used is brought from Pennsylvania, it may be classified among the mineral interests of the State, in view of the immense industry to which its distillation and preparation have given rise. It is the principal among the industries of a city which claims to have 1,149 manufacturing establishments in its vicinity, employing 10,000 men.

MERIAM & MORGAN PARAFFINE CO., CLEVELAND, O.

THE above company was incorporated June 1, 1874, with an authorized capital of $600,000, of which $300.000 has already been paid in. The officers are E. P. Morgan, President; J. B. Meriam, Vice-President and Treasurer; and Wm. Morgan, Superintendent. The company was formed for the purpose of manufacturing cold-pressed paraffine oil, 25° gravity, refined paraffine wax, railroad and machinery oils, and axle grease. The firm, out of which the present company grew, was started in 1863 by Morehouse & Meriam, which, in 1865, changed to Morehouse, Meriam & Co., afterward Meriam & Morgan—the latter since 1869. The principal works and offices of the company are located at Nos. 81 to 87 Central Way, corner of Ohio Street, the building being three stories—one hundred feet front and two hundred feet deep. They have also branch works on River Street, occupying sixty by two hundred feet, and two refineries, one occupying seven acres, on Kingsbury Run, and the other on the Heights. They use about two hundred and fifty barrels of 25° gravity distillate daily, which is the product of about 15,000 barrels of crude petroleum, and which they buy from the refiners of illuminating oil. At the principal works the oil is received through a pipe-line from the refinery one and a half miles distant into large tanks, and from which the oil is drawn directly into the freezing-cans, 770 in number, where, by a patent process, which consuming eighteen tons of ice and ten barrels of salt daily, it is brought to a temperature of 10° Fahrenheit. The material is then put into patent presses, of which Mr. Meriam is the inventor and patentee, and the present corporation the sole proprietor. The works are furnished with one hundred and thirty of these presses, through which all the oil passes. They have eighty other presses, part lever and part hydraulic, by which the crude paraffine-wax receives a second pressing before going to the refinery, where it is converted into pure white candle-stock at the rate of 5,000 pounds daily. Oil made by this patent process stands a greater degree of cold, without thickening, than by any other mode. They have adopted all the best modern appliances, many of which are their own peculiar inventions, and adapted particularly to their works. They will shortly add to their works a barrel-house, seventy-five by one hundred feet, three stories high; also a building eighty by eighty, and three stories high, for storage and the manufacture of paraffine candles. The Valley Railroad, which is now in process of construction, will pass through the grounds of this company, where their products are finished, and will give them direct rail communication with all the roads centering in Cleveland. The Meriam and Morgan Paraffine Company will spare no pains to merit a continuance and extension of the confidence reposed in past years in its several members. Their efforts will always be directed to the production of goods which will compete with any others in the market in the three great essentials of quality, reliability; and price—a result which can only be achieved by those who have ample capital to take advantage of every saving item. They are among the heaviest capitalists in the business, giving constant employment to about one hundred men; and their sales have reached $750,000 annually.

FOREST CITY VARNISH, OIL, AND NAPHTHA CO., CLEVELAND, O.

Among the many firms and companies, and one of the most prominent who transact the mammoth oil, varnish, and naphtha trade of Cleveland, is the Forest City Varnish, Oil, and Naphtha Company, who have now been established since 1862, then as a firm, though in 1867 it was incorporated under the State laws of Ohio. The officers are G. H. Stone, President; S. H. Shannon, Vice-President; M. P. Stone, Secretary and Treasurer; and the works of the company are located on Commercial and Canal Streets, where they manufacture varnishes, Japans, naphtha, gasoline, and carbon oil. The offices are located at No. 26 (old No.) Euclid Avenue, where the business of the company is transacted. The company and the firm, out of which it grew, have now been established in Cleveland for thirteen years past, and have done their part toward multiplying the oil sales of the city. The extent of their business averages 700,000 to 800,000 dollars annually, and they employ in production thirty hands, exclusive of barrel-making—they buying them already manufactured. The varnishes and Japans made by them range in price from fifty cents to eight dollars per gallon. They make a specialty of 63° naphtha; street-lamp gasoline, 75° gravity; and gasoline for machines from 80° to 90°. The varnish-house is on the hill, where is made all kinds of varnishes by various processes and ingredients, also in this building are fire-proof store-rooms for varnishes. In the upper room are thirty tanks, holding one thousand gallons each, and below are thirty-four tanks, varying in size from one hundred and twenty to one thousand gallons, for fine varnishes exclusively. This company runs ten stills, with a total capacity of five hundred barrels, for making all grades of light oils. The works are supplied with five iron condensing-boxes, two thousand seven hundred feet of coil in each, and have a full supply of spring-water for all their tanks. For fuel they use naphtha, which, besides being a great saving in labor and outlay, is, in case of fire, a safety, as the supply can be shut off immediately. They have twenty-two underground tanks; also a crude naphtha tank—the latter holding 10,000 barrels. Then comes the agitating and barreling room, which is large and spacious. The barrels are received, finished with the exception of being glued; this is done in the establishment—they taking great care to have them properly glued, using glue manufactured by Peter Cooper, of New York. Their storage capacity is 100,000 barrels; also canning department, where oils are canned for the Southern trade—it taking just seven hundred five-gallon cans to make a car-load. We need scarcely refer to the standing of the company—that speaks for itself. The long course of years, in which they have transacted an ever-increasing business, without a single instance of having failed to live up to the spirit as well as the mere letter of their contracts, is the basis of a business confidence which is as wide-spread as their extensive business relations.

MIX & COOKE, OIL REFINERS, CLEVELAND, O.

The firm of Mix & Cooke is composed of L. D. Mix and W. P. Cooke, and is a continuation of Mix & Arter, who started the business as early as 1865. In 1867 Mr. Mix became sole proprietor, and so continued till 1872, when Mr. Cooke became a partner and the present firm style was adopted. They have now in operation the Atlantic Carbon Oil Works, located on the A. &. G. W. R. R., on Central Way, the Eagle Lubricating Oil Works and Cleveland Naphtha Works, on Commercial, near Canal. They furnish constant employment to twenty men, and do an annual business of one hundred and fifty thousand dollars. The lubricating and naphtha works are furnished with four stills, each having a capacity of thirty-five barrels, and the works are furnished with every improvement known that cheapens labor and gives security to the product, including agitators, bleachers, barreling room, etc., and the different gravities made by them range from 62° to 87°. The Atlantic Works, on Central Way and the A. & G. W. R. R., receive the oil from tank cars to their own tanks at the works, and the works being on the railroad, the oil is pumped from the storage tanks to tank cars when ready for shipment. The works are supplied with stills, including all the necessary attachments, the capacity of which are one hundred and thirty-five barrels.

This house is immediately connected with the Missouri, Kansas & Texas Tank Line Co., which was incorporated for the express purpose of transporting refined oil in bulk, the company having numerous stations on their route at which they have ample facilities for barreling the oil directly from the tank cars, thus avoiding breakage and leakage, which of necessity must take place when the oil is shipped in barrels; besides, it does away with all litigation, and the trouble and expense of settling claims with the railroad companies in regard to losses made when oil is barreled here and shipped on the cars in packages. The officers of this company are, W. P. Cooke, President; L. D. Mix, Secretary; and A. A. Bailey, General Manager. They were incorporated, with an authorized capital of $500,000, over $200,000 of which is paid up. Their present capacity for shipping is one million gallons of refined oil annually.

C. L. MOREHOUSE & SON, OILS. CLEVELAND, O.

The above firm is composed of C. L. and C. F. Morehouse, whose office is at 26 Merwin Street, and the senior partner is one of the oldest oil men among us, having been in the business here for fifteen years past. He commenced when oil commenced to be taken from terra firma, and has grown with its growth and strengthened with its strength. In 1860 Mr. C. L. Morehouse commenced refining, compounding, and preparing lubricating oils, and continued in the business until 1862, when a copartnership was formed, and the firm became Morehouse & Meriam. This, in 1864 or 1865, gave way to Morehouse, Meriam & Co., who continued business till 1869, when Morehouse, Freeman & Crumbs became their successors. Soon after their works were destroyed by fire, when Mr. Crumb retired, leaving Morehouse & Freeman to conduct the business till 1872, at which date Morehouse, Rockefeller & Co. became their successors. After this followed the Morehouse Oil & Wax Company. Now the firm is C. L. Morehouse & Son, Mr. Morehouse having lately given his son, C. F., an interest, who has been regularly educated to the business under the supervision and instruction of his father, and has been connected with the manufacturing department for some time past. Mr. C. L. Morehouse is well versed in all the various manipulations of crude, animal, and carbon oils to the finished article, and has brought seventeen distinct products out of earth oil. His reputation is as wide as our vast country; for he has been at the head of each enterprise he was ever connected with, and been eminently successful, practically and financially, and has associated himself with others merely to increase capital and production. He has now arrangements completed for the erection of a large manufacturing department in New York—the building to be 340x110 feet, three stories high—for the manufacture of paraffine lubricating oils, wax, and grease; and, with his reputation and ability, we predict for the new enterprise unparalleled success, even in this age of marvelous prosperity, as his goods are always recognized as standard, and his sales have always averaged $300,000 to $400,000 annually. Yes, by enterprise, diligence, and industry the firm have established a wide-spread reputation, and their lubricating productions are far superior to any paraffine lubricants in the country. They are of a rich, golden color, perfectly free from wax, gum, or acids, and particularly adapted to general machinery, compounding, and factory uses. Their terms will always compare favorably with those obtainable elsewhere, while the quality of the goods supplied can not do otherwise than please; and all orders are not only filled punctually, but with due attention to the wishes of the buyer in other respects. The aim of Mr. Morehouse has always been to so serve his patrons that they should buy none other's goods; and in this policy has laid the foundation of a vast and ever-increasing business.

W. H. DOAN, OILS AND NAPHTHA, CLEVELAND, O.

THE manufacture, refining, distilling, and redistilling of oils, naphtha, etc., has now assumed an importance that is scarcely less than that of the great iron and lumber interest, which has made Cleveland one of the principal markets of the world. Among the largest manufacturers, and one of the heavy capitalists engaged in this branch, is W. H. Doan, whose large works are located on the A. and G. W. Railroad, Kingsbury Run, Sixth Ward, with offices for the transaction of all business connected with the works, at rooms 11 and 12, Standard Block; and his connection with the oil business dates back as far as 1865. The works produce gasoline, No. 1, 85°, 87°, 88°, and 90°, redistilled for gas-machines; No. 2, 74°, redistilled for petroleum, stores, street-lamps, and vapor-burners; No. 3, 74°, redistilled and deodorized for petroleum, stores, street-lamps, and vapor-burners; No. 4, naphthas, 68° to 70°, redistilled and deodorized; No. 5, naphtha, 63°, redistilled and deodorized for paints, varnishes, etc.; No. 6, painters' fluid; also all kinds of burning oils, making a specialty of water-white oil, being almost void of odor, and of high gravity and high test. As many of the above productions are transported in cans, Mr. Doan has taken advantage of a patent can-faucet, lately invented, of which he, with one other party, have the entire ownership, and by which means oil can be drawn off at option, and closed immediately—the can being perfectly air-tight—making a saving from evaporation and leakage, which must necessarily occur when in barrels. The goods packed in these cans are intended principally for the Southern and Western markets. The oil is received, without pumping, from tank cars into the receptacle for the crude liquid, the capacity of which is 10,000 barrels; the material is also distributed from the receptacle to the different stills without pumping. The works are furnished with eight of these stills, aggregating a capacity of four hundred and forty barrels. The water-box contains 5,500 feet of iron pipe, used in condensing. There are also eight stills for gasoline, with a capacity, for distilling, of seven hundred and forty barrels daily, and three tar stills, having a capacity of one hundred barrels, making a total of nineteen stills, with a combined capacity of over eight hundred barrels, and, in all, thirty-five tanks, holding fifty thousand barrels, used for storage, most of which are underground, exclusive of two agitators, four hundred barrels capacity, and six bleachers, over five hundred barrels capacity. Naphtha is used at these works for fuel, being less expensive, labor-saving, and, in case of fire, the supply can be shut off at a moment's notice. The store-rooms, for empty barrels, hold six thousand packages, besides filling-rooms, cellars for storing oils, two boiler-rooms, situated in different parts of the grounds, which supply steam for ten pumps, and for pumping oil, air, and water—the latter in case of fire—the works having hose and fire attachments. The drying-house, just completed, is forty by sixty feet, with kettle-house detached, which contains four kettles; capacity, one hundred and six gallons each. Mr. Wilbur, who has charge of the works, is eminently practical in all the various branches.

