

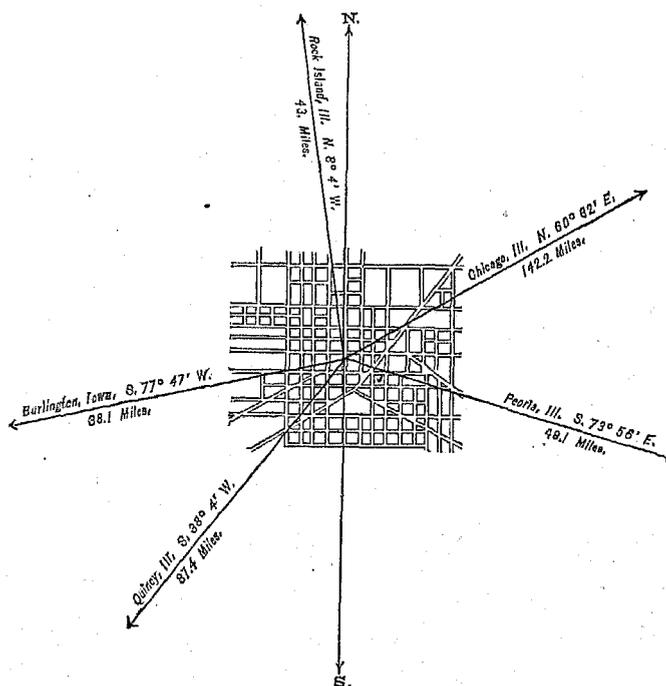
GALESBURG, KNOX COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,

1850-1880.

Year	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	882
1860	4,953
1870	10,158
1880	11,437



POPULATION

BY
SEX, NATIVITY, AND RACE,

AT

CENSUS OF 1880.

Male	5,599
Female	5,838
Native	8,586
Foreign-born	2,851
White	10,701
Colored	*736

* Including 2 Chinese.

Latitude: 40° 55' North; Longitude: 90° 24' (west from Greenwich); Altitude: 755 to 810 feet.

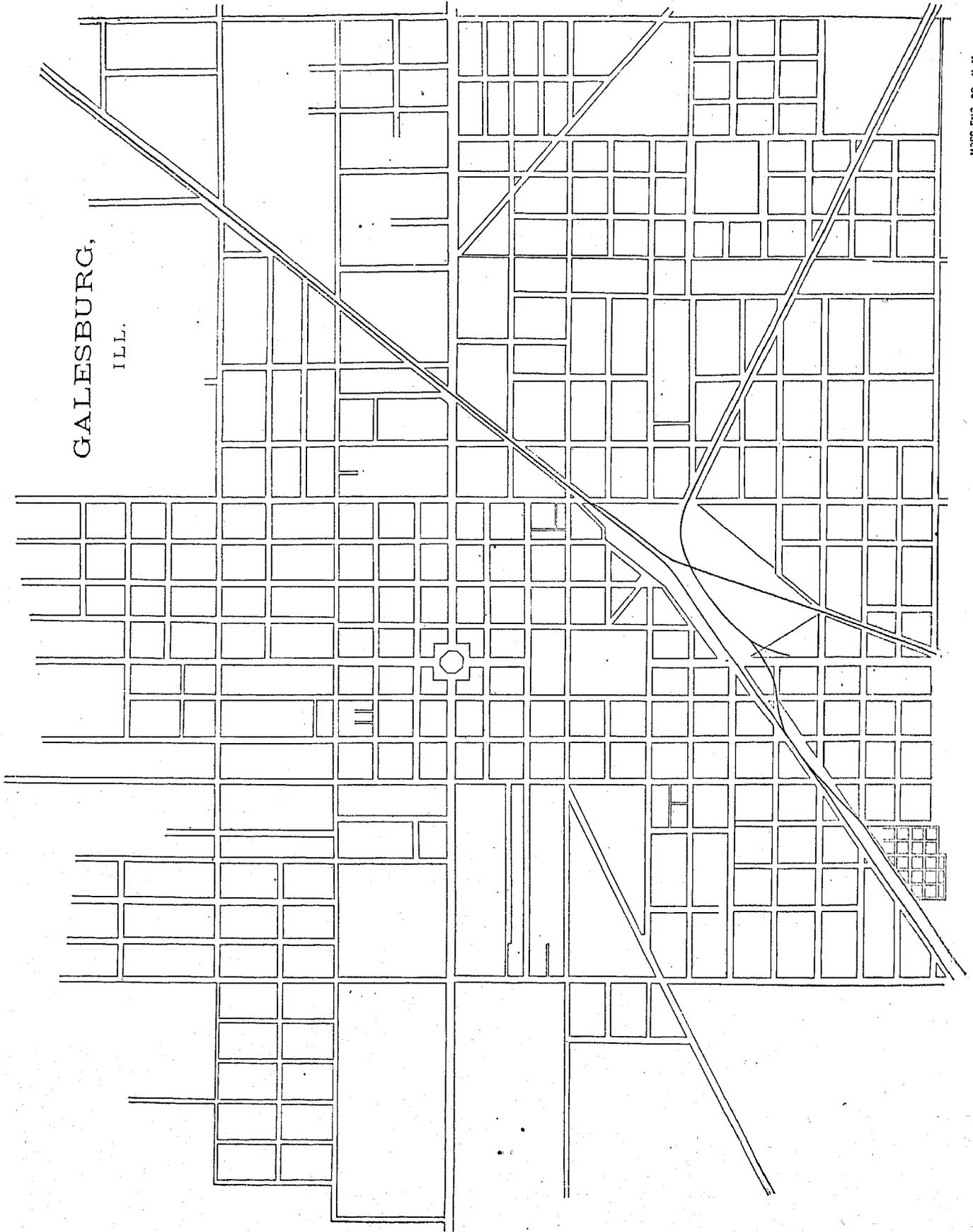
FINANCIAL CONDITION:

Total Valuation: \$3,022,493; per capita: \$264 00. Net Indebtedness: \$53,250; per capita: \$4 66. Tax per \$100: \$2 54.

HISTORICAL SKETCH.

Galesburg was first settled by a colony of "Christian" people from central New York and northern Vermont, with the intention of building up a "Christian" college and other schools. In 1836, 11,000 acres of land were bought at the government price, and, when properly laid out, resold to the settlers at such an advance as to form an endowment for the college. In 1837 the settlement began, and the enterprise was marked by a steady progress, changed only as the great tides of business depression or revival swept over the country. In 1854 the first railroad was built from Chicago to Galesburg, attended with the usual rapid growth of a temporary terminus. Extensive railroad shops and the junction of five branches of a great railway give the city a very large business. No very

GALESBURG,
ILL.



destructive fires have occurred. At present there is a steady and constant improvement, more, however, in the way of betterments than in actual new building. The people are still mostly of New York and New England antecedents, with the usual sprinkling of all foreign nationalities. Among these, Swedes predominate largely, and they are considered as being among the most esteemed and valuable citizens. They acquire wealth rapidly, and are fast buying out the smaller native farmers, who go farther west and secure larger farms.

GALESBURG IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Galesburg:

LOCATION.

Galesburg lies in latitude $40^{\circ} 55'$ north, longitude $90^{\circ} 24'$ west from Greenwich, on the water-shed between the Illinois and Mississippi rivers, 163 miles southwest from Chicago and 100 miles northeast by north from Quincy. The elevations of the city above sea-level are, average at the railroad station, 799 feet; lowest point, 755; and highest point, 810 feet. The city is not on navigable water.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroad line: Chicago, Burlington, and Quincy railroad, from Chicago to Council Bluffs, with branches to Quincy, Peoria, Saint Louis, and Kansas City. This line, with its numerous connections, gives Galesburg railroad communication with all points in the country.

TRIBUTARY COUNTRY.

The character of the surrounding country is essentially agricultural, with much stock-raising. The principal crops are corn, oats, broom-corn, rye, and a very small amount of wheat. It is noted for its fine hogs and cattle, and, latterly, for dairy products. The industries are such as naturally pertain to an agricultural district, and the commerce is of the same character.

TOPOGRAPHY.

The soil is a rich black loam from 3 to 5 feet deep, resting on a stratum of yellow clay from 8 to 12 feet thick, and that upon sand or gravel, followed by a hard blue clay. The rocks lie deep, and are generally limestone, with some soft sandstone. Bituminous coal is mined in the vicinity. The surface is quite level, though most of it is sufficiently undulating to afford good drainage, part of the rainfall going east to the Illinois river, and part west to the Mississippi. There are no ponds, lakes, or marshes, and the country within a radius of 5 miles is about the same as that portion occupied by the site of the city. The country was originally a prairie, with heavy forests bordering the small water-courses, but now the prairies have artificial groves scattered over them, while much of the original forest has been cleared off.

CLIMATE.

Highest recorded summer temperature, 99° ; highest summer temperature in average years, 96° . Lowest recorded winter temperature, -22° ; lowest winter temperature in average years, -7° . None of the winds seem to be of a more healthful character than others. Southwest winds prevail in summer, and northwest winds in winter, the former being warm and dry, and the latter cold and dry. Southeast winds usually bring rain, while those from the northeast are generally accompanied by a cold drizzling rain.

STREETS.

Total length, 75 miles, and, with the exception of 3,500 feet laid in gravel, none of these are paved. The graveled streets cost \$1.15 per square yard, but as it is yet only an experiment, its permanent economy is said to be an open question. Sidewalks are generally of wood, some are of concrete, and a few are of stone. The graveled streets have stone gutters in part, while the remainder of the streets are simply ditched. There is an abundance of trees planted along the sides of the streets. General repair on streets is done by the day, but the permanent work is done by contract. This latter class of work is preferred by the city authorities, although there are cases of emergency when day work is thought to be better. Street expenses amount annually to about \$7,000. There are no horse-railroads. Three omnibuses carry passengers to all parts of the city, at the uniform rate of fare of 25 cents.

WATER-WORKS.

The works for the water-supply cost \$16,000, but, with the exception of the statement that the water-pipes are connected with two manufacturing establishments that furnish the pumping-power when necessary, no other information regarding them was given.

GAS.

The gas-works are owned by private parties. The charge to consumers per 1,000 feet is \$2 70. The city pays \$18 25 per annum each for gas street-lamps, 149 in number. There are also 90 gasoline street-lamps, cared for by the city, and their cost, including lighting, is \$12 per annum each.

PUBLIC BUILDINGS.

The city owns and occupies for municipal uses, wholly or in part, 1 building for city offices and 2 fire-engine houses. The estimated cost of these buildings is \$9,000. The cost of the buildings used for city offices is \$5,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is but one park proper in Galesburg, area 7 acres, though there is a small piece of ground in the center of the public square that is fenced off for park purposes in a sixteen-sided figure. The cost of the park proper, including land purchase and construction, was \$21,000. The yearly cost of maintenance is \$500. The park was designed by the board of commissioners, and that body controls it.

PLACES OF AMUSEMENT.

There are two theaters in the city—the Opera-house, with a seating capacity of 1,500, and the Academy of Music, seating 1,000. They pay a license to the city of \$5 per day when performances are had. In addition to the theaters there are several small halls which can be used for various purposes, but seldom for concerts, etc. There are no concert- and beer-gardens in the city.

DRAINAGE.

A small water-course, running through the city in open channel, receives the surface drainage from both sides and the discharge from sewers and drains. The bed of this stream is about 28 feet below the general surface of the city, and it affords a good fall for sewers extending as far back as they have yet been built. The first public sewerage work was begun about the year 1870, consisting of a brick sewer, 36 inches in diameter and 1,266 feet long, running northerly into the stream. Since that time four other streets, running north and south, have been furnished with sewers, viz, one 2,600 feet long and 24 inches in diameter, of brick; one 1,500 feet long is of 18-inch pipe; and two, having a combined length of 5,000 feet, of 15-inch pipe. Streets crossing these in an east-and-west direction are provided with 12-inch pipe sewers. Many streets are so level as to be difficult to provide with good surface drainage. Within a few years porous drain-tiles have been laid beneath the gutters, on each side, and have done good service. Some of these are laid with a fall of only 1 inch in 100 feet.

The mouths of sewers are exposed, except in time of floods. Ventilation is provided for, in some instances, by grated manhole covers, while in others no provision for ventilation is made. No trouble has yet been caused by deposit of solid matter, the wash of storm-water having been sufficient to remove all obstructions. No water-closets are allowed to drain into any public sewer, but the outfalls are beginning to cause some inconvenience and complaints, and the disposal of sewage is receiving the attention of the people and of the council.

The cost of sewerage-works is paid, one-third by the city and two-thirds by owners of abutting property. Assessments are sometimes based on the value of the lots and buildings to be drained, but those based on the frontage of lots appear to have given the best satisfaction.

No information is furnished of the cost of sewers. That of catch-basins is given at \$25, and for connecting the drain with the sewer from \$15 to \$20 each.

CEMETERIES.

There are 4 cemeteries in and connected with the city: *Hope Cemetery*, area 12 acres, is situated between Main and Academy streets, while *Catholic Cemetery*, area 15 acres; *Linwood Cemetery*, area 30 acres; and *Jewish Cemetery*, area three-fourths of an acre, are all outside the city limits. There are no church-yards or private burial-grounds in which interments are no longer permitted. It is impossible even to approximate the number of interments that have been made in the above cemeteries. Burials have been going on for the past thirty years, sometimes one on top of another, and many without record. No statement could be made that would be better than a random guess. Burial permits are issued by the city clerk, upon the filing of a certificate of death. Persons dying of contagious or infectious diseases are required to be buried privately and without delay.

MARKETS.

There are no public or corporation markets in the city. A lot 156 by 104 feet is set apart for standing-ground for loads of corn and wood offered for sale.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Galesburg is the board of health, composed of the mayor, with the marshal, overseer of the poor, and a physician appointed by the council. The action of the board is determined by the action of the council in the passage of ordinances. In ordinary times the annual expenses of the board are \$260, for salaries and stationery, and during epidemics any increase of expense depends on the amount appropriated by the council. Either in the absence of or during epidemics the extent of the authority of the board is limited to a general supervision over health matters. The mayor is presiding officer, but by tacit consent the physician of the board is allowed to have control and to exercise his judgment; his salary is \$150 a year. The board meets only in extraordinary cases, and then transacts business as a deliberative body. Last year there were 5 inspectors employed during the summer months to make a house-to-house inspection; but this year only one has been appointed, and he co-operates with the physician. Three inspectors are usually detailed from the police force. At intervals general inspections are made. The practice this year is confined to acting on the nuisances that may be reported, and to such matters as incidentally come to the knowledge of the board. When a nuisance is reported the inspector visits and examines the premises; if the complaint is well founded, notice to abate within a certain time is served, and if this is disregarded, suit is begun. No regular inspection of drainage or of drinking-water is had. When cases come to the knowledge of the board such action is taken as will remedy the evils. The same is also applicable regarding defective privy-vaults and cesspools. The board exercises complete control over the conservation and removal of garbage. There are no special regulations regarding the burial of the dead. The board reports annually, and from time to time, to the city council, but the reports are not formally published.

The record of diseases, births, and deaths is kept by the city clerk at his office, all physicians reporting to him.

INFECTIOUS DISEASES.

Small-pox patients are isolated, a temporary pest-house being erected in the suburbs for the purpose. Scarlet-fever patients are quarantined, as much as possible, at home; communication is cut off from the family, cards are posted on houses, rooms are required to be disinfected, and every precaution is taken to prevent the spread of the disease. The board prohibits the attendance of pupils either in public or in private schools coming from houses in which contagious diseases exist. Vaccination is not compulsory and is not done at the public expense.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city and with its regular force. The work is done wholly by hand, no sweeping-machines being used. The graveled streets are cleaned about every two weeks, and the others are cleaned as required. The droppings and garbage are removed, loose matter is swept into pails and carried off, and the gutters are cleaned. The annual cost of the service is estimated at \$200. The sweepings are either used for grading or are taken as a fertilizer.

Removal of garbage and ashes.—All garbage is removed by the city scavenger at the expense of the city. There are no special regulations as to the conservancy of garbage while awaiting removal, the matter being under the supervision of the board of health. It is used by the scavenger to feed hogs. The ashes are used for gardening purposes. The annual cost of the service is \$108, being the salary of the scavenger. The board of health is diligent in causing the garbage to be removed promptly. The system is reported to work well, the only difficulty being to get the people to appreciate the necessity of having the garbage ready for removal at stated intervals.

Dead animals.—The city marshal is required to see that all dead animals are disposed of. They are usually hauled off and buried on the commons in the suburbs, the cost of the service being generally paid by the owner. No record is kept of the number of different animals annually removed.

Liquid household wastes.—A comparatively small portion of the houses in the city are connected with the public sewers, so that nearly all of the liquid wastes are thrown into cesspools and privy-vaults, none being allowed to pass into the street-gutters. The cesspools are generally tight, do not receive the wastes from water-closets, and are cleaned out when they are complained of. The board-of-health physician has in several cases analyzed the well-water on premises of diphtheria patients, and has expressed his opinion that the impurity of the water, owing to its proximity to privy-vaults, was probably the cause of the disease.

Human excreta.—Nearly if not quite all the dwelling-houses in the city depend on privy-vaults; hotels have water-closets, delivering into the sewers. Very few of the privy-vaults are water-tight, they being mostly boarded up. Vaults are required to be a certain distance from wells, and are emptied at night in covered water-tight boxes. The board of health has totally prohibited the digging of vaults, and has endeavored to bring into use the dry-earth system. The board is meeting with some success, as well as violent opposition in some quarters, and a few dry-earth closets are now in use, with their number gradually increasing. The night-soil is used as manure by farmers a few miles from the city, but it is thought that none is so used on the gathering-ground of the public water-supply.

POLICE.

The police force is appointed by the mayor, subject to the approval of the city council, and is governed by the city marshal, who, in addition to police supervision, performs police duty, and is *ex officio* a constable; his salary is \$800 per annum. The remainder of the force consists of 4 regular policemen at \$600 per year each. The uniform consists of a blue suit, costing complete about \$30, and when required to be worn each man furnishes his own. The policemen are armed with club, revolver, and nippers. Each policeman is on duty twelve hours at a time, and patrols 3 miles of streets. During the past year 393 arrests were made, including 144 tramps for vagrancy, the principal causes being, intoxication 148; assault, theft, robbery, disorderly conduct, etc. The majority of these paid or worked out their fines, and some were turned over to the county. The force is not required to co-operate with the other city departments except when it is in the line of police duty. Special policemen are appointed by the mayor for the time required, and the appointments are reported to the city council. These specials are under the direction of the marshal, unless appointed for the board of health or something not connected with the regular force. The yearly cost of the police force (1880) is \$4,000.

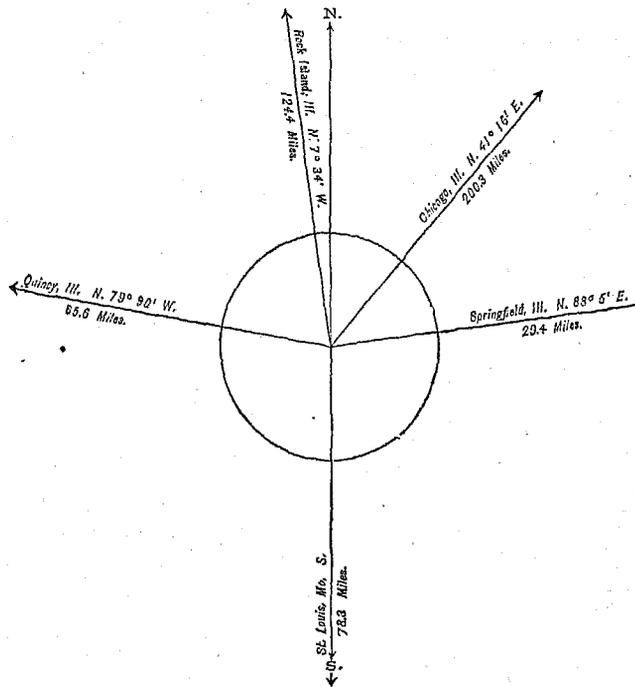
JACKSONVILLE,

MORGAN COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	2,745
1860.....	5,512
1870.....	9,203
1880.....	10,927



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	5,220
Female.....	5,707
—	
Native.....	9,109
Foreign-born.....	1,818
—	
White.....	10,220
Colored.....	707

Latitude: 30° 45' North; Longitude: 90° 12' (west from Greenwich); Altitude: 676 feet.

FINANCIAL CONDITION:

Total Valuation: \$2,000,000; per capita: \$183 00. Net Indebtedness: \$273,336; per capita: \$25 01. Tax per \$100: \$5 03.

JACKSONVILLE.

The site of Jacksonville, the county-seat of Morgan county, was one of the most beautiful spots on the native prairies. To the east and to the north, about a mile from the spot where the court-house was built, a line of heavy timber marked the changing course of the Mauraisterre creek on its way to the Illinois river, about 20 miles to the west. To the south, some 4 miles away, a line of timber marked the western course of Big Sandy creek. About a mile west was a magnificent prairie grove of large timber, through which the prairie ridge gradually rose to culminate in what is locally called the Mound, 3 miles away. South of this grove on another swell of the prairie was a second similar grove, within a mile, and later known as Diamond Grove.

The town was platted on the well-drained prairie ridge in 1825, in which year there were 20 families there. (a) The site for Illinois college was early selected in the shade of the prairie grove west of the settlement, and in 1829 a school was opened as its beginning. This institution, the focal point of the work of a band of graduates of Yale

college, was the first of a group of educational and benevolent institutions now clustered at Jacksonville. Next after the college came the Jacksonville Female academy. The state put here its institution for the deaf and dumb, its first insane asylum, the institution for the blind, and temporarily the school for the feeble-minded, at intervals of some years. Other public and private institutions swell the present number.

The streets are adorned with shade-trees. Horse-cars run on the principal avenues. The city is provided with gas, a complete system of water-works, and sewerage.

No details were furnished as to the present condition of various departments of city and social organization.

RAILROADS.

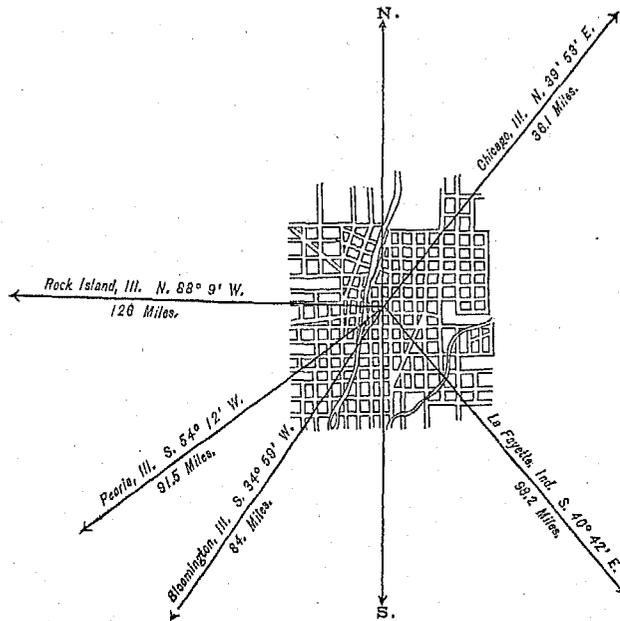
In 1837-'38 the state progressed far enough with its system of internal improvements to put a locomotive on a track of strap-rails through Jacksonville from Meredosio, on the Illinois river, to Springfield. When the locomotive was no longer capable of use, mules were used for a time to draw freight on the track, which fell into entire disuse in time. The franchise of the road was sold, and in 1848 a modern track was laid from the Illinois river to Jacksonville as a part of what is now the Wabash, Saint Louis, and Pacific railroad. Besides this track, Jacksonville has connections by the Peoria, Pekin, and Jacksonville division of the same road, by the Jacksonville and Southeastern railroad, and by the Jacksonville division of the Chicago and Alton railroad.

JOLIET,

WILL COUNTY, ILLINOIS.

POPULATION
IN THE
AGGREGATE,
1850-1880.

Year	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	2,659
1860	7,104
1870	7,263
1880	11,657



POPULATION
BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	5,875
Female	5,782
Native	8,509
Foreign-born	3,148
White	11,559
Colored	98

Latitude: 41° 30' North; Longitude: 88° 5' (west from Greenwich); Altitude: 543 to 550 feet.

FINANCIAL CONDITION:

Total Valuation: \$3,293,363; per capita: \$283 00. Net Indebtedness: \$54,000; per capita: \$4 63. Tax per \$100: \$2 64.

HISTORICAL SKETCH.

In 1837 the village of *Joliet* was incorporated by an act of the legislature, and was known under that name until 1853, when the legislature changed its name to Joliet and incorporated it as a city. It early became a distributing point for the produce of the surrounding country, and this fact, together with the establishment of many industries here and the opening of several lines of railroads gave the city an impetus that has not since declined. The state penitentiary, a large building, said to be one of the model institutions of the kind in the country, is situated near Joliet. It was built of limestone quarried in the vicinity, and cost about \$1,000,000. The city has never been seriously ravaged by fire, and the only marked period of depression was between 1873 and 1878, when Joliet suffered in common with the other cities of the country. No population of one nationality or state has supplanted others previously established, but several nationalities have held a very even representation since the first settlement of the place.

JOLIET IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of the city:

LOCATION.

Joliet lies in latitude $41^{\circ} 30'$ north, longitude $88^{\circ} 5'$ west from Greenwich, on both sides of the Aux des Plaines river, about 37 miles southwest of Chicago. The surface of the river at the city is 543 feet, and the track at the railroad station is 550 feet above mean sea-level. The river on which the city lies is not navigable, but the Illinois and Michigan canal, from Chicago to La Salle, Illinois, passes this point.

RAILROAD COMMUNICATIONS.

Joliet is touched by the following railroads:

The Chicago, Pekin, and Southwestern railroad, to Peoria, Illinois.

The Chicago and Alton railroad.

The Chicago, Rock Island, and Pacific railroad.

The Joliet division of the Michigan Central railroad.

TRIBUTARY COUNTRY.

The city is the reshipping point for a very large amount of grain of all kinds for the eastern markets. The several industries comprise the Joliet iron and steel mills, with blast-furnaces; 7 large barbed-wire fence factories, 1 flouring-mill, 2 agricultural-implement factories, and 1 paper-mill. There are also 5 large limestone quarries and extensive gravel-beds near the city, while cement and fire-clay are largely obtained in the vicinity.

TOPOGRAPHY.

The city is situated mainly in the river valley, but part of it is on bluffs, situated on either side, and rising to an altitude of 50 feet above the surface of the water. The soil of the city and vicinity is a rich black prairie soil, underlying which is a fine stratified limestone 200 feet thick. There are no marshes, ponds, or lakes within a radius of 5 miles, and the surrounding country is open. The natural drainage is good.

CLIMATE.

Highest recorded summer temperature, 96° , while the highest summer temperature in average years is said to be the same. Lowest recorded winter temperature, -25° ; lowest winter temperature in average years, -15° . There are no adjacent waters that exert any climatic influence.

STREETS.

There are about 60 miles of streets in the city, and of these, 45 miles are paved, having a foundation of broken stone with gravel on the top. The cost of this pavement is 50 cents per square yard, and, owing to the fact that the materials are obtainable here, is considered the most economical for the section of country. The sidewalks are of stone flagging and planks, about half of each. The gutters are laid with cobble-stones. Trees are planted along the sides of the streets. The construction of new streets is done by contract; repairs are done by day labor, and cost \$3,000 annually. The city authorities express a preference for grading new streets, etc., by contract and doing all repairs by the day. There are 5 miles of horse-railroads in the city, with 14 cars and 25 horses, and giving employment to 10 men. Passengers are carried at the uniform rate of fare of 5 cents.

WATER-WORKS.

At present there are no water-works in the city, but a private company has been formed, and works for the water-supply have just been begun.

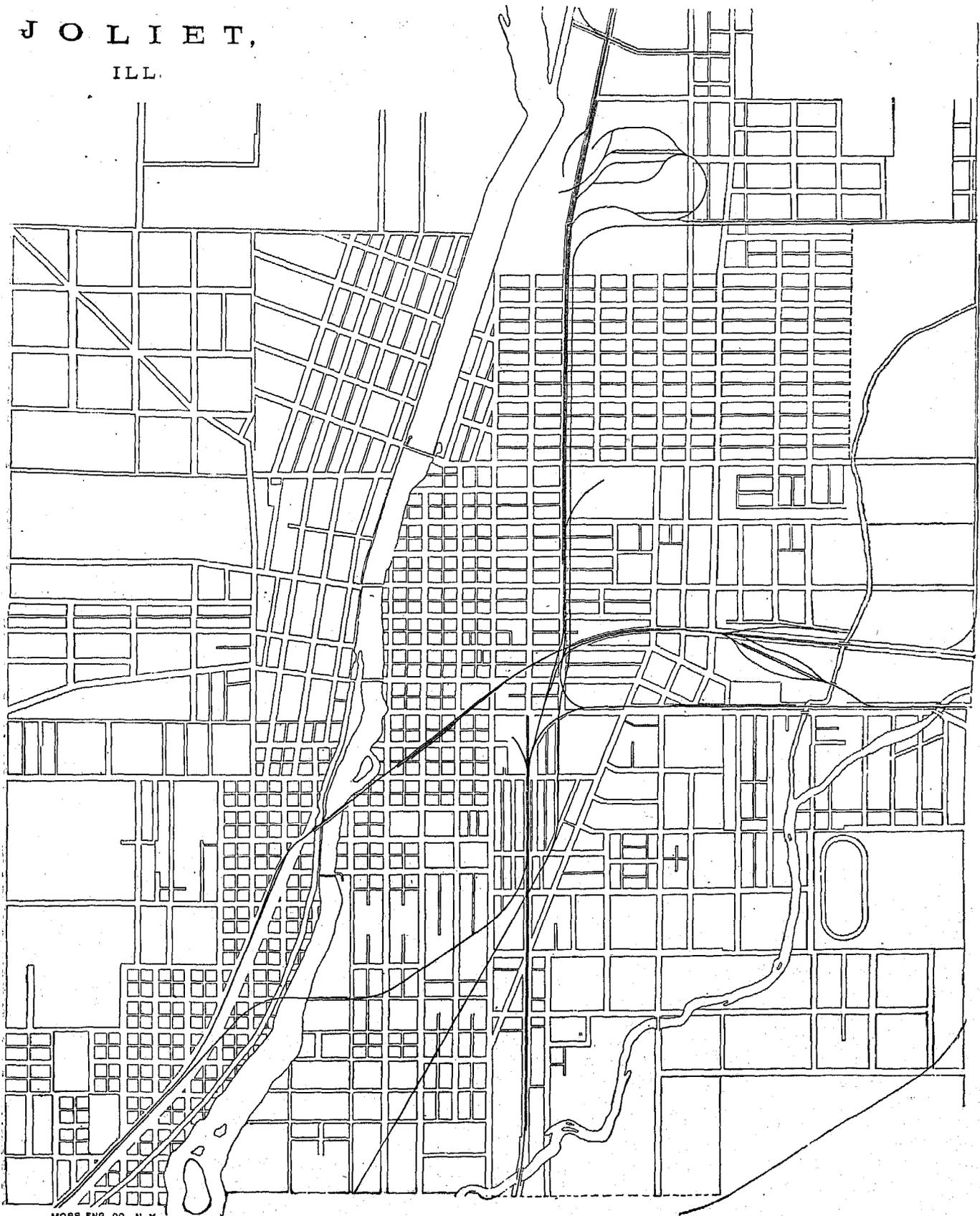
GAS.

The gas-works are not owned by the city. The daily average production is 18,000 cubic feet. The charge per 1,000 feet is \$2 50. The city pays \$25 per annum for each gas street-lamp, 124 in number. In addition there are 60 gasoline street-lamps, which are maintained by the city at a cost of \$20 each per annum.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes, wholly or in part, 1 city hall, 2 engine-houses, 8 school-houses, and 1 bridewell. The cost of the municipal buildings is \$70,700. The city hall was built by and belongs to the city; its total cost was \$7,500.

JOLIET,
ILL.



PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no parks in Joliet. "Court-house square", the title of which is in the name of the county, is about 500 feet square, and is maintained at the expense of the county.

PLACES OF AMUSEMENT.

The following buildings are used for theatrical exhibitions, lectures, concerts, balls, etc.: Opera-house, with a seating capacity of 800; Werner's hall, seating 400; Munroe's hall, seating 400; Walsh's hall, seating 300; and Theiler's hall, seating 300. Exhibitions pay a license to the city, and the total amount received from this source, through the above halls, during a year is about \$125.

DRAINAGE.

The city has never adopted any regular system of sewerage. It is situated in the valley of the Aux des Plaines river, which runs south, dividing the city into east and west sides, with natural drainage. There are but three sewers of any importance, one of which passes under the center of two of the central business streets. This latter one is three-quarters of a mile in length, 6 feet wide, and 4 feet high, and is built of stone, with a stone arch, at an average depth of 3 feet from the road-bed to the top of the arch; it empties into the river. The other two sewers are open. One is about half a mile east of the river, runs parallel with the same through the city for nearly 2 miles, and is always well supplied with running water. The other is intended for and carries off surface water; it is about 1 mile in length. The sewers are paid for wholly by the abutters, the cost being assessed by the front foot.

CEMETERIES.

There are 6 cemeteries in or connected with the city, as follows:

Oakwood Cemetery, area 35 acres, situated 1 mile east of the city limits.

Irish Catholic Cemetery, area 25 acres, situated in the western part of the city.

German Catholic Cemetery, situated just outside the northern limits of the city.

Lutheran Cemetery, area 20 acres, 1 mile from the city.

Zorley's Cemetery (private), also about 1 mile from the city.

Potter's Field, area 10 acres, half a mile from the city.

There is also one private burial-ground $1\frac{1}{2}$ mile from the city, and outside the limits, in which burials are no longer made. In Oakwood cemetery there have been about 2,000 interments. Of the other burial-grounds above mentioned there are no statistics available from which the number of interments can be given. The mayor of the city reports that there are no ordinances regulating burial permits, limit of time after death for burial, depth of graves, etc.

MARKETS.

There are no public or corporation markets in the city, all meats, poultry, fish, and vegetables being sold at private markets and stores.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Joliet is the board of health, an independent body, composed of one citizen from each ward of the city, appointed by the mayor and subject to confirmation by the city council. Generally at least one member is a physician. The expenses of the board, either in the absence of or during epidemics, are regulated by the city council, and its authority is at all times sufficient to cover all cases affecting the general health of the city. When there is no declared epidemic a health officer is appointed by the mayor, and confirmed by the council, at a salary of \$100 per annum. He is the executive officer of the board, and has full power to act; he also has police powers. Inspections are generally made as nuisances are reported. When reported nuisances are found to be such they are abated at once by the proper officer.

INFECTIOUS DISEASES.

Small-pox patients are taken to the public pest-house, which is situated outside the city limits. Scarlet-fever patients are quarantined at home. In the case of the breaking out of contagious diseases either in public or in private schools the board can cause the same to be closed. Vaccination is not compulsory nor is it done at the public expense.

REGISTRATION AND REPORTS.

By law all births are registered by the county clerk. The board reports to the city council.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, with its own force, and entirely by hand. The streets are cleaned as often as necessary, and the work is reported as well done. The annual cost of the service is included in the regular street appropriation, no separate account being kept. The manner of disposing of the street-sweepings is not stated.

Removal of garbage and ashes.—Garbage is removed both by the city and by householders, the city doing its part with its own force. There are no special regulations as to the conservancy of garbage while awaiting removal, but it and ashes are not allowed to be placed in the same vessel. The garbage is finally disposed of by being dumped outside the city limits, while the ashes are used for filling holes. No nuisance or probable injury to health is said to result from the manner of handling and disposing of the garbage, and the system is reported to be satisfactory.

Dead animals.—These are removed outside the city limits and buried, but by whom this service is performed is not stated. The carcasses of 75 dogs, 15 horses, and 15 cattle are annually buried at a total cost of \$100.

Liquid household wastes and human excreta.—Most of the liquid household wastes of the city are thrown into privy-vaults, probably about one-third being run into sewers and none into the street-gutters. There are no cesspools. The city is largely supplied with water from artesian wells, which are, on an average, 460 feet in depth, and not affected in any way by the contents of vaults. A large proportion of the houses depend on privy-vaults, there being but few water-closets, one-fourth of which deliver into the sewers. Very few of the privy-vaults are even nominally water-tight. They are cleaned during the night by scavengers, under permits from the board of health, and their contents must be disinfected before removal. The night-soil is taken outside the city limits.

Manufacturing wastes.—There are no regulations regarding the disposal of either solid or liquid manufacturing wastes.

POLICE.

The police force of Joliet is appointed by the mayor, subject to confirmation by the city council, and is governed and controlled by the mayor. The executive officer is the chief of police, salary \$780 per annum, who has general supervision over the force. The remainder of the force consists of 10 patrolmen at \$50 a month each. The uniform is of blue cloth, with brass buttons, and each man provides his own. The patrolmen are equipped with pistols and clubs. They are on duty twelve hours at a time, and patrol 8 miles of streets. The number of arrests for the past year was not stated, but the principal offenses for the same were larceny, burglary, drunkenness, etc. Most of those arrested were fined, and in default of payment sent to "bridewell". The police force is required to co-operate with the fire and health departments only in a general way. Special policemen are appointed by the mayor only for special occasions, their duties and powers being the same as those of the regular force during the time they serve. The yearly cost of the police force (1880) is \$7,000.

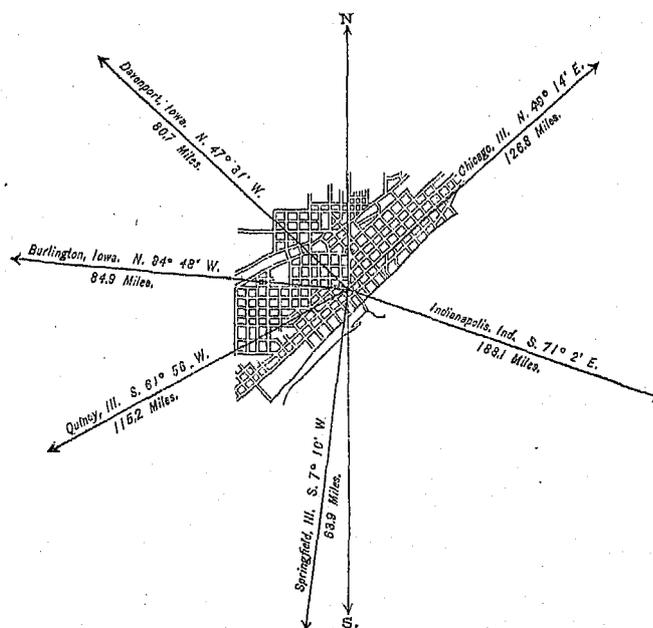
PEORIA,

PEORIA COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	5,095
1860.....	14,045
1870.....	22,849
1880.....	29,259



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	14,567
Female.....	14,692
—	
Native	22,134
Foreign-born	7,125
—	
White	28,765
Colored	*494

* Including 12 Chinese.

Latitude: 40° 43' North; Longitude: 89° 30' (west from Greenwich); Altitude: 433 to 518 feet.

FINANCIAL CONDITION:

Total Valuation: \$6,763,320; per capita: \$231 00. Net Indebtedness: \$716,500; per capita: \$24 49. Tax per \$100: \$4 27.

HISTORICAL SKETCH.

Though the site of the present city of Peoria was visited by La Salle in 1680, during his famous search for the mouth of the Mississippi, it was not until 1819 that the permanent settlement of the place may be said to have begun. In spite of its advantageous position, the growth of the town was slow, and in 1845, when it was incorporated as a city, the population numbered less than 2,000. In 1847 a canal from lake Michigan to the headwaters of the Illinois river was opened, and Peoria sprang into new life. The canal afforded a more convenient access to markets than had previously existed, and a very considerable trade sprang up with Chicago. The river business increased rapidly, and in 1850 there were no less than 60 steamboats engaged at Peoria. Owing to the opposition of the steamboatmen the contemplated running of the Illinois railroad through the city was defeated, and it was not until 1854, when a line was constructed to connect with the Chicago and Rock Island railroad, that Peoria enjoyed railroad communication. Other lines soon followed, and it was not long before the city was well connected with the whole railroad system of the state. Their effect was marked, and the increase in wealth and population of Peoria went steadily forward.

Among the industries of Peoria may be mentioned the distilleries. The first enterprise of the kind was started in 1845, and the business has grown to such an extent that now more proof-gallons of spirits are produced here than in any other city in the country. It is estimated that three-sevenths of all the alcohol exported from the United States is manufactured here. As a natural outcome of the distilleries, the stock-yards have become a necessity, as a way of disposing of the swill, and in 1879 there were 300,000 hogs and 50,000 cattle handled here. The flouring interest has also developed largely, the exports rising from 34,000 barrels in 1850 to 573,500 in 1870.

PEORIA IN 1880.

The following statistical accounts, collected by the Census Office, partially indicate the present condition of Peoria:

LOCATION.

Peoria lies in latitude 40° 43' north, longitude 89° 30' west from Greenwich, on the west bank of the Peoria river, at the head of Peoria lake (formed by the widening of the river), and about 160 miles southwest of Chicago. The altitudes above mean sea-level in the city are, surface of the river 433 feet, and highest point about 518 feet. The river is navigable for steamboats at all stages of water, and communication, by this means, is had with all points on the Ohio and Mississippi rivers and their tributaries.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroad lines:

The Chicago, Burlington, and Quincy railroad, between the points named, and to Omaha, Nebraska, and Kansas City, Missouri.

The Chicago, Pekin, and Southwestern railroad, to Joliet, Illinois.

The Chicago, Rock Island, and Pacific railroad, from Chicago to Omaha, with branches to Atchison, Kansas, and Kansas City, Missouri.

The Illinois Midland railroad, to Terre Haute, Indiana.

The Indiana, Bloomington, and Western railroad, to Indianapolis, Indiana.

The Peoria, Decatur, and Evansville railroad, to Packerburg, Illinois.

The Peoria, Pekin, and Jacksonville railroad, between the points named.

The Rock Island and Peoria railroad, to Rock Island, Illinois.

The Wabash, Saint Louis, and Pacific, from Toledo to Saint Louis, Kansas City, and Omaha.

TRIBUTARY COUNTRY.

Peoria is situated in one of the richest corn-producing districts of Illinois, and the handling of this cereal, as well as the numerous industries connected with it, forms the principal business of the city.

TOPOGRAPHY.

The city is located upon a plateau which rises from the lake to an average elevation of about 85 feet above the water, extending 4 miles along the river and lake, and varying in width from one-half to 1½ mile. Back of this plateau are the "bluffs", which rise from 100 to 125 feet higher. Lake Peoria, formed by the expansion of the river, is 1 mile wide by 20 miles long, and is a beautiful sheet of water. Many residences are built on the bluffs that overlook the river, lake, and surrounding country.

CLIMATE.

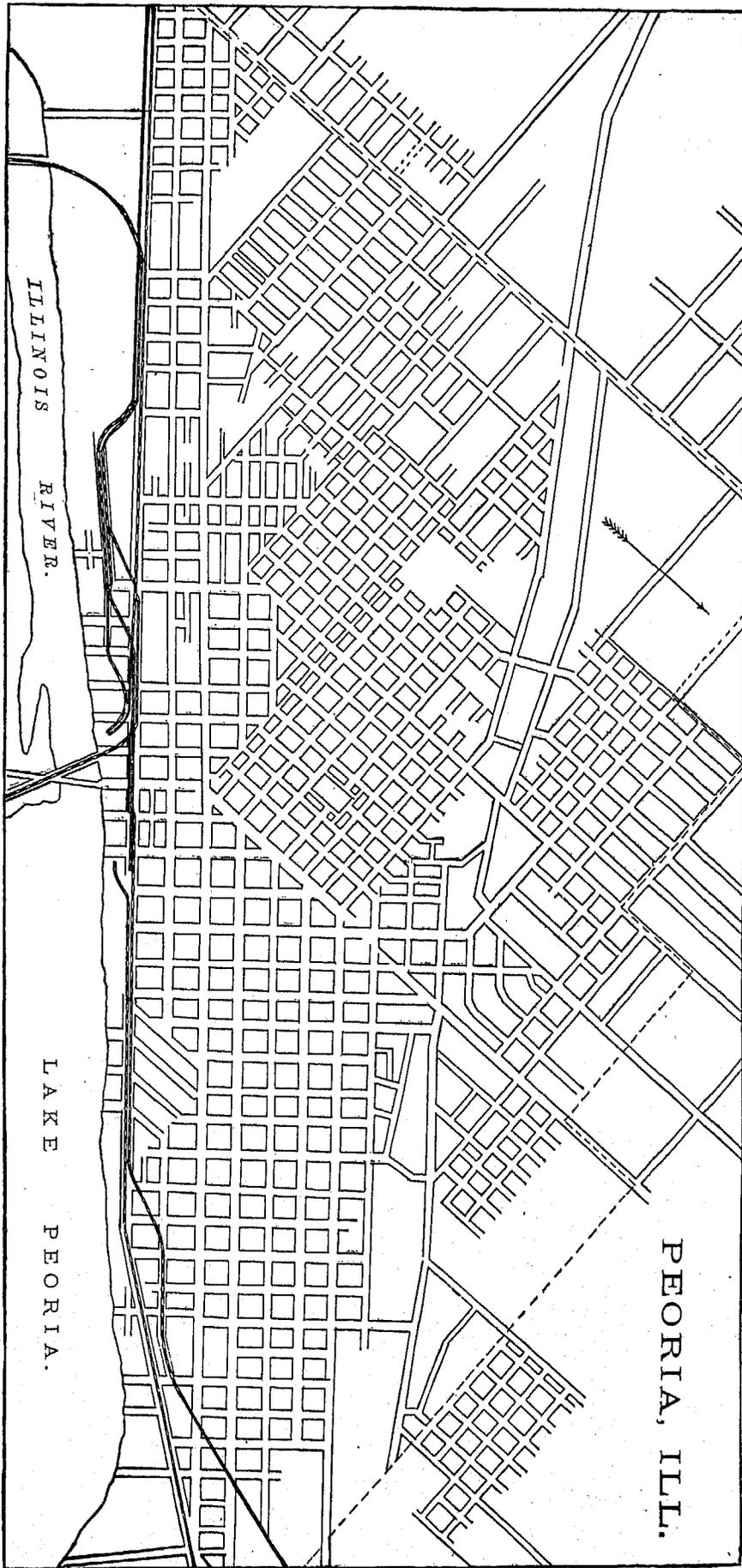
No report on this subject was received. The mean annual temperature, taken from the reports of the Smithsonian Institution, covering a period of over fourteen years, is 51.36°.

STREETS.

The city is laid out in rectangular blocks, and the streets are wide and well graded. No detailed information regarding them was received.

WATER-WORKS.

The water-works are owned by the city, and their total cost was \$450,000. Water is taken from the Illinois river and pumped directly into the mains. The pressure in the pipes is from 60 to 140 pounds per square inch. The average daily consumption is 2,000,000 gallons. The annual cost for maintenance and repairs (1880) is \$18,989, and the yearly income from water-rates, \$24,800. There are 43 miles of pipe and 267 fire-hydrants.



ILLINOIS
RIVER.

LAKE
PEORIA.

PEORIA, ILL.

GAS.

The city is lighted by gas, but no statistics on the subject are given.

PUBLIC BUILDINGS.

No information regarding the municipal buildings was furnished.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is 1 park, area 40 acres, that has just been donated to the city. There are also 2 small squares, each 360 feet square, located in the city. In addition to these there are several parks and pleasure-grounds, owned by private parties, outside the city limits.

PLACES OF AMUSEMENT.

There are 2 halls, each with a seating capacity of about 1,000, called opera-houses, and used for theatrical exhibitions, concerts, lectures, etc. Exhibitions, etc., pay a license to the city, and the annual revenue from this source is \$1,374. There is 1 concert- and beer-garden, with an area of 7 acres, that is well patronized on pleasant Sundays.

DRAINAGE.

No information on this subject was given by the city authorities.

CEMETERIES.

There are 5 cemeteries connected with the city, as follows: *Springdale Cemetery*, area 220 acres; *Saint Mary's Cemetery* (Catholic), area 10 acres; and *Saint Joseph's Cemetery* (Catholic), area 8 acres—all situated about 2 miles from the center of the city; *Hebrew Cemetery*, area 3 acres, 3 miles out; and *Moffat's Cemetery*, area 7 acres, 2½ miles out. There are no church-yards or private burial-grounds in which burials are no longer allowed. Nothing further regarding the cemeteries of Peoria or the manner of interments, etc., could be learned.

MARKETS.

There is one public market—Central market—located on the corner of South Madison and Fulton streets. Its dimensions are 144 x 140 feet, and it cost \$9,000. There are 35 stalls, and the streets around the market are used for standing-places. The stalls rent for from \$75 to \$150 per annum; only part of them are rented, as the rental value of the market amounts but to \$2,200. The market is open every day until 11 o'clock a. m., and about one-quarter of the retail supply of meats, poultry, fish, and vegetables for the city is sold here.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Peoria is the board of health, composed of three members, one of whom is a physician, appointed and controlled by the board of aldermen. The annual expenses of the board of health are \$500, and no provision seems to be made for an increase in case of an epidemic. The board has authority to abate nuisances, to remove infected persons to the pest-house, and to prevent boats and cars from bringing infected persons into the city. The president, salary \$200 per annum, is the chief executive officer of the board. No assistant health officers or inspectors are employed. Inspections are made only as nuisances are reported, and when a nuisance is found to exist it is ordered abated under penalty. The board inspects and corrects defective house-drainage, privy-vaults, cesspools, sources of drinking-water, etc., when it is necessary. The board exercises no control over the conservation and removal of garbage. Burial permits are issued by the president of the board. Excrement must be removed outside the city and buried.

INFECTIOUS DISEASES.

Small-pox patients are removed to the public pest-house, situated in the suburbs. Scarlet-fever patients are quarantined at home and a notice is placed on the door. The board has had no experience in regard to the breaking out of a contagious disease either in public or in private schools. Vaccination is not compulsory, but it has been done at the public expense.

REPORTS.

Every physician, midwife, etc., is required to report all births and deaths to the county clerk, and, by ordinance, to the physician of the board of health.

The board reports annually to the city council, and the report is published.

MUNICIPAL CLEANSING.

Street-cleaning.—There is no regular system of street-cleaning in Peoria. The streets are cleaned by the city as often as required, at an annual cost of \$2,500 per annum.

Removal of garbage and ashes.—Garbage is removed by the householders. There are no rules or regulations governing the matter, but householders are required to keep their premises, and all alleys in the rear of the same, clean. The final disposal of garbage is not stated. Ashes are taken out of the city.

Dead animals.—The carcass of any animal dying within the city is removed outside the limits and buried. It is not stated by whom this service is performed, but the annual cost is said to be \$500.

Liquid household wastes and human excreta.—Most of the liquid wastes of the city go into cesspools, which are porous. When they are filled new ones are dug. About 10 per cent. of the houses are provided with water-closets, a few of which empty into the sewers, while the remainder depend on privy-vaults. The vaults are required to be dug 10 feet deep, and none of them are even nominally water-tight. The water-supply is taken from the Illinois river, above the city, and is not contaminated here; but a fear is expressed that, owing to the pumping of the sewage of Chicago into the headwaters of the Illinois and Michigan canal, whence it flows into the Illinois river, it will be before long. When vaults are cleaned the night-soil is taken outside the city and buried.

Manufacturing wastes, both liquid and solid, are run into the river below the city.

POLICE.

The police force of Peoria is appointed by the mayor, subject to the confirmation of the city council, and is governed by that official. The superintendent of police, salary \$1,000 per annum, is the chief executive officer, and has general supervision over the force, which consists of 1 captain and 28 patrolmen. The captain has a salary of \$900, and the patrolmen receive \$720 each a year. The uniform is blue "Metropolitan", and the men provide their own. Patrolmen are equipped with clubs and revolvers and are on duty twelve hours at a time. During the past year 1,397 arrests were made by the force, the principal causes being, drunk and disorderly, assault and battery, inmates of houses of ill-fame, etc. Of these, 343 were committed to the work-house, 77 were sent to jail, and the remainder were fined. During the year there were 343 station-house lodgers, as against 557 in 1879. Special policemen are appointed, and, when on duty, have the same powers as the regular force. The yearly cost of the police (1880) is \$23,000.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Peoria for 1880, being taken from tables prepared for the Tenth Census by Henry C. Bestor, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	296	\$4, 160, 707	5, 619	313	185	\$1, 507, 606	\$9, 556, 476	\$14, 228, 134
Agricultural implements.....	5	250, 000	241	.....	4	87, 500	217, 000	438, 000
Baking and yeast powders.....	3	9, 200	9	7	.....	5, 675	27, 150	43, 500
Blacksmithing (see also Wheelwrighting).....	15	11, 950	34	.....	.....	13, 936	15, 400	44, 370
Boots and shoes, including custom work and repairing.....	26	8, 025	29	.....	.....	11, 007	10, 750	45, 235
Carpentering.....	22	97, 400	265	.....	.....	96, 827	265, 400	429, 550
Carpets, rag.....	3	1, 700	5	1	.....	2, 555	4, 100	9, 450
Carriages and wagons (see also Wheelwrighting).....	6	66, 000	52	.....	10	26, 200	62, 000	110, 232
Coffins, burial cases, and undertakers' goods.....	5	18, 500	4	.....	.....	1, 550	11, 000	23, 725
Clothing, men's.....	15	160, 750	97	170	.....	64, 045	422, 853	603, 865
Cooperage.....	15	43, 300	210	.....	4	66, 460	103, 391	330, 050
Flouring- u. grist-mill products.....	3	80, 000	20	.....	.....	16, 500	263, 250	309, 500
Foundry and machine-shop products.....	7	142, 100	210	.....	.....	97, 932	124, 100	263, 750
Furniture (see also Upholstering).....	6	41, 700	47	.....	.....	25, 506	41, 735	90, 025
Furs, dressed.....	3	4, 400	7	14	.....	4, 600	3, 300	10, 750
Hairwork.....	3	800	.....	4	.....	560	1, 500	4, 000
Liquors, distilled.....	14	1, 679, 000	1, 070	.....	.....	480, 000	5, 735, 000	8, 106, 000
Liquors, malt.....	3	153, 000	44	.....	.....	16, 695	81, 528	127, 007
Lock- and gun-smithing.....	5	3, 700	12	.....	.....	3, 752	3, 420	12, 300
Lumber, planed.....	4	109, 000	74	.....	3	30, 615	56, 000	120, 500
Marble and stone work.....	8	17, 300	32	.....	.....	16, 650	25, 500	57, 650
Mineral and soda waters.....	3	23, 500	12	.....	2	3, 040	6, 400	15, 300
Painting and paperhanging.....	17	11, 840	50	.....	1	15, 970	24, 050	53, 400
Plumbing and gasfitting.....	6	62, 500	74	1	10	34, 448	103, 500	176, 000
Printing and publishing.....	12	100, 750	121	21	37	82, 089	52, 675	180, 215
Saddlery and harness.....	6	22, 470	37	.....	.....	10, 715	47, 612	94, 518

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products
			Males above 16 years.	Females above 15 years.	Children and youths.			
Slaughtering and meat-packing, not including retail butchering.....	3	\$205,000	174	.....	19	\$15,000	\$713,881	\$756,033
Tinware, copperware, and sheet-iron ware.....	16	81,775	02	.....	1	31,506	80,800	150,050
Tobacco, cigars and cigarettes.....	10	24,525	53	.....	21	30,509	43,092	95,430
Upholstering (see also Furniture).....	3	1,200	4	.....	.....	1,780	1,800	0,800
Wheelwrighting (see also Blacksmithing; Carriages and wagons)....	5	3,400	12	.....	.....	5,272	7,200	15,700
All other industries (a).....	44	725,022	537	.....	80	165,730	889,890	1,301,270

a Embracing awnings and tents; baskets, rattan and willow ware; bookbinding and blank-book making; boxes, cigar; boxes, fancy and paper; bread and other bakery products; brick and tile; brooms and brushes; buttons; coffee and spices, roasted and ground; confectionery; cordage and twine; corsets; drugs and chemicals; electroplating; engraving and die-sinking; flax; glucose; grease and tallow; hats and caps; housefurnishing goods; iron work, architectural and ornamental; lime; looking-glass and picture frames; lumber, sawed; pumps; roofing and roofing materials; safes, doors, and vaults, fire-proof; saws; shipbuilding; shirts; show-cases; soap and candles; starch; stone and earthen-ware; trunks and valises; and wire.

From the foregoing table it appears that the average capital of all establishments is \$14,056 44; that the average wages of all hands employed is \$370 70 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$38,222 24.

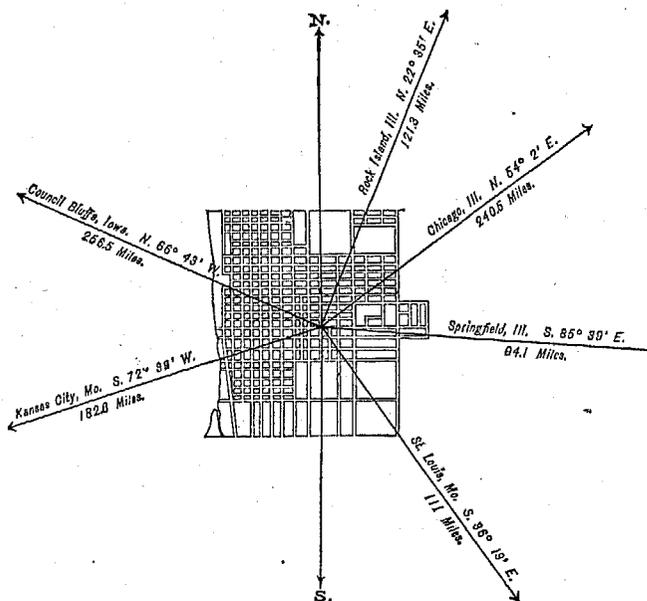
QUINCY,

ADAMS COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,
1830-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	300
1840.....	2,686
1850.....	6,902
1860.....	13,718
1870.....	24,052
1880.....	27,268



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	13,289
Female.....	13,979
<hr/>	
Native.....	20,706
Foreign-born.....	6,562
<hr/>	
White.....	25,760
Colored.....	1,508

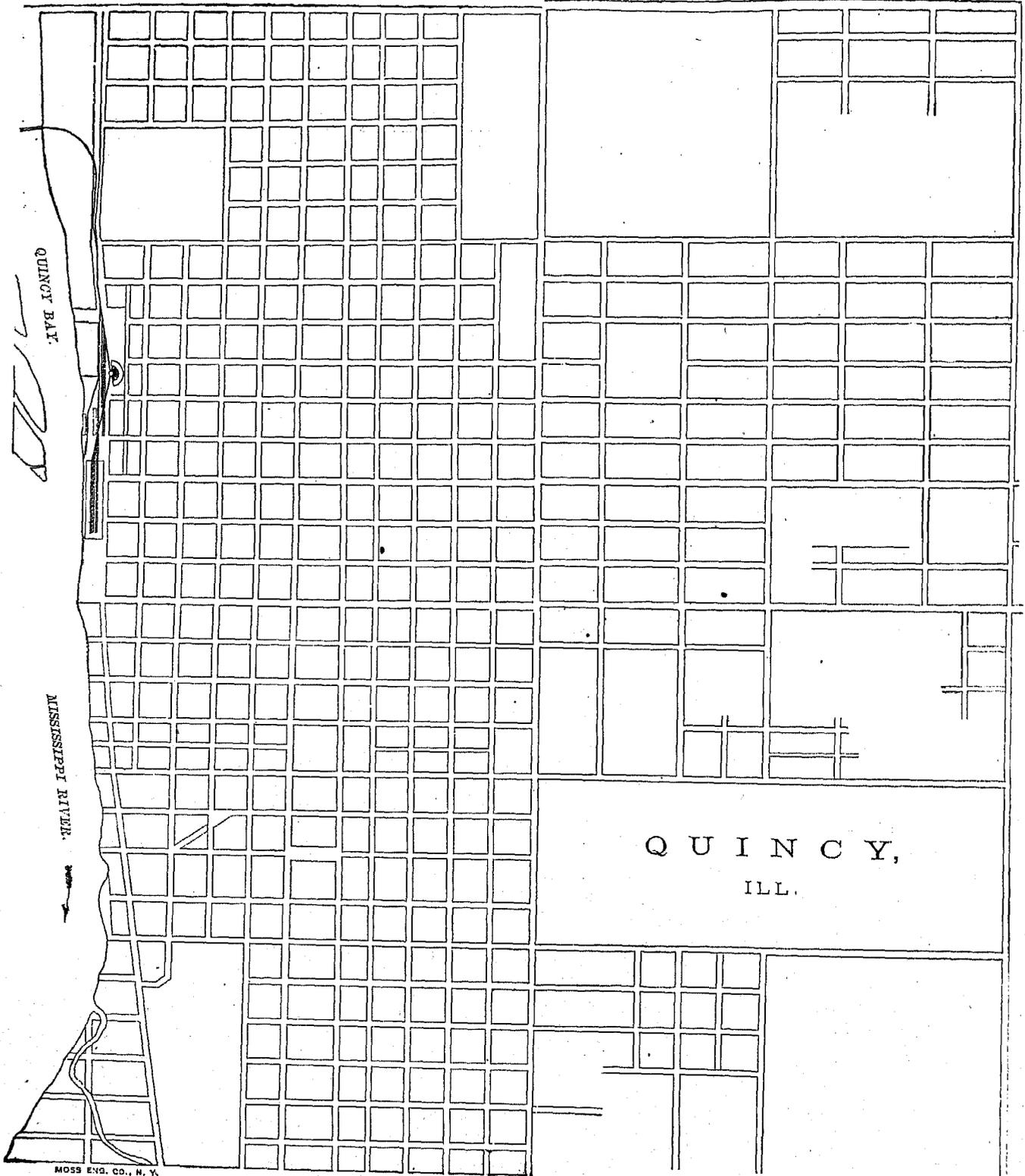
Latitude: 39° 55' North; Longitude: 91° 25' (west from Greenwich); Altitude: 423 to 628 feet.

FINANCIAL CONDITION:

Total Valuation: \$6,487,997; per capita: \$238 00. Net Indebtedness: \$1,917,888; per capita: \$70 33. Tax per \$100: \$0 89.

HISTORICAL SKETCH.

The site upon which Quincy is built was known in the early part of the century as "The Bluffs", or "Old Sauk Village", from the fact that in 1812 a body of Illinois and Missouri troops passed the place on their march from the lower end of the territory of Peoria and found here a deserted village, lately occupied by the Sauk tribe of Indians. But it was not until 1822, when the first log cabin was erected, that the permanent settlement of the town can be said to have taken place. In January, 1825, the legislature provided for the organization of Adams county, fixing its boundaries as they now exist, and appointed commissioners to locate the county-seat. The commissioners decided on the "Bluffs" as the place best calculated for the future convenience and accommodation of the people, and, in honor of the President, christened the embryo town "Quincy". In November of the same year, the town was surveyed and laid off, and on the 13th of December the first sale of lots took place. For ten years the growth of Quincy was not rapid, owing, in a great measure, to her distance from other settlements. In



QUINCY BAY.

MISSISSIPPI RIVER.

QUINCY,
ILL.

1830 the first regular church was organized. In 1832 the Black Hawk war broke out, but it had no appreciable effect on Quincy, except somewhat to increase the number of military titles previously held by the citizens. In 1833 an epidemic of cholera broke out, and, though no record was kept of the number of deaths, 43 cases were reported for July 7, out of a population of about 400. In 1834 the town was incorporated and trustees were elected. In 1837 the first hotel was built, and in 1840 a city charter was granted.

The position of Quincy, on the immediate bank of the river, at the head of the great *Sny Cartee*—a bayou which cuts off access with the river for a long distance below—soon made her the market for a fertile and productive country, now being rapidly settled; while the opening of railroads and the developing of coal-mines in the vicinity insured her subsequent growth and prosperity. The city rapidly increased both in wealth and population, a decided impetus being given during the latter part of the late war, and for a year or two after its close, through influences connected with her location on the borders of Missouri. Considerable capital and some large manufacturing interests (notably of tobacco) were transferred during this period from the neighboring districts of Missouri, not only from considerations of safety, but probably from better prospects for business, while the disturbed condition of the country west of here tended largely to increase the general business of the city.