AMERICAN LUBRICATING OIL CO., CLEVELAND, O.

This company was organized in 1868, and since then they have had a steady and increasing trade, until it now amounts to upwards of $300,000 in lubricating oils alone, annually. Their works are located on Walworth Run, foot of Mill Street, where they give constant employment to twenty-five hands. The company's offices are in the Standard Block, situated on Euclid Avenue, and admirably adapted to the transaction of their business, which is conducted in the most thorough and systematic manner. There is no place in America better adapted for the manufacturing and handling of petroleum products than the city of Cleveland. The vast amount of business transacted here in lubricating and petroleum burning oils, has established for her a reputation for excellence of manufacture of these productions which stands unrivaled. This is mostly due to the efforts of her manufacturers to produce superior *quality* as well as quantity. Among them none stand higher for this specialty than the American Lubricating Oil Company. They receive their crude oil in tank-cars, direct from the oil regions, which cars are run on to their own switch at the works, and thence to five reserve-tanks, into which the contents of the cars are emptied. From here it is pumped into other tanks, of which there are seven, and is then conveyed to the retorts, where the oil undergoes the process of distillation. After the lighter oils are extracted, the remainder is the lubricating oil, and is run into the bleaching-room, where it is clarified and prepared for barreling, ready for market. The company have in operation four forty-five-barrel, and two twenty-five-barrel retorts; and, in addition to these, are about to erect two others of fifty barrels capacity each. Mr. Jacob Finger, one of the most experienced and scientific refiners in the country, is the superintendent of the works; and under his careful supervision oils are daily put up and shipped to all parts of the Union and the Canadas. Their oils, if not superior, are equal to the best manufactured, and have a wide reputation for their quality. Their brands are special favorites, and have elicited, from those who have used them, the highest commendations. This company pay particular attention to procuring special rates of freight for their patrons, and sending out with every invoice a bill of lading, which custom gives the most unqualified satisfaction, and has contributed not a little to their success. They also take pleasure in sending circulars and samples of their oils to any who may so request. Their aim has been, and always will be, to supply the market with the best goods that can be manufactured, and to furnish them at as low a price as their superior quality will justify.

SHERWIN, WILLIAMS & CO., PAINTS, OILS, ETC., CLEVELAND, O.

The above firm is composed of H. A. Sherwin, E. P. Williams, A. T. Osborn, and W. H. Glover, with offices and storerooms at 126 Superior Street, and works on Cuyahoga River, opposite the foot of Michigan Street, where they manufacture white lead, colors, colored paints, etc. The house was originally started by Truman, Dunham, & Co., in 1865, H. A. Sherwin comprising one of the firm. In 1870 Sherwin, Williams & Co. became the sole proprietors. From a small commencement, by an unsurpassed energy, strict attention to business, and fair dealing, they have so extended their operations that they now give constant employment to sixty-five hands, and produce annually $750,000 worth. A specialty of this establishment is the manufacture of fine colors.

The offices, stores, and salesrooms are 165 feet deep by 20 feet front on Superior, and 40 feet front on Long Street, where they keep, besides their own productions, a full supply of painters' materials of all kinds, including brushes, and in the last-named branch they are among the largest dealers in the United States. The window, plate, and French glass department is a specialty with this house, having an extensive and commodious storeroom on Long Street, 33 by 125 feet. In the manufacturing department they run forty-one mills for grinding paints and colors. In connection with these works is an oil refinery, which is a fire-cased building, containing eight enormous metal vats, of 7,000 gallons capacity, besides a very fine conical tank and three large caldrons, where the oil is boiled. The firm make all their own cans and pails, in the manufacture of which they have all the latest and best improved machinery for facilitating and cheapening production. One feature of this department is a patent can, of Mr. Sherwin's invention, in which the cover requires no soldering, and, instead of being destroyed when opening the package, can be removed and kept intact. In a neatly fitted up printing-office they turn out all their own labels, circulars, etc. The firm are also sole agents for the extensive concern of Murphy, Sherwin & Co., who started in 1870 to manufacture, on a large scale, Varnishes, Japans, etc., making a specialty of fine carriage varnishes. In 1872 the Company was incorporated, with an authorized capital of $150,000. The works for this branch are new and elegant, having recently been fitted up with every improvement known, and their productions may have equals, but none superior.

Messrs. Sherwin, Williams and Co. being among the largest dealers in their trade, and one of the best-known houses in Cleveland, can always fill an order promptly and satisfactorily, no matter how large or varied, and this is a consideration of great value to those who have suffered vexatious and costly delays in procuring stock after they were ready to use it, for there is no pursuit in which the article of promptitude is more of a virtue than in the exercise of the painter's art. We had almost forgotten to speak of the manufacturers of this firm. They stand deservedly high, their brands being universal favorites wherever known, and the strictly legitimate basis upon which their commercial and financial traffic is carried on. The members of this firm have a reputation that is truly enviable.

KING IRON BRIDGE AND MANUFACTURING CO., CLEVELAND, O.

THIS Company was organized in 1871, with a paid-up capital of $225,000, absorbing the private enterprise of Z. King, who originated the works as early as 1857. By a very liberal charter, granted by the Legislature of Ohio in 1871, the Company was authorized to build and construct iron bridges of all kinds, turn-tables, fences, jail-works—in fact, every thing in general wrought iron business. In addition to the original works, new and complete works of enlarged capacity have been erected, till the whole covers over 50,000 square feet, affording unlimited facilities for getting out work promptly. In the completeness, extent, and adaptation of all the tools and appointments required for bridge construction, the works of this Company are without a rival, while at the same time they possess every facility requisite for the construction of any thing in wrought iron. The annual sales of these works is now $600,000, and even these are being constantly increased. Some idea of the favor their style of bridge has met with will be apparent from the fact that during the first four or five years after 1859 they only built from five to twenty-five bridges a year, whereas they now manufacture from 250 to 300 spans of Z. King's patent bridges each year, and the number is constantly increasing. During the year 1874 they contracted and erected over 18,000 feet of wrought iron bridges of Z. King's patent, and they have yet to learn of a single failure of their work to do what ought to be required of it. The officers of the Company are, Z. King, President; Chas. E. King, Vice-President; H. B. Gibbs, Secretary; and Wm. Vliet, Engineer. The office and works are situated on the corner of Wasson and St. Clair Streets, Cleveland, Ohio.

Schofield, Shurmer & Teagle, Oil Refiners, Cleveland, O.—This firm is composed of Wm. C. Schofield, Daniel Shurmer, and John Teagle, who associated themselves together under the above firm style, for the purpose of refining petroleum. The house, though young, are among the heaviest capitalists interested, their annual business amounting to $400,000. The office of the firm is located at No. 171 Superior Street, though their works are situated on Willson Avenue Extension, and the A. & G. W. R. R., between Cleveland and Newburg, where they give employment to from twenty-five to thirty men. Here they receive the crude oil from the tank-cars of the A. & G. W. R. R. into their own receptacles, from whence it is conveyed to the stills without pumping. These works are furnished with seven 75-barrel stills, and one 500-barrel; also, agitator, with 800 barrels capacity, besides four bleachers, 1,600 barrels capacity. They have also a fine house in which they paint and glue their barrels; and barrel storeroom, with capacity for 3,000 packages. In connection with their works they have a large cooper shop, superintended by K. Egert, which employs thirty-two hands and turns out 1,500 barrels weekly. One special feature of these works is, that every thing and every body has its or their own place, and their works are furnished with every convenience and labor-saving arrangement that is known, and the proprietors enjoy a reputation for their products and business capacity that is truly enviable.

GRISWOLD & DUNHAM, LINSEED OIL, CLEVELAND, O.

The above firm, composed of G. O. Griswold, of Warren, Ohio, and Truman Dunham, of Cleveland, are the proprietors of the Cleveland Linseed Oil Works, which were started by them in 1867 for the purpose of manufacturing linseed oil and oil cake. How well they have succeeded may be inferred from the fact that they give constant employment to thirty hands, and do an annual business of $700,000 to $800,000. Their main building covers an area of 120 feet front by 62 deep—a fine three-story brick edifice, with basement; and the progress of their business has been such that they are now building a fine store-room as a receptacle for seed. This building will be 66 feet front by 75 deep, and 35 feet high, built with 12 x 2-inch plank, nailed flat one upon another with 5½-inch iron spikes, and braced with heavy rods in every 8 x 5 feet. The roof will be iron and the exterior of the structure brick, making it perfectly fire-proof. The weight of spikes alone necessary to nail planks together reaches 17,400 pounds, and the iron for bracing is something over fifteen tons. The capacity of this enormous store-room is 130,000 bushels, which will be connected to the works proper by means of an elevator. The manufacture of this valuable product is rapidly passing into the hands of a very few, who are able to meet the increased competition by saving every possible item in the cost of production. Cleveland is now the point of greatest oil supply of all kinds, and it is undoubtedly the cheapest market on the continent for these goods. The house spoken of is among the largest extant, and each succeeding year can but still further extend the business, it being conducted with the same prudent foresight and on the same liberal terms which have ever been their policy.

The trade of this firm principally confines itself within the limits of the city of Cleveland, the principal aim being to have a large trade right here at home, though the refuse after the oil is extracted is made into linseed cake, which is used largely for fattening and feeding cattle and sheep, and most of which finds a market in London and Glasgow. The firm pay particular attention to quality, and pride themselves on never sending out an inferior article. They have attained their high standing by a practical knowledge and a close observation to their business, growing with our growth and strengthening with our strength.

L. HALDEMAN & SON, CLEVELAND, O.

The above firm is composed of L. Haldeman and L. P. Haldeman, who are largely engaged in mining building-stone and manufacturing grindstones—they making only the larger sizes of the latter, for manufacturing purposes. Their quarries are situated on the Lake Shore and Michigan Southern Railroad, about two and a half miles from Amherst, Ohio. where they constantly employ ninety to one hundred hands, and do an annual business of $150,000. Their offices are located in Room 15, National Bank Building, Cleveland, Ohio. That the reader may form an idea of the vastness of their quarries, we have only to state that they have already worked down sixty feet, and are not yet through the bed. The building-stone from these quarries is uniform in color, and a great favorite. The above firm are furnishing the same stone for Horticultural Hall, Fairmount Park, Philadelphia, and this is the only Ohio sandstone used in the construction of the Centennial Buildings. It has also been adopted and specified for all the interior work and entrances to the new City Buildings in Philadelphia. The Academy of Fine Arts, in the same city, has used largely of it. The "Beautiful Opera-house," of Cleveland, is also built of stone from the same quarry; also the "Simmons Block," said to be the finest sandstone building in the country. Their facilities for shipping are the best, they having side-track alongside the quarries, where the stone is loaded right on to the cars.

BREWERS.

Isaac Leisy & Co., Brewers, Cleveland, O.—In 1873 this firm bought its present brewery, which is located at 137 to 143 Vega Avenue, west side, from F. Haltworth, and commenced the brewing of lager-beer; and that the reader may have an idea of the extent and character of the business done, and the reputation of Mr. Isaac Leisy, who is thoroughly practical, we have only to say that they give employment to thirty-two hands, and sell annually 35,000 barrels of beer, which amounts to $350,000. This is double the business done when they first started, and speaks volumes. They have a branch office at 340 Liberty Street, Pittsburg, Pennsylvania, and sell beer through Western Pennsylvania and Northern Ohio. Messrs. Leisy & Co. have new patent cellars, with ice above, for fermenting, holding fifty-six butts, each butt having capacity for forty-five barrels. The cellars for storing beer are models; and here you are impressed at once with the great neatness and cleanliness to be seen on every hand, as much attention being paid to these points as is to be found in a regular barracks on inspection-day; and whoever drinks Isaac Leisy & Co.'s beer may be sure they are partaking of the purest, made from the best materials to be bought, which has given them their present standing. The reputation enjoyed by the firm is one that any house might well feel proud of.