Quincy has never had any serious conflagration. The greatest loss from any one fire was \$125,000. No local influences have produced periods of depression specially affecting the city, those of 1837, 1857, and 1873 having been felt here in common with the rest of the country. Of the 300 inhabitants in 1830 a considerable majority were from Kentucky, Virginia, and the southern states, though most of the eastern states were partially represented. About 1834 New England people began to arrive, some 50 or more reaching here in the fall of that year. From this period immigration from the New England and middle states far exceeded that from the southern states, and such has continued to be the tendency since. The causes for this change are due to the facts that when the first settlement began the states bordering on the Ohio river had the facilities afforded by water communication, while people from the New England states were obliged to take a long and tedious journey overland by wagon, through a sparsely settled country. It is also stated that the slavery agitation between 1840 and 1850 retarded and finally almost stopped emigration from the slave to the free states. After the opening of railroad communication with the East—about 1852-'54—the tide of eastern comers increased rapidly. Foreign immigration reached here in considerable numbers at an early day, and the increase of population from this source from 1845 to 1860 was specially noticeable. At present the Germans form the bulk of the foreign-born population, the Irish coming next. The percentage of English, French, and other nationalities is small, the increase of the foreign population being chiefly from German immigration.

QUINCY IN 1880.

The following statistical accounts, the materials for which were furnished by J. G. Rowland, esq., and Albert Demaree, esq., the late and the present comptroller, indicate the present condition of Quincy:

LOCATION.

Quincy lies in latitude 39° 55' north, longitude 91° 25' west from Greenwich, on the east bank of the Mississippi river, 160 miles above Saint Louis, and about 110 miles west of Springfield, the seat of government of Illinois. The average altitude of the city is 553 feet above sea-level—the lowest point, on the river-bank, being 423 feet, and the highest point 628 feet above sea-level. The draught of water in the Mississippi here varies with the height of the river, from 2½ to 14 feet usually. The harbor is on the city front open to the river, the levee, or paved landing for steamboats, etc., being 1,600 feet in length. Boats can, however, land at any point on the city front (2½ miles in extent) except in portions of the bay, in the northern part of the city. This bay is a natural harbor, 3½ miles long by 500 feet average width, and when deepened and improved, by dredging or otherwise (a work now being carried on by the United States government), will afford a secure harbor for all the shipping of the upper Mississippi. Extremes of very low water and the highest floods would present minima and maxima of the water-depth beyond the figures given above, but they can be taken as a fair average of variation. Probably the draught in the channel opposite Quincy will average about 6 feet. Average width of channel in front of city 650 feet; average area of cross-section 3,900 feet. The current is about 3 miles per hour, and the channel-flow per second is 15,600 cubic feet. The entire width of the river here is about 3,600 feet. Water communication is open to all points on the Mississippi river and its tributaries.

RAILROAD COMMUNICATIONS.

The following railroads either pass through or terminate in the city:

The Chicago, Burlington, and Quincy railroad, between the points named, and to Omaha and Saint Louis.

The Wabash, Saint Louis, and Pacific railroad, terminal connections at Chicago, Toledo, Saint Louis, and Keokuk.

The Saint Louis, Keokuk, and Northwestern railroad, from Saint Louis to Keokuk.

The Hannibal and Saint Joseph railroad, between the points named, with lines to Quincy and Kansas City.
The Quincy, Missouri, and Pacific railroad, to Milan, Missouri.

TRIBUTARY COUNTRY.

The country adjacent to Quincy was originally mixed prairie and wooded uplands, with timber on the bottom or low lands near the Mississippi river. It is now so generally cultivated that the greater part of this timber, both in the uplands and bottoms, has been removed. The farms and farming implements are excellent, while the yield of the staple grains is above the average. The soil is well adapted to wheat, corn, oats, and hay, the production increasing per acre as better agricultural appliances are introduced and better modes of cultivation are adopted. Hogs, cattle, the cereals above named, hay, dairy products, and fire-wood form the bulk of the trade from the farming district that is tributary to the city.

TOPOGRAPHY.

The site of the city is of the limestone formation, the stone cropping out at all points along the river-bluffs, and yielding an excellent building rock. The overlying soil is about as follows: First 3 or 4 feet, black loam; below that, 6 to 15 feet of clay (good brick-clay); then a mixed clay-and-sand formation, with streaks of sand, for a depth of 60 or 75 feet; and below that the first stratum of limestone. The geological formation may be described as a narrow neck (15 miles wide) of Carboniferous limestone lying between the bituminous coal-basin of Illinois and that of Missouri; the rock conglomerate and compact limestone. The surface of the country is varied by gentle undulations, and broken by water-courses and ravines running to the river through the bluffs. The variations of level cover about 200 feet, but the general plane of the city is about 150 feet above the river. The topography of the surrounding country is the same, with elevations 2, 4, or 6 miles from the city rising from 230 to 260 feet above the river. The highest elevation within the corporate limits is 225 feet above the river. In the bottom-lands adjacent to the Mississippi there are many lakes, ponds, and sloughs that connect with the river at high flood-water. For a radius of 5 miles on the bluffs or uplands 70 per cent. is open, while on bottom-lands timber covers about 60 per cent. of the area. Within this radius one-fourth of the area has a rich black loamy bottom soil, very productive, while the remainder has a good tillable soil, part loam, part clay, some of it, however, beginning to need fertilization.

CLIMATE.

Highest recorded summer temperature, 105°; highest summer temperature in average years, 100.8°. Lowest recorded winter temperature, -22°; lowest winter temperature in average years, -3.75°. Northerly and northwesterly winds bring lower temperature and clear weather. Northeasterly, easterly, and southeasterly winds usually accompany protracted rains. Westerly winds bring cooler and clearing weather. Winds from the south and southwest raise the temperature. Thunder-storms generally come from the south or west.

STREETS.

There are 88 miles of streets in the city, 7 miles being paved with broken stones (macadam) and 8 with gravel. The cost per square yard of each, as nearly as may be estimated, is, for broken stone 36 and for gravel 20 cents. The cost of keeping each in good repair per mile annually is, for broken stone \$542 and for gravel \$121. The gravel road is said to be the easiest to keep clean, and to be better and cheaper than the broken stone. The sidewalks are of brick and stone curbing, the average width being from 12 to 15 feet. The gutters are laid with limestone rock, and are from 5 to 10 feet wide. With the exception of the business portion of the city, trees are planted, as a rule, on all improved blocks, being set 2 feet inside the curbing. Work on the streets is done both by the day and by contract, the former being preferred for repairs and the latter for new work. The annual cost of street repairs is \$8,000. A roller drawn by horses has been used on the streets, and it is reported that not much benefit was realized from it.

HORSE-RAILROADS, ETC.

The horse-railroads in the city have a length of 4½ miles. They use 15 cars and 65 mules, and give employment to 14 men. The rate of fare is 5 cents. Three omnibuses, with 8 horses and 6 men, carry annually 25,000 passengers to all parts of the city at the uniform rate of fare of 25 cents.

WATER-WORKS.

The works for the water-supply are in process of construction, and are owned by a private corporation. The total cost so far is \$114,478 85. The system at present is pumping, the pressure being 90 pounds to the square inch; but a reservoir is to be built with an elevation of 230 feet above the city datum line. The average amount of water pumped per diem is 171,397 gallons, the greatest amount being 435,000 and the least 38,000 gallons. During 1879 the total cost of maintenance was \$6,860 01, and the total income from all sources was \$15,714 26. Only 3 water-meters are in use.

GAS.

The gas-works are not owned by the city. The daily average production is 87,100 feet. The charge per 1,000 feet is \$2 25. The city pays \$30 annually, which includes the lighting, cleaning, and keeping in repair, for each street-lamp, 700 in number.

PUBLIC BUILDINGS.

The city owns and occupies for municipal uses, wholly or in part, 7 engine-houses, 3 market-houses, 8 public-school buildings, 1 hospital, 1 house of correction, and 1 police station. The total cost of these buildings is given at \$300,000. There is no city hall proper, the city offices being located over one of the engine-houses.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the public parks in Quincy is 30 acres. They are 5 in number, and, except one of 15 acres, which is projected but not yet improved, are too small for driving purposes. They are scattered over the city, 2 being suburban and 3 centrally located. The latter are well improved, and are resorted to largely by the people. The land for these parks was donated to the city, and the cost of improvements has been \$10,000. The parks are controlled by the usual police regulations.

PLACES OF AMUSEMENT.

There are two theaters in the city—the Opera-house, seating capacity 1,500, and a small variety theater, with a seating capacity of 300. The Academy of Music, recently burnt, was also used as a theater. Each exhibition or performance pays a license to the city of \$5. There are 3 halls used for concerts and social entertainments, and 6 minor halls used for lodge-rooms and sometimes for lectures. There are 5 concert- and beer-gardens in or near the city. Of these, 2 are in the suburbs, 1 occupying several acres, established in 1860, costing \$8,000, and seating 2,000 persons, and the other, rather smaller, established in 1870, and cost \$6,000, and 3 in the city, having an aggregate seating capacity of 600, costing \$4,500, and built about fifteen years ago. All these gardens are largely patronized during the summer months.

DRAINAGE.

There are no sewers in Quincy at present, but there soon will be, as work on a system of sewerage has been begun.

CEMETERIES.

Quincy has 5 cemeteries now in use, as follows:

Woodland Cemetery, area 38 acres, owned by the city, is situated on the bluff overlooking the river, and at an average elevation of 80 feet above low-water mark. A very large proportion of the lots are 20 feet square, and originally sold for \$10 each; they now sell for \$100 each, and most of the available ones have been disposed of. The cemetery has been in use about thirty years, and was named in honor of Hon. John Wood, the first white settler in the city.

Saint Boniface Cemetery, area 6 acres, owned by the German Catholic churches, is situated on State street, 175 feet above low-water mark. Lots are 15 by 15 feet, sell for \$25 each, and most of them have been disposed of. The cemetery has been in use 22 years.

Saint Peter's Cemetery, area 11 acres, owned by the Irish Catholic church, is situated just outside the city limits, and 169 feet above low-water mark in the river. It has been in use six years. It is laid off regularly in blocks 33 feet square, divided into four lots each, with a 5-foot avenue between the blocks. The lots sell for \$33 each.

Hebrew Cemetery, area 6 acres, situated near Saint Peter's, and 200 feet above low-water mark, is owned by the Jewish congregations in the city, and has been in use six years. Lots are regularly laid off 20 feet square, and sell for \$25 each.

Green Mount Cemetery, area 13½ acres, outside the city limits and 90 feet above low-water mark, is owned by the Salem German Protestant church, and has been in use 7 years. The lots are 20 feet square, and sell for \$20 each.

In addition to these there are 4 old cemeteries in which burials are no longer made, and from which most of the bodies have been removed, as follows: Old Hebrew cemetery, Old Saint Boniface cemetery, Old Public cemetery, and an old burial-ground near where the court-house now stands.

The record of interments is very imperfect, none having been kept previous to 1877, and none during 1878-79. During 1880 the interments were Woodland, 251; Saint Boniface, 133; Saint Peter's, 40; Green Mount, 41; and Hebrew, 2. Burial permits are granted, on certificates of death signed by the attending physicians, by the board of health, which also issues permits for the removal of any body from the city. No body can remain in the vault of Woodland cemetery for a period longer than four weeks, unless by special consent of the mayor.

MARKETS.

In reply to the schedule of interrogatories asking for information on this subject, Comptroller Demaree says:

The city of Quincy, Illinois, owns 3 market-houses, but for the past three years the use of them for the ordinary purposes of market-houses has been abandoned. They are rented by the year to private individuals. One of them is used as a wholesale hat and fur store, and the other two as butcher-shops. Fresh meat, fish, and vegetables are sold in any part of the city, vegetables in nearly all grocery stores and from the garden-wagons. Fresh meat is sold in butchers' shops in various parts of the city, 28 in number, paying to the city an annual license of \$25 each. There are also 5 stands or stores for the sale of fresh fish, each of which pays an annual city license of \$5. There is no time fixed by ordinance for the opening or closing of butcher-shops, and the ordinances in force for the protection of the public against unwholesome meat and decayed vegetables are practically a dead letter, and no effort is made by the health department to enforce the law. Every purchaser must be the judge as to the wholesomeness or otherwise of meat or vegetables purchased.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Quincy is the board of health, composed of the mayor and 2 aldermen, with 4 citizens and 1 health officer appointed annually by the city council. This year 5 of the members of the board are physicians. In ordinary times the annual expenses of the board are \$800 for scavenger work, for removing and burying dead animals, and for salary of health officer, but at no time must the board increase its expenses beyond the amount appropriated, unless by special permission of the council. The board has power by ordinance to do all things necessary to promote the health and general cleanliness of the city, to abate nuisances, and to use any measures it may deem fit to prevent the introduction of any disease of an infectious or contagious nature. The health officer, salary \$200 per annum, is the chief executive officer of the board, and sees that its regulations, as well as the health ordinances of the city, are enforced; he is secretary of the board, and keeps a complete record of its proceedings. No assistant health officers or inspectors are employed, but the city marshal is required to act as a sanitary policeman, and for this service receives an extra compensation of \$240 per annum. No regular inspections are made, nuisances being inspected when reported, or as they may come under the observation of the sanitary policeman. When nuisances are found to exist, the owner of the property is served with a written notice from the health officer to abate the same. The board meets regularly once a month and transacts its business as a deliberative body; the board does nothing regarding the inspection and correction of defective house-drainage, privy-vaults, cesspools, and sources of drinking-water unless complaints are made. The board has full control over the conservation and removal of garbage. The board, through the health officer, issues burial permits on certificate of attending physician stating cause of death, etc.

INFECTIOUS DISEASES.

Small-pox patients are quarantined at home, and a placard is placed on the house to warn the public. Physicians are requested to report all cases of small-pox or other infectious or contagious disease to the health officer within 12 hours after the same comes to their notice. Vaccination is compulsory only to children attending the public schools, but it is not done at public expense.

REPORTS.

The board is required to keep complete mortuary records. The board reports to the city council once a year, and the report is published with the annual reports of the city officials.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city and with its regular force. The work is done wholly by hand, no sweeping-machines being used. The cleaning is done whenever it is deemed necessary, and its efficiency is stated to be "just passable". The annual appropriation for the work is \$10,000, and the sweepings are used to fill lots.

Removal of garbage and ashes.—Garbage is removed by the city under contract. While awaiting removal it is required to be kept in tight barrels or tubs, in a place convenient for removal and unmixed with any ashes, soot, or house-dirt. It is taken out of the city and fed to pigs. It is removed twice a week. The ashes are also removed by the city and used for fillings. The cost for the service during the past year was \$490. It is stated that neither nuisances nor probable injury to health, to any great extent, result from the manner of handling or disposing of the garbage, and if the contract is faithfully executed the system is considered a good one.

Dead animals.—The carcass of any animal dying within the limits of the city is required to be removed by the owner. When the owner can not be found the work is done by the board of health, the carcass being generally thrown into the river. The cost of the service annually is very small, and no record is kept of the number of dead animals so disposed of.

Liquid household wastes.—Nearly all the liquid household wastes in the city are either thrown into cesspools or run into the street-gutters. The cesspools are stated to be nominally tight; they are not provided with overflows; generally receive the wastes from water-closets, and their cleaning is left to the judgment of the householders. The gutters are very seldom flushed, but they are cleaned by the street force.

Human excreta.—A large majority of the houses depend on privy-vaults, there being but few water-closets, which nearly all deliver into cesspools. Very few of the vaults are even nominally water-tight. They are cleaned out under contract, and the night-soil is deposited in the river. The dry-earth system is not used at all.

Manufacturing wastes, both liquid and solid, eventually find their way into the river.

POLICE.

The chief of police, sergeants, and detectives are appointed annually by the city council, the patrolmen are appointed by the chief with the concurrence of the council, and the force is governed by the mayor and chief of police, under the ordinances. The chief of police, salary \$900 per annum, is the commanding officer of the force, and his duties are to see that the laws and ordinances are enforced by the men under his command. The rest of the force and the salaries of each grade are as follows: 2 detectives, \$60 per month; 2 sergeants, \$54 per month; 9 patrolmen, \$45 per month; and 1 turnkey, \$30 per month. The uniform consists of a dark-blue coat, vest, and pantaloons, with brass buttons, and a black soft felt hat; it costs, complete, including overcoat, \$45, and the men provide their own, the city furnishing the buttons. The patrolmen are equipped with revolvers and clubs, and their hours of duty are from 8 p. m. to 5 a. m.

During the past year 1,249 arrests were made by the force, the principal causes being: Disturbing the peace, 285; drunkenness, 252; inmates of houses of ill-fame, 142; larceny, 48; vagrancy, 206, etc. Of these, 426 were fined, 326 committed, 394 discharged on probation, and the remainder variously disposed of. There were 161 station-house lodgers during the year, as against 891 in 1879. The force is required to assist the fire department when occasion requires. Special policemen are appointed by the mayor or chief whenever their services may be required. Private watchmen in the employ of railroads, manufacturers, etc., are appointed special policemen, but have nothing to do with the regular force. The yearly cost of the police force (1880) is \$9,187 15.

FIRE DEPARTMENT.

The following, regarding the fire department of Quincy, is taken from the last annual report of the chief engineer:

The manual force of the department consists of 1 chief engineer, 9 permanent firemen, and 19 minute-men. The apparatus consists of 3 steam fire-engines, 4 hose-reels, and 1 chemical engine. In addition there are 2 volunteer hand-engine companies. During the past year there were 42 alarms of fire, 7 of which were false. The loss by fire and water was \$90,411, more than one-half this amount having been caused by one fire, and a loss of \$22,000 at another. The total expenditure on account of the department for the year was \$15,734 08.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Quincy for 1880, being taken from tables prepared for the Tenth Census by A. L. Langdon, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	318	\$4,078,200	2,866	151	309	\$1,271,995	\$5,080,880	\$8,103,277
Agricultural implements.....	5	160,000	137			62,326	66,019	174,000
Blacksmithing (see also Wheelwrighting).....	10	3,150	16			4,274	4,075	13,050
Boots and shoes, including custom work and repairing.....	18	5,075	25		2	8,063	8,435	23,130
Boxes, wooden packing.....	3	16,500	28	8		10,000	15,550	26,240
Bread and other bakery products.....	10	56,850	93	17		33,375	134,565	189,785
Brick and tile.....	10	25,400	68		2	15,180	7,660	29,250
Carpentering.....	15	20,550	69		1	26,550	42,325	95,175
Carriages and wagons (see also Wheelwrighting).....	5	277,000	193		20	86,355	150,639	351,800
Clothing, men's.....	12	30,500	58	1	1	23,250	45,000	93,500
Cooperage.....	30	23,200	139		2	32,725	60,460	128,975
Drugs and chemicals.....	8	33,000	29	2	2	12,690	18,700	49,500
Flouring and grist-mill products.....	9	289,000	99			60,725	1,555,921	1,723,365
Foundry and machine-shop products.....	11	809,900	425		15	213,319	300,820	954,484
Furniture.....	7	199,300	197	10	12	87,750	59,500	194,700
Lime.....	5	51,500	93			35,505	70,832	140,675
Liquors, malt.....	7	406,650	88			39,970	171,871	306,980
Looking-glass and picture frames.....	3	4,300	5		1	1,470	5,500	11,000
Lumber, planed.....	4	62,000	126		4	39,000	69,000	187,000
Marble and stone work.....	4	9,700	61			16,000	24,200	42,200
Painting and paperhanging.....	8	5,950	49			14,040	11,890	31,584

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Photographing.....	5	\$13,500	10	8	.....	\$4,790	\$4,335	\$17,950
Printing and publishing.....	4	54,000	80	4	17	50,820	87,500	135,900
Saddlery and harness.....	12	49,650	63	.....	.....	24,211	53,776	95,300
Slaughtering and meat-packing, not including retail butchering.....	4	130,000	100	.....	1	18,500	836,000	987,650
Tinware, copperware, and sheet-iron ware.....	16	32,750	42	.....	4	15,674	36,550	78,300
Tobacco, chewing, smoking, and snuff (see also Tobacco, cigars and cigarettes).	4	740,250	161	75	178	151,075	822,335	1,170,070
Tobacco, cigars and cigarettes (see also Tobacco, chewing, smoking, and snuff).	25	34,625	85	.....	10	31,830	38,002	102,200
Wheelwrighting (see also Blacksmithing; Carriages and wagons)...	9	9,600	26	.....	1	10,250	10,100	26,550
All other industries (a).....	37	414,300	301	31	36	145,763	397,074	737,464

a Embracing awnings and tents; bone, ivory, and lamp-black; bookbinding and blank-book making; brass castings; brooms and brushes; coffee and spices roasted and ground; coffins, burial cases, and undertakers' goods; dyeing and cleaning; files; hairwork; hats and caps; lead, bar, pipe, sheet, and shot; lumber, sawed; mattresses and spring beds; mineral and soda waters; musical instruments, organs and materials; paper; saws; shirts; show-cases; soap and candles; steam fittings and heating apparatus; stencils and brands; stone and earthen-ware; trunks and valises; vinegar; windmills; and wooden ware.

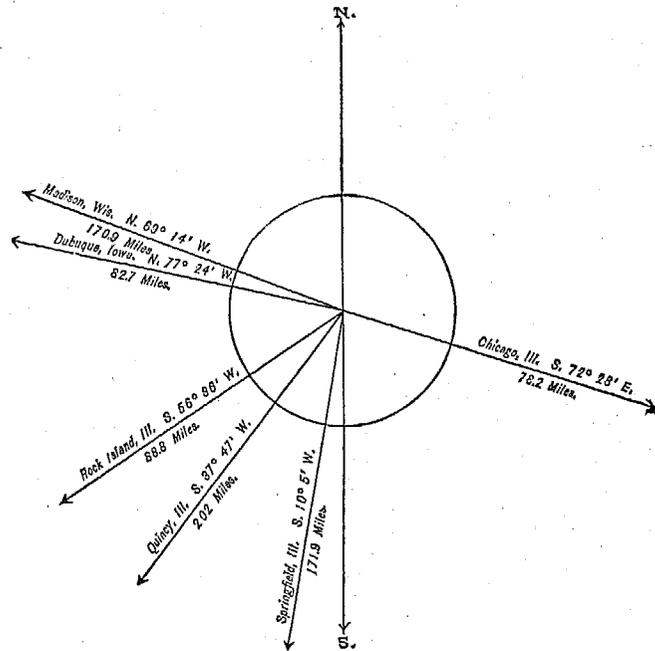
From the foregoing table it appears that the average capital of all establishments is \$12,824 52; that the average wages of all hands employed is \$382 43 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$20,775 36.

ROCKFORD,

WINNEBAGO COUNTY, ILLINOIS.

POPULATION
IN THE
AGGREGATE,
1850-1880.

Year	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	2,093
1860	6,979
1870	11,049
1880	13,129



POPULATION
BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	6,263
Female	6,866
Native	9,857
Foreign-born	3,272
White	13,030
Colored	99

Latitude: 42° 15' North ; Longitude: 89° 5' (west from Greenwich); Altitude: 707 feet.

FINANCIAL CONDITION.

Total Valuation: \$3,508,647; per capita: \$267 00. Net Indebtedness: \$178,090; per capita: \$13 56. Tax per \$100: \$2 94.

HISTORICAL SKETCH.

In 1834 two white men, with their families, took up land on Rock river, and in the following year a family crossed the river, taking a farm on the opposite side. In this latter year about 20 settlers arrived, and the nucleus for the future city of Rockford was formed. In 1844 the Rockford Hydraulic Company was organized, and a dam 800 feet long was built across the river. This improvement insured the manufacturing interests of the place, and when the Chicago and Northwestern railroad reached here the future prosperity of Rockford was assured. Prior to the advance of white settlers, a large area of land on Rock river had been reserved for "Polanders", but there being no emigration the termination expired, and northern Illinois became occupied by men of industry, enterprise, and capacity. The chief industry is the making of agricultural implements, but there are also furniture factories, a watch manufactory, cotton- and woolen-mills, and several flour-mills.

ROCKFORD IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of the city:

LOCATION.

Rockford lies in latitude 42° 15' north, longitude 89° 5' west from Greenwich, on both sides of the Rock river, in the northern part of the state of Illinois, and about 90 miles by rail west of Chicago. The elevation of the city above sea-level, as given in the reports of the Smithsonian Institution, is 707 feet. The navigation of the river, on which the city lies, is interrupted by draws, but should a steamboat require to pass the draw at Rockford the expense of getting her from the water below to that above would have to be paid by the owners of the draw. The Rock river empties into the Mississippi about 2 miles below Rock Island.

RAILROAD COMMUNICATIONS.

The city is touched by the following railroad lines:

The Chicago and North western railroad—one division, to Freeport, Illinois, connecting with the Illinois Central for Dubuque, Iowa, and the other division to Kenosha, Wisconsin.

The Chicago and Iowa railroad, to Forreston, Illinois.

The Chicago, Milwaukee, and Saint Paul railroad has extended its line from Milwaukee to Rockford, thereby competing with the Northwestern road.

TRIBUTARY COUNTRY.

In addition to the manufacturing interests of Rockford, which have developed to a marvellous extent, the country immediately tributary to the city is an agricultural one. The production of wheat, barley, rye, and oats has decreased from 40 bushels to 10 and 12 bushels per acre. This decrease has been in the last twenty years, and is said to be owing to the fact that farmers have neglected the fertilization of their land and so have impoverished the soil. The exportation of hogs, cattle, butter, and poultry to markets varying from New England to California has enriched the agriculturists of the surrounding country and made them satisfied. Though the soil has decreased in fertility, yet the corn crop holds its own.

TOPOGRAPHY.

Winnebago county, of which Rockford is the capital, consists of prairies bounded by elevated ridges of land. The underlying rock is of limestone formation. Acres of woodland in the adjacent townships are covered with forest timber. The hill-slopes and broad prairies are now no longer flooded, and all farm lands have natural drainage. The old marshes and swampy lands have dried up, and are now productive.

CLIMATE.

Highest recorded summer temperature, 106°; highest summer temperature in average years, 95°. Lowest recorded winter temperature, -27°; lowest winter temperature in average years, -18°. In the early settlement of the country the winds were very strong, but the spread of timber, by planting and cultivation, has diminished the force of the aerial currents, and now tornadoes are not frequent.

STREETS.

There are 125 miles of streets in the city, and of these, 25 miles are paved with broken stone and 5 miles with gravel. The cost per square yard of each, as nearly as may be estimated, is, for broken stone \$1 and for gravel 50 cents. The cost of keeping broken stone in good repair is 5 cents per yard, and gravel 3 cents per yard. Broken stone is reported as being much the easier to keep clean, while in point of quality and permanent economy it is said to be far superior to gravel. The sidewalks are of wood and stone, and the gutters are of stone. Trees are planted along the sides of the streets, being set 8 feet from the street line. All street work is done by day labor, and the annual cost is about \$10,000. Day work is preferred, as it is considered that more satisfactory results are obtained for the money expended. All stone-breaking is done by hand. There are no horse-railroads in the city. An omnibus line, with 14 vehicles and 40 horses, and giving employment to 10 men, annually carries about 18,000 passengers at a rate of fare of 25 cents.

WATER-WORKS.

The water-works are owned by the city, and their total cost was \$260,000. Water is taken from springs, though a supply-main runs to the river in case of failure of the regular supply. The water is pumped directly

into the pipes, on the Holly system. The pressure is ordinarily 60 pounds to the square inch, but in case of fire this can be raised from 120 to 150 pounds to the square inch. The number of gallons pumped per diem is 1,500,000, the least being 1,000,000 and the greatest 2,250,000. The average cost of raising 1,000,000 gallons one foot high is $14\frac{24}{100}$ cents. The yearly cost of maintenance, aside from the cost of pumping, is \$300, and the yearly income from water-rates is \$8,000. Water-meters are not used.

GAS.

The gas-works are owned by a private person. The daily average production is nearly 28,000 cubic feet. The charge per 1,000 feet is \$2 70 net, but in case of large consumers only \$2 50 is charged. The city pays \$27 60 per year, which includes every thing—as repairs, lighting, etc.—for each street-lamp, 300 in number.

PUBLIC BUILDINGS.

The city owns and occupies 3 engine-houses and 8 school-houses, the total cost of these being \$125,000. There is no city hall. The city rents for its offices rooms in the county court-house, which is a large stone edifice occupying, with its surrounding grass plat, an entire block, except the space at the corner occupied by the county jail.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 2 public parks in Rockford, area about 2 acres each, and centrally located, one on each side of Rock river. The land covered by these parks was deeded to the city by the former owners. A board of commissioners has just been appointed to control the parks, with a view to improving them. The court-house square serves some of the purposes of a park, and there are some small plats at the intersections of diagonal streets that have been improved.

PLACES OF AMUSEMENT.

There are 2 public halls in the city, with a seating capacity of 700 each, used for theatrical exhibitions, concerts, lectures, etc. They pay no license to the city. There are no concert- and beer-gardens.

DRAINAGE.

There are no public sewers of any importance, except one draining the county buildings, with which adjacent owners have been permitted to make connections. Water is conveyed to the river mainly by surface gutters.

CEMETERIES.

There are 2 cemeteries of considerable extent on either side of the river, just above the city, and much taste has been displayed in their adornment. There is also a Catholic cemetery contiguous to the West cemetery. No information regarding the size of the cemeteries or the number of interments made was furnished.

The company controlling the West cemetery sets apart from the sale of lots a fund to furnish an income after the sale of lots cease, that the grounds may be perpetually well kept.

MARKETS.

There are no public or corporation markets in the city.

SANITARY AUTHORITY.

The sanitary needs of Rockford are looked after by the police marshal, who receives a special salary of \$200 per annum for his services as health officer. He is appointed by the mayor, with the consent of the council. He makes frequent inspections, and when nuisances are reported or discovered they are removed. In the case of defective house-drainage, privy-vaults, cesspools, or sources of drinking-water, the health officer orders the same to be corrected by the owner, and if it is not done then, the health officer has the correction made, and the expense is assessed on the property. The health officer exercises control over the conservation and removal of garbage only when it becomes a nuisance or endangers public health. Physicians report all cases of contagious diseases to the health officer, who makes any necessary arrangement. The system of registration of births, diseases, and deaths is attended to by the county officers.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets of the city are cleaned with its own force, and entirely by hand. The cleaning is done when it is required, and the expense, which is small, is included in the general street appropriation.

Garbage and ashes are removed by the householders, but when complaints are made the health officer causes it to be done.

Dead animals.—A piece of ground is rented by the city, in which is buried the carcass of any animal dying within the city. The health officer causes the carcasses to be removed, and the total cost of the service for the year 1879-'80 was \$54 50.

Liquid household wastes, etc.—With the exceptions of the statements that but very little of the liquid household wastes deliver into sewers and that there are but few water-closets, no information regarding the disposal of liquid household wastes, human excreta, or manufacturing wastes was furnished. The principal manufactures have no wastes, except fragments of wood or metal, and these are utilized. The small amount of liquid wastes goes off into the river, with no perceptible effect.

POLICE.

The police force of Rockford is appointed by the mayor and confirmed by the council. The chief executive officer is the city marshal, salary \$800 per annum, who has general supervision of all police business. The remainder of the force consists of 7 assistant marshals at \$600 a year each. The uniform is of dark-blue-cloth with a great many brass buttons. The cost of the uniform is \$59, and is furnished by the city. The men are equipped with pistols and clubs. They are on duty 10 hours out of the 24, and patrol about 3 miles of streets. During the past year 250 arrests were made, the principal causes being drunkenness, disorderly conduct, and violating liquor ordinances. These cases were finally disposed of either by fines or by imprisonment. During the same time there were 300 station-house lodgers, as against 450 in 1879. Free meals to the value of \$20 were furnished to station-house lodgers during 1880. The police assist the fire department by guarding property at all fires, and as the marshal has been health officer for many years, he has the force to assist him. Special policemen are appointed in the same manner as the regular force and have the same powers. The yearly cost of the police force under the old system was \$2,854 43, but the cost under the present system is not given.

FIRE DEPARTMENT.

The manual force of the department consists of 1 chief and 2 assistant engineers, 24 company officers, and 162 men—a total of 189. The apparatus consists of 1 hand-engine, 9 hose-carts, and 1 hook-and-ladder truck. The public water-supply is by the Holly system, by which a fire-pressure is communicated to the hydrants. There are 4,300 feet of hose in use. There were nine alarms of fire during the year ending May 5, 1879, and the loss by fire was \$1,600. The total cost of the department during the same time was \$2,038 25.