Cuyahoga Steam Furnace Company, Cleveland, O.—The officers of this company are J. F. Holloway, President; S. F. Lewis, Secretary; and their works are located on Center and Detroit Streets, which were established in 1834. Their capital is $100,000, and they manufacture land and marine engines, and do general foundry and machine work, employing one hundred and seventy-five hands, doing an annual business of $200,000. Among their specialties we may mention their machinery for blast-furnaces, rolling-mills, mill-gearing, and all kinds of casting and boilers. They have built some of the finest engines and blast-furnace machinery in the country, and were the first in the West to introduce the short-stroke, high-speed, blowing-engines; their celebrated "Himrod Engine," whose fame is known to all iron men, being the original from which all subsequent builders have copied. Among stationary engines, built by this company, and now in use in various parts of the country, we cite as part of them the machinery constructed for the Cleveland Rolling-mill Company for their Newburg and Chicago Steel Works; the large low-pressure engine built for Smith & Jewel, and which is now driving one of the largest and finest flouring mills in New York; also the large engine furnished the new M'Cormick Reaper Works of Chicago, as well as those in use in some of the largest elevators in that city, besides the largest merchant flouring-mills in Cleveland; and we refer with particular pride to the marine engines built by the Company, of which so many are to be found on the finest boats that navigate our lakes. Their large accumulation of patterns enables them to supply almost any thing required in their line.

Cleveland Scale Works, Cleveland, O.—The Cleveland Scale Works, of Cleveland, O., are owned and operated by Jones & Lyman—the firm being composed of C. S. Jones and C. C. Lyman, and their manufactory is located at No. 9 Slater Avenue, where they have been manufacturing railroad and platform scales since 1870. C. C. Lyman is patentee of the celebrated motion-weighing scale, with indicator attachment, for weighing and registering trains while in motion. It has also a device attached for entirely relieving the scale-bearings when not in use; hence their scale is well adapted for main tracks, as they can be incessantly passed over with engines, etc., without the least injury to the scales, not even causing the bearings to touch together. Therefore, the expense of building, and trouble of switching upon side-tracks to weigh, may be avoided, only six (6) seconds being required in changing the scales into weighing condition, or *visa versa*. The wheel-barrow scale, with indicator and register for loading canal-boats in the night as well as day-time, will soon find a conspicuous place on the docks. Among the railroad scales, now in active service and made by the above firm, is one on the C. and P. R. R., at Cleveland, and one on the Tuscarawas Valley Railroad, near Cleveland. The proprietors enjoy the best facilities for manufacturing a most superior scale, and the attention of business men interested is called to those practically in use.

Lake Shore Foundry, Cleveland, O.—This company was incorporated in 1874 with a capital of $200,000. The officers are O. M. Burk, President; A. M. Burk, Vice-President; C. E. Burk, Secretary. The works and grounds, which are located at the foot of Alabama Street, between the Lake Shore and Cleveland and Pittsburg Railroads, cover an area of five acres in the heart of the city of Cleveland. The principal productions are cast-iron gas and water pipes, though they do general foundry work, such as car-wheels and miscellaneous casting—their total production footing up $400,000 to $600,000 annually, consuming ten to twelve thousand tons of pig metal; and they have a capacity to cast eighteen to twenty thousand tons. They supply the city with all the pipes used, and ship all over the country. And their position between two great railroads enables them to land their pipes and castings right on to the cars without carting. The shop, in which are made the heavy water and gas pipe, contains three pits and two cupolas; and the pipes, after being cast, are cleaned, heated, and coated with pitch, then tested, weighed, etc., when they are ready for shipment. The miscellaneous casting-room is furnished with steam hoisting-machines for conveying iron to cupolas, of which there are two; also four drying-rooms, besides every modern appliance for handling work cheaply. Their pattern-room contains patterns for every thing made by them; and they also have a machine-shop and forge connected with their works, sufficient for doing all their own work, thereby saving all intermediate profits necessarily charged by others. Their works are among the largest in our State.

L. Schlather, Brewer, Cleveland, O.—The brewery, in which L. Schlather conducts his large and growing business, is located on York, corner Carroll Street, and were originally started, in 1857, on the corner of York and Bridge Streets, the present building being built in 1861. Though started on a small scale, the brewery now gives employment to twenty-five or thirty hands, and turns out annually 25,000 barrels of beer, which represents one-quarter of a million dollars. Mr. Schlather enjoys the best facilities for making good brewings, having a patent fermenting cellar, besides eight underground cellars for storage, four of which are one-story, and four are two-stories deep, with a capacity to store away ten thousand barrels; and the amount of ice consumed daily reaches twelve tons. The steam brewing-kettle holds one hundred and twenty barrels—they brewing often twice daily. The brewery is also furnished with a patent copper beer-cooler eighteen by eight feet. The whole establishment is run with a fine new forty-five horse-power upright engine, built by Stovering & Co., of this city, and is an elegant piece of machinery. Two tube-boilers are used for supplying steam to the engine, and heating the brewery and supplying steam. Mr. Schlather is a thoroughly practical brewer and a business man, which is proven by the recorded results to give Clevelanders the best glass of beer that can be made here or abroad; and whoever partakes of his productions may be sure they are getting the purest and the best.

CORRIGAN & CO., OIL WORKS, CLEVELAND, O.

THE Excelsior Oil Works, which are located on either side of the bridge, Walworth Run Railroad Crossing and Pearl Street, and are two separate buildings, occupying, with ground and buildings, nearly six acres, are operated by Corrigan & Co., who have the office and counting-room at No. 12 Bratenahl's Building. The works, which are among the largest in the city, give constant employment to twenty-five hands, and have a capacity to handle 500 barrels of crude oil daily, from which they manufacture carbon oils of high tests, and extra refined oils, their annual sales at present prices amounting to $300,000. The oil, which is received from the L. S. & M. S. R. R. alongside their works, is pumped from the tank-cars into their own receptacles, which contain 2,200 barrels; from here it goes to the stills, they having in all eleven small stills, each with a capacity of 550 barrels, and one 400-barrel capacity; two water-boxes, containing almost 10,000 feet of condensing pipe, and are bountifully supplied with cold spring water. The tank capacity for manufactured goods is about 4,000 barrels, exclusive of agitator, which holds 650 barrels. They have a barrel room that holds 5,000 empty packages, and one room capable of holding 2,000 painted barrels, and storehouse for barreled oils with capacity for 800 barrels; also, a skidway for loading barrels from the works to the cars. The works are also furnished with one large 20-horse power steam blower, two large steam pumps and two small ones, two large 52-tube boilers twelve feet long, and for fuel they burn gasoline at one of the works, and coke at the other.

C. Gehring, Brewer, Cleveland, O—Mr. C. Gehring commenced brewing beer in Cleveland as early as 1857, though on a very small scale compared with his present fine and well-conducted establishment. The brewery is located on Brainard, Freeman, and Pearl Streets, and covers an area of 132 feet on Brainard, 132 on Pearl, and 180 on Freeman, where he gives constant employment to sixteen hands, and turns out annually $130,000 worth of beer. The building is furnished with a fine 16-horse power engine and boiler, a 60-barrel kettle for brewing purposes, a patent beer cooler, consisting of a series of copper tubing, over which the beer passes and through which is pumped ice-water, so that when the beer reaches the bottom of the cooler it is in condition to go below, having in the cellar a pump for forcing ice-water from the cistern below, which holds 50 to 75 gallons. The cellars, which are in themselves models, are used for storing beer, and in them are situated the fermenting tubs. When the beer has passed over the cooler above, it is transported to these fermenting tubs by means of rotary pumps. These cellars are packed in ice all the time, which keeps the beer at about 38° or 40° Fahrenheit. He also has four cellars, with a capacity to hold 2,500 barrels, for storage purposes, and also has his own malt house in connection with the brewery. Mr. Gehring is thoroughly a practical man, who pays strict attention to his business, always meriting the patronage so liberally bestowed upon him.

NOVELTY IRON WORKS.

These Works were originally started by Thos. R. Reeve, in 1862. In 1873 Fred and Frank Zwilling, who had been interested with Mr. Reeve since the beginning, now bought interests, when the firm name was changed to Zwilling Bros. & Co. Their works, which cover 90 by 157 feet, are two stories high, and located on Wasson and St. Clair Streets. They are largely engaged in the manufacture of bridges, iron and jail-work, fences, machinery, etc., giving employment to sixty hands. In 1871 the works were rebuilt by Mr. Reeve, and refitted with the latest and best improved machinery, including nine lathes—the largest being nine feet long—three planing-machines, three drilling-machines, one wheel press, one bolt-cutter, two punches, one nut-tapping machine. They have a fine set of patterns, and every facility for making them. The blacksmith shop has twelve forges, two furnaces, a 10,000 pound steam hammer, bolt-headers, etc., and their work is of the highest standard, especially their jail-work, which has received the best indorsements from all over the country.

Peter Gerlach & Co. are the well-known proprietors of the Cleveland Saw Works, have been in existence since 1854, though the present firm style—composed of P. Gerlach, John Gerlach, and A. Knipper—started in 1871. They manufacture largely at the factory—which is located at corner of Columbus, Winter, and Leonard, with warerooms at 51 Center Street—saws, stave, shook and barrel machinery; are also the patentees and manufacturers of the justly celebrated Champion Stave-sawing Machine. They give constant employment to thirty hands, and do a business of $50,000 annually. The Champion Stave-sawing Machine will cut from 5,000 to 7,000 good staves per diem of ten hours, with eight to twelve-horse power. It will cut every stave of a uniform thickness and any width of bolt presented to it, without extra fitting to make it fit the carriage, and we can thoroughly recommend it to those in search of such machine.

Akron Chain Works, Akron, O.—These Works were started at Akron in 1869, by L. Chevrier, formerly of Trenton, N. J., where he manufactured chains for twenty years. The ground now occupied by him covers two acres, mostly covered by buildings, and the works employ constantly 120 hands, producing $120,000 to $130,000 annually. The trade of this establishment is coextensive with our vast country, sending their goods as far east as Maine, and west to San Francisco. The goods made by them vary in size from halter to the largest anchor chains, and the works are by far the largest in the United States. The fuel consumed daily amounts to one ton of coal and three tons of coke.

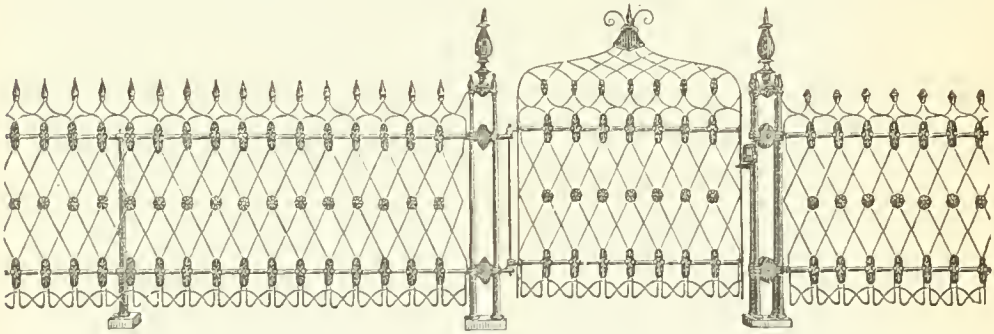
ALFRED EYEARS, CLEVELAND, O.

Alfred Eyears, whose emporium of fashion is 352 (new number) Euclid Avenue, where, with his location on Bank and Superior Streets, he has catered to the wants of his customers for the past sixteen years, started in business in this city in 1859, on a very small scale. We suppose there are few among our home readers who do not know Mr. Eyears personally, or by reputation, as taking the lead amongst our merchant-tailors. He has held for several years past the position as acknowledged chief in the art of clothing gentlemen who desire to be gentlemen in dress as well as in money and manners. He has achieved this distinction simply because he has mixed brains with his work. Where others obtain what are called the "fashions" from abroad, and dress up all their customers according to their interpretation of style, irrespective of personal adaptation, Mr. Eyears often treats them as monitions of something to be avoided, instead of exemplars to be followed. He knows well that what becomes one man will not look well on another, and that perfection in dress can only be attained by studying the peculiarities of the individual and making the suit accordingly. In this way the true artist can tone down angularities of appearance, heighten the effects of good looks by judicious contrast, and actually frustrate the designs of the Tempter, by making the man the better for his dress, whereas the serpent designed him to be the worse for it. Hence Mr. Eyears is a leader of fashions, and his styles have always been accepted as models of elegance. The leading people of Cleveland and its surroundings are admitted to be among the best dressed in the United States, which fact is largely due to the efforts of Mr. Eyears during the past sixteen years to elevate the standard of taste in dress. How well he has succeeded may be inferred from the fact that, while he commenced in 1859 in a small way, he now occupies a palatial store, where he gives constant employment to twenty-five workmen, besides cutters, salesmen, etc. All these are employed on first-class work, prominent among which we may note wedding outfits, which are a specialty in the establishment. He uses no inferior article whatever, believing that talent and industry are alike wasted in the effort to make bad shoddy into good clothing. His store is stocked with the finest goods and patterns "the spacious world affords," and could not fail to suit the tastes of the most fastidious, which allows Clevelanders and Ohioans generally to get a suit of clothes not to be surpassed anywhere, in style, workmanship, or finish—a fact we ought to be proud of, for "the apparel oft proclaims the man." To our readers who live away from Cleveland we will only say that, if they have taste for dress, they will do themselves injustice if they do not find time to visit this establishment. Mr. Alfred Eyears is in every respect a gentleman of standing; and should our readers call at his establishment, which sparkles like a diamond, he will, we are sure, take great pleasure in showing them the most tastefully selected stock of goods to be seen. They will also meet a liberal dealer, richly deserving the patronage so liberally bestowed upon his house.