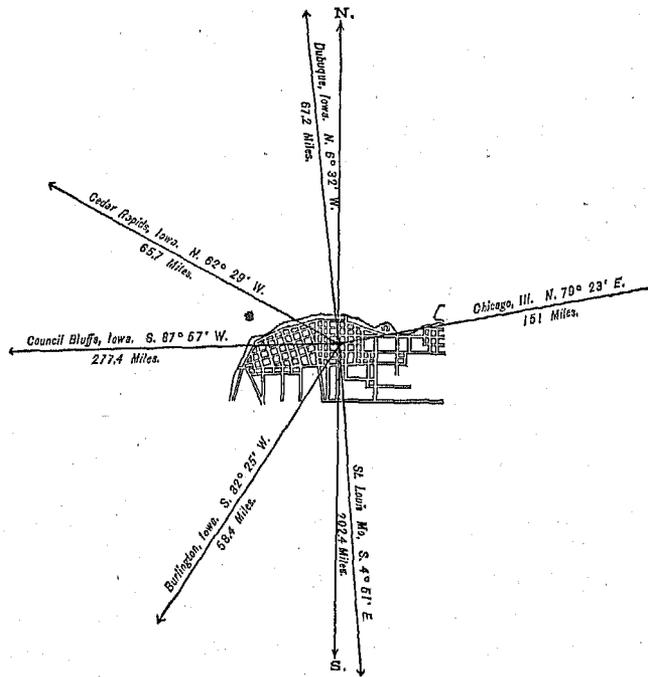
ROCK ISLAND,

ROCK ISLAND COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,
1850-1880.

Year	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	1,711
1860.....	5,130
1870.....	7,890
1880.....	11,659



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	5,874
Female.....	5,785
Native.....	8,308
Foreign-born.....	3,351
White.....	11,475
Colored.....	*184

* Including 2 Chinese and 2 Indians.

Latitude: 41° 32' North; Longitude: 90° 31' (west from Greenwich); Altitude: 546 to 734 feet.

FINANCIAL CONDITION:

Total Valuation: \$2,462,702; per capita: \$211 00. Net Indebtedness: \$289,050; per capita: \$24 79. Tax per \$100: \$3 95.

HISTORICAL SKETCH.

The city of Rock Island takes its name from an island in the Mississippi river nearly 3 miles long and averaging half a mile in width. Here was the chosen camping-ground of the Sac and Fox Indian tribes, and it was not until the year 1832, at the close of the Black Hawk war, that they departed for a region west of the Mississippi. The island was first occupied by the whites in 1816, during which year fort Armstrong, consisting of a series of block-houses, was erected on the lower end, directly opposite to the place where the city of Rock Island now stands. It no longer exists, but during the Black Hawk war it was a special place of interest and security, where the early pioneers used to rendezvous when the signal of alarm was given. Originally the island was a military and trading post, but in 1825 the government made it a military reservation, and in 1839 it was surveyed and a report was filed in the War Department recommending it as a suitable place for a United States armory. No definite action was taken till 1861 or 1862, when it was selected and designated by act of Congress as the site for a western arsenal out of

six strong and urgent competitors within the limits of Illinois. The civil war being in progress at this time, the island was selected by the War Department as a military prison, and no less than 14,000 confederate prisoners were held there at different times during the war.

The first house within the present city limits of Rock Island was erected in 1826 by George Davenport and Russell Farnham, Indian traders, the location being known as Farnhamburg. The vicinity was gradually settled by the early pioneers, who came there in order to be within the protection of fort Armstrong. In 1835 the commissioners of Rock Island county, under authority from the state legislature, entered at the Galena land-office a fractional quarter-section of land in what is now the central part of the city, and laid out a town called Stephenson, which was made the county-seat. An act of the state legislature passed in March, 1841, changed the name to Rock Island, and incorporated it as a town, under a board of 9 trustees; in 1849 it was incorporated as a city. The present city government, adopted in March, 1880, is under the general incorporation act of the state.

The main channel of the Mississippi is on the west side of Rock island. The east channel has been dammed so as to produce an immense water-power and to form a good harbor below. These improvements were made in the most durable manner at government expense, and the right was thus acquired by the United States to three-fourths of the power. The availability of this power, together with the central location of Rock island, the abundance of fuel and building materials, and the fact that Rock Island city is a central market for iron, steel, copper, lead, wood, and leather, the principal materials used in the manufacture of arms and accouterments, induced the government to enter upon the construction on Rock island of the most extensive armory and arsenal in the country. The bridges establishing communication with Rock Island city on the Illinois shore and Davenport on the Iowa shore have already been built. They are of iron, with a passage for railway trains above and for vehicles below. The cost of these bridges was over \$1,000,000, a portion of which was borne by the Chicago, Rock Island, and Pacific railroad; they are among the finest in the country. Besides this the government has laid out streets and avenues, so that the island, which is well wooded, is quite a pleasure resort. In all there are ten extensive shops on the island, built of Joliet stone roughly dressed.

The advantages furnished by this immense water-power have been utilized by Rock Island and Moline (a thriving manufacturing city east of and adjoining Rock Island) to such an extent that they, with Milan (formerly Camden), which lies southwest of Rock Island, make this one grand center of business and manufactures. The communication afforded with all markets east, north, south, and west by the Mississippi river and the railroads passing through the city of Rock Island, combined with its natural resources, sufficiently explain its past and present prosperity, and indicate a prosperous future. The first railroad, the Chicago and Rock Island, came into the city in 1856; up to that time the city had made slow progress as to wealth and population, but since then it has had a steady and rapid growth.

The city has suffered from no fires of any magnitude. There have been only two serious depressions in business—one from 1837 to 1840, and the other from 1857 to 1862, during which time Rock Island suffered in common with the whole country. The depression of 1873 was of short duration there. The early settlers represented all parts of the United States, the New England element being in the majority; at present a good share of the population is foreign-born, coming mainly from Germany, Ireland, and Sweden.

ROCK ISLAND IN 1880.

The present condition of Rock Island is indicated by the following statistical accounts collected by the Census Office:

LOCATION.

Rock Island lies in latitude $41^{\circ} 32'$ north, longitude $90^{\circ} 31'$ west from Greenwich, on the left bank of the Mississippi river, and 180 miles west of Chicago. The average altitude above sea-level is 556 feet, the lowest point being 546 feet and the highest (the general level of the bluffs) 734 feet above sea-level. The river here is navigable, the draught of water varying from 4 feet at extreme low water to 16 feet at high water. The harbor capacity is one-half mile of river levee; opposite the city the river is 3,800 feet wide and navigable from shore to shore. The current averages, for all stages of water, about $1\frac{1}{2}$ mile per hour. The city has water communication with all points on the Mississippi river and its tributaries.

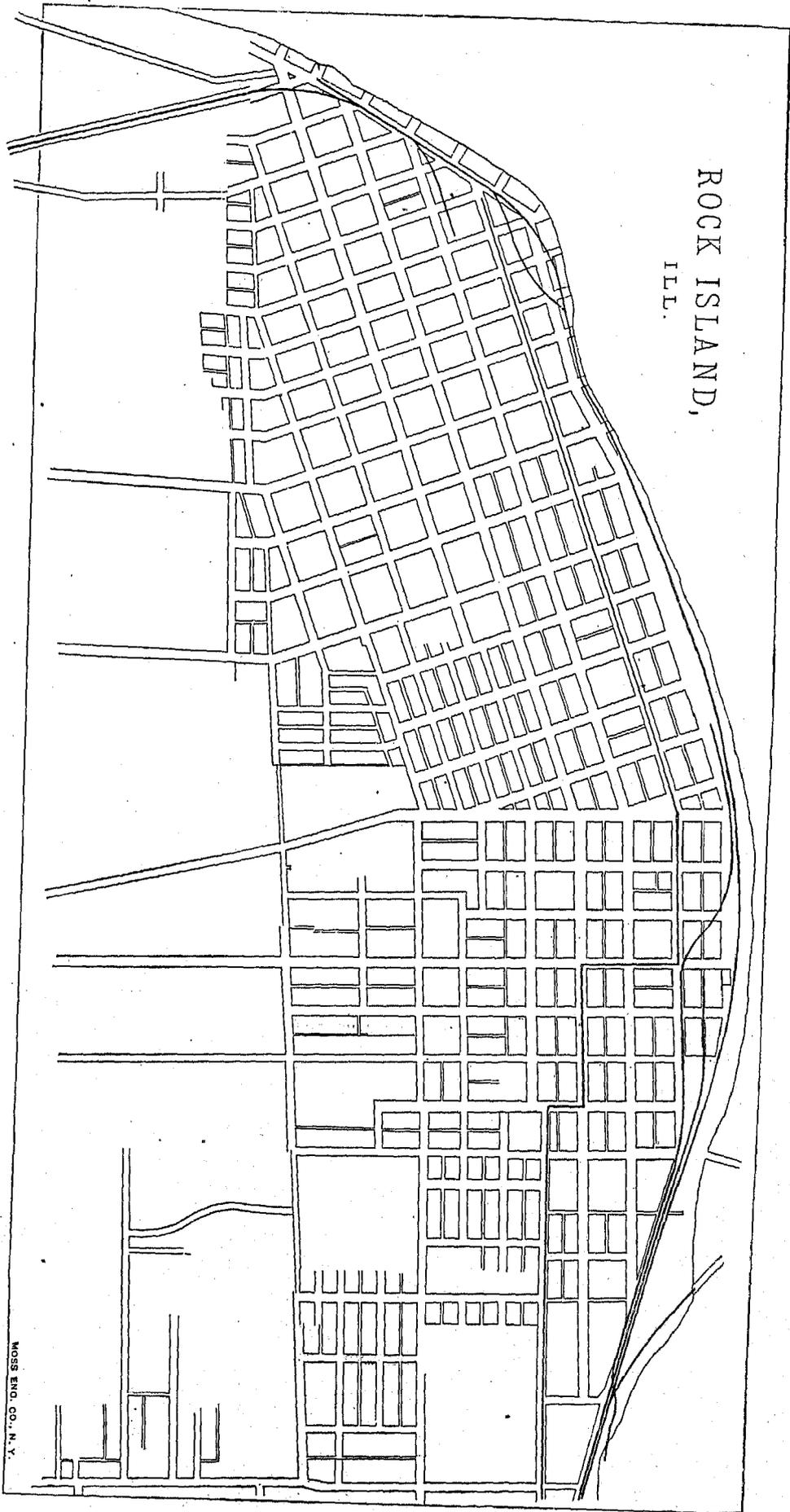
RAILROAD COMMUNICATIONS.

The city is touched by the following railroad lines:

The Chicago, Rock Island, and Pacific railroad passes through Rock Island, connecting the city with Chicago on the east and with Council Bluffs on the west.

The South Western division of the Chicago, Milwaukee, and Saint Paul railroad, which terminates in Rock Island, connects it with the North and the Northwest.

ROCK ISLAND,
ILL.



MOSS ENG. CO., N. Y.

The Saint Louis and Rock Island division of the Chicago, Burlington, and Quincy railroad gives a third line to Chicago, and makes direct connection with Saint Louis and the South.

The Rock Island and Peoria railroad runs to Peoria.

The Rock Island and Mercer County railroad runs through Mercer county.

TRIBUTARY COUNTRY.

Rock Island county is 13 miles long, lying upon the east bank of the Mississippi river; the city of Rock Island is nearly in the center of it. The county is thickly settled with farms, and contains, besides the cities of Rock Island and Moline, some 20 towns, with from 300 to 1,500 inhabitants each, most of the trade of which comes to Rock Island; besides this, much trade comes from the places through which run the railroads centering in Rock Island. The farms in the surrounding country are mostly in a high state of cultivation. There are five or six wholesale houses in the city, three national banks, having a capital of \$3,000,000, and one bank of deposit.

TOPOGRAPHY.

The city stands on a nearly level plateau, which is for the most part from 10 to 25 feet above the high-water mark of the river, and from one-half to 1 mile wide from the river to the foot of the bluffs. The variation from a level plain gives ample drainage; the bluffs generally rise 200 feet above high water. The soil is a rich loam, with occasionally deposits of clay, sand, and gravel, and has an underlying bed of magnesian limestone, generally from 3 to 10 feet below the surface of the ground. For a radius of 5 miles the country is wooded, the soil is excellent, and there are no marshes, ponds, lakes, etc.

CLIMATE.

Highest recorded summer temperature, 104°; highest summer temperature in average years, 98°. Lowest recorded winter temperature, -38°; lowest winter temperature in average years, -18°. The influence of adjacent waters and elevated lands on the climate is unimportant. The north winds are cold and the south winds are hot; all winds cause a dry atmosphere.

STREETS.

The total length of the streets is about 45 miles. No data could be obtained as to the length paved with various materials or as to cost, etc. The sidewalks are generally of wood, some of stone, and some of brick. The gutters are paved with curbed stone or with broken stone. Construction and repairs are done by the city itself, and the annual cost is about \$12,000. Day work is preferred to contract work. Neither a steam stone-crusher nor a roller is used. There are 4½ miles of horse-railroads in Rock Island and Moline together, having 10 cars and 33 horses, and employing 11 men. The rates of fare are 10 cents for the whole and 5 cents for half the distance. There are no omnibus lines.

WATER-WORKS.

The water-works are owned by the city; their total cost was \$165,000. Direct pumping (the Holly system) is employed, the average head of water under ordinary pressure being 140 feet, the ordinary pressure being 50 pounds to the square inch; under fire pressure (125 pounds to the square inch) the head is 320 feet. The average amount pumped per day is 1,400,000 gallons; the least amount, 830,000, the greatest, 1,987,000 gallons. The average cost of raising 1,000,000 gallons 1 foot high is 7½ cents. The yearly cost of maintenance, aside from the cost of pumping, is \$3,300. No water-meters are used.

GAS.

The gas-works are not owned by the city. The daily average production is 45,000 feet, and the charge per 1,000 feet is \$3. The city pays \$34 for each street-lamp, and there are 101 of them in all.

PUBLIC BUILDINGS.

No buildings are owned by the city excepting small hose-houses.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no improved parks in the city.

PLACES OF AMUSEMENT.

Harper's opera-house has a seating capacity of 1,000. Besides this there are Darl's hall, Central theater, and Turner hall. There are no concert- or beer-gardens in the city.

DRAINAGE.

No information on this subject was furnished by the city authorities.

CEMETERIES.

There are 3 cemeteries connected with the city, as follows:

The *Chippianock Cemetery*, area 60 acres.

The *Lutheran Cemetery*, area 1 acre.

The *Catholic Cemetery*, area 6 acres.

These are all situated south of the city, in the same neighborhood, about a mile from the city limits. The Catholic cemetery was organized in 1854. The total number of interments up to the present time, including those from Rock Island, Moline, and the country for 20 miles around, is 600. The Lutheran cemetery was organized in 1870. The interments have been as follows: 1870, 5; 1871, 10; 1872, 14; 1873, 23; 1874, 21; 1875, 18; 1876, 16; 1877, 20; 1878, 24; 1879, 23; 1880, 24; total, 198. The Chippianock cemetery was organized in 1855. The interments, which embraced many from different parts of the country and some removals from abroad, as well as interments from the city of Rock Island, have been as follows: 1855, 6; 1856, 74; 1857, 78; 1859, 66; 1860, 38; 1861, 58; 1862, 62; 1863, 69; 1864, 188; 1865, 119; 1866, 97; 1867, 92; 1868, 98; 1869, 128; 1870, 148; 1871, 103; 1872, 155; 1873, 161; 1874, 158; 1875, 139; 1876, 173; 1877, 169; 1878, 170; 1879, 183; 1880, 152; total, 2,780. Total for the three cemeteries, 3,578. The regulations regarding interments require permits from the city clerk, and the Catholic cemetery also requires permits from the pastor of Saint Joseph's church. There are no special limits as to time. The depth of graves for children is 5 feet, for adults 6 feet.

MARKETS.

There are no public or corporation markets in the city.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Rock Island is the board of health, composed of the mayor, the city clerk, and 4 commissioners. The ordinance establishing this board and prescribing general sanitary regulations was passed in 1857, but this is the first year that the city has really had an active board. At present 3 of the 4 commissioners are physicians. The ordinary annual expenses are about \$300, but this year \$500 more was expended in a struggle with small-pox. A member of the board reports that he does not know the limit to which the board might increase its expenses during an epidemic, but thinks it would have the full power of the city if it were necessary to exercise it. The ordinance says that the board has full power to use all measures to promote the health of the city. It also has power to do whatever may be necessary to prevent the spread of disease. The members of the board all receive the same pay, \$2 for each meeting. The commissioners shall serve all precepts and notices issued by the board, which are signed by the mayor and by the clerk, in the districts assigned to them. Last year the city marshal was one of the commissioners, and the board executed its orders through him. There are no assistant health officers or inspectors, the physicians and the marshal acting as such. About once or twice a month tours of inspection are made, there being no regularity about the work. If nuisances are reported, some of the commissioners examine into the matter, and if the nuisances really exist they have the clerk write an order for their abatement, which is given to the marshal. The commissioners are appointed by the mayor and confirmed by the city council. The expenses of the members are submitted to the board for approval, and by them to the council. The board is careful to contract no bills which the council would not pay. Stated meetings are held once a month, and special meetings at such times as in their opinion the public welfare may require. As regards defective house-drainage, privy-vaults, cesspools, and sources of drinking-water, last year, the board being in its infancy as a practical body, contented itself with exercising moral suasion. It examined into any thing tending to produce disease, including the above subjects, and used its influence, generally supported by the press, with tolerably good results. As yet there are but few sewers in the city, but the city and private parties are building some each year. The ordinance gives the board power over the streets, but it is reported that the board does nothing with them. It exercises very little control over the conservation and removal of garbage, but hopes before long to see the adoption of a thorough system of scavenging. No dead body may be removed from the city without a burial permit from the board. There are no regulations concerning the removal of excrement, except that it must be taken so far away below the city as to create no nuisance.

INFECTIOUS DISEASES.

Small-pox patients are isolated by placing a guard outside the premises and allowing nobody to pass out, unless permitted by the board. Scarlet-fever patients are not isolated or quarantined at home, but no person is permitted to attend school from a house containing scarlet fever. Dangerous contagious or infectious diseases are reported forthwith by the attending physician to the clerk of the board of health, who, on the same night, notifies the superintendent of schools. The latter allows no person to attend school from the house where the patient is, without a permit from the board of health. There is no public pest-house. Vaccination is not compulsory, and is not done at the public expense.

REPORTS.

All births and deaths are registered, under the same requirements as those of the Illinois state board. The board reports to the council simply as matters arise to which it wishes to call the attention of the council, and such reports are published only with the usual council proceedings. The board has, among other things, persistently pressed the necessity of a public abattoir, and this year received a small appropriation for the purpose.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned by the city, the work being done by the city's own force, and wholly by hand. Streets are cleaned monthly, alleys in the spring and fall. It is reported to be done fairly well. The annual cost to the city is \$1,600. The sweepings are mostly deposited in slough lots.

Removal of garbage and ashes.—Garbage is removed by the city at the time of the alley-cleaning, the work being done by the city's own force. If complaints are made as to the conservancy of garbage while awaiting removal, the owner is notified to abate the nuisance. Garbage and ashes are finally disposed of in filling up slough lots, the cost of removal being charged to the street- and alley-cleaning account. Nuisances and injury to health often result from infrequent removal and from improper final disposal.

Dead animals.—Under the regulations of the police department dead animals are dragged off and buried outside the city limits. The annual cost of this service is about \$20, from 20 to 30 dogs, with occasional cows and horses, being removed annually.

Liquid household wastes.—Chamber slops are disposed of in the same way as laundry waste and kitchen slops, nearly all the liquid household waste of the city being delivered into the public sewers where the sewers exist. The city has water-works, and very few wells are used for drinking purposes. The only regulations concerning the cleaning out of cesspools are those for abating nuisances if complaints are made.

Human excreta.—About half the houses of the city have water-closets, and the other half depend on privy-vaults. About one-third of the water-closets deliver into public sewers and about two-thirds into cesspools. None of the privy-vaults are nominally water-tight, and there are no regulations concerning their construction and emptying. The dry-earth system is not used to any extent. Night-soil is ultimately hauled outside the city limits and buried. None of it is allowed to be used for manuring land within the gathering-ground of the public water-supply.

Manufacturing wastes.—There are no regulations concerning the disposal of liquid and solid manufacturing wastes.

POLICE.

The police force is appointed by the mayor, subject to the approval of the city council, and is governed by the mayor. The chief executive officer is the city marshal, with a salary of \$900 per year, besides whom there is a deputy with a salary of \$700, and two patrolmen with salaries of \$600 per year each. Their uniform is of the regulation style, being of dark blue throughout, with brass buttons and shield. Men provide their own uniforms, except winter overcoats, and are allowed \$75 each for clothing. Each man is provided with a revolver, nippers, a duplex whistle, and a 22-inch locust baton. They serve twelve hours per day and patrol a territory three-quarters of a mile long and one-half mile wide. In 1880 there were 433 arrests, mainly for larceny, assaults, and drunkenness; 30 were sentenced to the state prison, 102 to the county jail, and there were 301 city cases. About \$900 worth of property, stolen or lost, was reported to the police, of which about \$500 was recovered and returned to the owners. There were 261 station-house lodgers during the year 1880, against 512 in 1879. Meals were given them by the overseers of the poor at the county expense.

The police force is required to co-operate with the health department by reporting nuisances, etc.

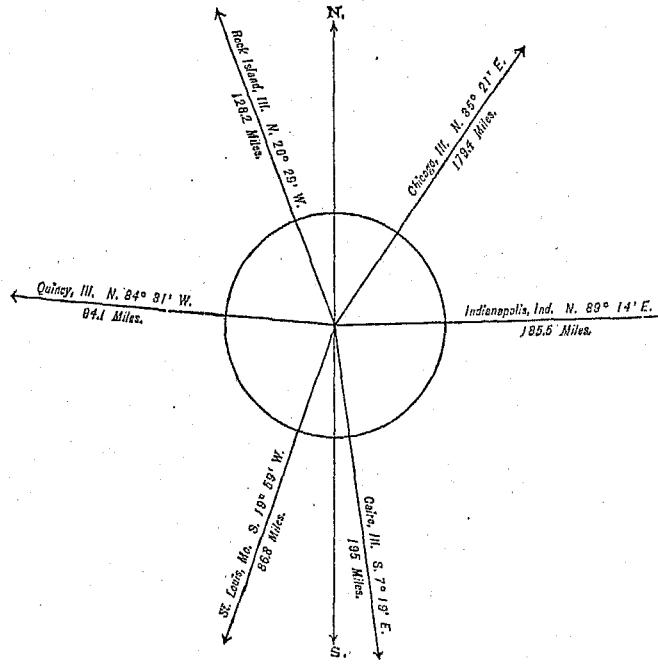
Special police officers are appointed by the mayor for the same service as regular policemen, and their standing, while on duty, is the same. The cost of the police force for the year 1880 was \$8,600.

SPRINGFIELD, SANGAMON COUNTY, ILLINOIS.

POPULATION

IN THE
AGGREGATE,
1840-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	2,579
1850.....	4,433
1860.....	9,320
1870.....	17,364
1880.....	19,743



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	9,805
Female.....	9,938
—	
Native	15,459
Foreign-born	4,284
—	
White.....	18,414
Colored	* 1,329

* Including 1 Chinese.

Latitude : 39° 48' North; Longitude : 89° 39' (west from Greenwich); Altitude : 550 feet.

FINANCIAL CONDITION:

Total Valuation: \$4,226,575; per capita: \$214 00. Net Indebtedness: \$778,780; per capita: \$39 45. Tax per \$100: \$2 74.

SPRINGFIELD IN 1880.

Springfield, the capital of the state of Illinois, is situated on the edge of a rich prairie, about 3 miles south of the Sangamon river, near the center of the state, and about 180 miles southwest of Chicago by rail. It was laid out in 1822 on a regular plan, with a public square in the center, and with wide streets crossing each other at right angles. At first its growth was slow, but after the establishment of the state government here in 1850 it rapidly advanced in manufactures, commerce, and population. The Chicago and Alton, the Illinois Central, the Ohio and Mississippi, the Springfield and Northwestern, and the Wabash, Saint Louis, and Pacific railroads pass through the city, affording ample railroad facilities. There are two horse-railroads, gas-works, a paid fire department, and adequate water-works. There are six coal-shafts on the verge of the city, where superior coal in inexhaustible quantities is mined. Springfield was the home of Abraham Lincoln, President of the United States, and his remains now rest in Oak Ridge cemetery, adjoining the city, marked by a handsome monument.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Springfield is the board of health, composed of 6 members, 1 from each ward of the city, appointed by the mayor and confirmed by the city council, with the mayor *ex officio* president, and the city clerk *ex officio* clerk of the board. For the present year the 6 members appointed are all physicians. The

annual expense of the board in the absence of any declared epidemic is \$300, and in case of epidemics this sum may be increased to any amount deemed necessary by the council. The board has authority over the general health and cleanliness of the city; can cause all nuisances to be abated or removed, can erect temporary hospitals, and destroy infected clothing, bedding, etc., and generally do all things that may be necessary to prevent the introduction or spread of contagious diseases. The board meets once a month, or oftener at the call of the president, and transacts its business as a deliberative body, a majority forming a quorum. After the orders of the board have been certified by the clerk, the mayor causes them to be executed by the supervisor, by the marshal, or by a policeman. There are 4 inspectors employed, and all have police powers. One general inspection is made annually. When nuisances are reported they are ordered abated within 24 hours. The same mode of procedure is observed toward defective house-drainage, privy-vaults, cesspools, sources of drinking-water, etc. Small-pox patients are removed to the public pest-house, situated outside the city limits. Scarlet-fever patients are neither isolated nor quarantined at home. The board has power to disband public schools or public meetings of any kind in case of contagious diseases. Vaccination is compulsory, and is done at the public expense when persons are unable to pay. All births and deaths are required to be reported at the office of the county clerk as soon as practicable.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city, with its own force, and entirely by hand. The streets are cleaned when they need it, and the work is reported as but poorly done. The annual cost is \$3,500.

Ashes and garbage are removed by the city with its own force. Garbage and ashes are allowed to be kept in the same vessel.

Dead animals are removed under contract to a rendering establishment, at an annual cost of \$150.

Human excreta.—About one-third of the houses in the city are provided with water-closets, all of which deliver into the sewers, and the remainder depend on privy-vaults. None of the vaults are even nominally water-tight, and they must be cleaned when the health inspector gives notice. It is reported that in the center of the city the well-water is very bad, from the effects of old privy-vaults that were in use before the sewers were built. Night-soil is not allowed to be used for manuring land within the gathering-ground of the public water-supply.

Liquid household wastes.—Although the city is well sewered, only about one-half of the liquid household wastes are run into the public sewers. Gutters are never flushed.

Manufacturing wastes.—All manufacturing wastes are run into the sewers.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Springfield for 1880, being taken from tables prepared for the Tenth Census by J. O. Humphrey, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	116	\$1,709,775	1,901	75	292	\$650,253	\$3,156,279	\$4,123,888
Blacksmithing.....	6	4,400	10	.....	.....	5,800	4,540	17,840
Boots and shoes, including custom work and repairing.....	13	7,930	12	.....	1	5,400	6,177	17,688
Bread and other bakery products.....	8	19,700	15	4	3	7,140	23,800	39,000
Carriages and wagons.....	4	67,500	52	.....	.....	27,200	37,000	93,000
Confectionery.....	3	14,500	12	3	6	7,000	24,500	33,000
Flouring and grist-mill products.....	5	140,000	40	.....	.....	16,800	268,550	330,405
Poundery and machine-shop products.....	6	107,500	121	.....	3	62,665	191,297	240,626
Furniture (see also Upholstering).....	3	1,600	7	.....	.....	4,200	3,300	8,700
Printing and publishing.....	6	50,300	123	3	44	40,050	22,150	105,800
Saddlery and harness.....	8	19,300	35	2	.....	13,764	26,400	61,106
Tinware, copperware, and sheet-iron ware.....	5	12,000	18	.....	1	9,540	17,400	34,000
Tobacco, cigars and cigarettes.....	9	17,400	30	.....	11	10,216	13,808	36,050
Upholstering (see also Furniture).....	3	3,200	6	.....	2	2,660	4,300	8,700
All other industries (a).....	37	1,247,445	910	63	161	434,818	2,573,057	3,067,188

a Embracing agricultural implements; bags, paper; baking and yeast powders; bookbinding and blank-book making; brooms and brushes; clothing, men's; coffee and spices, roasted and ground; coffins, burial cases, and undertakers' goods; cooperage; files; iron and steel; liquors, malt; lock and gun-smithing; looking-glass and picture frames; lumber, planed; marble and stone work; mineral and soda waters; paper; patent medicines and compounds; roofing and roofing materials; sash, doors, and blinds; shoddy; slaughtering and meat-packing; stereotyping and electrotyping; trunks and valises; wheelwrighting; wirework; wood, turned and carved; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is \$14,739 44; that the average wages of all hands employed is \$386 48 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$33,751 02.

MISSOURI.

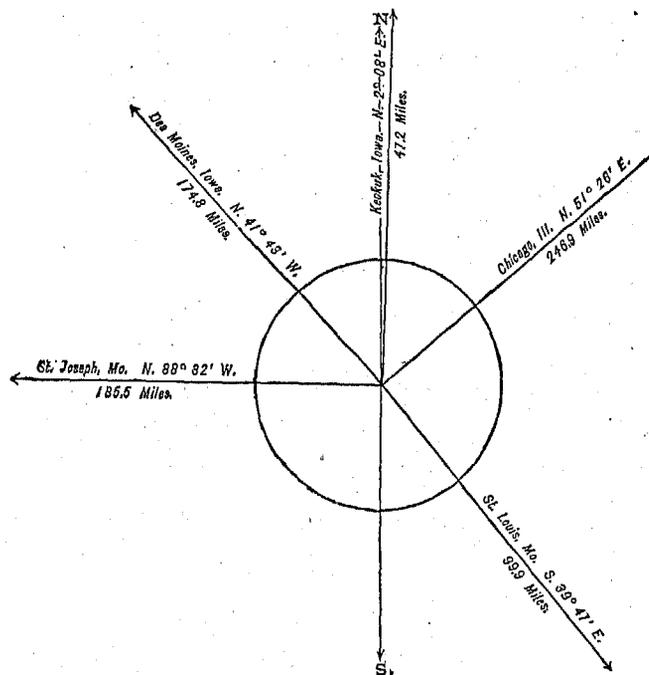
HANNIBAL,

MARION COUNTY, MISSOURI.

POPULATION

IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	.....
1800.....	.....
1810.....	.....
1820.....	.....
1830.....	.....
1840.....	.....
1850.....	2, 012
1860.....	6, 505
1870.....	10, 125
1880.....	11, 074



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	5, 542
Female	5, 532
—	
Native	9, 809
Foreign-born	1, 265
—	
White	9, 232
Colored	*1, 842
*Including 1 Chinese and 3 Indians.	

Latitude: 39° 44' North; Longitude: 91° 23' (west from Greenwich); Altitude: 486 feet.

FINANCIAL CONDITION:

Total Valuation: \$2,300,460; per capita: \$253 00. Net Indebtedness: \$190,173; per capita: \$17 17. Tax per \$100: \$2 95.

HISTORICAL SKETCH.

The site of the present city of Hannibal was first settled in the year 1819, but the growth of the place was very slow, and it was not until 1836 that the town was regularly laid out. In 1845 it was incorporated as a city, and in the same year the Keokuk and Saint Louis Packet Company was established. In 1847 the Hannibal and Saint Joseph railroad was chartered, but it was not built before 1859. It extended directly across the state, tapping the Missouri river at Saint Joseph, and its completion infused new life into the quiet city of Hannibal. The western

terminus of the road became the starting point for the overland traffic to California, and Hannibal profited greatly by the tide of travel passing through her limits. Her growth for a few years was exceedingly rapid, and, but for the civil war, might have continued. From 1861 to 1865 Hannibal was at a standstill, and suffered a business prostration in common with the rest of the state. After the close of the war, however, the city began once more to advance, and steadily increased in population and material wealth. The extension of the several railroads touching the city was another source of profit, and quite an extensive trade in lumber sprang up with Missouri, Kansas, and Texas. The extensive machine-shops and general offices of the Hannibal and Saint Joseph railroad are located here, and contribute largely to the general business of the place. Until within fifteen years the city has suffered greatly by fires, the business portion having been nearly destroyed in 1857, and again in 1859. The principal periods of depression were in 1857 and 1863. The original settlers were mostly from the southern states, but during the past twenty years the population has changed considerably. The cause of the change was largely due to the opening of the railroads to this point, thereby furnishing increased facilities for eastern emigration.

HANNIBAL IN 1880.

The following statistical accounts, mainly collected by the Census Office, indicate the present condition of Hannibal:

LOCATION.

Hannibal lies in latitude 39° 44' north, longitude 91° 23' west from Greenwich, on the west bank of the Mississippi river, 144 miles from Saint Louis by river and 285 miles from Chicago by rail. The city of Quincy, Illinois, is a short distance above Hannibal, on the opposite bank. The altitude of the city above sea-level is 486 feet. The draught of water in the Mississippi at this point varies from 3 to 12 feet, and from the spring to July or to September boats drawing 8 feet of water can come to the city. After that, however, it is navigable here only for boats drawing from 2 to 4 feet. Water communication is open to all points on the Mississippi and Missouri rivers and their navigable tributaries. The current of the river here is stated to be 4 miles per hour.

RAILROAD COMMUNICATIONS.

Hannibal has the advantages afforded by the following railroad lines:

The Chicago, Burlington, and Quincy railroad, to Chicago.

The Hannibal and Saint Joseph railroad, between the points named.

The Kansas and Texas division of the Missouri Pacific railway, to Denison, Texas.

The Saint Louis, Hannibal, and Keokuk railroad, now completed to Bowling Green, Missouri.

The Saint Louis, Keokuk, and Northwestern railroad, from Saint Louis to Keokuk.

The Wabash, Saint Louis, and Pacific railroad, an air-line to Toledo, Ohio, with good eastern connections.

TRIBUTARY COUNTRY.

The country immediately tributary to the city is agricultural, wheat, hemp, and tobacco being largely raised. The local trade, aside from manufacturing interests, etc., is altogether from the farming community, a large part of Marion, Pike, Monroe, and Ralls counties, in Missouri, as well as the counties of Pike and Adams, in Illinois, adding largely to the trade of the city.

TOPOGRAPHY.

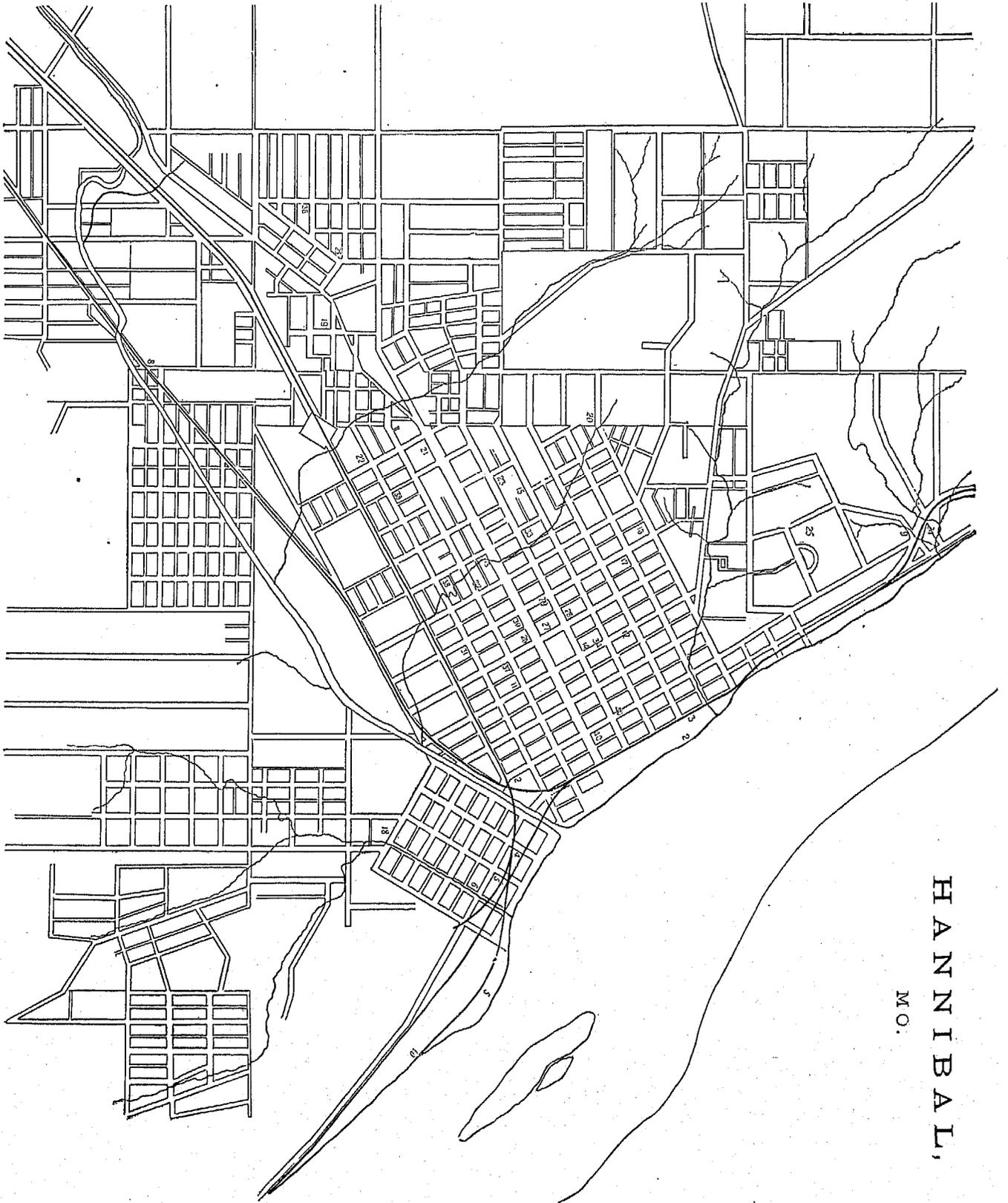
The vicinity of the river on the Missouri side from the Iowa state line to a point near Hannibal is alluvial. A range of high bluffs closely skirts the river's bank for many miles below Hannibal. A point of the bluffs also joins the river above, forming by the detour a natural amphitheater, about a mile across along the river, open toward the river and inclosed on the other three sides. Hannibal is situated in this recess, the ground rising gradually from the river's edge toward the west. The bluffs are mostly of limestone of a good quality, probably similar in formation to those on which the city of Quincy, Illinois, is located, and described in the report of that city. The country within a radius of from 5 to 10 miles is wooded, while the soil outside the city limits is a deep rich loam.

CLIMATE.

No daily record of temperature has been kept.

STREETS.

There are 75 miles of streets in the city, paved as follows: Stone blocks, 1 mile; broken stone, 10 miles; and gravel, 15 miles. The cost per square yard of each, as nearly as may be estimated, is, for stone blocks, \$1 10;



HANNIBAL,
MO.

for broken stone, \$1; and for gravel, 40 cents. The annual cost of keeping the paved streets in repair is \$1,500. The stone blocks are said to be the cheapest and most permanent in the end. The sidewalks are of stone, wood, and brick, while the gutters are laid with stone. Tree-planting is quite general, and altogether on the outside of the pavements. The work of construction and repair of streets is done under the supervision of the street commissioner, with the advice of the committee on streets and alleys, and the annual amount expended varies from \$3,000 to \$5,000.

HORSE-RAILROADS.

The horse-railroads in the city have a total length of $1\frac{3}{4}$ mile, have 3 cars and 14 horses, and give employment to 6 men. There are 96,000 passengers carried annually, the rate of fare being 5 cents. There are no omnibus lines in the city.

WATER-WORKS.

The works for the water-supply have just been begun, and so far their cost has been \$100,000. The system is to be pumping into a reservoir, with an elevation of 230 feet.

GAS.

The gas-works are owned by a private corporation. The daily average production is 20,000 cubic feet. The charge per 1,000 feet is \$3. The city pays \$18 per annum for each street-lamp in use, 133 in number.

PUBLIC BUILDINGS.

The city owns and occupies for municipal purposes, wholly or in part, the city hall, market-house, engine-house, and city prison. The total cost of the buildings belonging to the city is \$19,500. The city hall is owned entirely by the city, and cost \$6,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

With the exception of one square with an area of 5 acres, which is public, there are no parks or pleasure-grounds in Hannibal.

PLACES OF AMUSEMENT.

There are 2 halls in the city used for concerts, lectures, theatrical performances, etc.: Mozart hall, with a seating capacity of 600, and the Academy of Music, seating 1,000. The city charges a license for each exhibition given. There are no concert- and beer-gardens.

DRAINAGE.

There is no system of public sewers in Hannibal, and there are no private sewers deserving mention. The matter of public sewers, it is reported, will come before the council this winter.

CEMETERIES.

There are 4 cemeteries now in use, 2 within and 2 outside the city limits:

Riverside Cemetery, overlooking the river inside the southern limits, has an area of 15 acres.

Mount Olivet Cemetery, area 22 acres, is situated just outside the southern limits.

Baptist Cemetery, in the northern part of the city, has an area of 2 acres.

Catholic Cemetery, one-quarter of a mile northwest of the city, has an area of 5 acres. There is also one Catholic cemetery, area 3 acres, located south of the city, now no longer used for burial purposes.

As no records of interments were kept prior to January 22, 1880, the number of burials in all or any of the cemeteries can not be given. Burial permits are issued by the city clerk, and must be presented to the officers of the cemeteries before interments are allowed to be made. All of the above cemeteries except the Baptist are now, and there has not been much done in the direction of landscape-gardening, etc.

MARKETS.

There is one public market, situated near the center of the city. The lot is 132 by 132 feet, and the building, which is of brick, is 80 by 120 feet; the cost, including the land, was \$8,000. There are 10 meat-stalls, renting for \$8 a month each, and 14 vegetable- and 4 fish-stalls, renting for \$1 a week each; the total rental from the market is about \$125 per month. The market-houses are open from 4 to 10 a. m. and from 4 to 8 p. m., and on Saturdays until 10 p. m. About one-half of the retail supply of meats, poultry, fish, vegetables, etc., of the city is sold at the public market. There are no statistics available from which to show the amount of annual sales from within the market. The market-building is reported as in good repair.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary organization of Hannibal is a board of health, composed of the city clerk and the city physician, with 3 members of the board of aldermen, who are appointed annually by the mayor and confirmed by

the city council. The annual expense of the board, when there is no declared epidemic, is merely nominal, and no provision by law has been made for any increase in case of epidemics. The extent of the authority of the board in ordinary times is, a general supervision over the health and cleanliness of the city, with special authority during epidemics. The board organizes by electing one of its members chairman and one clerk. The city physician receives a salary of \$300 per annum. All cases requiring action are reported to him, and he presents them to the board. The street commissioner acts as messenger of the board; he attends all meetings, serves all notices that have been attested by the secretary and makes due return of same, and reports to the board all matters pertaining to public health which in his opinion require attention. No regular inspectors are employed, but one or all of the police officers may be detailed for the duty. The members of the board have authority to enter premises. The board meets regularly once a month, and also on call of the chairman. Inspections are in general made regularly once a year, and afterward as nuisances are reported. When a nuisance is found to exist, the party responsible is notified to remove or abate the same within a specified time. The board has no custom regarding the inspection of defective house-drainage, privy-vaults, cesspools, or sources of drinking-water unless the same becomes a nuisance, and then property-owners are notified to correct. The board exercises no control over the conservation or removal of garbage. The carcasses of dead animals and the contents of vaults are not allowed to be cast into any other stream than the Mississippi river.

INFECTIOUS DISEASES.

Small-pox patients are isolated by being removed to a house provided for that purpose for the time being. Scarlet-fever patients are quarantined at home, but there is no law on the subject. So far no occasion has arisen for the board to take action on the breaking out of contagious diseases either in public or in private schools, but should the contingency occur the board would act. Vaccination is neither compulsory nor is it done at public expense.

REPORTS.

Death certificates are filed with the city clerk, and it is presumed that he keeps some record. The board does not make any reports, but the city physician reports quarterly to the council.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city and with its regular force. The work is done wholly by hand, no sweeping-machine being used. The streets are cleaned at irregular intervals, according to their condition, and the work is said to be done in a satisfactory manner. The cost of the service is included in the general street appropriation. The sweepings are used for filling streets and lots, and it is reported that the only advantage in this mode of disposal is that it helps to bring the streets up to grade.

Removal of garbage and ashes.—All garbage is removed by the householders. It is kept in barrels and removed daily by persons who use it as feed for hogs. Ashes and garbage are allowed to be kept in the same vessel, but, as a rule, this is not done. Ashes are thrown into the alleys, and are removed when the alleys are cleaned by the householders. The annual cost of removal to each person varies from 25 cents to \$5, according to the amount. It is thought that no nuisance or probable injury to health occurs from infrequent removal of garbage, improper handling, etc.; but the defect in the system is that parties are apt to be governed by their own convenience instead of promptly complying with the ordinances.

Dead animals.—The carcass of any animal dying within the city is removed and thrown into the Mississippi river. This work is performed by the owners, but when they are not known it is done by the street commissioners. The cost of the service is very little, the number of dead animals removed annually being between 50 and 100. It is reported that the system works well for a city of this size.

Liquid household wastes.—Chamber-slops, laundry wastes, and kitchen-slops are generally disposed of in the same manner, and, as there is but one sewer, they are generally thrown into vaults and cesspools. The cesspools are nominally water-tight, are not provided with overflows, receive the wastes from water-closets, and are cleaned out at night, the contents being taken outside the city. Contamination of drinking-water, owing to the escape of the contents of vaults and cesspools, is thought to have occurred in the low lands and bottoms, producing a mild form of cholera and typhoid fever.

Human excreta.—Nearly all the houses in the city depend on privy-vaults. There are some water-closets, and nearly all of them deliver into cesspools, but very few delivering into the sewer. All the privy-vaults on the high land are nominally water-tight. Vaults are required to be 10 feet deep and to be walled up either with brick or with stone. They are emptied at night as often as required, and the night-soil is taken below the city and dumped into the river, none of it being allowed to be used for manuring land within the gathering-ground of the public water-supply.

Manufacturing wastes.—There are no regulations regarding the disposal either of liquid or of solid manufacturing wastes.

POLICE.

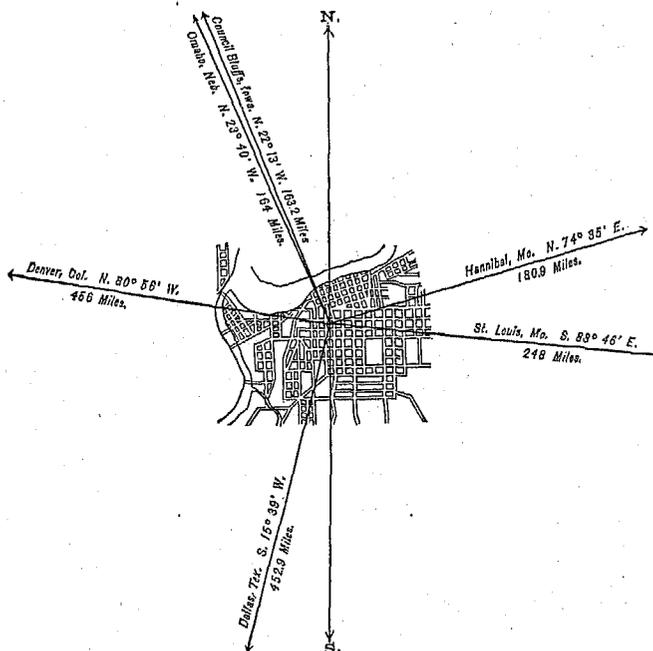
The police force of Hannibal is appointed by the mayor, subject to the approval of the city council, and is governed by the mayor. The city marshal, salary \$720 per annum, is the chief executive officer, and has direct supervision over the police. The rest of the force consists of 6 patrolmen at \$540 a year each. The uniform is of navy-blue cloth, with silver-plated buttons, and each man provides his own. The patrolmen are equipped with "Bean's patent flexible police club", are on duty 10 hours at a time, and each one patrols about 12 blocks. The total number of arrests during the past year was 425; the principal causes being for disturbing the peace, drunkenness, burglary, larceny, etc. In their final disposition 215 paid fines and 210 were sent to work breaking stone. There were 93 station-house lodgers during 1880. The force is required to co-operate with the fire and health departments under the instruction of the mayor and the marshal. Special policemen are appointed for elections, circus days, etc., and work with the regular force. The yearly cost of the department (1880) is \$3,287 50.

KANSAS CITY, JACKSON COUNTY, MISSOURI.

POPULATION

IN THE
AGGREGATE,
1860-1880.

	Inhab.
1790.....	.....
1800.....	.....
1810.....	.....
1820.....	.....
1830.....	.....
1840.....	.....
1850.....	.....
1860.....	4,418
1870.....	32,260
1880.....	55,785



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	31,999
Female	23,786
—	
Native	46,484
Foreign-born	9,301
—	
White.....	47,613
Colored	*8,172
*Including 25 Chinese and 4 Indians.	

Latitude: 39° 5' North; Longitude: 94° 40' (west from Greenwich); Altitude: 647 to 860 feet.

FINANCIAL CONDITION:

Total Valuation: \$10,577,260; per capita: \$190 50. Net Indebtedness: \$1,339,224; per capita: \$24 00. Tax per \$100: \$4 55.

HISTORICAL SKETCH.

The country around the site of Kansas City was well settled thirty years ago, and some of the settlers even came as far back as 1825. The city itself dates back to 1846, although a few families were here before the great flood in 1844. Little progress was made till 1856-57, at which time settlers began to pour into the territory of Kansas in great numbers. Kansas City profited by this, and flourished greatly until 1861; but during the civil war, being on the border, she suffered very much. The first railroad reached the city in 1865, and from that time to 1873 she gained largely in population and wealth. From 1873 to 1879 there was continual depression—worst in 1874 and 1875, when the Rocky Mountain locust or grasshopper covered the North and West both spring and fall, destroying every thing that was green. The plague extended but a few miles east of here. The city has been singularly free from great fires. The chief importance of Kansas City consists in its being a distributing point for

the live-stock traffic of the Southwest, a business which has enormously increased since the completion of the Missouri, Kansas, and Texas railroad connecting this city through the Indian territory with the great stock-raising regions of Texas. The pork-packing business has also assumed considerable importance. Manufacturing industry is as yet small.

The original settlers were French Canadians and half-breed Indians. Next came emigrants from the slave states, principally from Kentucky. It is reported that it is impossible to give any intelligent opinion as to changes in population. At present the representation of nationalities and states in the city is decidedly varied.

KANSAS CITY IN 1880.

The present condition of Kansas City is shown by the following statistical account, mainly gathered by the Census Office:

LOCATION.

Kansas City lies in latitude 39° 5' north, longitude 94° 40' west from Greenwich, on the right bank of the Missouri river, half a mile below the mouth of Kansas river, 1 mile from the boundary line between Kansas and Missouri, and 235 miles west of Saint Louis. Its lowest altitude above the level of the sea is 647 feet, and its highest 860 feet. The city is located at the great southern bend of the Missouri river, where it finally turns to the east. The river is navigable, having an average width of 1,300 feet, and a depth of main channel varying at this point from 19 to 39 feet, the greatest variation recorded being 37 feet in 1844. The main channel is close to the south shore for two thirds of the city's frontage on the river.

RAILROAD COMMUNICATIONS.

The Kansas City, Saint Joseph, and Council Bluffs railroad runs from Kansas City to Council Bluffs.

The Hannibal and Saint Joseph railroad runs to Hannibal.

The Southwestern division of the Chicago, Rock Island, and Pacific railroad connects Kansas City with Chicago via Davenport, Iowa.

The Wabash, Saint Louis, and Pacific railroad makes nearly a straight line from Kansas City to Toledo, Ohio.

The Chicago and Alton railroad runs from Kansas City to Saint Louis and Chicago.

The Missouri Pacific railroad gives another line to Saint Louis.

The Kansas City and Eastern railroad (narrow-gauge) runs to Lexington.

The Kansas City, Fort Scott, and Gulf railroad has Kansas City and Joplin as its terminals.

The Kansas City, Lawrence, and Southern railroad has Kansas City and Harper as its terminals.

The Atchison, Topeka, and Santa Fé railroad runs to Santa Fé and Denver.

The Kansas division of the Union Pacific railroad runs from Kansas City to Denver.

TRIBUTARY COUNTRY.

Surrounding the city lie fine lands for grazing and agriculture, well suited for the growth of any of the cereals and other products of the western states. The lands in the adjoining counties of Kansas are thickly settled, and are about the best in the state; the Missouri counties near the city are of superior fertility, and were settled before those of Kansas.

TOPOGRAPHY.

The site of the city was originally very rough and uneven, part of the city being on a bluff and part on bottom-lands. All the rocks above the level of the river are limestone, and for a depth of 250 feet below that level there is nothing but limestone, clays, and shales; below that depth lie boulders. Above the limestone are heavy deposits of soil, clay, etc., very little land being unfit for tillage. There are no lakes, ponds, or marshes near by. On the river-bottom there are a few ancient channels partly filled up. The country to the north and east of the city is (or was) heavily timbered; to the south and west it is mostly prairie, beginning about 5 miles from the city.

CLIMATE.

The highest recorded summer temperature is 113°; the highest in average years, about 100°. The lowest recorded winter temperature is -19°. The winters have been very variable, that of 1878-'79 being the hardest in thirty years, while in the preceding and succeeding winters there was but little ice. Parties living on the river-bottoms are subject to ague, malaria, etc. On account of the malarial exhalations of the lowlands, the uplands are the more sought after, and more populous. In summer the prevailing winds are from the south, and are always cool and pleasant. In the spring and winter they are from the north and west, blustering, cold, and disagreeable. East winds bring rain or snow.

STREETS.

The total length of streets is 89 miles, 1,500 linear feet of which are paved with stone blocks and 16.4 miles with broken stone. The cost per square yard of sandstone blocks, as nearly as it can be estimated, was \$3 50, and of broken stone 60 cents. The sandstone, having just been laid, has so far needed no repairs; the annual cost of repairing the broken-stone pavement is about 10 cents per square yard. It is impossible to keep the broken stone clean; for each wetting a new coat of mud appears on the surface. The broken limestone of this locality is stated to be unfit for the wear and tear of streets. Sandstone and granite are too costly, on account of the long distances from which they must be brought. Pine planks are principally used for sidewalks; brick, limestone, flags, and cement are occasionally used. The gutters are principally made of limestone blocks. Trees are planted at the curb-lines, and tree-planting has been very generally done on improved residence property. Maple and elm are the most used. The construction of streets is done by contract. Repairs are done by day labor, and the annual cost, including the clearing of stone-paved streets, is about \$20,000. The contract system is given the preference.

HORSE-RAILROADS.

There are 17.25 miles of horse-railroads in the city, with 61 cars (small ones for heavy grades) and 360 mules, employing 90 men. The rate of fare is 5 cents.

WATER-WORKS.

For the water-supply pumping is employed, the pressure for ordinary supply being 85 pounds for the lower town, 135 for the upper, which is increased from 50 to 75 pounds in case of fire. The Holly system is used in connection with a reservoir. The average amount pumped is about 3,000,000 gallons per day—the greatest 5,000,000, the least 2,000,000. Water-meters are used, and are found very effective in stopping waste. The water-works are owned by a private company.

GAS.

The gas-works are not owned by the city. Their daily average production is 200,000 cubic feet, and the charge per 1,000 feet is \$2 50. The city pays \$22 per year for each street-lamp, there being 605 of them.

PUBLIC BUILDINGS.

The city owns a city hall, 4 engine-houses, a work-house, and a hospital. The total cost of the municipal buildings belonging to the city was about \$20,000. The city hall was built 25 years ago, for city and county use, at a cost of about \$16,000. It is now used entirely by the city.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The city has one small park or block of ground, containing 2.11 acres, used originally for a cemetery, of which it retains possession from the fact of its still containing the remains of persons buried therein. There is no attempt at maintenance except mowing the grass.

PLACES OF AMUSEMENT.

The theaters of the city, with their seating capacities, are as follows: Coats' opera-house, 2,000; Theater Comique, 6,000; Coliseum theater, 800; Casino, 400. Jillis' opera-house, at present under construction, will probably have a seating capacity of 2,200. Theaters pay a license of \$50 per year. There are 2 halls—the Board of Trade and the Turner. There are 3 small open-air gardens for concerts and refreshments. The attendance varies from 50 to 200 persons.

DRAINAGE.

The foundation of the sewerage-works of this city is a number of natural water-courses running in ravines, which were inclosed in stone conduits laid with lime and mortar. These channels were of various sizes and shapes, and are ill-adapted to the removal of foul sewage, but they are still used as main outlet-sewers. No plan has been made for the sewerage of the whole city, each case being provided for according to the ideas of the city authorities as to what is required. A distinction is made between what are called public sewers, which are paid for by the city, and district sewers, which are paid for by assessments on the drainage districts within which they lie.

The city is naturally divided into three drainage areas. What is known as West Kansas, above the railroad, is low and sandy, and, though quite densely peopled, is poorly provided with sewers. It has a stone sewer, about three-quarters of a mile long, discharging into the Missouri river, and a few pipe-sewers extending only one or two blocks. That portion of the city which faces the Missouri river rises to a high ridge at a distance of about 4,000 feet from the bank. This was originally cut by deep ravines, making a very uneven surface, and requiring expensive grading. Its principal drainage is to a sewer begun in 1860, laid along the bed of a water-course crossing streets and lots, and discharging into the river just below the public landing. It is of all shapes and sizes, and

in both material and workmanship is so bad as to require constant outlay to restore portions which fall in. For a considerable portion of its length it has been buried to a depth of 40 feet or more. In 1878 a portion of this sewer, covered to a depth of 60 feet, caved in and had to be repaired at considerable expense. It forms the only outlet for the drainage of the most thickly settled portion of the city, from the river to Eleventh and Twelfth streets, and from Locust to Wyandotte street. This district contains about 3 miles of sewers, though only a small proportion of the length of streets within it was sewered.

Another outlet-sewer, 4 feet in diameter, discharges at the foot of Broadway, near the railroad bridge; another about 3,000 feet farther down the stream. A very large part of the city, and one most difficult to drain, lies on the southerly slope beyond the dividing ridge along Ninth and Eleventh streets. This drains naturally away from the river into a small stream about a mile and a half from the Missouri, running in an opposite direction to the Kansas river, and entering it about 2 miles from its mouth. This small stream is quite insufficient to carry away the sewage from the large area naturally draining to it. About $3\frac{1}{2}$ miles of the sewers constructed in 1880 discharge into it at least 2 miles from the Kansas and 4 miles from the Missouri. It has been proposed to provide this district with an outlet-sewer, carried around by the water-works and through West Kansas, a distance of nearly 3 miles, to the Missouri river, which it would meet with a sharp bend above the city, rendering it probable that its extension along the front of the city, discharging into the river below, would become necessary.

The rates of fall in Kansas City are usually very rapid, and there has been no trouble from deposits requiring removal by hand. The sewers discharge below high-water mark, but are exposed during the greater part of the year. The only provision for ventilation is by perforations in the covers of manholes, save when the imperfectly constructed inlet-basins furnish an additional outlet. Many of these are being rebuilt. The sewers are circular and mostly of brick, but few pipes having thus far been used.

For purposes of assessment the city is divided into drainage districts, each of which pays for its own sewer, a system which has failed of popularity because of the difficulty of so arranging the districts as to equalize the tax. The low-lying districts along the river and the water-courses have the least value, but require the most expensive sewerage works, while the more valuable property, which is better able to pay taxes, lies in the higher portions, which are easily drained and require less expensive sewers. In some districts the tax has not exceeded 63 cents per hundred square feet of lot area, while in others it has reached \$4 50.

The cost of sewers built in 1880 was as follows:

A sewer having an average depth of 14 feet, with much rock excavation, and being of brick, 3 feet in diameter, cost \$7 per foot.

A sewer 2 feet in diameter, under the same conditions, cost \$5 50 per foot, and 18-inch pipe, \$4 50 per foot.

A sewer in good clay, with an average depth of 14 feet and a diameter of 3 feet (brick), cost \$4 20 per foot.

A sewer in made ground, average depth 16 feet, diameter 3 feet (brick), cost \$4 90 per foot.

A sewer partly in made ground, partly in good clay, and partly in solid rock, average depth 14 feet, 3 feet diameter (brick), cost \$4 65 per foot; 2 feet diameter (brick), \$3 10; 18-inch pipe, \$3 50.

All of the above prices include manholes and inlet-basins. The average cost of each inlet-basin and its connection with the sewer is \$50. The cost of each manhole is \$30. The total amount of sewerage completed in 1880 amounted to over 7 miles.

CEMETERIES.

The city has 4 cemeteries, as follows:

Union Cemetery, situated three-fourths of a mile south of the city, containing 49 acres, in which there have been 4,819 interments.

Elmwood Cemetery, $2\frac{1}{2}$ miles east of the city, containing 51 acres, in which the number of interments has been about 2,000.

Saint Paul's Cemetery, one-half mile south of the city, containing 14 acres, in which there have been 150 interments.

Saint Mary's Cemetery, $2\frac{1}{2}$ miles northeast of the city, containing 45 acres; interments not ascertainable.

Union and Elmwood cemeteries are owned by stock companies, and the lots in them are sold according to location; each has macadamized roads. The other two are church burying-grounds.

MARKETS.

There is one market-house in the city, built on the north side of the public square. It cost about \$8,000, and covers an area, including the platform around the building, of 65 by 150 feet. There are 16 stalls inside, 32 stands outside, and places for 32 wagons to back up against the walk. The market-house itself is a one-story brick building, built about twenty-five years ago. The greater part of the public square is also a part of the market-place. The rent of the butchers' stalls within averages \$10 per month, and the stands rent for 25 cents each per day. The total revenue from this market in 1880 was \$7,500. It is open from daylight till 11 a. m., and on Wednesdays and Saturdays from 3 to 9 p. m. also. Not over two-thirds of the farm produce brought to the city comes to the regular market. The fish and poultry business is almost entirely confined to the market-house, and the market butchers retail about one-fifth of the meat retailed in the city. The great packing-houses do most of the wholesale business.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority is the board of health, composed of the mayor, the chief of the fire department, the chief of police, the city physician (who is sanitary superintendent), and two other persons annually elected by the common council, one of whom shall be assistant sanitary superintendent, and the other the clerk of the board. The expenses of the board have so far been very small. The ordinance establishing it does not specifically define its powers in the presence or absence of epidemics, but gives general authority to abate nuisances and care for the public health. There are but two salaried officers—the assistant sanitary superintendent, with a salary of \$75 per month, and the clerk, with a salary of \$100 per year. The board has stated meetings monthly. The ordinance makes inspection duty devolve upon each officer of the police force as well as upon the assistant sanitary superintendent. Inspections are made continuously throughout the city, and attention is given to all complaints made to the board. When nuisances are reported a notice is served that said nuisance must be abated, and upon failure to do so within a given time the matter is put into the hands of the city attorney for prosecution. In regard to defective house-drainage, etc., the board has power to order the defects remedied, but upon failure to do so has no resort save power to prosecute for failure. The board has no fund with which to do this, but taxes the parties for the same. The ordinance specifies that garbage shall be collected by each household in receptacles, and the same shall be removed by the city authorities, but this summer the board of aldermen made no provision for such a purpose, each family providing for its own garbage.

INFECTIOUS DISEASES.

Small-pox patients are isolated in the pest-house, which is situated on an island in the Missouri river a mile below the city. Scarlet-fever patients are quarantined at home as well as can be done, and the building is placarded. Children from infected families are not permitted to attend school until given permission by the proper parties. The treatment and selection of a physician is left unrestrained. Vaccination is neither compulsory nor done at the public expense.

REPORTS.

The board, by its clerk, keeps a record of all marriages, births, and deaths in the city. It reports annually, or oftener if required, to the common council as to its proceedings, receipts, and expenditures, and the general sanitary condition of the city. It is stated that the board bears no special relation to the medical profession, and is in many respects yet in a crude state, but efforts are being made to make it more efficient.

MUNICIPAL CLEANSING.

Street-cleaning.—Street-cleaning is done by the city by its own force, and by hand, only those streets being cleaned which are closely built upon and heavily traveled. It is reported that it is done whenever it is needed; the city usually waits until three inches or more of mud accumulates, and that it is not well done. The expense to the city is about \$2,500 annually. The sweepings are usually deposited along the river-bank or in some deep ravine, without any system.

Garbage and ashes.—Garbage is removed by householders, and is generally dumped into the river. Ashes are not usually removed. No complaints are made of the final disposition of garbage. The defect in the system lies in the lack of sufficient regulations and the non-enforcement of what regulations do exist.

Dead animals.—The city annually contracts with some private party for the removal of dead animals. There are no regulations on the subject. Such as are suitable are tanked, and the rest are buried and thrown into the river. The annual cost is about \$400. The service in this respect is very irregular.

Liquid household wastes.—Chamber and kitchen slops are disposed of in the same way. About one-tenth of the liquid household waste of the city goes into the sewers, the rest into vaults, cesspools, or gutters. But a small portion goes into dry wells, cesspools, or gutters. The cesspools have few overflows, since the soil is porous clay. Such as there are usually empty into alleys or gutters. Street-gutters are cleaned and flushed when the streets are cleaned, and oftener if needed in case of continuous dry weather. Where cesspools or dry wells are used they receive the waste of water-closets. Previous to the construction of the water-works nothing but cisterns were used. A large part of the city now uses water from the water company, and wells are scarce, such as there are being looked upon with suspicion.