National Flour Mills, Cleveland, O.—W. H. and H. A. Harvey, under the firm style of W. H. Harvey & Sons, are proprietors of these mills. The business was started in 1855 in the mill, which is located at 265 Merin Street, and covers an area of 200x 150 feet, and all railroads running into the city have direct connection by means of side-tracks. Wheat is received by rail and water from any part of the country, and handled direct from cars and boats, without carting. Coal is also received as their wheat is, and put down at the boilers without hauling. In shipping they enjoy the same facilities, which allows them to handle all their goods at the minimum of cost. Fifty to sixty per cent of their goods are put up in sacks. Their mill is furnished with seven run of stones, and has capacity to turn off 500 barrels per diem. Their machinery is propelled by a fine 300-horse-power engine, having 40-inch bore and 36-inch stroke, fed by two 7-flue boilers, and great precaution is taken against fire. Having pipes running from ground-floor to top of building, with hose connections on every floor, a few seconds would give them water supply enough to deluge the building if necessary.

Mr. Middletown, who has charge of the milling department, has been with this house twenty years, and is a practical miller and millwright. The engineer is considered one of the best on the Lakes. In the process of manufacturing the greatest cleanliness is observed. The proprietors, though comparatively young, are wide awake to every essential requirement in all modern improvements that will improve or cheapen production, and there are few mills in the country that are so well arranged and conducted as the National Mills, of Cleveland, O.

Delaware Fence Company, Delaware, O.—Mr. E. Powell is proprietor of these works, which were started in 1873, and they now turn out eight different patterns (one



of the best we furnish a cut of), ranging in price from $1.25 to $5 per foot. Nothing can be more beautiful and lasting. That the reader may have an idea of their fast-growing popularity, we have only to say they are being put up all over the country. The works give constant employment to twelve hands, and have a capacity to turn out $50,000 worth of work annually. To those about erecting fences we would say that you will do yourselves injustice if you do not first get estimates and plans from this company.

SANDUSKY WHEEL COMPANY.

As a truly representative house in this great and growing branch of industry, we quote that of the Sandusky Wheel Company, manufacturers of carriage wood-work, at Sandusky, Ohio. The business was first started in 1860, by Olds, Ocobock & Co., F. T. Barney being the Company and the capitalist. They then only manufactured hubs and bent stock. In 1863 the firm changed to Gregg, Ocobock & Co., the firm of Gregg & Torrey being taken in as partners. In 1865 Mr. Barney bought the interest of Mr. Gregg, changing the firm name to Barney, Ocobock & Torrey, and continued as such till 1867, when the present Company was incorporated, with an authorized capital of $200,000, Mr. F. T. Barney being elected President. In 1869 Mr. Barney disposed of a portion of his interest to John R. Miller, who became Treasurer of the Company. Two years later, the health of Mr. Barney compelling his entire withdrawal from business, he sold his entire interest to the same party, who then undertook the general management of the business of the Company, in which position he has since continued. Their business continued successful till 1872, when the entire stock and shops were destroyed by fire. In the following Spring the works were again in running order. It is sufficient to say that their history of 1860 has but repeated itself each year, only that every succeeding cycle has witnessed a larger growth, a more wide-spread business connection, a more extended patronage, a broadening and deepening of the firm foundation on which the house was first built up, till it has assumed such gigantic shape that one would think it required an Argus to keep watch of the multifarious details, a Briareus to handle them, and a very Pluto himself to find the money wherewith to do the business. The unexampled success of this Company in the manufacture of carriage wood-work, has followed, as the legitimate result of well-digested plans and sound principles of construction. Discarding alike all foreign precedents and crude American examples, the officers of this Company, by the application of scientific principles, careful observation, and mature judgment, influenced and corrected by practical experience, have brought to perfection a class of work which in material, design, proportion, and details of construction have not been excelled in this or any other country.

That the reader may form an idea of the extent of their business, we have only to say they give constant employment to 200 hands, and use in the manufacture of their goods the following machinery: six spoke lathes, sixteen spoke-finishing machines, fourteen saws, five binding machines, five planers, seven special wheel machines, three mortises, four turning lathes, six special body machines; the whole being driven by a fine 150-horse power engine fed by three large boilers, they using refuse as fuel. Their present buildings and grounds cover an area of 200 by 400 feet, and the aggregate of their sales amounts to $200,000 annually. By the strictly legitimate basis upon which their commercial and financial traffic is carried on, the officers of this institution have made a reputation that is truly enviable.

WICK, RIDGWAY & CO., YOUNGSTOWN, O.

The above firm, which is composed of Caleb B. Wick, C. D. Arms, M. S. Ridgway, H. K. Wick, R. J. Wick, and Peter Gillen, are the proprietors of the Ridgway Iron Works, which were originally started in 1871 as the Valley Iron Company, and changed to present style in 1873. The buildings cover an area of 110 by 780 feet, and are furnished with fourteen engines, two rail trains—one 20 and one 16-inch—one 16-inch butt train, one 16-inch bar mill, one 20-inch muck train, twelve heating furnaces, and all the paraphernalia for transacting their colossal business. Their facilities for transportation are unequaled, being located on the Atlantic and Great Western, Lake Shore and Michigan Southern, Pennsylvania and Painesville, and Youngstown Railroads, and have immediate communication with them all. Their capacity is 42,000 tons of finished rails annually, and they give constant employment to 450 hands, and sell $2,000,000 worth of product annually. On entering the main mill it presents to the unaccustomed an almost awful spectacle, the upper part of the building being one grand piece of network, composed of joistings, machinery, shaftings, water and steam pipes. Their efforts will always be directed to the production of material which will compete with any other in the market in the three great essentials of quality, durability, and prices.

A. STEPHAN & CO., BREWERS, TOLEDO, O.

This firm, which is composed of A. Stephan and Adam Ulbrich, was started in 1858, under the firm style of A. Stephan & Co., though Mr. Stephan first commenced the brewing business in 1853. From a small commencement they now have one of the finest breweries in the city of Toledo, having, in 1873, made a very large addition. Their building now covers an area of 200 feet front on Champlain Street by 100 feet on Bush, and contains all the modern and labor-saving improvements known to the trade, including two patent fermenting cellars of 2,000 barrels capacity. Their storing cellars, for the storage of the product, include two 130 feet, long with a capacity for 2,000 barrels; one 40 by 100, 4,000 barrels capacity; and in the latter are eighteen immense butts, each holding 2,000 gallons of foaming lager. The ice-house is a fine building, 40 feet front, 100 deep, and 28 high, and in which is stored the ice for cooling beer and the cellars during process of manufacture. They give constant employment to twenty hands, and turn out annually 20,000 barrels of beer, worth $200,000.

THE principal branch of manufacturing, at this industrious city, is that of potteries engaged in the manufacture of ironstone China, yellow and Rockingham ware, which is shipped all over the United States. The capital employed is over one and a half millions, giving constant employment to nearly one hundred hands. In all there are five white or ironstone China manufacturers, and eighteen who make a specialty of yellow and Rockingham ware. As a representative house in the white ware manufacturers, we qnote that of

Laughlin Bros. The firm is composed of Homer and Shakespeare M. Laughlin, proprietors of the Ohio Valley Pottery, and manufacturers of the best ironstone China. The main building covers an area of two hnndred and sixty by thirty feet; a fine two-story brick building, furnished with all the latest and most approved patterns, some of which are of their own especial design, besides the latest and best machinery for turning out expeditiously and well; the kiln-sheds cover an area forty by one hundred and forty feet, placing-houses one hundred and twelve by fifteen feet, glaze-house thirty by thirty feet, clay-houses fifty by twenty-four feet; and the works give constant employment to one hundred and twenty-five hands, who produce annually $150,000 worth of ware. A description of the present process of manufacturing ware, that is in every-day use on our tables, may prove interesting to our readers, who, until reading such description, would hardly credit such tedious handlings before being marketable. The clay, which comes from Missouri and Pennsylvania, is received in bins directly from the cars. One of these clays, the Glen Allen, is the purest and whitest known, in its natural state; then the plastic-ball clay, from Vineland, Missouri, and a whitewashed kaolin, from Chester County, Penn., are put in vats with water to the consistency of cream, and stirred up with arms, representing the operation of the churn. When thoroughly mixed, these clays, in their liquid state, run together into a mixer, when is added the flint and feldspar, also blue oxide of cobalt for clarifying; then, by means of a siphon-pump, the liquid is elevated to a box above the sifter, from where it runs through a No. 16 silk bolting-cloth into a large cistern underneath; and, while passing through these fine cloths, all foreign particles are extracted. In the cistern is an agitator, which keeps it in solution; from where it is pumped into a hydraulic press, which forces all the water through canvas, leaving the clay in the shape of putty. It now passes into a patent wedging-machine, containing thirty-two knives, which thoroughly kneads the clay, and prepares it for the workmen. The buildings are furnished with steam elevators for hoisting the clay into the upper stories, where it goes in the presses, and is pressed into the hnndreds of different shapes for table and chamber sets; after which, they receive handles, tops, etc., which are stuck on while the clay is in a plastic state. Cups, sancers, plates, nappies, wash-bowls, ice-creams, mugs, etc., are jiggered in molds; after which they go to the drying-room; after being dried they are sponged and honed, which gives them a fine smooth face; then they are thoroughly dried and sent to the green-room,

where they season. Now the ware is placed into seggars and packed in with glass-sand. The seggars are now arranged in stacks in the bisque-kiln, and fired for sixty-five to seventy hours. Next we find the goods in the bisque-warehouse, where they are cleaned and stamped; thence to the dipping-house, where they receive the glaze, by being dipped in a solution resembling whitewash, composed of borax, carbonate of lead, whiting, China, clay, flint, and feldspar; after which they are placed in a glazed seggar, each piece being separated from the other by "thimbles," "stilts," "spurs," "saddles," etc.; then they are fired in the gloss-kiln for about thirty hours; and, after being allowed to thoroughly cool, they are dressed, assorted into firsts, seconds, and thirds, and become merchantable. Messrs. Laughlin Brothers have a natural gas-well, which furnishes the boilers in part with heat, also the whole buildings with gas; the entire works are heated by steam, doing away entirely with danger from fire. May we witness the growth of hundreds of such establishments, for they bring wealth and reputation to our State.

C. C. Thompson & Co.—Among the largest Rockingham and yellow-ware manufacturers are C. C. Thompson & Co., who organized their present business and firm in 1872, though the firm was originally started by Thompson & Herbert as early as 1870. The main building, occupied by them, is a fine three-story brick edifice, furnished with all the latest machinery for cheapening labor and making the best of ware. Among the many articles manufactured in yellow ware are plain, pressed, lipped, and pressed lipped bowls; stove-dishes; nappie-dishes, plain and scalloped; butter-pots, bakers-mugs, pie-plates, milk-pans, soaps, chambers, jelly-cans, pitchers, etc.; and in Rockingham ware, spittoons, tea-pots, pressed and plain pitchers, pie-plates, mugs, snuff-jars, milk-pans, and many of the other articles enumerated in yellow ware. They also make a fine quality of terra-cotta ware hanging-basket, and at all times can be found ready for shipping assorted packages, suitable for the jobbing trade, which they serve; and their trade is as extensive as our country. Their aim is to place before the trade the most complete assortment possible, and leave buyers to select for themselves. The factory turns out fifty thousand dollars' worth of product annually, which, to do, gives constant employment to forty hands, among which is the best of skilled labor. These works adjoin the C. & P. R. R. passenger and freight depot, at East Liverpool, having every convenience in shipping and receiving the raw material.

S. & W. Bagot.—Among the oldest houses and most extensive manufacturers of yellow and Rockingham ware in East Liverpool is the firm of S. & W. Bagot, who started the business as far back as 1853, on a very small scale. The success of their business may be inferred from the fact that they now give constant employment to thirty-five hands, and produce annually $30,000 worth of ware, which they ship all over the United States. Their manufactured articles stand deservedly high—their wares being known, and universal favorites, wherever known. The fact that their own productions are superior, does not, however, lead them to place those of other makers in the background. They are liberal dealers, richly deserving the patronage so liberally bestowed upon their house.

LA BELLE GLASS COMPANY, BRIDGEPORT, OHIO.

The above Company was incorporated July, 1872, with a capital, paid in, of $100,000, and an authorized capital of $200,000. The organization was completed for the purpose of manufacturing fine white flintware. Such great favorites are their productions that they sell their goods all over the United States, Canada, and Cuba. The works originally started in Wheeling, West Virginia, in 1870, on a capital of $11,500; since that time they have earned nearly all their increase—between $57,300 and $100,000—besides paying cash dividends amounting to $8,240. This is, indeed, a good showing, and speaks volumes of so new a company; and the secret of their success lies in the quality and styles of their productions. They own their own coal banks and manufacture their own molds and boxes; in fact, every thing required in the works is made by them. They give constant employment to 140 hands, and turn out annually $132,000 worth. Among the many sciences and branches of mechanic art, there is none, perhaps, so little understood as the manufacture of table glass. It is a science, because its successful management requires a thorough knowledge of the chemical combinations; a mechanic art, because it requires a knowledge of all the rules pertaining to those avocations that go so far to adorn our homes. The officers of the above Company are, A. H. Boggs, Manager; E. G. Cate, Secretary; E. P. Rhodes, President; N. B. Scott, Western Agent; O. S. Boggs, Eastern Agent.

Massillon Excelsior Works, Agricultural Implements, Massillon, O.—These Works, which are owned and operated by Edwin Bayliss, are located at Massillon, Ohio, and the ground on which they are located covers 1,000 feet front by 150 deep. They were originally started in 1864, on a small scale compared with their present proportions, which give constant employment to 150 hands, who are engaged in manufacturing various agricultural implements, prominent among which is the Massillon Harvester, they having this year built 1,500, which they ship all over the United States, and as far east as Scotland and Sweden. The machine, ready for work, weighs only 900 pounds; its drive-wheel is over 3½ feet in diameter, with a tire 7 inches broad. The works also turn out the Excelsior Reaper and Mower, Bayliss's Patent Wheel Harrow, Rogers's Patent Iron Cultivator and Shovel Plow combined, the Pioneer Stump-puller, and Lyons's Portable Furnace for Summer cooking. Few firms conducting a business of as large proportions as this make less display in their transactions or move so rapidly forward. The proprietor at the head of it is progressive and enterprising. He did not consider the achievement of one year as a criterion for the future, but looked upon it as an encouragement to try for greater results. Each year some new device has been introduced, or a change made in the working of the machinery, which, after years of tests, have given them their present perfection.

C. AULTMAN & CO., AGRICULTURAL IMPLEMENTS, CANTON, O.

Among the largest and most useful manufacturing establishments in Ohio, is C. Aultman & Co., of Canton, who were incorporated in 1865, with a capital stock of $100,000, for the purpose of manufacturing the Buckeye Mower and Reaper and Sweepstakes Thresher. A private firm, bearing same time, and out of which the present organization grew, was started as early as 1853, on a very small scale. The works now cover twenty acres of ground, and give constant employment to five hundred hands—the amount paid out in salaries alone amounting to $20,000 monthly. The foundry covers an area of seventy-five by two hundred feet, in which is cast sixteen tons of iron daily—there being one thousand and forty-five different patterns for castings, used in the various sizes of reapers, and in keeping up the repairs of old ones; and the threshers require between five and six hundred castings for this department. They have a stock of over eight hundred tons of pig iron on hand. The blacksmith shop is furnished with seventeen fires, steam-hammers, dies, punches, trip-hammers, and a steam tire-setter, doing away entirely with the old process of heating. The wood-working department is a perfect wonder of discipline, and covers three hundred and eighty-eight feet front, by sixty feet deep—a fine continuous four-story brick building, the machinery in which is propelled by a fine eighty horse-power engine, they having a separate engine of one hundred and twenty horse-power for the iron department.

More attention has been paid, probably, to the development of machinery for facilitating and economizing farm labor than any one branch of industry; more particularly is this applicable to reaping and mowing machines. For twenty years past the genius of invention has been tasked to produce a combined mower and reaper, and perfection was finally attained—if such a thing is possible—by the world-renowned "Buckeye." The last invention, which has perfected this machine and outrivaled all others, is a self-rake, which owes its grand success to Mr. Lewis Miller, who is the good genius of the "Buckeye." In his fertile mechanical brain was conceived the plan of a light turn-table rake, to supersede the heavy reel-rake, heretofore used in sweeping the platform of the reaper.

The company, whose officers are Lewis Miller, President; H. C. Fogle, Secretary and Treasurer; Jacob Miller, Superintendent; Geo. Cook, Assistant Superintendent, have a surplus of one-half million of dollars, and are at present adding to their immense building capacity. The immense capital employed, and the business standing of the Company, individually and collectively, give a reputation, of which the State might well feel proud.

BALLARD, FAST & CO., CANTON, O.

The manufacture of saws, springs, reaper and mower knives and sections, has now assumed an importance not less than that of the agricultural implements, which have made our State one of the principal markets of the world. Among the largest and heaviest capitalists interested in this branch of industry in Ohio and the West is Ballard, Fast & Co., of Canton, Ohio, who, having faith in the future of our State as the great manufacturing point for the Western World, started their works in 1864. They began business in a quiet way, when we say their capital at that time was only $4,000

Prior to the date of their commencement, and for many years before their organization, Mr. M. L. Ballard and Mr. D. Cobaugh had been connected with the manufacturing concerns of both Ball, Aultman & Co. and E. Ball, occupying positions of trust and importance as mechanics and superintendents. Mr. M. L. Fast, at an early age, became a bank clerk, and served eight years at that occupation, and then joined Messrs. Ballard and Cobaugh in their labors at E. Ball's establishment, leaving it in 1864, and organizing as aforesaid.

The progress of their establishment has been unusual, even in this age of marvelous success. Close personal attention to the details of the business gave them a reputation for superiority of workmanship which soon demanded an increase in their manufacturing facilities, which have been made from time to time, till they now occupy a mammoth establishment. We were struck with a feeling of bewildering helplessness upon entering their establishment, in attempting to comprehend the uses of the myriad machines, with the hundreds of workmen, which throng the floors of these works. Imagine unbroken pieces of shafting, with their huge driving-wheels, running so many pieces of machinery that the belts attached to them have the imposing look of a vast cobweb, and you have the appearance of the shops as you stand looking down the center. Never did men seem so interested and attentive to their work as we find them here. This is owing to the beauty in construction and perfectness of their several machines. They seem to take care of them, during their working hours, as they would of their own children when at leisure. All the tools peculiar to their work are made under the especial direction of Mr. Ballard.

This is truly a representative house. They do all their own work, from the raw material to the finished saw, spring, knife, and section—forming a complete system of production, which guarantees the two important points of certainty and cheapness. They save all the intermediate profits which are necessarily charged by many other dealers, and are thus enabled to sell at the minimum of cost, while they can always tell the quality of the productions, which in all cases will really prove as represented. It is no wonder that, with their unequaled arrangements, their first-class machinery, and a practical and thorough knowledge of the business, they should find constant employment for nearly two hundred men. These men, with a capital of $100,000, turn out annually $600,000 worth of products. It is to such establishments that our State owes her wealth, growth, and prosperity.

The works began on reaping and mowing-machine knives, etc. Prosperity set in, and in 1866 the concern was incorporated under the laws of Ohio, with a capital of $100,000. The beginning was small, but ambition was great. They mounted the hill and shrieked, "Excelsior!" Result was, enlarged establishment, and the manufacture of seat springs. This was better, but still not up to the mark; and a few years later, in the year 1871, they again enlarged their works, this time taking in the manufacture of saws of all kinds.

In 1873 they began the manufacture of carriage springs, and are now again putting up an estalishment, with a separate engine, for that part of their business. So that to-day they have one of the largest manufacturing concerns in the State, and their facilities are for making annually as follows: In springs, $300,000; saws, $150,000; sickles, $150,000. The trade of the house is almost coextensive with the expanse of the Great West there being very few places of any size in the Western and Southern States and Territories where their goods do not find their way.

Ballard, Fast & Co. have no specialties. Their greatest specialty is to keep and make every thing that can be called for in their line, so that the buyer can find just what he wants, and as much of it as required. They pay particular attention to the quality of their goods, and pride themselves on never sending out an inferior article. They will be in the future, as in the past, absolutely trustworthy under all circumstances; and those who are about to buy any thing they make will do themselves injustice if they do not first examine the merits and qualities of those offered for sale by Ballard, Fast & Co., of Canton, Ohio.

DIEBOLD, NORRIS & CO., SAFE MANUFACTURERS, CANTON, O.

As a truly representative house of the great and growing trade in the manufacture of fire and burglar-proof safes, vaults, locks, etc., we quote that of Diebold, Norris & Co., of Canton, O., which, including the reorganization of last year, has been in existence since 1857—eighteen years ago. The works were started in Cincinnati by Diebold, Bahmann & Co., afterward Diebold & Kienzle; and in February, 1874, the firm changed to its present style. A very small proportion of our readers are familiar with the history of the firm in its earlier days, as they started on a very small scale. But none are unfamiliar with their later career, the name being "familiar as household words." Every succeeding cycle has witnessed a larger growth, a more wide-spread business connection, a more extended patronage, a broadening and deepening of the firm foundation on which the house was first built up, till it has assumed such gigantic proportions that one would think it required an Argus to keep watch of the multifarious details, a Briareus to handle them, and a very Crœsus himself to lend the money wherewith to conduct the business. The works, which are the largest in the world, and the only buildings which have been erected especially for this branch of industry, cover two acres of ground, and employ in the business two hundred and fifty thousand dollars, which keeps constantly at work three hundred to four hundred hands, who turn out a finished safe every hour, from the smallest to the largest in use. In connection with their factory they have a building, fifty by one hundred and twenty feet, for the express purpose of constructing safe-deposit vaults, and in which they have built the largest vault in the world, of this kind, for the San Francisco Safe-deposit Company, of San Francisco, California, and which, in transit, occupied forty railroad cars, and cost over $100,000. Its superficial dimensions were: width, 27 feet; length, 32 feet; height, 12 feet, weighing 800,000 pounds. The entrance to the vault is protected by three doors, the outer one fire-proof, and the two inner ones burglar-proof. To overcome the ponderous barrier, the burglar would have to pierce six inches of fire-proof material, and nine inches of burglar-proof material, a task which could not be accomplished, under the most favorable circumstances, in less than three or four weeks. There are five locks of the latest improved pattern on the door. The safe depositories in the vault number 4,600. They are of burglar-proof material, and are guarded by patent combination locks and keys, and escutcheon locks. The gold and silver trimmings of the depositories are elaborate and very rich. The interior of the vault, in the light of the gas, presents a scene of dazzling splendor. The work of erecting the vault was done under the personal supervision of Mr. Norris, of Diebold, Norris & Co., and, with the aid of a force of skilled workmen from his manufactory, he succeeded in forcing the enterprise ahead with remarkable dispatch, and to the complete satisfaction of the Deposit Company. The contract for this work was awarded to them over a host of competitors, which of itself speaks volumes for their facilities and capacity. They have also completed a safe deposit vault and five hundred boxes for the State Savings Institute of Chicago—it being nearly as large as the

one built for San Francisco—and have furnished the First National Bank of Grand Rapids, Mich.; First National Bank of Milwaukee, Wis.; Johnson County Savings-bank, of Iowa City, Iowa; New Orleans Savings Institution, with large safe-deposit vaults and boxes. They also furnished the Equitable Life Assurance Society buildings at Boston, and the U. S. Custom-house and Post-office, at Indianapolis, with their large vaults; besides other Government buildings, banks, insurance companies, with work too innumerable to mention. The building, in which this work was erected, has, overhead, tram-rails, by means of which quantities of metal, weighing fifteen tons, can be moved from one part of the building to another. The iron is received, and goes through the straightening process; first the outer shell is made, then the inner part put in it—the vacuum between the two shells being filled with cement, which is the fire-proof quality. The burglar-proof work is made with a steel surface; that is, the outer plates are steel, instead of iron, as heretofore; and the method of construction involves the use of compound plates, both for the exterior and interior sections. The outer wall of the burglar-proof proper is four plates thick, and the inner wall has a thickness of two plates. These are so arranged as to break the joints. The explanation may be more lucid if we say that the plates are joined together on the tongue and groove system—it being impossible to introduce powder; neither are there any seams at the angles; and the entire shell is composed of six pieces only, including door, so that no wedges can enter the work, as in the old process. Safes, or the iron for their construction, enter the back part of the building and gradually move through, adding piece by piece, till they come out at the front of the factory painted and ready to put on the cars—they having a private track of one-half mile long on which to load their goods. A prominent feature of their perfect arrangement is their own telegraph-office, right in their counting-rooms, where they receive and transmit messages from and to all parts of the world. The lock department is a feature of itself; and here they make all their own castings, screws—in fact, every thing that goes to make those wonderful barriers between those who are not justly entitled to look into another man's financial affairs and the rightful owner. In view of all this diversity, the perfect order and arrangement which reigns throughout the establishment is really wonderful. There is a department and place for every thing, and every thing is always to be found in its own place, while that place is so well known that any thing required could be found in the dark by the foreman or superintendent of the department it belongs to. This company attends strictly to quality in all its purchases of iron, steel, brass, etc., buying only the best; and by this perfect system goods will be found to be just what was expected, and to perform what ought to be required of them. The clock-work regularity of the establishment secures the packing and shipping of all goods ordered within the shortest space of time possible. May we witness the growth of hundreds of such factories, for they bring wealth and reputation to our State.