Human excreta.—About one-twentieth of the houses of the city have water-closets, the remainder depending upon privy-vaults. About one-third of the water-closets deliver into the public sewers, and the rest into cesspools. None of the privy-vaults are nominally water-tight. There are no regulations regarding their construction. While there are certain rules laid down as to emptying them, there is no system and no attempt at regulating such matters. The dry-earth system is used very little. Night-soil is taken to the river.

Manufacturing wastes.—There are no regulations governing the disposal of manufacturing wastes.

POLICE.

The police force of the city is appointed by the mayor and two commissioners, the former of whom is elected annually, and the latter are appointed by the governor of the state for a term of three years. All orders are issued by the chief of police, who is the chief executive officer. He has general supervision of the entire department, and his salary is \$2,000 per annum. The rest of the force, with their salaries, are as follows: 1 captain, \$1,140; 1 clerk, \$900; 2 sergeants, \$930; 2 roundsmen and 2 detectives, \$780 each; 1 officer for special duty, 2 jailers, 2 mounted police, and 25 patrolmen, \$750 each. Their uniform is blue, with brass buttons, and each man furnishes his own at a cost of \$75. They also furnish their own side-arms and equipments. They carry Colt's revolvers, 14-inch clubs, and nippers. The department has an armory consisting of a Gatling gun, 60 Springfield rifles, and 60 revolvers. The tours of duty are 12 hours per day, and the men patrol 89 miles of streets. Last year there were 3,877 arrests, principally for intoxication. About \$8,000 worth of stolen property was recovered and returned to the owners. There were about 2,000 station-house lodgers during 1880, about the same as in 1879. A very few meals were furnished, at a cost of 12 cents per meal. The police force is required to co-operate with the fire department in removing goods and guarding property; with the health department in serving notices, inspecting alleys, vaults, etc., and with the building department in noting dangerous places in the streets and sidewalks, and violations of building ordinances. Special policemen are appointed by the commissioners to act as railroad and merchant police and as night watchmen. They are under the control of the chief, and assist the regular force when called upon. Specials wear a gray uniform. The yearly cost of the police force is \$38,000. Since 1874 the police department has been operated upon the metropolitan system, which has been found very satisfactory; officers and patrolmen are appointed for three years, and are removed only for cause after trial and examination. On the reorganization preference is given to those in the service. The standard height is 5 feet 10 inches; standard weight, 185 pounds; average age, 33 years.

FIRE DEPARTMENT.

The city ordinances provide, among other things, that the more thickly settled portion of the city shall be divided into two fire districts, and that within their limits both outside and party-walls of new buildings shall be built of brick, stone, or some other incombustible material; outer walls shall be not less than 1 foot thick, and in case of buildings more than two stories in height the walls of basement and first story shall be at least 16 inches thick; walls of 3 inches less thickness will be allowed in dwellings; party-walls must extend 12 inches above the roof; roofs and chimneys must be made of some incombustible material; smoke-pipes must enter flues at least 12 inches from the ceiling; there must be 2 inches space between wood-work and flues filled in with mortar; the openings of theaters and public halls are to be not less than 5 feet in width and not less than 18 inches for every 100 seating capacity, and doors of all public places must swing outward. The fire department is composed of a chief engineer, with a salary of \$1,200 per year, 3 hose companies of 5 men each, 1 hose company of 3 men, and a hook-and-ladder company of 2 men. The monthly pay-roll of the department, exclusive of the salary of the chief, is \$958 33. In the current year the expenses of the department were \$16,253 85; 118 calls were answered, and property valued at \$342,310 was destroyed, on which there was \$296,400 insurance. The alarm in 98 cases out of 118 was given by telephone. The principal causes of the fires were defective flues, 28 being due to them. The loss from the largest fire was \$40,000 on building and \$340,000 on stock, the insurance being \$264,500.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Kansas City for 1880, being taken from tables prepared for the Tenth Census by E. J. Nickerson, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	224	\$2,147,905	2,127	293	188	\$1,420,713	\$3,723,916	\$6,382,681
Blacksmithing (see also Wheelwrighting).....	17	12,850	47	.....	1	29,800	13,000	73,200
Boots and shoes, including custom work and repairing.....	18	7,575	42	.....	2	24,000	21,225	63,281
Bread and other bakery products.....	8	82,700	76	20	5	59,350	284,600	300,300
Brick and tile.....	15	75,000	315	.....	87	163,020	51,302	360,900
Brooms and brushes.....	3	1,700	12	.....	2	5,300	5,725	17,000
Carpentering.....	26	45,150	279	.....	.....	202,300	447,950	775,500
Carriages and wagons (see also Wheelwrighting).....	5	29,000	44	.....	.....	25,800	41,900	105,000
Clothing, men's.....	5	41,344	71	4	.....	48,334	90,120	165,438
Confectionery.....	5	6,200	10	4	4	8,250	14,800	27,000
Flouring- and grist-mill products.....	4	71,500	56	.....	.....	27,300	581,400	683,450

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Foundry and machine-shop products.....	8	\$221,500	207		8	\$129,770	\$243,500	\$171,000
Furniture.....	7	2,825	13			8,050	14,200	30,000
Lumber, planed.....	4	46,000	71			43,800	92,000	206,000
Marble and stone work.....	4	16,200	29		2	15,300	26,100	54,000
Painting and paperhanging.....	5	4,100	28			18,920	22,570	53,500
Paints.....	3	120,000	41			20,000	180,000	253,000
Photographing.....	3	6,750	9	2		6,400	4,350	18,000
Printing and publishing.....	4	255,000	159	49	12	152,800	130,000	432,000
Saddlery and harness.....	8	23,400	35	1		19,150	46,580	83,500
Slaughtering and meat-packing, not including retail butchering.....	3	437,500	253		35	169,500	739,071	903,000
Tinware, copperware, and sheet-iron ware.....	4	11,400	18			8,550	20,450	37,000
Tobacco, cigars and cigarettes.....	13	70,200	75		9	50,800	109,050	210,000
Wheelwrighting (see also Blacksmithing; Carriages and wagons)....	4	6,500	12			5,500	4,400	14,100
All other industries (a).....	43	551,911	225	153	21	133,753	529,433	902,314

a Embracing awnings and tents; bags, other than paper; baking and yeast powders; bookbinding and blank-book making; boxes, wooden packing; carpets, rag; cement; cheese and butter (factory); clothing, women's; drain and sewer pipe; engraving and die-sinking; furniture, chairs, hand-stamps; hats and caps; iron work, architectural and ornamental; liquors, distilled; liquors, malt; looking-glass and picture frames; mattresses and spring beds; mineral and soda waters; models and patterns; patent medicines and compounds; refrigerators; roofing and roofing materials; shipbuilding; shirts; show-cases; soap and candles; tools; trunks and valises; upholstering; vinegar; watch and clock repairing; and wire.

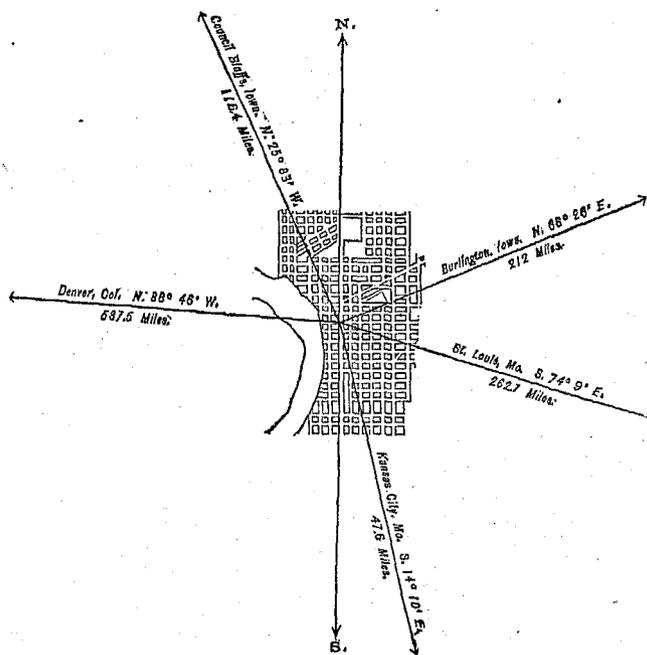
From the foregoing table it appears that the average capital of all establishments is \$9,586 18; that the average wages of all hands employed is \$557 58 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$23,542 26.

SAINT JOSEPH, BUCHANAN COUNTY, MISSOURI.

POPULATION

IN THE
AGGREGATE,
1860-1880.

Year	Inhab.
1790	.....
1800	.....
1810	.....
1820	.....
1830	.....
1840	.....
1850	.....
1860	8,932
1870	19,565
1880	32,431



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	.....	17,832
Female	.....	14,599
Native	.....	26,775
Foreign-born	.....	5,656
White	.....	29,201
Colored	.....	* 3,230
* Including 2 Chinese and 1 Indian.		

Latitude: 39° 45' North; Longitude: 94° 53' (west from Greenwich); Altitude: 837 to 1,021 feet.

FINANCIAL CONDITION:

Total Valuation: \$8,508,529; per capita: \$265 00. Net Indebtedness: \$1,843,662; per capita: \$56 85. Tax per \$100: \$2 00.

HISTORICAL SKETCH. (a)

Saint Joseph was founded by Joseph Robidoux, a French Roman Catholic, who was born in Saint Louis in 1784, and who was one of the most noted pioneers of the West. About the time when the general government incorporated the territory of Louisiana (1803) Robidoux left Saint Louis for the then wild country of the west to trade with the Indians. Selecting a beautiful spot among the hills on the bank of the Missouri, 545 miles from its mouth, he built a hut and began trafficking with the red men, by whom the country round about was thickly inhabited. In 1840 the rich country surrounding this trading point, known as the "Platte Purchase", was opened to settlement by treaty with the Indians. The fertile land was rapidly taken up, and the settlement immediately became the principal frontier town west of the Mississippi. In June, 1843, the original town was laid out by Mr. Robidoux

^a For the greater part of the information concerning Saint Joseph the Census Office is under obligations to General R. C. Bradshaw, late city register and assessor.

and named Saint Joseph. Two years later the county-seat was removed from Sparta to Saint Joseph, and most of the buildings and people of the former place moved with it. In 1849 the town became the great outfitting point for emigrants and gold-seekers leaving the states for California, it lying directly on the great highway across the plains. In February, 1851, with a population of about 4,000, it became a city, having been incorporated as a town in February, 1845. In February, 1859, the Hannibal and Saint Joseph railroad, the first road to penetrate so far west, was completed to this city, and from that time on Saint Joseph made rapid strides in wealth and population. In the following year the famous "pony express", designed to transmit quickly a limited mail from the states to San Francisco, was started from the city. The war period was a gloomy one. The government occupied and fortified the city, and it became a point for the centralization and distribution of troops. The population had dwindled to about 7,000 in 1865, but the return of peace brought prosperity again, an immense trade flowed in, and the city grew rapidly. On May 31, 1873, it celebrated the completion of a magnificent iron railway bridge across the Missouri river, costing \$1,500,000. The first church was built in 1845; there are now 28 in the city. The first school was opened in 1846; the city now claims to have some of the best public schools in the West. The only period of depression in the history of the city was the war period. Since the war many people have removed to the city from the southern states.

SAINT JOSEPH IN 1880.

The following statistical accounts, mainly gathered by the Census Office, indicate the present condition of the city:

LOCATION.

Saint Joseph, the capital of Buchanan county, Missouri, lies in latitude 39° 45' north, longitude 94° 53' west from Greenwich, on the left (east) bank of the Missouri river, 340 miles above Jefferson City, and 496 miles by water from Saint Louis. The altitude of its lowest point, for which was taken the high-water mark reached by the river in 1844, is 837 feet above the level of the sea; the highest point in the city is 1,021 feet above sea-level. The Missouri is navigable, but the channel at this point is constantly changing both in position and in depth.

RAILROAD COMMUNICATIONS.

The city is well supplied with railroad communications. Her five railroads are as follows:

The Saint Joseph and Western division of the Union Pacific, running from Saint Joseph to the main line at Grand Island.

The Hannibal and Saint Joseph, connecting the two cities named.

The Saint Joseph division of the Wabash, Saint Louis, and Pacific, connecting at Lexington junction with the Kansas City line, which gives a road to Saint Louis and the East.

The Kansas City, Saint Joseph, and Council Bluffs railroad, connecting the places named.

The Saint Joseph and Des Moines railroad, reaching at present only to Albany, but with Des Moines as its objective point.

TRIBUTARY COUNTRY.

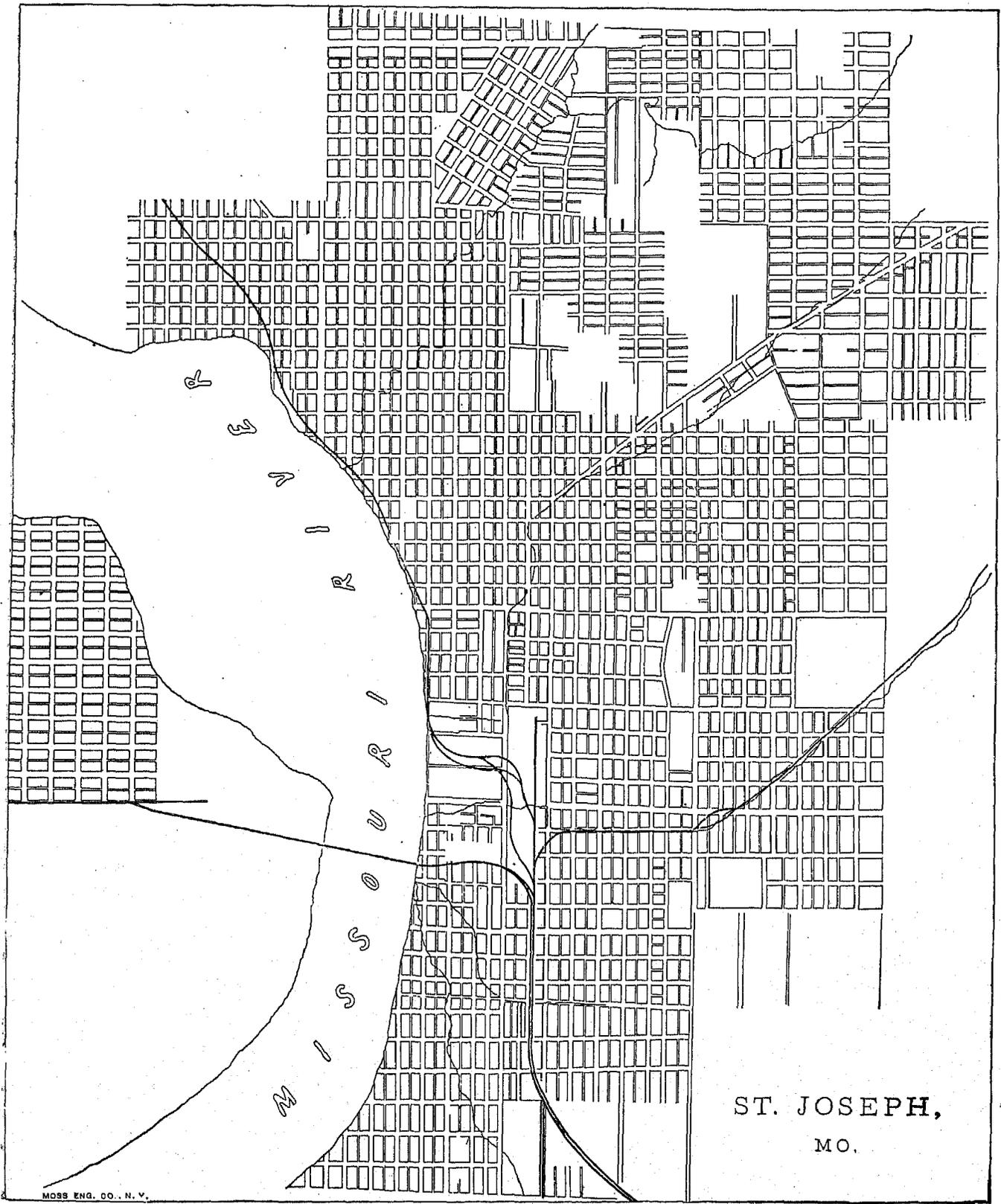
The region around Saint Joseph is very fertile, and its inhabitants are wholly devoted to agriculture. The soil is very rich, chiefly alluvial. Buchanan county is intersected by the Little Platte river, which flows southward, and is drained also by Castile and Livingston creeks.

TOPOGRAPHY.

The soil of the city is known to geologists as "loess", which is a name given to the "bluff formation" of the rivers of the West. The loess is simply a river-silt, just such as now renders the waters of the Missouri so remarkably turbid, and is merely a facing to the rocky bluffs which form the true walls of the river valleys. The country on the Missouri bluffs at Saint Joseph is rolling and well timbered; that in the bottoms is entirely at the mercy of the river; in the present year, for example, the entire country being inundated from bluff to bluff, an average distance of 4.5 miles. The underlying rock is limestone. For a radius of 5 miles about the country is well cultivated, with alternating wood and open land. The former channel of the river has left a few small lakes and ponds.

CLIMATE.

No definite data is given as to the temperature of the city, but it varies from about -20° in winter to 105° in summer. The influence of the marshes is malarial. The air is generally very dry in the summer time, this being especially noticeable this summer (1880), when, notwithstanding the intense and long-continued heat, only two cases of sunstroke were reported.



ST. JOSEPH,
MO.

STREETS.

Total length, 112 miles, of which 24 are paved with cobble-stones, the original cost being 60 cents per square yard. This paving is kept in repair at the cost of the adjacent property-owners. The quality of the stone used is frequently very inferior. The sidewalks in the business portion of the city are made of brick and sawed sandstone, and, in the portion devoted to residences, of brick. From two fifths to one-half the streets occupied by residences are provided with shade-trees, set just inside the curb-line. The construction and repair of streets is done by contract, at so much per square, at the expense of the adjacent property-owners, who have the right to contract for the same when the city council orders it done; but in case of their failure to do the work themselves or make contracts for its performance the city makes the contracts and assesses them. It is reported that the preference is decidedly in favor of the contract system. A steam stone-crusher is partially used in crushing rock, but no roller of any kind is employed.

HORSE-RAILROADS.

The city has three horse-railroads, with a total length of 6 miles of track, 32 cars, about 110 horses, and employing about 30 men. The rate of fare is 5 cents.

WATER-WORKS.

The total cost of the works for water-supply was \$700,000. Water is pumped, under the Worthington system, from the Missouri river, north of the city, to reservoirs at a distance of 1,000 feet, and with an elevation of 320 feet, giving an effective head in the city of from 50 to 135 feet, according to location. The greatest amount pumped in one day was 5,000,000 gallons; the least 2,000,000. The average cost of raising 1,000,000 gallons 1 foot high is 9 cents. The yearly income from water-rates is estimated at about \$124,000.

GAS.

The gas works are not owned by the city. The daily average production is 30,000 feet, and the charge per 1,000 feet is \$2 50. The city pays \$25 per annum each for street-lamps, there being 430 of them.

PUBLIC BUILDINGS

The city owns and occupies for municipal purposes, wholly or in part, the city hall, costing \$50,000; the city work-house, costing \$5,000; hospital, \$2,000; and markets, \$5,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 3 parks with an area of 2 acres each; one is thickly set with forest trees, but there are no improvements on the others. They were donated, the city having spent only a few hundred dollars in fencing them.

PLACES OF AMUSEMENT.

There is 1 theater, Tootle's opera house, with a seating capacity of 1,500, paying no license; there are 2 halls, Turner hall and Red-Ribbon hall, seating about 300 each. There are 3 beer-gardens, but the buildings were not built for such a purpose, and are cheap and inferior.

DRAINAGE.

The sewerage-works of this city consist principally of main sewers built of brick, located in ravines or other convenient lines for main drainage. About 4 miles of such sewers have been built, of about equal proportions, being 10 feet, 6 feet, and 5 feet in diameter. The sewage is delivered into the Missouri river, the outfalls being open and fully exposed for about ten months of the year, and submerged during high stages of the river. Lateral sewers are built according to the requirements of each case—sometimes of brick and sometimes of vitrified pipes. Storm-water is admitted through inlet-basins, which are usually left open for the ventilation of the sewers. Flushing is done during the summer season with water supplied from the water company's mains without charge, the labor being furnished by the fire department. There is no map showing any general plan of sewerage. It is reported that the need of such a plan is apparent, large sewers having in some cases already been made to discharge into those of smaller size. Main sewers are paid for by the city, and about \$200,000 has been expended on these works. Lateral sewers are built under an act of the Missouri legislature, "authorizing cities acting under special charters, and containing more than 30,000 and less than 50,000 inhabitants, to establish a system of sewerage, and to construct, establish, and keep in repair sewers, culverts, and drains". By the provision of this act the cost of lateral sewers is assessed upon abutting property, the assessment bills being given to the contractor for collection. Assessments are based on the frontage of lots, and the amount expended in this way has been about \$18,000.

The cost of constructing sewers is as follows: For sewers 6 feet in diameter, 2 rings of brick, the contractor furnishing all labor and materials, average depth to bottom of invert 10 to 16 feet, soil alluvial, digging very good,

no rock, contract price \$5 70 per foot. Sewers 5 feet in diameter, under the above conditions, \$4 80 per foot. Fifteen-inch pipe sewers, 14 feet deep, digging less favorable, in some cases very bad, no rock, some quicksand, a Y-branch for house-connection every 20 feet, the contractors repairing pavement and road-beds, contract price \$3 73 per linear foot. Eighteen-inch pipe, under the same conditions, \$3 93 per foot. The average cost of inlet-basins is \$28, and of manholes \$18.

CEMETERIES.

There are 8 cemeteries, as follows: 2 Catholic, 1 Baptist, 1 Lutheran, 1 Jewish, 1 City, 1 Freemason, and Mount Mora. The last-named is 10 acres in extent, while the others are small. They are all outside the city. There is no limit of time imposed as to burials, it being generally twenty-four to thirty hours after death. The depth of grave is from $4\frac{1}{2}$ to 6 feet, according to age of deceased and location of ground. The Jewish cemetery is exclusively for Jews; the Catholic, for Catholics; the Freemason, for Freemasons; the City, for paupers. In the others lots are sold to whoever will buy. Mount Mora cemetery is handsomely laid out. There is a vault in it, but at present it is not fit for use. One of the Catholic cemeteries, known as the Carby grave-yard, about 2 miles north of the city, contains a mortuary chapel, built at a cost of some \$30,000.

MARKETS.

The ground floor of the city hall is used as the central market. There are 10 butchers' stalls around the walls, and in the center there are long tables for vegetable markets and florists' stands; also, there are tables outside the walls for summer use. The market is open from 5 a. m. to 11 a. m., and in summer on Saturdays from 3 p. m. to 7 p. m. also. Most of the butchers buy their animals direct from drovers or farmers. There are two cattle- and hog-yards, one owned by the city and the other by railroad men, where cattle are always found for sale. Hucksters have to be licensed, marketmen and retailers of fresh provisions generally being included under that head. Peddlers also must be licensed.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief health organization is a board of health, consisting of one councilman from each ward (5), and the health officer, the hospital steward acting as clerk. Although it is composed of members of the council, its acts are independent. When there is no epidemic its annual expenses are from \$3,000 to \$4,000. In any case it is limited to the appropriations made by the city council. Its duties are to see that all laws and ordinances relating to the sanitary well-being of the city are properly enforced, to visit the city hospital and see that patients are properly cared for, to employ nurses and inspectors, to order the abatement of nuisances, and to direct the payment of bills contracted by the board. During epidemics its duties are to establish quarantine stations, and to do and perform all things necessary to abate the epidemic. The chief executive officer of the board is the health officer, whose salary is \$500 per year. A hospital steward and from one to three nuisance-inspectors are employed. Only the health officer is a physician, and none of them have police powers. Inspectors report any person violating the health ordinances to the city attorney, and then the attorney files a complaint before the city recorder, who issues his warrant for arrest. Then the accused is brought before the court, and if found guilty is fined. During the summer months tours of inspection are supposed to be regularly made to all parts of the city; in cool weather they are made only upon reports of nuisances. The board is appointed annually by the mayor; it is dependent upon the city council for appropriations to pay its bills; it meets monthly, but may adjourn from day to day. Defective house-drainage, etc., is treated like any other nuisance, no action being taken except in case of complaint. The street commissioner is required to keep the streets clean, and to report to the city recorder any person who may deposit in any street, avenue, or alley any garbage, filth, ashes, etc.; said officer is also required to keep the sewers free and in good condition. The board has full power to require the removal, at the expense of the householder, of the garbage, offal, etc. The only regulation concerning the burial of the dead seems to be that the sexton shall be furnished with a certificate from the attending physician, stating age, sex, and cause of death. The city ordinances prohibit the pollution of the water in the two creeks running through the city, and impose a fine for any violation thereof.

INFECTIOUS DISEASES.

In case of small-pox, public patients are isolated in the pest-house; the families of private patients are quarantined. There is no law concerning scarlet-fever patients. There have never been any cases of serious contagious diseases in the schools, but the board has power to act as it may see fit should the emergency arise. There is a public pest-house, situated on a high bluff of the river and isolated. Vaccination is compulsory, but the law has never been enforced; in cases of indigent persons it is done at the expense of the city.

REGISTRATION AND REPORTS.

The system of registration of diseases and births and deaths is very defective. The people have not yet learned the benefits of statistics, and look upon laws requiring statistical information as an invasion of individual rights.

No reports are required of the board; the health officer reports annually to the mayor, but his reports are not published. There are two medical colleges in the city. Saint Joseph has been blessed with uniform good health since its incorporation.

MUNICIPAL CLEANSING.

Street cleaning.—The streets are cleaned by the city's own force under the management of the street commissioner, and wholly by hand. In the business part of the city it is done about every two weeks, and done very poorly. The annual cost to the city is about \$10,000. Sweepings are deposited in the river, the place being well selected. As a whole the system is very defective, but the class benefited by it, together with the force of habit, are powerful enough to continue it.

Removal of garbage and ashes.—The ordinances require that householders shall remove garbage before it becomes offensive, but the law is poorly enforced. Part of the work is done, however, by the city's force. What they do not take scavengers gather up, and use what they can of it for feeding hogs, the rest being thrown into the river. There is probably some injury to health in a few cases from improper treatment of garbage, but this is rare. The system is poor and is indifferently executed.

Dead animals.—Dead animals are removed by the owner if known; if not, then by the street commissioner, who disposes of them to a glue factory south of the city, or deposits them in the Missouri.

Liquid household wastes.—Chamber-slops, laundry waste, and kitchen-slops are all disposed of in the same way, a small part only going into the public sewers because the sewer system is not yet complete. Perhaps one-half goes into cesspools or dry wells on the premises. These are generally porous, and no provision is made for overflows; they do not receive the waste of water-closets. In the past the rain has done all the flushing of street-gutters, the water-works being just in process of completion. The overflow and underground escape of cesspools and privy-vaults has been very injurious to drinking-water and to health in the old or business portion of the city; in the residence portion the people have relied on cisterns built with brick and cemented. Ordinances require the cleaning out of cesspools, but the law is not enforced.

Human excreta.—The entire population has depended on privy-vaults except a very small portion residing near the main sewers. None of these vaults are nominally water-tight. The ordinances require that they shall be sunk to a depth of not less than 8 feet, and must be emptied or cleaned when they become offensive to neighbors or to passers-by, but as a rule they have not been enforced. The dry-earth system is very little used. Night-soil is generally deposited in the river between the hours of 10 p. m. and 4 a. m.; it is not allowed to be used for manuring land within the gathering-ground of the public water-supply.

Manufacturing wastes.—Liquid manufacturing wastes are conducted by sewer to the river; the solid wastes from wood manufactories are consumed as fuel; those of iron-, tin-, copper-, bone-, and horn-works are collected and shipped east.

POLICE.

The police force is appointed by the mayor and city council, who have general supervision over it and the right to dismiss any of its members for cause. The chief executive officer is the marshal, who has the general management of the force, and whose salary is \$50 per month. There are 20 patrolmen and 2 special policemen. Their uniform, which they provide themselves, is dark navy blue; clubs are furnished by the city, but the men provide their own revolvers. Their hours of service are from 7 p. m. to 7 a. m., and they patrol about 20 miles of streets. In 1880 there were 1,712 arrests, intoxication being the chief cause; of these, 1,013 were dismissed on payment of fine, 686 were sent to the work-house, and 13 were discharged. Free meals were given to station-house lodgers, but as to the number of lodgers, or meals, or cost of meals no record was kept. The police force is required to co-operate with the fire department to the extent of preserving order and preventing theft at fires, and with the health department in reporting violations of the sanitary laws of the city to the city recorder. Two special policemen are appointed by the mayor, and are subject to his orders and those of the city marshal; they are separate from the patrolmen. The cost of the police force for 1880 was \$12,572.

SCHOOLS.

The following details concerning the schools of the city were taken from the report of the superintendent for the year ending September 1, 1879: The total number of children of school age for the year was 7,658. The city occupied 19 school-houses, of which 10 were rented; the value of the school property owned by the city January 1, 1880, was \$122,560. There was 1 high school, with 5 teachers and an attendance of 177; 15 district schools, with 47 teachers and an attendance of 3,087; 2 colored schools, with 4 teachers and an attendance of 427. The total attendance was 3,691, but the average daily attendance was only 2,521. One of the schools is a German-English school, in which 450 pupils were enrolled last year. The total expenditures for the year were \$52,263 50, and this was \$8,575 73 more than the receipts. The bonded indebtedness of the school board is \$80,000. There is great need of more school-houses. Besides the public schools there are numerous private institutions of learning in the city, among them being the College of Saint Joseph, with an attendance of 160 students; Saint Patrick's parochial school,

with 100 students; the Convent of the Sacred Heart, with 68 boarders and 40 day pupils, with which is connected a parochial school with 100 pupils; and the school of the Immaculate Conception, with about 200 pupils—all of which are Catholic institutions; Saint Joseph Female College, a flourishing school; the Young Ladies' Institute, with 83 scholars, and other smaller Protestant and non-sectarian institutions.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Saint Joseph for 1880, being taken from tables prepared for the Tenth Census by Willis M. Sherwood, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	238	\$1,423,650	2,040	94	124	\$806,702	\$3,210,080	\$5,143,585
Blacksmithing.....	19	18,650	29	.....	2	14,145	18,710	51,000
Boots and shoes, including custom work and repairing.....	15	55,100	65	10	.....	40,080	83,030	150,400
Brick and tile.....	10	31,800	208	.....	57	71,235	41,050	140,055
Carpentering.....	30	31,450	316	.....	.....	141,850	220,204	453,050
Carriages and wagons.....	9	22,800	52	.....	3	26,710	25,600	07,850
Clothing, men's.....	14	17,350	30	14	.....	10,350	40,000	88,160
Cooperage.....	8	12,150	49	.....	4	20,312	28,300	57,200
Drugs and chemicals.....	3	22,850	9	5	2	5,100	11,625	40,500
Flouring- and grist-mill products.....	4	108,000	33	.....	.....	14,400	202,024	338,050
Furniture.....	4	75,350	100	.....	3	40,300	20,100	90,750
Liquors, malt.....	5	200,000	44	.....	.....	21,402	92,582	105,325
Lock- and gun-smithing.....	3	4,400	4	.....	.....	2,180	4,200	0,200
Marble and stone work.....	4	68,000	77	.....	1	35,600	35,500	87,500
Masonry, brick and stone.....	5	10,750	71	.....	.....	32,300	44,200	93,500
Painting and paperhanging.....	14	10,150	51	.....	.....	18,887	20,750	55,000
Photographing.....	5	4,700	7	2	.....	4,408	0,550	21,000
Printing and publishing.....	8	120,500	112	.....	11	85,040	00,708	104,250
Saddlery and harness.....	8	81,400	84	.....	5	52,000	164,485	275,800
Slaughtering and meat-packing, not including retail butchering.....	5	134,500	190	.....	14	37,200	1,224,208	1,430,843
Tinware, copperware, and sheet-iron ware.....	10	37,700	63	.....	.....	30,925	80,200	130,700
Tobacco, cigars and cigarettes.....	12	20,950	53	5	5	27,897	60,201	118,340
All other industries (a).....	43	328,040	373	53	17	140,307	500,903	1,041,310

a Embracing baking and yeast powders; bluing; bookbinding and blank-book making; boxes, wooden packing; bread and other bakery products; brooms and brushes; coffee and spices, roasted and ground; coffins, burial cases, and undertakers' goods; confectionery; coppersmithing; electroplating; foundry and machine-shop products; fruits and vegetables, canned and preserved; grease and tallow; hosiery and knit goods; looking-glass and picture frames; lumber, planed; mattresses and spring beds; mineral and soda waters; patent medicines and compounds; plumbing and gasfitting; pumps; roofing and roofing materials; shirts; show-cases; stone- and earthen-ware; trunks and valises; upholstering; vinegar; wheelwrighting; whips; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is \$5,981 72; that the average wages of all hands employed is \$397 14 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$17,614 54.

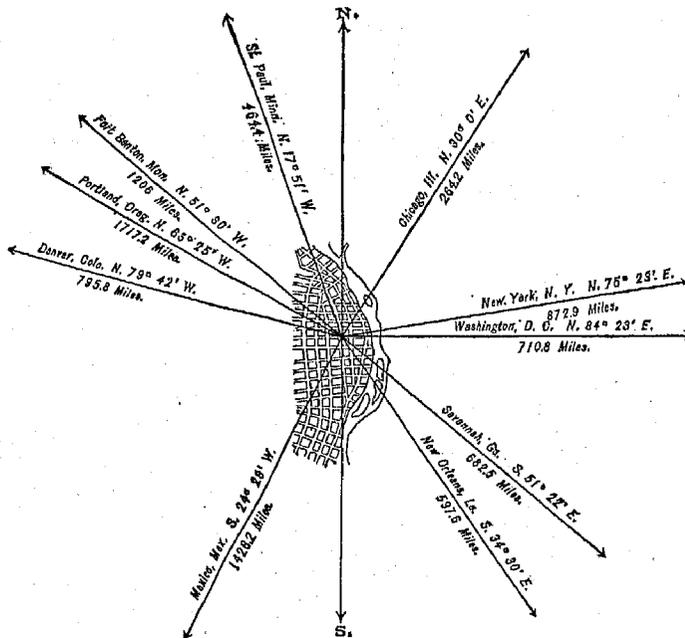
SAINT LOUIS,

SAINT LOUIS COUNTY, MISSOURI.

POPULATION

IN THE
AGGREGATE,
1820-1880.

	Inhab.
1790	
1800	
1810	
1820	10,049
1830	14,125
1840	16,469
1850	77,860
1860	160,773
1870	310,864
1880	350,518



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	179,520
Female	170,998
—	
Native	245,505
Foreign-born	105,013
—	
White	328,191
Colored	* 22,327

* Including 56 Chinese and 15 Indians.

Latitude: 38° 37' North; Longitude: 90° 12' (west from Greenwich); Altitude: 374 to 610 feet.

FINANCIAL CONDITION:

Total Valuation: \$165,288,400; per capita: \$472 00. Net Indebtedness: \$22,847,761; per capita: \$65 18. Tax per \$100: \$2 23.

HISTORICAL SKETCH. (a)

EARLY SETTLEMENT.

It was nearly two centuries and a quarter after the brilliant but unfortunate expedition of De Soto, eighty years after the last exploration of La Salle, and forty years after the founding of New Orleans, before the vast resources

^a Professor S. Waterhouse, of Washington University, Saint Louis, not only secured many of the statistics and much of the detailed information regarding the present condition of the city, but to him alone is due the careful and valuable historical sketch, from the settlement to the incorporation of Saint Louis, with which this report is introduced. But the necessity of shortening a sketch too long for the allotted space has required the omission of a large amount of subject-matter, together with copious notes and citations of authorities; and the readjustments of connection in a narrative interrupted by this abridgment have compelled frequent departures from the exact words of the author.

of the valley of the upper Mississippi began to attract the attention of commercial enterprise. In 1762 the firm of Maxent, Laclède, & Company obtained from the governor-general of Louisiana an exclusive control of the fur-trade with the Missouri and other tribes of Indians, as far north as the river Saint Peter, and the company immediately took steps to avail itself of the valuable privilege of its charter. Laclède, the junior member of the firm, was directed to select a site for a trading-post in upper Louisiana, and under the royal license and the instructions of his firm, he at once began active preparations for his expedition. In the cumbersome boats of that period, heavily laden with goods for the Indian trade, and manned by a hardy band of pioneers, Laclède left New Orleans on August 5, 1763. There were but few villages at that time even along the banks of the lower Mississippi, but for 700 miles from Natchez stretched an unbroken wilderness, which was peopled only by savages. After months of weary toil, the expedition reached Sainte Genevieve, the only French settlement on the west side of the river. There is legal evidence of its existence in 1754. Its origin is assigned by tradition to about 1735. Not finding there the accommodations he desired for his goods, he continued his trip to fort De Chartres, the commandant of that post, M. de Villiers, having offered him the necessary shelter. The expedition was just three months in making the voyage from New Orleans to fort De Chartres.

Leaving his merchandise and some of his men at the fort, Laclède, with a few companions, set out to accomplish the object of his mission. He ascended the stream to the mouth of the Missouri, and, after carefully observing all the natural advantages of situation as well as the merits of several locations, chose the spot on which Saint Louis now stands as the site for his trading-post, being about 50 miles above fort De Chartres. Its local superiority relieved him of the embarrassment of a doubtful choice. High, salubrious, and central, the situation possessed the twofold excellence of fitness for healthful residence and of matchless facilities for commercial exchange. Indeed, so favorably did the advantages of the place strike Laclède, that on his return to fort de Chartres he told M. de Villiers that "he had found a situation where he intended to establish a settlement which might become hereafter one of the finest cities of America". The winter months were spent in active preparations for the future settlement, and an open spring permitted an early resumption of the work of colonization. Before leaving the site of his trading-post Laclède had marked the trees so as to indicate the spot, and early in the following year he sent Auguste Chouteau, with a party of about 30 men, to clear the site and to put up temporary shelters. Chouteau reached the spot February 14, 1764, and on the following day began the humble labors which subsequent events have rendered memorable. His party cleared a space in the primeval forest, sheltered themselves with temporary scaffoldings, and then built a tool-shed and a few log huts. These buildings, the rude beginning of a metropolitan greatness, were erected on the block, as now laid out, where Barnum's hotel stands. Laclède selected a site for his own residence and laid out a plan for the future village.

Saint Louis owes its title to a mingled sentiment of piety and patriotism. Under the illusion that the vast domain lying west of the Mississippi was still a French possession, Laclède named the newly founded post "Saint Louis", after the patron saint of Louis XV. According to tradition, the companions of Laclède wished to name the place after their leader, but the founder declined the deserved distinction.

The expected arrival of the English troops at fort De Chartres induced Laclède to hurry the removal of his merchandise to Saint Louis; but the sudden arrival, on October 10, 1764, of 100 Missouri warriors, with several hundred women and children, delayed his movement. There were no Indian villages in the immediate vicinity of the new post, and though the Illinois Indians claimed to be owners of the ground on which Saint Louis stands, they did not disturb the French settlers, and demanded no remuneration for the occupancy of the land. Still, the sudden appearance of such a large body of savages caused some uneasiness. The ostensible object of the visit was to procure a supply of provisions, but the food given for the purpose of conciliating the visitors proved a dangerous gift. The Indians were so delighted with the hospitality of their reception that they expressed a determination never to leave their generous entertainers. This was more than the French had bargained for, and, after trying various pacific measures to rid himself of his troublesome guests, Laclède finally threatened to bring over the French troops from fort De Chartres and expel the savages by force of arms. This had the desired effect, and the Indians reluctantly withdrew. This left Laclède free to carry out his intentions regarding the removal of his goods. The desire to insure the safety of his goods was not his only motive in making the transfer. Laclède disliked the English, and this feeling, shared by all the French in upper Louisiana, did much to foster the growth of the infant colony: The Seven Years' war in Europe had recently closed, and the Peace of Paris changed the bounds of empire in America as well as in Europe. The French residents of eastern Louisiana bitterly resented the transfer, and while many of them went to New Orleans, a number of others, entertaining the erroneous belief that the country west of the Mississippi was still a part of France, came to Saint Louis. Many of the latter recrossed to the east side when the Missouri Indians made their visit, but, after seeing that there was no danger, they returned. The Indians, also sharing the dislike of the French to the English, withdrew a large part of the fur trade from fort De Chartres, Kaskaskia, and Cahokia, and transferred it to Saint Louis. This combination of circumstances so materially increased the population and business of Saint Louis that the village became in the first year of its life one of the most important places in upper Louisiana, and the settlements of Carondelet, Saint Charles, Bon Homme, Florissant, and Portage des Sioux sprang from this strong young colony. The information,

officially proclaimed to the people of Louisiana in October, 1764, that all the territory on the west side of the Mississippi had been transferred to the king of Spain, aroused here the same antagonism among the French people that was so violently expressed in New Orleans, and which is so fully described in the report on that city.

At first no organized form of civil government existed in Saint Louis. The few mechanics and hunters who accompanied Laclède were bound to each other by the ties of personal friendship and of common interests. The restraints of law were not needed to preserve public order. The imperial charter doubtless vested in Laclède discretionary powers of government; but, as if unwilling to transcend the express privilege of his royal license, he preferred to devote his attention exclusively to mercantile interests. However, it was necessary that the settlers should have a title to the ground on which they built their cabins, and therefore Laclède granted allotments of land, with the right of use, until the inchoate claim was confirmed by an authority competent to confer a full title. But the accession of immigrants was gradually changing the conditions of the young settlement, and after the transfer of fort De Chartres to the English, in October, 1765, Saint Ange de Bellerive, with some 40 soldiers, came to Saint Louis. The presence of an indolent soldiery did not improve the morals or the tranquillity of the colony, and the need of an organized government, to repress the growing tendencies to disorder and to punish violations of the law, became urgent. In view of these facts, and without awaiting the sanction of the Spanish authority, the people unanimously vested in M. de Bellerive the power of civil government, which he was to exercise until the arrival of his legally appointed successor, it being presumed that Spain would imitate the example of England in promptly taking possession of its newly acquired territory. As after events showed, Spain took its time.

Associated with Saint Ange de Bellerive were Judge Lefebvre^a and Joseph Labuscère (the latter a notary public), both of whom had come from fort De Chartres; and while M. de Bellerive attended to the maintenance of public order, to the concessions of land and to the direction of the military, the latter performed the purely civil functions of the government. The system of registered land grants was begun in April, 1766, the first concessions bearing the signature of M. de Bellerive as acting governor, and Lefebvre as former judge. Lefebvre died in August of this year, and after his death all legal documents were executed by Labuscère and kept in his custody. When the Spanish authorities took possession of Saint Louis, in 1770, Labuscère delivered to Governor Piernas 194 legal documents. It is a singular incident in the history of Saint Louis that its first form of government, though instituted during a period of rigorous imperialism, was distinctly republican in its character. The king of France could not legally appoint the lieutenant-governor of a province that had ceased to be a part of the French empire, neither could the vice-regent in New Orleans do an act which his sovereign was not empowered to perform. But though the governor-general could not confirm the action of the Saint Louis colonists with full official sanction, he yet sustained the popular choice by his personal approval. The appointment of officers whose purely ministerial functions did not involve the grant of lands was vested in the director-general of Louisiana until Spain assumed control of her possessions, and in the exercise of this right Governor Aubri completed the organization of the civil government of Saint Louis by the appointment of two judges, an attorney-general, and a notary.

Several events, interesting from the novelty of first occurrence in the little colony, took place in 1766. The first marriage recorded in the archives was celebrated on the 20th of April; the first baptism was administered in May, the ceremony being performed in a tent; the first recorded mortgage was executed on September 29, and the first grist-mills were built during this year.

In the summer of 1767 news reached Saint Louis that Spain had appointed officers to take charge of Louisiana, and Rios, the Spanish officer sent to take possession of upper Louisiana, arrived at Saint Louis August 11, 1768. The Spanish officer quickly saw that any attempt on his part to exercise his authority would, in all probability, lead to bloodshed; and though he went through the formality of taking military possession of upper Louisiana, he did not exercise any civil functions, the government being administered by M. de Bellerive during the time Rios remained in Saint Louis. On July 17, 1769, the Spanish forces retired from Saint Louis, to the great joy of the colonists.

The inclemency of the winter of 1768-69 was extraordinary. It was so cold that fruit trees were killed on the borders of the Gulf, and ice was formed on the banks of the lower Mississippi. The famous Indian chief Pontiac visited Saint Louis during 1769 as the guest of M. de Bellerive. While on a visit to Cahokia, across the river, Pontiac was murdered by a Kaskaskia Indian, and the body was brought to Saint Louis and buried with military honors. It was during this time that Saint Louis, made up mostly of hunters and traders, received the name of "Pain Court" from the citizens of Carondelet, who were mainly farmers, a name given to it on account of its inadequate supply of grain.

SPANISH DOMINION.

Shortly after Don Alexander O'Reilly had occupied New Orleans and fully asserted the authority of Spain in Louisiana, Don Pedro Piernas was sent with a body of troops to take possession of upper Louisiana. The date of his arrival in Saint Louis is not definitely known, but it was probably early in the spring of 1770. The colonists, probably overawed by the stern measures taken by O'Reilly, received the lieutenant-governor in sullen silence,

^a His full name was Joseph Lefebvre d'Inglebert Desbruisseau.

while he, not entering at once on the discharge of his duties, lived quietly in the house of Laclède and spent some months in cultivating friendly relations with those over whom he was placed, and in learning the resources of his department. The result of his observations was highly gratifying to the Spanish magistrate. He found his province blessed with every bounty of nature. The beauty of scenery, richness of soil, and facilities for commerce, excited well-grounded expectations of rapid development. Saint Louis, enriched by the wealth of an extensive Indian trade, was actively prosperous, and had already grown from a small trading-post to a village of about 700 inhabitants.

On the 20th of May, 1770, Piernas took formal possession of upper Louisiana and assumed the functions of government. One of his first acts was the erection of a church on a plot of land which had been reserved for religious purposes by Laclède when the village was first laid out. The church stood on the west side of Second street, between Market and Walnut streets, as now named, and was built of upright logs, the crevices being plastered with clay. This church was dedicated June 24, 1770. The administration of the new governor was popular and conciliatory. Piernas was married to a French lady, and this fact, together with the filling of many of the minor civil offices with Frenchmen, contributed in no small degree to his success. The original settlers were much alarmed over the tenure by which they held their lands; but Piernas quietly relieved this anxiety by publicly confirming all the land titles which M. de Bellerive had granted. When the settlers asked that the bounds of all lands should be properly defined, the governor appointed a Frenchman as official surveyor. The Spanish military force then in Saint Louis numbered 6 officers and 20 men.

During the administration of Piernas nothing of special interest occurred in Saint Louis. On the 27th of December, 1774, M. de Bellerive died, and his remains were interred in the grave-yard adjoining the Catholic church. At this time the duties levied by Spain on all English imports were almost prohibitory, and many of the Saint Louis dealers evaded the laws by systematic smuggling.

In May, 1775, Piernas was superseded by Don Francisco Cruzat, an officer who continued the conciliatory policy of his predecessor. The Atlantic colonies were now agitated by the commotion that attended the outbreak of the Revolution, and though no ripple as yet disturbed the serenity of the little village on the banks of the Mississippi, it began to be rumored that after war was declared England might instigate Indian attacks on the Spanish settlements west of the river. It was supposed that Saint Louis would offer a favorable point of attack for hostile parties from Canada, and Cruzat began to mature a system of fortifications. Before much could be done he was removed from office, and was succeeded, in 1778, by Don Fernando de Leyba. Shortly after this change the father of the colony died.

Pierre Laclède Liguist came to New Orleans from Bion, in southern France. His personal appearance was striking. An erect figure, somewhat above the ordinary stature of Frenchmen, a dark olive complexion, a broad forehead, a prominent nose, and penetrating black eyes were the physical traits of the founder of Saint Louis. Endued with a restless nature, Laclède could not be content with the uneventful life of an obscure French province. A longing for a career of adventure and an ambition to found a French colony in the domain of Louisiana were the supreme motives that impelled Laclède to seek his fortunes in the new world. At his solicitation a number of his countrymen accompanied him to America for the express purpose of establishing a new settlement, and history records few examples of a more complete realization of ambitious hopes. Reared at the foot of the Pyrenees, he could scarcely have grown to manhood without acquiring a familiarity with the Spanish language, and in Louisiana, under Spanish rule, this accomplishment was of practical service to Laclède in the conduct of his business. Laclède occupies but little space in the political history of the colony which he founded. He devoted himself exclusively to commercial pursuits. His charter guaranteed to him a monopoly of the Indian trade for eight years. Smitten with a fatal illness while coming up from New Orleans, he was carried to the military post near the mouth of the Arkansas, where he died June 20, 1778, at the age of 54. His remains were buried in the wilderness, on the south bank of the Arkansas river. In a few years every vestige of the grave was obliterated; and now the city which would gratefully erect a monument in honor of its founder will search in vain for the place of his burial.

During the remainder of the time that Saint Louis was under the Spanish rule but little of interest transpired, though there were several governors. On the 26th of May, 1780, Indians surprised some farmers at work, and before they could get to shelter five were killed. The Indians withdrew without making any attempt to attack the village. This event admonished the colonists of the insecurity of their village, and a system of fortifications was at once begun. In June, 1785, a great flood swept down the Mississippi. The water at Saint Louis rose 20 feet above all then known water marks, and the inhabitants prepared to leave their houses, and had already begun to remove some of their property to the highlands in rear of the village, when the subsidence of the water allayed their anxiety. With the exception of the high water of 1844 this is said to have been the heaviest flood that ever inundated the valley. In 1787 a band of pirates that had for many years infested the Mississippi and seriously interfered with commerce was broken up. About this time numerous small parties of Indians hung about Saint Louis and made the surrounding country very unsafe for the settlers. In 1792 the first honey bees came to Saint Louis, causing much curious interest and satisfaction. In the following year the governor, becoming impressed with the economic importance of immigration, offered generous grants of lands to all who would come in and settle. This had a good effect, and not only did many immigrants take advantage of the offer, but many merchants came

to the growing settlement to avail themselves of its superior facilities for trade. Business became more active, new buildings were more spacious and elegant, and in every branch of industry the indications of increasing prosperity were distinctly visible. In 1799 the total number of people in upper Louisiana was 6,028, and of these 925 lived in Saint Louis. The winter of 1799-1800 was the coldest known, the temperature falling as low as -32° . In 1801 the small-pox broke out in Saint Louis, and it is noted as the first appearance of this dread disease in upper Louisiana.

Though the purchase of Louisiana was ratified by Congress in October, 1803, it was not until the 9th of March, 1804, that Governor Delassus transferred upper Louisiana to Captain Amos Stoddard, of the United States army, who, by virtue of a commission from the first consul, took possession of it in the name of France, and on the following day delivered it to the United States authorities. For forty years the province had been under the sway of France and Spain, but now another race, filled with the energies of liberty and progress, assumed control.

AMERICAN JURISDICTION.

In 1804 Saint Louis was still a small village, containing 180 houses and nearly 1,100 inhabitants, with only two American families in the place. The accompanying map indicates the extent of the settlement and the location of the buildings. Most of the people lived on the present Main and Second streets. There was no street fronting on the river, but the rear yards of the first line of buildings extended to the edge of the bluffs. There were only two pathways up from the water, one of these leading up through Market street and the other through the present Morgan street. There was no post office, and for the transmission of their letters the villagers were forced to rely on the courtesy of travelers, years sometimes elapsing before an opportunity presented itself of sending a letter to a distant friend. There was no ferry across the Mississippi, the only one theretofore established having been discontinued for want of patronage. There were only three small inns, and even these seemed unnecessary, as the stranger was welcome to the free hospitality of every home. At the time of the cession one of these inns had just been opened; the other two, situated on the corners of the present Main and Second streets, had been in existence several years. The only place of worship was the little log church already mentioned. In their respective vocations, one physician, one baker, and three blacksmiths supplied the wants of the village. Most of the dwellings were low-studded, one-story buildings, and in exceptional cases, where two stories occurred, the family ordinarily lived up stairs, while the first floor was the little shop which courtesy dignified by the name of store. The merchants generally kept their goods in boxes, and frequently the trader's whole stock of merchandise was contained in a single chest.

At the time of its transfer to the United States the luxury of an indolent life was deemed preferable to the attractions of wealth or the gratifications of ambition. The people had an aversion to any systematic industry.

Within a few months after the cession the boundaries of the province were defined, and all that portion north of the 33d parallel was called the "district of Louisiana", Captain Amos Stoddard being appointed the first governor, with headquarters at Saint Louis. The civil and military control of the district was intrusted to the territorial government of Indiana, and in the fall of this year General Harrison, the governor, and several officers from Indiana, came to Saint Louis to discharge their new duties. Laws were formed and regulations were enacted for the guidance of the new acquisition. Toward the close of the year the first session of the court of common pleas was held in the old fort, where now is the corner of Fourth and Walnut streets, and the supreme court was organized shortly afterward. The government also provided postal facilities, and appointed a postmaster at Saint Louis. On March 3, 1805, the district was transformed into the "territory of Louisiana", with a full territorial government, General James Wilkinson being appointed governor. In July of this year Aaron Burr visited Saint Louis and was entertained by the governor. In 1806 Lewis and Clarke returned from an expedition which had been inaugurated in 1803. They had left Saint Louis in 1804 to cross the continent. They had explored the Missouri river to its source, had crossed the Rocky mountains, and had descended the Columbia river to the Pacific ocean. The expedition had developed many valuable facts, and in recognition of the service performed, Clarke was appointed governor in place of Governor Wilkinson, who had been ordered to New Orleans.

The increasing demand for transportation across the Mississippi river led to the establishment of two ferries. The flat-boats used in this service were at first impelled by oars, then by horse-power, and it is said that the number of immigrants so greatly exceeded the capacity of the ferries that persons were sometimes detained on the eastern bank for days before their turn, in the order of arrival, permitted them to cross the river. Merchants with increased capital came in, while larger stores and better buildings were erected. On July 12, 1808, the *Missouri Gazette*, the first newspaper printed on the west bank of the river, was established. The first issue of the *Gazette* was on paper only 12½ by 16 inches, but the lapse of time has developed this little sheet into the ample pages of the *Missouri Republican*. On September 16 of the same year, a young man was hung for murder, this being the first execution of a white man in the territory of Louisiana. In this year the Saint Louis Fur Company, with a capital of \$40,000, was organized. The company established a trading-post on the Columbia river, and in 1812 was reorganized as the Missouri Fur Company, with a capital of \$50,000, but it seems that its influence upon the

commercial development of Saint Louis was greater than its own success. On October 11, 1809, Governor Lewis died by his own hand, and was succeeded by Governor Howard. On the 9th of November the district court of common pleas incorporated Saint Louis as a town.

A board of trustees was appointed and ordinances were passed for the better protection of the new town. Fire companies were organized; every householder was required to keep two buckets in readiness for use, and to have his chimneys swept once a month; while the occurrence of a fire created a presumption of negligence, and subjected the tenant to a fine of \$10 unless he could prove that he had complied with the terms of the ordinance. The supervision of roads and bridges was lodged in the hands of an overseer, and whenever there was need of repairs, assessors levied a tax, payable in manual labor, on the abutting property-owners. In 1810 six or seven buildings were erected, but the supply was still unequal to the demand. In January, 1811, a market-house was built on the square now bounded by Market and Walnut streets, Main street and the river, the square being subsequently occupied by the old Merchants' Exchange. Though small, it was for a number of years the only market-house.

At this time the population of Saint Louis was estimated at 1,400, and there were twelve stores, two schools, and one printing-office in the place. The estimated value of the stock of merchandise was \$250,000. Trade was still largely carried on by barter; peltries, lead, and whisky forming the common medium of exchange. Business, which had been languishing for a while, began to improve, and, though many new buildings were erected, there was not a house to rent in the town. During this year the trustees passed an ordinance regulating the assessment and collection of taxes. On December 17, 1811, the great earthquake, so destructive at New Madrid, caused much alarm at Saint Louis, but inflicted no damage there.

In 1812, when the state of Louisiana was admitted into the Union, the name of the territory of Louisiana was changed to the "territory of Missouri". Up to this time the people had no voice in the administration of public affairs, the government of the territory being vested in the hands of officers appointed by the President. But the act of Congress which altered the name of the territory also granted to the people a liberal measure of republican power, and in all subordinate matters the inhabitants were entitled to vote. Town meetings were held and a house of representatives was elected, one of whose duties was to nominate to the President the members of an executive council. The governor, council, and house of representatives constituted the territorial legislature. The first sessions were held in Saint Louis during the winter of 1812.

During 1812 trade was active, wages were high, and money was abundant, while real estate rose to unnatural values. Business was carried on by means of borrowed capital, and land and merchandise were largely purchased for speculative purposes. High prices and long credits controlled trade.

The breaking out of the war of 1812 caused great depreciation of prices, and temporarily suspended the trade carried on with Mackinaw. But peace soon relieved business of its depression and allowed the full tide of trade to flow in its wonted channels. In 1813 William Clark was appointed governor, and about this time the first brick house was erected. Even so late as 1814 there was not a public hall in the town, all entertainments being given in barns or stable-lofts. The want of better facilities for the transaction of business had long been felt, and the merchants determined to remedy the defect. The Bank of Saint Louis was chartered August 21, 1816, and this was soon followed by other banks. On the 2d of August, 1817, the first steamboat reached the wharf at Saint Louis. This inaugurated a new era of commercial development.

In the same year a duel was fought on Bloody island, between Thomas H. Benton and Charles Lucas, the United States attorney for the territory, in which the latter was wounded. On September 27 they met again, and Mr. Lucas was killed.

During the fiscal year 1817 the revenue from the whole county of Saint Louis did not much exceed \$2,000, and the expenses for the same period were but little more than \$1,000. In this year the legislature granted license to lottery companies.

In 1818 the sidewalk on Market street, between Main street and the river, was laid with stone blocks set on edge. This was the first pavement in Saint Louis. The same year the little log church was torn down and a brick cathedral was built in its place. Though the edifice was never wholly finished, yet it was occupied for some time as a place of worship. The same year the Saint Louis college was built, and the excellence of the institution soon attracted students from other parts of the country, notably from Kentucky and Louisiana. Up to this time the only church belonged to the Roman Catholics, but now the Baptists erected a place of worship at the corner of Market and Third streets. Though never completed, it was used not only as a church but as a court of justice.

In 1818 the application of Missouri for admittance to the Union gave rise to the exciting political discussion terminated by the famous "Missouri Compromise". The territory was permitted to determine the character of its institutions. A pro-slavery constitution was adopted, every member of the constitutional convention of 1820 being pledged to advocate slavery.

During 1819-'20, in addition to the ordinary expenses of sustaining public worship, \$18,000 was raised for the erection of churches. In 1820 Alexander McNair was elected governor of Missouri, being the first governor elected under the state laws.

About this time the derangement of currency, incident to the failure of the banks, seriously affected the business interests of Saint Louis. To relieve the financial wants of the community the legislature created a loan office, but this not proving effectual, the courts were authorized to grant an arrest of execution in judgment for a period of two and a half years. This latter, though affording some measure of relief, wrecked the fortunes of many merchants, who, dependent on the collection of moneys due to meet their own liabilities, were forced into bankruptcy. It was several years before Saint Louis recovered from this financial depression.

In 1821 a brick sidewalk was laid in front of block 52, the first pavement of this class put down in Saint Louis. In the same year the first Methodist church was erected. The first directory of Saint Louis was published during this year, and, as many of the streets bore no distinctive names, the compiler supplied names, using the letters of the alphabet to a considerable extent for streets running north and south. The names thus given remained in use for some time, being finally superseded by the present system. The introduction of many new industries was a gratifying indication of public progress, and agriculture, which had been neglected from the first settlement of the province, began to receive greater attention. At a meeting held in Saint Louis in 1822 a society for the encouragement of agriculture was formed, and for several years did good work in actively promoting the interest of agriculture in the state.

On the 9th of December, 1822, the legislature granted to the town of Saint Louis a city charter, and on the first Monday of April, 1823, the city government was inaugurated by the election of a mayor and nine aldermen. The area comprised within the corporate limits was 385 acres, and the population of Saint Louis at that time was about 5,000.

CIVIC GROWTH. (a)

Immediately after the organization of the new city government the city engineer was instructed to submit a plan for grading and paving the streets. He recommended a grade for Main street, from near where the Iron Mountain depot now stands to the intersection of Green street, which was adopted by ordinance; and the grading and paving between Market and Walnut streets was completed in the autumn of 1823. The grading was done at the cost of the city, but the paving and curbing were done at the cost of the owners of lots fronting on the streets paved. As a result many of the owners of large lots found it desirable to divide and sell them, and thus an opportunity was afforded for the improvement of the city in its central parts, where it had long been disfigured by rustic and nearly useless inclosures.

In consequence of this and similar changes many old French families, who were fond of a rural life, retired into the country in the course of this decade. As the facilities for their obtaining a subsistence in the city were daily diminished, hunters, trappers, bargemen, and voyageurs also gradually disappeared, and their places of residence were occupied by newcomers of other occupations, so that, although the population of the city increased only about 600 from 1820 to 1828, there was yet much real growth. In the latter part of the decade the influx of population from Illinois was important.

In 1824 the first Presbyterian church was erected, and in 1825 the first Episcopal church. Both of these structures disappeared long ago. Two years later, in 1827, the old court-house was built. The market-house, on the north end of Place d'Armes, the only one in the city, was found to be too small, and from the proceeds of a loan a new one was built, which, by having a town-house above and stores below, seemed for a short time to satisfy the needs of the growing town. The erection of this building induced many owners of lots in the immediate vicinity to improve them—a procedure which soon gave this part of the city a more animated and commercial appearance, and obliterated most of the old landmarks, except the streets themselves.

Improvements seemed not to be confined to this locality only; they extended to all parts of the city. At the same time new brick-yards were established, new lumber-yards and quarries were opened in the suburbs, and sites for new dwellings were selected and improved. An ordinance was passed for paving Olive and Chestnut streets from Fourth street to the river, and Green street from Main street to the river. The new buildings differed so far in materials and symmetry from what had been in use in former years that all imitation of former style was abandoned, and the monuments of French and Spanish architecture rapidly gave place to the new order of improvement. But even yet half the families residing in the city spoke the French language, and in all Saint Louis there were less than half a dozen German families.

In 1829 the progress of the city became still more marked. The new buildings of any former year were doubled. The United States Bank, then in the zenith of its financial glory, established a branch here—an act which at this crisis was fraught with advantage to every kind of business, inasmuch as this institution had no competitor and was guided by persons identified with every local interest. One of its results was the substitution of United States notes and half-dollars for the heterogeneous currency then in use. For many years silver coin had been the circulating medium of the country, and the vast influx of foreigners from many parts of the world had put the coins of nearly all the enlightened nations into circulation among the people of Missouri, so that more than half the currency was foreign coin, chiefly Mexican dollars, 5-franc French or Italian pieces, and Prussian or German thalers.

In 1830 the number of brick buildings in the city increased considerably. The frame or one-story cottage houses, with their piazzas and large yards, significant of the French and Spanish time, were fast disappearing. Most of the extensive gardens, frequently occupying a whole square, in which grew delicious fruit, and in which were raised abundance of vegetables, had now either lost their original owners by death, and so the property had become divided, or had risen to such value that the price offered was a temptation to part with it.

Many of the old French families, after the advent of the Americans, still preserved their simple mode of life, nor seemed sensible of the changing circumstances around them. They gathered the fruit from their trees and raised their vegetables until taxes and other demands so accumulated that they were forced every few years to lop off a slice from their grants, and their simplicity and unbusiness-like habits were often taken advantage of by the enterprising race that had settled among them.

A writer in one of the public journals of 1831 thus speaks of Saint Louis: "Our city is improving with great rapidity. Many good houses are building in a style worthy the most flourishing seaport towns. The arts and useful manufactures are multiplying and improving. Mills, breweries, mechanical establishments, all seem to be advancing successfully for the good of the country, and we hope for the great profit of our industrious and enterprising fellow-citizens. The trade and navigation of this port are becoming immense." During the year 1831, according to the wharfmaster's report, 60 different steamboats visited the harbor, making 532 entries, with an aggregate tonnage of 7,769 tons. The city derived a revenue from wharfage amounting to \$2,167.

In common with other cities of the Union, Saint Louis was visited by the cholera in 1832. In spite of all the precautions that had been taken, two well-defined cases were discovered September 25. The disease spread rapidly, and in the five weeks of its continuance about 4 per cent. of the population perished. It reappeared in the next year in a milder form, but as it continued several months longer, it was on the whole as detrimental to the city's mercantile interests as in 1832. It put a marked check on immigration and enterprise.