WROUGHT-IRON BRIDGE COMPANY, CANTON, O.

THIS company was organized in 1864, and incorporated in 1871, with a capital stock of $106,000. The officers are, D. Hammond, President; Job Abbott, Chief Engineer; H. R. Wise, Treasurer; W. Britton, Secretary. The company's business is exclusively the manufacture of wrought-iron highway, city, and railroad bridges, iron roofs, and swing bridges. The unexampled success of this company in the manufacture and erection of bridges, roofs, and other engineering work has followed as the legitimate result of well-digested plans and sound principles of construction, and by the application of scientific principles, they have brought to perfection a class of structures which, in material, design, proportion, and finish, have not been excelled in this or any other country. Their distinguishing features are lightness, strength, and economy, obtained by employing the beam and channel truss plan for short highway bridges, the column and channel arch bridge for heavy highways and city spans, the plate and channel truss bridge for city and railway spans, and the channel swing plan, with conical center turn-table for highway, city, and railway bridges. The company also manufacture wrought-iron pier supports, concrete filled piers, iron pier fronts, wrought-iron trestling, and iron roofs for shops, foundries, etc., owning over twenty different patents on inventions on these different plans. The Wrought-iron Bridge Company of Canton, in the erection of bridges, make provisions for painting; and it is obvious to any reflecting mind that very thin tubular trusses, placed over damp situations, must be seriously weakened by corrosion in a few years, while columns and trunks that can be kept constantly repainted may be preserved indefinitely.

The works cover an area of about three acres, and give employment to 100 to 150 employees, besides 40 to 60 constantly erecting bridges. The present capacity of the company's shops is about 150 feet of finished bridge work per day; and that the reader may form an idea of their popularity, we have only to say that they have constructed over twenty-five miles of bridges, which are located in twenty-three different States, and have never had a single failure of any bridge of their erection.

Among the prominent bridges built by this company are two 200 feet spans, on the arch and swing truss plans, at Columbus, Miss.; 140 truss span, 70 feet wide, at Atlanta, Ga.; 16 spans of 40 to 145 feet, on lattice plate, arch, and truss plans, at Indianapolis, Ind.; 4 spans of 175 and 235 feet, on truss and swing plan, at La Salle, Ill.; ten 100 to 215 feet arch spans at Lansing, Mich.; four 200 feet and five 182 feet arch spans at Parker and Kittanning, Penn.; 105 feet arch span, and nine 80 to 90 feet arch and truss spans, at Pittsfield and Williamsburg, Mass.; three 135 to 160 feet arch spans at Concord, N. H.; 190 feet truss span at Fisherville, N. H.; 220 feet arch, and two 128 feet truss spans, at London, Canada; two 125 feet truss spans at Peterboro, Canada; two 100 feet spans at Plymouth, Conn. This limited list gives an idea of the extent and variety of the company's business, which has grown from $80,000, in 1869, to over $550,000 in 1874. The yearly consumption of iron amounts to nearly 4,000 tons.

B. F. Renick & Co., Printing Presses, Canton, O.—The firm of B. F. Renick & Co., proprietors of the well-known Aldine Printing-press Works, of Canton, Ohio, is composed of Benjamin F. Renick, the estate of the late Thomas T. Renick, and P. J. Claussen, who are largely engaged in the manufacture of the Aldine printing-press. The buildings cover an area of 300 feet front by 60 wide, two stories high, a fine brick edifice, with two wings, used for forging and engine rooms, 40x40 each. The machinery of the establishment is very intricate, and nearly all of their own invention, for their especial work, propelled by a fine 50 horse-power engine, and which, with the help of 75 hands, enables them to turn out nearly one press per diem, though the works have a capacity to employ 125 hands. The principle of their printing-press is to print in one, two, or three colors from one form, at one impression; and it combines, to the printer, the finest press extant for strength and distribution in one or more colors. They also manufacture job and cylinder presses for one-color work only, and their superiority is admitted by printers, in distribution, strength, and speed, possessing every convenience for the printer's "make-ready.' They fully guarantee each and every machine they make. To printers who have not yet seen this wonderful invention we would say that they are behind the times; for nothing ever invented in their line is giving such universal satisfaction. The principal salesroom of the firm is at No. 172 William Street, New York City, where Mr. J. P. Claussen makes his headquarters.

C. Russell & Co., Reapers and Mowers, Canton, O.—This company was incorporated in 1870, with C. Russell, of Massillon, as President; W. K. Miller, Vice-President and Superintendent; J. S. Tonner, Secretary and Treasurer, with a capital of $400,000, for the purpose of manufacturing the "Peerless" reapers and mowers—a machine that combines all the good qualities and very few of the bad characteristics of all the machines made. The fact, in connection with the manufacture of the various modifications of reaping and mowing machines now in universal use, that those manufactured by C. Russell & Co., of Canton, hold the highest rank for simplicity of construction, perfection, and general durability, is verified by their enormous sales, and the fact that they manufacture fifteen to twenty per diem, and have a capacity to turn out 5,000 machines annually. The works occupied by them cover an area of 225 feet front by 50 deep, a fine, four-story, strongly built building, with wings 220x60 and 150x40, furnished with the latest and best improved machinery, which enables them to produce their work at the minimum of cost. One hundred and seventy-five hands find constant employment at these works, to pay whom takes $9,600 per month. The business standing of the firm, individually and collectively, gives a reputation of which Ohio might well feel proud, and such institutions are a credit to our State.

M. L. Gibbs & Co., Plow Manufacturers, Canton, O.—This firm is composed of M. L. Gibbs and Henry R. Rohrer, for manufacturing the justly celebrated Champion Plow, invented by M. L. Gibbs himself, a practical farmer, who thoroughly understands the requirements of the agricultural community. His inventive genius completed a steel point on a cast or steel share, which, when worn out, can be repaired for fifteen cents; the plow is also convertible from a steel to a cast or combination plow. It also has a revertible cutter, thus enabling the farmer to do his own repairs at a little cost. The plow is also two or three horse, besides being a perfect sod and stubble plow. Its commendation, on our part, is useless. Its rapid sales, the increasing demands, and the volume of flattering testimonials from those who have used them, are alone sufficient proof of its merit.

P. P. Bush, Agt., Engines and Mill Work, Canton, O.—The manufacture of stationery engines, mill work, shafting pulleys, mining machinery, etc., has now assumed an importance not less than that of the iron interests, which have made our State one of the principal markets in the world. The only one engaged in this branch of business at Canton is P. P. Bush, who commenced the business there in 1873. His works give employment to thirty-five hands, and the buildings cover an area of one hundred and eighty-eight by sixty feet; for foundry and machine-shop, sixty by sixty feet, the machinery in which is propelled by a fine seventy horse-power engine. Prominent among his business is general foundry work, at which he has a large and growing trade.

ALLIANCE WHITE LEAD COMPANY, ALLIANCE, O.

The above company is owned and operated by John Hunter and E. R. Eckley, for the purpose of manufacturing white lead and putty. The works, which cover an area of one hundred and sixty feet front by one hundred and ten feet deep, employ thirty hands, and have a capacity to turn out annually one thousand five hundred tons of the finest carbonate lead made in the United States. Their process is the improved "Hannan," which is the same, chemically considered, as the old German process. Instead of waiting for nature to do the work, they assist it by mechanical appliances, which shortens the time used in the process from three months to seventeen days, thus enabling the Alliance White Lead Company to make a purer article—the analysis proving that one pound of their lead will cover more surface than any other. The trade of the company extends all over the country, they being able to enter into competition in any market. In the process of manufacturing the greatest cleanliness and purity is observed; and whoever buys Alliance White Lead Co.'s lead may know they are using the purest and the best.

A. J. TSCHANTZ, ORGAN MANUFACTURER, ORRVILLE, WAYNE CO., O.

THE Ohio Beauty Organ Works, owned and operated by A. J. Tschantz, Orrville, Wayne County, Ohio, is to-day the largest building in the State devoted exclusively to that branch of business. The building is a fine three-story brick edifice, covering an area of seventy by seventy feet, furnished with all the latest improved machinery to facilitate production, propelled by steam-power, and turns out every week twenty-five finished instruments. His corps of men, engaged in the production of his fine instruments, are all first-class workmen. It is remarkable to visit the different departments, and in inspecting each piece, from the time it takes shape at the saw, to see how complete every change finds it, until it assumes its position in the instrument. Every-where, and on every hand, is to be seen the clock-work regularity with which every thing is done—a place for every thing and every body, and every thing always to be found in its place. The instrument manufactured by the proprietor has been pronounced by celebrated professors of music, who have visited Mr. Tschantz's factory, to be the best extant—a broad assertion, though one, I think, that will be ultimately reached by every body, as the factory, at this early day, can not keep pace with their orders—a fact that speaks in itself volumes. The proprietor, who is yet quite young, has a bright prospect before him.

ORRVILLE ENGINE WORKS.

THE above works, which go far toward the activity of this fast-growing town, are owned and operated by Messrs. Lautner & Snavely, who are successors to M'Connell & Lautner, manufacturers of Gibbs's Improved Monitor Plows, Waters's Portable Engine, Bell's Hay-carriers, etc. The factory, a fine building, is fitted up with all the modern appliances for turning out work expeditiously and well, and giving security to the product. One of their specialties is Waters's Portable Engine, which they build from two to twelve horse-power, inclusive; and, at present, are doing a large and growing trade, giving remunerative employment to twenty-five experienced workmen.

AULTMAN, MILLER & CO., REAPERS AND MOWERS, AKRON, O.

THE above company was incorporated in 1865, with a capital of $600,000, for the purpose of manufacturing the Buckeye Mower and Reaper. The works were originally started in Akron as a branch of the Canton Company, but afterward became an independent concern. The officers of the company are, J. R. Buchtel, President; Geo. W. Crouse, Secretary and Treasurer; L. Miller, Superintendent; and are the same officers in the same positions as at the date of organization. Their present works cover an area of 725 feet front by 50 feet deep, three stories and basement, brick structures; besides buildings, 90 x 50, three stories; and blacksmith-shop, 125 x 75, one story. The works give employment to four hundred mechanics, and turn out annually ten thousand machines, which in production consume two thousand five hundred tons pig metal, twelve to fifteen hundred tons wrought iron, and a million feet of lumber. Twenty-five thousand, or one-fourth of all the reapers and mowers made in the United States, of these are the celebrated Buckeye, and nearly one-half of these are made at the above works. The great specialty of the Buckeye Mower, and which is sold only in connection with this machine, is

MILLER'S IMPROVED TABLE-RAKE,

a cut of which we present; and this invention promises to be the greatest and most important one ever made in connection with farm implements to facilitate and cheapen farm labor, and for which object the genius of invention has been taxed for the past twenty years. Perfection has at last been reached, if such a thing is possible, by Miller's Improved Table-rake, invented by the superintendent of these works, who has been the genius of the "Buckeye."

BARBER MATCH COMPANY, AKRON, O.

THIS company was incorporated in 1867, though originally started by Mr. George Barber in 1847. The officers of the company are, O. C. Barber, President; James Hopkins, Secretary; J. K. Robinson, General Agent; and their capital stock is one hundred thousand dollars. This fact one would little dream of—that so much money could be invested in manufacturing an article of such trivial value, yet in momentous use on all quarters of the globe. This company turn out six different kinds of matches, which are put up in twenty-five different kinds of packages; and to show our readers how carefully disciplined the works are, we have only to say that, in twenty-eight years' experience, they never had an accident from fire.

Matches, an article indispensable, come so easily and used so often, that few, if any, ever stop to consider where they come from and how made. Now we assure our reader that the machinery for their production, together with the manufacture of the boxes in which they are packed, are of the most intricate and technical nature. The lumber, which is the "backbone" of matches, is sawed into lengths and brought into the building to season, after which it is cut into blocks for the different machines; and in this factory one of these cutting-machines for making block-matches has been attended by the same workman for over twenty-five years, and cuts fifteen million matches daily. After the blocks have been cut, the wood is again thoroughly dried and heated over fires, which causes expansion, before receiving the "sulphur-bath," and afterward the combustion. The room in which round sulphur matches are made is 50 x 60, and entirely fire-proof. The room for parlor matches is the same size. The machines in this department cut the matches from blocks of wood and set them in perforated trays at the same time, and in these trays they are dried and dipped without handling. Parlor matches receive no sulphur, but get an "oil-bath," after which a composition, which ignites with friction. After the matches are made they go to the packing-room, 100 x 50 feet, where they go into boxes and are cased ready for shipment, thence they go to the store-room, where they are stamped as fast as sold. This little item alone costs them thirty thousand dollars monthly, all of which goes to the United States revenue; each one hundred matches by law requires a one-cent stamp. The machines for cutting and making paper boxes number four, each capable of turning out daily ten thousand boxes. They also make their own packing-boxes, having a room for that purpose 50 x 60 feet, with machinery to turn out four hundred to five hundred packing-cases daily. The room for storing paper boxes is 36 x 75, thirteen feet high, and the room for making boxes is the same size, and these departments alone give employment to sixty hands. Among the features of the establishment is a fine machine-shop, in which they build and repair all their own machinery, and have a printing-office, in which they do all of that required in their business. Every precaution is taken against fire. Few companies conducting a business of as large proportions as this make less display or move so quietly forward, and the gentlemen at the head of it are progressive and enterprising.

FERDINAND SCHUMACHER, AKRON, O.

THE above-named gentleman is the proprietor of the Empire, German, and Cascade Mills, and as a truly representative branch of industry, so clearly indicative of the progress and extent of the agricultural interests tributary to Akron, we select the above mills. Mr. Schumacher commenced business in 1852 on a very small scale. How well he has succeeded may be inferred from the fact that he now owns and operates three of the finest mills in Ohio. Recently he has enlarged the celebrated EMPIRE BARLEY MILLS, making it a six instead of a four story building, and furnishing it with a double two hundred and fifty horse-power Putnam engine, thereby doubling its capacity as well as size. The building, a fine brick edifice, covers an area of eighty-seven by forty-three feet. The mill has a capacity of one thousand bushels of barley per day, transforming it into twenty different grades of pearl barley, and employs eighteen hands. His GERMAN MILLS, a fine seven story building, is furnished with a beautiful engine of the Putnam pattern. It is used for the manufacture of oatmeal, cracked pearl wheat, hominy, etc., and is fairly crowded to its capacity (one thousand five hundred bushels of oats per diem) by the constantly increasing orders for his superior brands, employing twenty to twenty-four hands. Whoever tarries at Akron for a few hours will be profited by visiting these mills, which stand up majestically at the depot, among the prominent institutions of the city. Order, system, and activity are manifest every-where, and a daily procession of farm-wagons pass before the doors of the establishment, unloading grain. The CASCADE MILLS in the Cuyahoga Valley, being run by water-power, are used for the manufacture of farina, Graham and family flour of choice quality. As to the quality of all his goods we need not speak; that they are the very best, is attested to by the many thousands who buy none other; nor is his reputation local. His brands are known all over the United States; and the proprietor of these mammoth establishments has a reputation of which he might well feel proud. In the process of manufacturing, the greatest cleanliness and purity is observed, and whoever eats the productions of the Empire, German, or Cascade Mills, may know they are partaking of the purest and best. To build up such a reputation, it has taken years of perseverance and energy, coupled with experience. Mr. Schumacher has proven himself "panic-proof;" and his articles of diet, barley, oatmeal, cracked pearl wheat, farina, hominy, etc., have become household words, even to the uttermost parts of the land.

TAPLIN, RICE & CO., FOUNDRY AND MACHINERY, AKRON, O.

THE officers of the above company are J. B. Taplin, President, and Henry Perkins, Secretary. This company grew out of the firm of Taplin, Rice & Co., who originally started the business in 1861, and was incorporated in 1867, with a capital stock of $100,000, for the purpose of manufacturing stoves and general foundry and machine work; and in the manufacture of their specialties we can say that this house is really a representative one in their great and growing industry. In the manufacture of stoves for soft coal they may have rivals, but no superiors; and the pattern-shop, which is under the superintendence of Mr. Geo. Wellhouse, has paid special attention to the production of cooking and heating stoves for the burning of soft coal, he having obtained several patents, under which Taplin, Rice & Co. are working. Among their well-known stoves are the celebrated "Iron King" and "Commodore" cook-stove, and "Climax" base-burning, soft-coal heating-stove—they making their own patterns for all their specialties.

In machinery, they principally make stationary engines, mill work, and sewer-pipe machinery, including grinding apparatus and presses, they being at all times prepared to make contracts to build, and put up entire, the machinery of sewer-pipe works. This department is under the entire control and superintendence of Mr. O. Barber, who personally manages the erection of such machinery; and having grown with the sewer-pipe business from its infancy, being situated at the very doors of the largest sewer-pipe manufacturers in the State, they thoroughly understand the requirements of the business, which certainly is an argument in their favor, and gives them precedence over foreign machinery manufacturers. The foundry is capable of turning out heavy castings, they at present having one in course of completion—a main-line shaft and pulley—weighing five and one-half tons. The buildings are especially adapted to the business, having been built as their growing trade requirements demanded, furnished with the finest machinery, which is propelled by a fine 40 horse-power engine. In all, they employ 75 to 100 men, and the works occupy an area of 330 feet front by 200 deep, mostly covered by buildings. The trade of the firm extends over Ohio, Pennsylvania, Illinois, Iowa, Michigan, and Wisconsin. We need scarcely refer to the standing of the company; that speaks for itself. They never having failed to live up to the spirit as well as the letter of their contracts, is the basis of a business confidence which is wide-spread as the extent of their trade.

JOHN BALL & CO., PLOWS, CANTON, O.

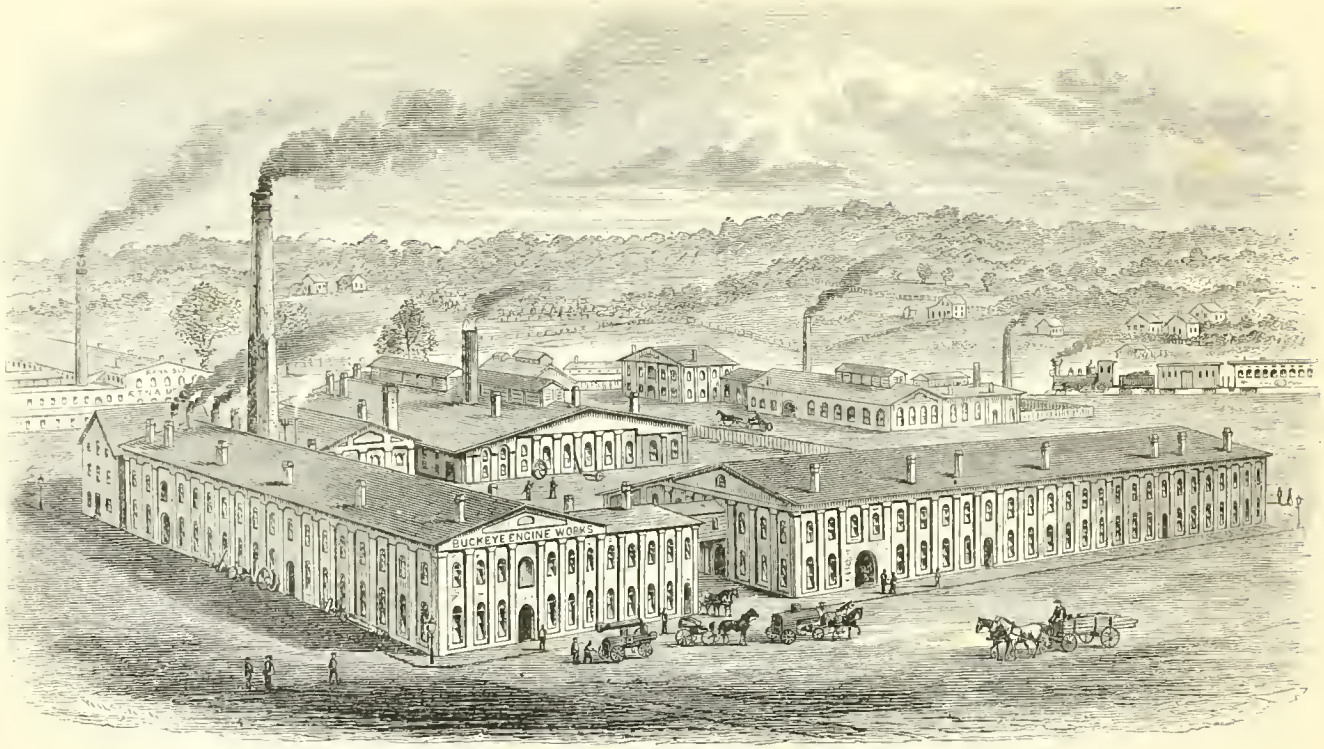
It is a remarkable fact, in connection with the various modifications of plows now in universal use, that those manufactured by John Ball & Co., Canton, hold the highest rank in simplicity of construction, perfection of work, and general durability. The wide reputation of these plows renders it unnecessary that we should say much about them, as the "Red Jacket" is a household word wherever these plows are sold, in Indiana, Ohio, and Michigan. All of these plows are manufactured in Canton. The factory is composed of a molding-shop, 35x85; grinding-room, 50x50; engine-room, 16x30; storage-rooms, 150x25; and the main building, a fine two-story brick building, 70x35 feet. They produce 9,000 plows annually, which gives employment to thirty hands. The company was incorporated in November, 1869, with an authorized capital of $100,000, $30,000 of which has been paid up. The officers of the company are, G. Cook, President; Albert Ball, Superintendent; and M. B. Cox, Actuary. To own such a business, it has taken years of energy, coupled with experience, which allows them to enter into competition with any in the market. Such sound institutions bring wealth to our State.

Silver & Deming Manufacturing Company, Salem, O.—This company was incorporated July 1, 1874, with a capital of $150,000. A private firm, out of which the present company grew, was originally started, in 1854, by Silver & Dole, which firm, in 1856, changed to Dole, Silver & Fitch. In 1858 Dole & Silver became their successors, and in 1865 Silver & Deming, which gave way to the stock company in 1874, the officers of which are, A. R. Silver, President and Superintendent; J. Deming, Vice-President and Treasurer; E. W. Silver, Assistant Superintendent; and W. F. Deming, Secretary. The works, which give constant employment to seventy-five hands, cover an area of 180x45 feet—two-story brick buildings, with two L's, 125x40 and 125x75 respectively—and turn out patent labor-saving machinery, including spoke-tenoning machines, hub-boxing machines, power meat-choppers, hand meat-choppers, saw gummers, meat-stuffers, horse-powers, fire-upsetting anvils, water tweer-irons, Dole's patent hollow auger, Dole & Deming's patent boring machine, Wharton's patent adjustable clamp, Silver & Deming's feed-cutter, improved horse power, with drag-sawing machine attached, and other valuable inventions, making it one of the most complete establishments of the kind extant, producing, as it does, $150,000 worth of machines annually, which are shipped all over the country. To own such a business, it has taken years of energy, coupled with experience and ability, which allows them to enter into competition with any market.

Amos Rank & Co., Salem, O.—This firm are successors to the Ætna Manufacturing, and are manufacturers of "Ætna" Mower and Reapers, "Ready" Mowers, Rank's Grave-guards, Novelty One-horse Sleighs, Santa Claus Coasting-sleds, etc., and were originally established as early as 1864. The double-speed "Ætna" Mower and Reaper has been a great favorite for many years, and the last season the firm have been kept busy making for the Pacific coast trade alone. They claim for Rank's "Ready" Mower, which sells for the low price of one hundred dollars, the lightest, simplest, strongest, and cheapest mowing machine made. The tongue is attached directly in the center, hence true center-draft. The inside shoe is in line with the driving-wheel, and the main and coupling frame are of wrought iron, the machine intact weighing only five hundred pounds. Rank's Patent Grave-guards are intended for guarding the graves, also for the receptable of head and foot stones. They are made of metal, cast in suitable molds, painted or enameled, as may be ordered, of different styles and sizes. The firm publishes a catalogue, with designs, that will be found useful to those in search of any thing of the kind. Prominent among their productions is the Novelty One-horse Sleigh, constructed with continuous runners, shaped in a graceful bend, having their open ends behind, the upper members of which form a support for the body and seat; and a set of springs are interposed between the upper and lower members of the runners, at their free ends, to give it an easy and graceful movement.

Excelsior Fertilizing Works, Salem, O.—These works are owned and operated by Mr. Lewis Schilling, who commenced the business in 1869; though his present mill was not erected till August, 1874, which has a capacity to turn out five tons per diem acknowledged by all to be the finest fertilizer extant. In fact, he manufactures the only clean, pure, odorless ground-bone manufactured in the world. There is no filth about it. It is simply clean bone. Ladies use this bone for house-plants; gentlemen for their lawns, trees, shrubs, and gardens; gardeners use it for truck-crops; and farmers use it for all grain, root, and grass crops. Parties needing information regarding the restoration of exhausted soils will do well to confer with Mr. Lewis Schilling.

Edwards & Morlan, Salem, O.—Martin L. Edwards and N. A. Morlan, under the above firm style, commenced in the Spring of 1873, after an experience of eighteen years in the business, to manufacture butchers' tools, such as Edwards's Patent Meat-chopper, Edwards's Improved Meat-stuffer, Power-chopper, Morlan's Improved Tincture and Lard-press; the "Family Gem" Meat and Vegetable Chopper, for families, hotels, boarding-houses, restaurants, bakeries, and are useful for cutting hash, mince-meat, cabbage-salads, pie-material of all kinds, cocoanut, fish, pickles, etc.; Morlan's Patent Universal Self-feeding Drill and Improved Blacksmith's Drill, Edwards's Improved Hollow Auger, Parallel Vise; Howell's Patent Calk-sharpener, for sharpening shoes while on horses' feet; also manufacturers of Lee's Lightning Fodder-cutter. That these productions are well known and appreciated, we have only to say that their second year's business was double that of the first.



BUCKEYE ENGINE COMPANY'S BUILDINGS, SALEM, OHIO.

BUCKEYE ENGINE COMPANY, SALEM, O.

Among the largest in this branch in the State of Ohio is the Buckeye Engine Company, of Salem, Ohio, who were incorporated December, 1870, with a capital of $250,000. Its officers are, J. Sharp, President; M. Davis, Vice-President; T. C. Boone, Secretary and Treasurer; J. S. Bonsall, Superintendent; S. Sharp, Assistant Superintendent. The company are successors to Sharp, Davis & Bonsall, who originated the business as early as 1851, on a small scale, compared with the present gigantic proportions. We present a fine view of their works on next page. That the reader may form some idea of the extent and character of their business, we have only to say that they employ a force of one hundred and thirty workmen, and turn out annually $240,000 worth of work, their trade extending all over the country.

Leaving the office, we were first conducted through the foundry, where all the molding and casting is done. Here is located a cupola, with a capacity of seven to nine tons. We next visited the cleaning-room, where the castings are cleaned. In this room is a large boiler, which furnishes steam for running the entire works. We next wended our way to the finishing-room, where all the castings are taken from the foundry and finished. The dimensions of this room are one hundred and fifty by fifty-five feet. In this room there are about fifty-five planers, drills, lathes, etc., used in the manufacture of machinery. The second story is devoted to wood-work, where all the patterns and other articles of wood are constructed. On this floor is also a large number of shingle-joiners, lath-machines, saws, and planers, finished and ready for shipment. We next visited the draughting department, where four hands are constantly employed draughting the various designs used by the company. From this we went through the pattern-room, which is forty by seventy feet, and where upwards of 10,000 patterns are stored. The next department that claimed our attention was the fitting and setting-up room, where all the various parts of the machinery manufactured by the company are perfectly fitted and adjusted, set up, and thoroughly tested before leaving the works. In this room are also a large number of saw-mills, complete and ready for use. We next passed to the store-room, where are kept a large number of printers' engines (four sizes); farmers' engines, on wheels; and single machines (self-acting), which cut 35,000 shingles per day, and is the only successful self-operating one in the United States. We next visited the constructing-room for machines, where we observed twelves engines, which were being set up. Prominent among their manufactures we may mention planing-mill engines, self-acting shingle-machines, printers' engines, saw-mills, shingle-joiners, lath-machines, etc. The automatic engine, manufactured by this company, has proved a grand success, and is gaining a reputation which is destined to become world wide.

This company will be, in the future as in the past, absolutely trustworthy under all circumstances; and those who are about to buy a portable or stationary engine or boiler, saw-mill, or any thing in their line, will do themselves injustice if they do not first examine the merits of those offered for sale by the Buckeye Engine Company, of Salem, O.

BECKEL HOUSE, DAYTON, O.

HOTELS.

Reibold's Beckel House, Dayton, O.—As a representative Western hotel we quote that of the Beckel House, of Dayton, Ohio, since 1872 under the sole proprietorship of Mr. L. Reibold, the prince of hotel-keepers. This has become the most favorably known first-class hotel in the interior of Ohio, and we can only except one as its peer on the borders.

Sumner House, Akron, O.—For many years past, Akron has keenly felt the want of a good hotel, which has at last been supplied by John Kolb, formerly of Franklin, Penn. The house contains sixty rooms, elegantly furnished; and the dining-room, 35x60, is a model for comfort and cleanliness. Every sleeping apartment is supplied with electric annunciators, and the building is heated by steam throughout. Elegant bath-rooms, with hot and cold water, are at the disposal of the guests, and fine Brussels carpets adorn the luxuriously furnished parlors. The kitchen is furnished with Van's patent hotel range, broiler, and coffee-urns.

West House, Sandusky, O.—This hotel is one of the most substantial in the State, and the first five-story building erected in Sandusky, being built of Sandusky blue limestone. Its erection was commenced in 1848, though not completed till ten years later, when it was opened by the builders, W. T. and A. K. West, and christened as above. They continued the management till last Spring, when the owners and former proprietors leased it to H. B. West and A. W. Powers, since when it has been remodeled and refurnished. The table is the best in every sense of the word, a fact which can be attested to by the many thousands who patronize none other.

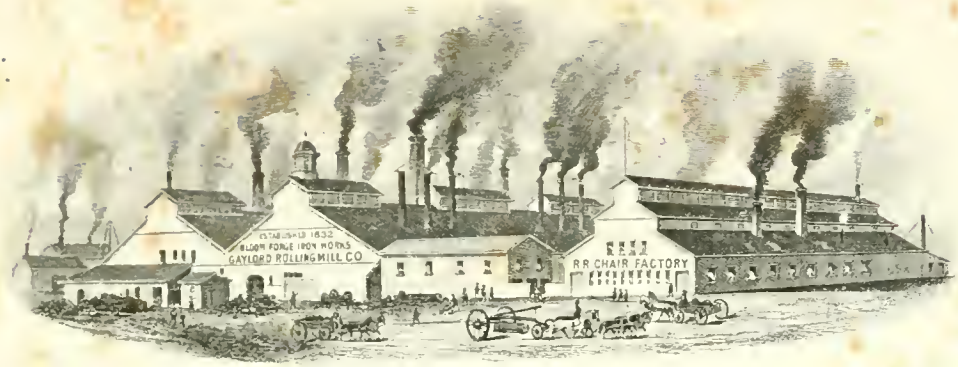
Ogden House, Canton, O.—This elegant hotel edifice, one of the finest in the State, was built in 1870 and first occupied in 1874. The house contains ninety rooms, and is furnished with elevator, bath and billiard rooms, and all the conveniences of a large city hotel. The dining-room is a spacious hall, 40x48 feet, with a 15-foot ceiling, and a seating capacity for 100 guests. The table is in every particular all that could be desired, both in quality and the way it is served from the *cuisine*. We predict for the proprietor, A. L. Rothacker, a life-long and enviable reputation.

THE BURGESS STEEL AND IRON WORKS, PORTSMOUTH, O.

The above company are largely engaged in the manufacture of plow and agricultural steel, steel boiler-plate, steel tire, United States and Norway irons, sheet iron, boiler-flange and fire-box iron, and their extensive works are located at Portsmouth, Ohio. The officers of the company are, J. R. Williams, President; L. C. Robinson, Vice-President; M. H. Ball, Treasurer; G. W. Meyers, Secretary; and the directory is composed of, including the above officers, C. Burgess, T. B. Ball, F. Thompson, and Geo. Davis, all men of sterling reputation for business qualifications, and their works are among the largest and most important in Ohio. In the amount of its transactions and the area through which its productions are distributed, it is not surpassed by any other one. The premises occupied by the company consist of a number of buildings, covering, with the ground, four acres, on the banks of the Ohio and Scioto Rivers. The works consume four hundred thousand bushels of coal annually, which is consumed by the four steam-boilers and fires. These boilers supply steam to five steam-engines, which propel, among other machinery, two 2-ton steam-hammers, power-press and shears, and three train-rolls; and their goods are shipped from Massachusetts to Texas, most of their refined iron being consumed in New England, for the manufacture of guns, sewing-machines, and cotton machinery. This company will continue to give the same careful attention to all the details of the business which they have individually exercised in the past. They claim that, by giving attention to this one branch, they can turn out the best material, and superior to those who mingle with it half-a-dozen other specialties. The knowledge already gained by their thorough experience will always be at the service of those desiring to consult them. They pay particular attention to quality, and pride themselves on never sending out an inferior article. They are a large house, doing a heavy business, and one of the useful institutions of our State. That the reader may form an idea of the extent and character of the above works, we have only to say, they give constant employment to two hundred and twenty-five hands, and produce five thousand tons of finished material annually.

BUILDING ON THE NORTH-WEST CORNER OF FIFTH AND VINE STREETS,

CINCINNATI, OHIO.



THE GAYLORD ROLLING MILL COMPANY WORKS, PORTSMOUTH, O.

The above company and mills, which are located at Portsmouth, O., were established as early as 1832, and comprise a forge, in which there are engines, puddling-furnaces, run-out and refining-furnaces, nobbling or charcoal fires, forge-trains of rolls, squeezer, steam-hammer of great power, ore crusher and pulverizer, shears of capacity to cut plates ten feet long, etc. The rolling mills consist of engines of great power; plate and sheet mills of large capacity; bar mill, three train high; and two eight-inch grade trains, heating and annealing furnaces, hammer, lathes, shears, saws, etc. The steam, for driving the machinery in forge and mills, is generated in boilers over the puddling-furnaces, with a battery besides. A factory, in which are engine and boilers, railroad-chair machine, railroad-spike and boat-spike machines, rivet machines, bolt machines, punches, shears, lathes, furnaces, etc. A large warehouse for storing iron, etc.; a large store for sale of goods to supply their hands; office buildings, etc.; the whole covering 900 by 400 feet on the river bank, and fronting on Front Street. They manufacture boiler plate and tank iron, sheet, flat, round, and squares, and bands and hoop irons. Also railroad and boat spikes, railroad chairs, splice bars, and bolts, nuts, washers, and rivets. Make specialties in boiler-plate iron and boiler rivets, and were the first manufacturers in the West to make and stamp its tensile strength upon the plates, as per Act of Congress relating to marine boilers, and produce the same in grades from 60,000 to 70,000 pounds as minimum, which iron, however, runs from 60,000 to 80,000. They also make a specialty in first grades of bars, and all descriptions of iron where a high tensile strength is required for special purposes, using for such specialties the finest and best cold blast metals obtainable in Ohio, Missouri, Tennessee, Georgia, and Alabama, without regard to their cost. There are now more than one hundred and fifty steamers running upon the Western and Eastern waters, whose boilers are made of the Gaylord Iron. They claim great uniformity of quality in their products, particularly in boiler plates, for the reason of producing their own blooms, knowing at all times what stock goes into such blooms. The warehouse and offices of the company in Cincinnati are situated at No. 92 Broadway, between Third and Fourth Streets.