In April, 1835, a destructive fire occurred in the heart of the city, by which the large unfinished brick cathedral and many other buildings were destroyed, together with about 50 houses, and much other valuable property.

At this time the Mississippi river passed the city in two streams of about equal size, being divided by Bloody island, now a part of East Saint Louis. The current on the eastern side of the island was daily increasing, and threatening to leave no channel on the west side. The departure of so large a portion of the river from its western shore slackened the velocity of the current and allowed the muddy water from the Missouri to deposit the heavy material it held in suspension near the shore in front of the lower part of the city, where the stream in 1800 was 70 feet deep, until it formed a bar on which vast quantities of flood-wood lodged and defended the accumulations until, assisted by a growth of willows, cottonwood, and sycamores, it had become in one lifetime an apparently permanent island. Its presence in the former deep channel of the river quite ruined the navigation along the bank as far as it extended, and its rapid growth up stream gave signs that it would eventually thrust itself, like a wedge, between Bloody island and the city, and thus destroy the port entirely. It had progressed so far northward that no steamboat could land below Market street, and some boats had grounded directly in front of the Merchants' Exchange before those most interested could be brought to contemplate their danger. Congress was then induced to make an appropriation of \$15,000 for a preliminary survey and examination of the river and harbor, and subsequently to appropriate additional funds to finish the work. By the system finally adopted, Bloody island, the scene of many tragic encounters in the days of the code of honor, became a part of East Saint Louis, then familiarly called Illinoistown, and the pile of *débris*, known as Duncan's island, was largely washed away.

Meanwhile the commerce of Saint Louis was taking giant strides, and was fast bringing the city into national prominence as a business center. In 1835, 121 different steamboats visited this harbor, against 60 in 1831. After another period of four years, in 1839, the total steamboat arrivals were 2,095, while the entries in 1831 had numbered only 532. By September, 1836, the place had reached such prominence that the Post-Office Department granted it a daily mail to and from the East. In that year a new hotel, a new church, and a theater were completed, and a city directory was published.

The theater was the old Saint Louis theater, which stood on the site later occupied by the custom-house, on the corner of Third and Olive streets. The lot on which it stood was 60 feet front by 160 feet deep, and cost the trifling sum of \$3,000, an amount then considered enormous. The theater cost \$60,000.

We learn from a *Gazetteer of Missouri*, published in 1837, that even then many of those manufactures were carried on that are auxiliary to commerce and agriculture, including flouring-mills, saw-mills, which fell far short of furnishing supplies of lumber sufficient for building purposes, and founderies and engine-shops, operating on a large scale.

At that time the wholesale and retail dry-goods houses were generally located in First street, which had been widened for the convenience of business operations, wherever it could be done, by the removal of balconies and houses of little value. In streets farther back from the river were located the tradesmen and artisans. From the river to the high ground, a distance of about 600 yards, the streets were generally graded and paved.

Two years later (1839) the city proper extended westward only as far as Seventh street. Beyond that line there were some scattered residences, ditches, and prairie. In the neighborhood of Washington avenue, west of the boundary of Seventh street, there were more buildings than in any other quarter in that direction, as the Saint

Louis college was located there. On the north the city extended to Middle street, and on the south to a point just below the convent of the Sacred Heart. Beyond these limits the residences were scattering and the population was inconsiderable.

It was the early custom here, as well as throughout the state, for mechanics and laborers to work for their employers from sunrise to sunset, taking a recess of one hour from 6 to 7 a. m. for breakfast, and another hour from 12 m. to 1 p. m. to dine. In May, 1840, the bricklayers of the city demanded a fixed number of hours for a day's labor, and uniformity throughout the year. Being refused, they quit work. The movement being joined by workmen of many other occupations, a general change was effected, and ultimately the ten-hour system was adopted.

Early in 1841 the city limits were extended considerably on the southwest and north, so as to begin on the river east of the southeastern corner of the suburb of Saint George, and thence to run due west to Second Carondelet avenue; thence north to Chouteau avenue; thence in a direct line to the mouth of Stony creek, and thence east to the river—so that the city now embraced 2,630 acres.

Charles Dickens, who visited Saint Louis in 1842, has left us in his *American Notes* a brief account of the place as he saw it. As one of the very few pen pictures of the Saint Louis of the first half of this century, it is well worth quoting here:

In the old French portion of the town the thoroughfares are narrow and crooked, and some of the houses are very quaint and picturesque—being built of wood, with tumble-down galleries before the windows, approachable by stairs, or rather ladders, from the street. There are queer little barbers' shops; and abundance of crazy old tenements with blinking casements, such as may be seen in Flanders. Some of these habitations, with high garret gable windows peering into the roofs, have a kind of French shrug about them; and being lop-sided with age, appear to hold their heads askew, besides, as if they were grimacing at the American improvements.

It is hardly necessary to say that these consist of wharves and warehouses, and new buildings in all directions, and of a great many vast plans which are still progressing. Already, however, some very good houses, broad streets, and marble-fronted shops have gone so far ahead as to be in a state of completion; and the town bids fair in a few years to improve considerably, though it is not likely ever to vie in point of elegance or beauty with Cincinnati.

Saint Louis was now beginning to make improvements, and so to raise its taxes and debt to an extent disproportioned to its rate of growth. In the first year of its existence as a city, 1823, the amount of tax raised by assessment was \$4,050 23. The next year it rose to \$5,665 85; but after that it fell considerably, and did not exceed this amount for ten years, varying in that time between \$1,970 41, the lowest figure, in 1825, and \$4,765 98, the highest, in 1829. Then in 1835 it went up to \$8,332 08, and in 1836 to \$26,615 41. After that the rise was steady, and in 1842 it had reached \$47,780. In 1843 the whole taxable property of the city was assessed at \$11,721,425, and the tax levied was 1 per cent. of that amount.

About this time the commerce of Saint Louis with the Missouri and the upper Mississippi, which has since contributed so much to the growth of the city, began to assume immense proportions. The steamboat arrivals at this port from the upper Mississippi for the five years ending with 1845 were: 1841, 143; 1842, 195; 1843, 244; 1844, 647; 1845, 663. In the last-named year the steam tonnage enrolled here amounted to 22,425.92 tons. In 1854 this had increased to 48,557.51.

The first steamboat, with all her engines, tackle, and machinery, built in Saint Louis was launched in April, 1842.

In June, 1844, about the 8th or 10th of the month, the waters of the river began rising. The levee was soon covered, and by the 16th the curbstones of Front street were under water, and the danger to property and business became quite alarming. Illinoistown and Brooklyn were nearly submerged, the occupants of the houses being driven to the upper stories. The American bottom was a turbid sea. On the 24th the river reached its greatest height, when it was 7 feet 7 inches above the city directrix. This surpassed the great flood of 1785, known as "*l'année des grandes eaux*", and also those of 1811 and 1826. The misfortunes that it brought in its train were heavy, but notwithstanding them the year was one of general prosperity. One of the signs of this was the erection of 1,146 new buildings.

That the social progress of the community was not neglected during these years was shown by the formation, in 1846, of the Mercantile Library Association. It opened rooms in April, 1847. This association prospered and grew rapidly, so that in a short time a joint-stock company was formed, with the erection of a suitable library building as its main object. In 1851 a lot was secured, and a building was put up at a total cost of \$95,500.

Saint Louis was lighted with gas for the first time on the evening of November 4, 1847.

On the 20th of December of the same year the telegraph lines connecting with the East reached Illinoistown, now East Saint Louis. On the 28th of the same month an important meeting of the citizens took place to consider the advisability of a city's subscription of \$500,000 toward the construction of the Ohio and Mississippi railroad. The measure was supported by a general vote of the people. In March, 1850, the Missouri Pacific railroad was chartered. Ground for this road was broken on the following 4th of July, with suitable ceremonies. The first locomotive was put on the track in November, 1852, and the first division of the line was opened in July, 1853.

On the 18th of May, 1848, a fire broke out on a steamer lying at one of the wharves, and soon spread to other boats and then to the shore. In a few hours nearly all the buildings from Locust to Market street, and between Second street and the river, were destroyed or badly injured. The progress of the flames was arrested only by blowing up buildings with gunpowder. The whole value of property destroyed reached over \$3,000,000; of this amount,

\$440,000 was the value set upon 23 steamboats, 3 barges, and 1 canal-boat that were burnt. This was a serious blow to the city; but the citizens displayed great activity in repairing the ravages of the flames, and the evidences of desolation and ruin soon disappeared; new buildings were erected of a more substantial character than the old, and Main street was considerably widened.

Far more terrible than the fire of 1848 was the cholera of 1849. The coming of this contagion had been heralded in the fall of the previous year, and, in spite of the precautions taken, it appeared in a violent epidemic form in June, and spread rapidly. Most of the alleys were unpaved, and had long been used as repositories for all kinds of filth thrown from the dwellings and stores. This had been blended with the soil for a foot or two below the surface, and as only the surface was scraped when the alleys were cleansed, the rest was left to exhale its poisonous particles. In many parts of the city the cellars contained water, which, becoming stagnant, infected the atmosphere. There were no sewers in the city.

When the terrific malady was raging in all its virulence and nothing seemed able to stay its progress, the columns of the daily journals were teeming with speculative theories on the cause of the disease and the proper measure to effect its cure. A board of the most respectable physicians in the city, after careful consultation, gave it as their opinion that a vegetable diet was highly injurious, and a meat diet less liable to objection than any other. In accordance with this decision the city council issued an ordinance prohibiting the sale of vegetables. This was serious to the market-gardeners of the vicinity, but the butchers reaped a golden harvest; for the approval of meat as an article of diet was construed by some as a remedy for the disease, and meat was consumed in quantities unknown before in domestic annals. In spite, however, of the meat diet, the cleansing and purifying of streets and alleys, and all the various applications of disinfectant agents, day by day the pestilence still spread. The ordinance prohibitory of vegetables was repealed. At last the plague wore itself out.

Saint Louis had been grievously smitten. Out of a population of less than 64,000 it had lost 5,989 in the short time between April 30 and August 16, and of these 4,060 had been the victims of the cholera. The greatest mortality had occurred between June 25 and July 15, in which period the number of deaths from the contagion reached as high as 160 per day.

The calamities of 1848 and 1849 were serious blows to the prosperity of Saint Louis, but with wonderful elasticity the city sprang up again, and 1850 found her prospects more cheerful than ever before. The census of that year showed that her population numbered 77,860, of which 37,436 were born in America, 23,774 in Germany, 11,257 in Ireland, 2,933 in England, and 2,460 in other countries. It is to be noticed that Germany had contributed over a quarter of the city's inhabitants, a proportion which has since remained tolerably constant.

According to the census returns of 1850 the total value of the yearly manufactures of the city amounted to over \$15,000,000, which shows that manufactures had now got a firm hold in the city. As for the condition of commerce at this time, it is enough to say that in 1850 the tonnage enrolled at Saint Louis was 24,995 tons; in 1851, 34,065 tons; and in 1852, 45,441 tons.

In 1853, Front, Main, and Second streets contained the principal wholesale stores. Second street was occupied by heavy grocery, iron, receiving and shipping houses. Fourth street, then the fashionable promenade, contained the finest retail stores.

A United States gazetteer for 1853 says: "It may be doubted whether any city of the Union has improved more rapidly than this in the style of its public buildings. * * * Saint Louis is handsomely built, especially the new portion of the city; the principal material is brick, although limestone is employed to some extent." At that time, in the "new city", as the later-settled portion was called, the private dwellings were mostly surrounded by garden plots and ornamental shrubbery.

This period, down to the breaking out of the civil war, was the most prosperous in the history of Saint Louis. To be sure, in 1853 her population was seventeen times and her wealth nineteen times what they had been twenty years before, but now in a period of six years she was to increase her population by almost one-half. In the seven years from 1852 to 1859 the population of Saint Louis nearly doubled, it having 94,000 inhabitants at the former and 185,000 at the later date. In the last three of these years, from 1856 to 1859, the city grew from 125,200 inhabitants to 185,587.

Perhaps the rapidity of the growth of Saint Louis in the decade immediately preceding the war can be better appreciated by considering the rise in the value of real and personal estate. In 1825 this amounted to but \$1,013,167; in 1840, to \$8,682,506; in 1850, to \$29,676,649; and in 1859, to \$104,621,361. Even better than these overwhelming totals will be some concrete instances of the astonishing rise in real-estate prices.

In 1822 the trustees of the First Presbyterian Church purchased a lot fronting 150 feet on Fourth street and 90 feet on Washington avenue and Charles street for \$300. In April, 1853, the ground was leased for a term of fifty years at the rate of \$4,000 per annum. The lot on the corner of Third and Chestnut streets, extending 120 feet on the former and 150 feet along the latter, was sold in 1826 for \$400; in 1853 it was valued at \$30,000, exclusive of improvements. A block situated between Fourth, Fifth, Locust, and Saint Charles streets, which in 1833 was sold for \$6,000, was said to be worth in 1853 \$182,000. Lots on Second street, which in 1848 could be bought for \$100 or \$150 per front foot, sold in 1853 for \$500 per front foot. In 1845 a lot on Second street, between Lombard

and Hazel street, running to the river, was bought for \$800. In 1855 one-third of it was sold for \$42,000, and the rest was held for \$100,000. Hundreds of similar instances might be given, but from these the reader can see how marvelous the growth of Saint Louis has been.

As is not unusual in times of great prosperity, few occurrences worth chronicling are met with in the course of these years. History treats of breaks in the current of affairs rather than of the smooth-running current itself, and breaks are rare at this period of the history of Saint Louis; but, on the other hand, history must measure this current occasionally.

A paid fire department was established in 1857. The history of the volunteer department, which was superseded at this time, dates back to 1832, when the organization of the Central Fire Company gave a nucleus around which the department was formed. By 1854 there had come to be 10 organized companies in the city, with 805 enrolled active members. These had built their own houses and had supplied all their engines, hose, etc.; but at this time the city was paying them \$1,000 each per annum toward meeting their heavy expenses. The companies had fallen into debt, and the city had paid up their debts and taken liens on their property. This made it much easier for the city to effect the change to a paid department in 1857, a change rendered imperative by the increased growth of the city and the consequent need of more systematic and effective protection against fire. At the time of the change there was but one steam fire-engine in the city, but others were soon added. The fire-alarm telegraph was put in operation in 1858, there being at the close of that year 63 boxes.

In 1858 the Saint Louis and Iron Mountain railroad was opened for business to Pilot Knob, a distance of 85 miles. Up to 1859 the omnibus was the only public means of local transportation in Saint Louis. It had made its appearance in 1843, and several lines were now used. In 1859 came the street railway, three lines being opened within a short period. In subsequent years a number of other lines were built.

In 1861 came the civil war, with its terrible train of disasters. Saint Louis, being on the border, in a doubtful state, suffered severely, though never the scene of actual warfare. The business of the city was reduced to about one-third its former amount, and yet refugees from the seat of war sought safety and sustenance in the impoverished city. During the last two years of the conflict the prodigious expenditures of the government in the Southwest enriched many citizens of Saint Louis, and gave employment to some thousands of them.

The condition of things in the early part of the war can be judged from the following remarks in a book of travel in America, by Anthony Trollope, who visited this country in 1861. In speaking of Saint Louis, he says:

I cannot say that I found it an attractive place, but then I did not visit it at an attractive time. The war had disturbed everything, giving a special color of its own to men's thoughts and words, and destroyed all interest except that which might proceed from itself. The town is well built, with good shops, straight streets, never-ending rows of excellent houses, and every sign of commercial wealth and domestic comfort—of commercial wealth and domestic comfort in the past, for there was no present appearance either of comfort or wealth . . . Up to the time at which I was at Saint Louis martial law had chiefly been used in closing grog-shops and administering the oath of allegiance to suspected secessionists. Something also had been done in the way of raising money by selling the property of suspected secessionists.

In July, 1862, the court-house was finished. Its site—the block bounded by Chestnut, Market, Fourth, and Fifth streets—was given to the city at an early day by Judge J. B. C. Lucas and Colonel Auguste Chouteau. Work was begun on the building in 1839, but progress on it was very slow and tedious. The form of the Greek cross was adopted, and the Doric style of architecture was employed. The total cost of the building was \$1,199,817 91.

After the war prosperity quickly returned to Saint Louis, and railroads were greatly extended. In 1866 the city did more business than ever before. The increase may be seen by comparing the amounts of corn received and disposed of in this and previous years. In 1860 there was a little less than 4,250,000 bushels, in 1863 less than 1,500,000, in 1865 a little more than 3,000,000, and in 1866, 7,233,671.

The following table indicates the growth of manufactures in this decade:

	1860.	1870.
Capital invested in manufactures.....	\$12,733,048	\$48,367,150
Value of raw material used.....	10,212,099	63,427,509
Value of products.....	27,610,070	100,513,750

Since the war Saint Louis has become a prominent market for the cotton product of the South and Southwest. To illustrate the rapid increase of this trade it is only necessary to present the following statistics: For the year 1867 the receipts of cotton were 19,838 bales; in every succeeding year there was a remarkable increase until, in 1877, the receipts reached 217,734 bales.

The commerce and business of Saint Louis have been greatly aided in the last few years by the grand tubular steel bridge across the Mississippi at this point. The following account of its remarkable superstructure is taken from the report of Mr. James B. Eads, the engineer who designed and constructed the work:

The foundation of the eastern pier was laid October 27, 1869, and the bridge was formally opened to the public July 4, 1874.

The bridge has three spans, each formed with four ribbed arches made of cast steel. The center span is 515 feet and the side ones 497 feet in the clear. The rise of the center one is one-tenth of the span; that of the side ones 47 feet 10 inches each. The four arches forming each of these spans consist of two parallel steel tubes, 9 inches in exterior diameter, placed side by side. The upper and lower members are

12 feet apart, measured from the center of the upper to the center of the lower tubes. At regular intervals of about 9 feet these members are braced from each other by a vertical system of cast-steel bracing on each side of them. These braces are secured at each end to cast-steel plates, formed something like the voussoirs of a stone arch, and against which the tubes are abutted and secured every 9 feet throughout the arches. A horizontal system of bracing extends from pier to pier between the four upper curved members, and a similar system between the four lower ones, for the purpose of securing the four arches in their relative distances from each other and to sustain them against lateral pressure.

The two center arches of each span are 13 feet 9½ inches apart, from center to center, and have, in addition to the upper and lower horizontal bracing just described, a system of diagonal bracing, securing the upper members of one arch to the lower one of the lower arch, and the two other members in like manner. The outside arches are each 15 feet 1¼ inches from the middle ones, and are joined to the latter by three systems of bracing similar to those described as between the two center arches. These systems, however, on the outside of the middle arches extend only from the piers to the under side of the railways, the latter being carried between the two outer and the two inner arches near their crown, the outside arches being supported in this interval against lateral movement by rigid connections from both the upper and the lower roadways.

The roadways are formed by transverse iron beams 12 inches in depth, supported by iron struts of cruciform section, resting on the arches at the points where the vertical bracing of the latter is secured. That portion of the railways which passes below the crown of the arches is suspended from them. Between the iron beams forming the roadways four parallel systems of horizontal wooden members are introduced, extending from pier to pier, and serving to maintain the iron beams in position. These wooden members are each about 9 feet long, and their ends rest upon the flanges of the beams, and are there secured from moving. On these the wooden beams for the carriage-way rest in one roadway and the cross-ties for the railways in the other. From the opposite ends of the iron beams a double system of diagonal horizontal bracing serves to bind the whole together, and gives additional support against wind pressure.

The upper roadway is 34 feet between the foot-walks. The latter are each 8 feet wide, making the bridge 50 feet wide between the railings. The railway passages, below the carriage-way, are each 13 feet 6 inches in the clear, and 18 feet high, and extend through arched openings of equal size in the abutments and in piers.

The shifting character of the bed of the Mississippi river and the great depth of the scour made the establishment of permanent foundations in it very difficult. The rock underlying the river opposite Saint Louis dips to the eastward, the depth at the west abutment being only 13 feet below extreme low water, while at the east abutment it is 94, and 136 feet below high-water mark. The two piers in the body of the stream are alike, except that the easterly one is deeper than the other, and they were built in caissons and gradually sunk through the shifting sand down to the bed rock of the river.

In April, 1871, went into operation the new city charter, which had been obtained in 1867. By extending the city limits it brought Carondelet into Saint Louis.

The growth of the city in the last decade in the line of public improvements may be seen by comparing the following statistics, compiled in 1870, with those given in the account of the *present condition* of the city: In 1870 the total length of street pavements was 174 miles; total length of sidewalks (about), 300 miles; total length of wharf (11½ miles river front), 2¼ miles; total length of water pipe, 102 miles; total length of sewers, 92½ miles, costing \$1,948,000.

In 1812 Congress passed an act giving certain vacant lands to the territory of Missouri within the district which includes Saint Louis and Saint Charles, for the support of the schools in these towns, and the legislature passed an act vesting in a board of trustees the authority to establish a school system; the matter, however, rested. The act of Congress admitting Missouri as a state, set apart one-thirty-sixth part of each township (the 16th section) for the support of schools, and 36 square miles (a congressional township) for the endowment of a state university. In 1824 and in 1831 further aids were granted by the government, and, finally, in 1833, the first school board in Saint Louis was organized, under a charter giving it complete control of all lands acquired by acts of Congress. The real estate handed over to them was leased, and from the rents derived therefrom 2 brick school buildings, accommodating 300 pupils, were erected. By 1846, 6 school buildings had been built, and that before city taxes for school purposes had been levied. In June, 1849, a tax of 1 mill on the dollar was voted for the support of the schools; the rents from leases, etc., amounted to \$14,000. The first mill tax, collected in 1850, amounted to \$18,432. In 1854 there was under the charge of the school board a well-organized system, with 25 schools, containing 3,881 scholars, taught by 72 teachers.

Since that time the growth of the school system has been rapid. During the civil war the unlawful taking of the school funds by the state authorities necessitated the payment of a tuition fee; but since 1865 the schools have been free. The feature of German-English instruction has of late become very popular. The phonetic system of learning to read was introduced in the primary schools in 1866 with gratifying results. The kindergarten, or Froebel, system of education was introduced as an experiment in 1873, a single school being opened. It worked well, and has since become an important branch of the school system.

SAINT LOUIS IN 1880.

LOCATION.

Saint Louis lies in latitude $38^{\circ} 37'$ north, longitude $90^{\circ} 12'$ west from Greenwich, on the right bank of the Mississippi river, 18 miles below the mouth of the Missouri, and about 1,240 miles by river above New Orleans. The city datum line has been established at 408.55 feet above the level of the sea; the lowest point is the Mississippi river, 34 feet below the datum line, or 374 above sea-level; while the highest point in the city is 610 feet above the sea-level, or $201\frac{1}{2}$ feet above the city datum line. The Mississippi river forms the eastern boundary of the city for a distance of 19 miles. The entire length of the water front is called the wharf, or *levee*, and of this the harbor proper occupies 3.31 miles, of which 1.53 mile is paved with granite blocks, and 1.78 mile with riprap and macadam. The total annual expense of the harbor and wharf proper is about \$55,000, and the receipts are about \$60,000. The average depth of water here is 20 feet; the velocity of the current varies from 2 to 7 feet per second, according to the stage of water in the river; and the average quantity of water carried past the city is 225,000 cubic feet per second, the maximum quantity being 750,000 cubic feet per second. The waters of the Missouri and the Mississippi (the former muddy and the latter clear) do not mingle freely at the point where the two rivers meet, and in low stages of water the distinction is quite marked at Saint Louis, the discolored waters of the Missouri keeping near the right bank, while the clearer water of the Mississippi hugs the Illinois shore. Water communication is had with all parts of the Mississippi Valley that border on the navigable affluents of the Mississippi river.

RAILROAD COMMUNICATIONS.

The following railroads center in the city:

The Chicago, Alton, and Saint Louis railroad, between the points named and Kansas City, Missouri.

The Chicago, Burlington, and Quincy railroad, to Chicago, via Quincy, Illinois, and to Omaha, Nebraska.

The Cairo Short Line, to Cairo, Illinois, connecting there with the southern roads.

The Saint Louis, Alton, and Terre Haute railroad, main line to Terre Haute, Indiana, and Vandalia line, to Indianapolis, connecting there with eastern roads.

The Illinois and Saint Louis railroad, to Belleville, Illinois.

The Indianapolis and Saint Louis railroad, between the points named.

The Missouri Pacific railroad, to Kansas City, Missouri.

The Ohio and Mississippi railroad, to Cincinnati, Ohio.

The Wabash, Saint Louis, and Pacific railroad—Eastern division, to Toledo, Ohio, and Western division, to Kansas City and Omaha.

The Saint Louis, Iron Mountain, and Southern railroad, to Texarkana, Texas, with branches to Cairo, Illinois, and Belmont, Missouri.

The Saint Louis and San Francisco railroad, to Vinita, Indian territory, with branches to Wichita, Kansas, and Fayetteville, Arkansas.

The Louisville and Nashville railroad, to Louisville, Kentucky.

The Cairo and Saint Louis railroad, to Cairo, Illinois.

The West End Narrow Gauge railroad, to Florissant, Missouri, 16 miles.

The Union Railway Transit Company, to East Saint Louis, Illinois.

All these roads, excepting the Saint Louis, Iron Mountain, and Southern, the Wabash, Saint Louis, and Pacific, and the West End Narrow Gauge, use the Union depot, situated near the business center of the city, and connected by a tunnel with the bridge over the Mississippi. This arrangement gives excellent facilities for the management of the railroad traffic.

TRIBUTARY COUNTRY.

The country immediately surrounding the city is agricultural, but the situation of Saint Louis has given it a very large local trade of an immense territory of which it is the legitimate capital. It is a distributing and supply point for the country south, west, and north, and naturally represents the wants and production of the population of that region. It is the market for a large proportion of the cotton, grain, live stock, etc., of the range of country penetrated by the many railroads radiating from the city, or touched by the navigable tributaries of the Mississippi. This is more especially true of the West and Southwest; and as this large region becomes settled, railroads are extended, and the merchants of Saint Louis draw its trade to their doors.

TOPOGRAPHY.

The site of Saint Louis has a gradual rise from the river toward the west, and is intersected by a number of small creeks, which empty into the Mississippi river and which have formed valleys of denudation. The most important of these valleys is that formed by Mill creek, through which the railroads from the west enter the city.

The soil consists of clay, underlaid with limestone rock, often penetrated by sinkholes, the thickness of the stratum of clay varying from a few feet to 70 feet. The extreme northern part of the city alone is subject to overflow during very high water, as the general elevation of the bottom-land here is about 7 feet below the high-water mark of 1844. This bottom is now overflowed about once in 12 years. The natural drainage of the rest of the city is very good.

The country around Saint Louis consists mainly of cultivated lands, interspersed with groves of fine timber. The land is very fertile. There are no marshes in the immediate vicinity.

CLIMATE.

Highest recorded summer temperature, 104°; highest summer temperature in average years, 98°. Lowest recorded winter temperature, -30°; lowest winter temperature in average years, -10°.

The Mississippi river probably influences the temperature of that portion of the city only which is located close to the bank of the river. The southerly winds are the warmest, those from the southwest generally bringing storms; northwest winds produce the greatest fall in temperature, while the winds from the east are generally accompanied by rain.

STREETS.

The estimated total length of the streets and alleys in Saint Louis is 450 miles, of which 354½ miles are paved with the following materials: Stone blocks (granite), 1 mile; alleys (limestone blocks), 51 miles; asphalt blocks, ¼ of a mile; broken stone, 292 miles; and wood, 10 miles. Gravel is used only as a top-dressing by the Telford and macadamized streets. The cost per square yard of each, as nearly as may be estimated, is: Wood, \$1 40; granite blocks, \$3; limestone blocks, \$1 20; asphalt blocks, \$3; broken stone (Telford), 70 cents; and broken stone, 45 cents.

The annual cost of keeping each in good repair per square yard, including cost of removal when worn out, is: For granite blocks, 10 cents; limestone blocks, 15 cents; asphalt blocks, about 75 cents; wood, 21 cents; and broken stone, 5 cents. These figures refer to streets with an average traffic. On streets with very light traffic the repairs of asphalt blocks would probably not exceed 20 cents, wood about the same, and broken stone 2 cents per square yard; while the cost of repairing stone blocks on such streets would not differ greatly from the figures given above. On streets with a very heavy traffic, on the other hand, the repair of broken stone pavements has sometimes cost the city from 40 to 45 cents per square yard. The data in regard to the asphalt blocks are based on a very short experience, and on estimates rather than results.

The relative facility with which each class of pavement is kept clean, taking the asphalt blocks at 100, may be graded as follows: Stone blocks (granite), 90; limestone, 80; wood, new, 90; old, 70; and broken stone, 20.

Regarding the quality and permanent economy of each class of the Saint Louis pavements, it is said that the granite blocks furnish the most durable pavements, and, for streets subjected to heavy traffic, the most economical; but it produces great wear on vehicles and horses, and, on account of the noise which the traffic over it causes, is not recommended for residence streets. Its great cost also makes it ineligible for streets with moderate traffic.

Limestone blocks, when of the best quality of stone obtainable here, make a very fair pavement; but it is much less durable than the granite, as it wears more rapidly and is apt to crack under very heavy loads as well as under the influence of frost. It is principally used on alleys, and is open to the same objection as granite so far as noise is concerned. Asphaltum blocks, if they could be made to stand the wear, would make the best possible pavement here, as it is easily cleaned, does not absorb any moisture, is noiseless, free from dust, and easy on horses and vehicles. The asphaltum blocks also seem to give a better foothold to horses than the ordinary asphalt pavement. In the residence streets, where heavily loaded teams but rarely use it, this pavement appears to be the best; but according to the experience here the blocks laid on streets with tolerably heavy traffic have worn nearly one inch during one year, so that the life of this pavement on streets of this character would probably not exceed 4 or 5 years.

Wooden-block pavement has some of the good points of the asphaltum, and exceeds it somewhat in durability and greatly in cheapness. For streets with medium traffic it is probably the best and most economical here. Its life is from 6 to 7 years, but by impregnating it with antiseptics it can probably be made to last twice as long, provided the wood itself has sufficient power of resistance against abrasure and crushing. As an experiment, impregnated blocks of gum and elm have been used during the past year in reconstructing some of the wooden pavements, and if it proves to be as durable as expected it will be the most economical. The impregnation increases the cost 60 cents per square yard.

The broken-stone pavement is the worst, both as to quality and as to permanent economy, if used on streets subject to heavy traffic. It is impossible to keep it clean, and its surface alternates between dust and mud. With a top-dressing of gravel it makes a fair pavement for streets subject to very light traffic, and in sparsely populated districts the cost of the pavements would be too great a burden on the property-owners, who, in Saint Louis, have to pay for all street improvements by a special tax.

The sidewalks in the city have by ordinance the following widths: On streets 50 feet wide the sidewalks are 10 feet wide; on streets 60 feet wide the sidewalks are 12 feet wide; on streets 80 feet wide the sidewalks are 16 feet wide; on streets 100 feet wide the sidewalks are 20 feet wide. They are mostly paved with hard-burned brick laid in a bed of sharp sand. In some of the principal business streets stone flagging is used.

The gutters are all 3 feet 6 inches wide and 6 inches deep. On the streets paved with blocks of stone or wood the gutters are laid with the same materials, while on the broken-stone streets the gutters are made with blocks of limestone. Between the gutter and the sidewalk a line of curbstone is placed, consisting of dressed limestone, 4 inches thick and 22 inches in depth. Many streets are planted with trees, which are set on the sidewalks close to the curbstones.

The construction of streets is all done under contract, a special contract being entered into for each particular improvement authorized by ordinance. Repairs of streets are made under annual contracts, under direction of the board of public improvements, and are paid for by the city. Repairs of alleys and sidewalks are also made under annual contracts and paid for by the abutting property-owners. The cost of repairs of the streets, alleys, etc., in the city during the fiscal year ending April 12, 1880, was as follows:

For streets paved with stone and wood blocks	\$25,566 63	
For streets paved with broken stone.....	154,215 99	
For miscellaneous expenses	44,528 69	
For salaries	19,741 48	\$244,052 79
For repairs of alleys	5,586 61	
For repairs of sidewalks	2,072 91	
For repairs of street bridges and culverts	12,361 37	
		20,020 89
Total.....		<u>264,073 68</u>

The city charter provides that all public work on streets and alleys shall be done under contract, except in case of necessary repairs requiring prompt attention. The city has no need of a steam stone-crusher, but uses steam and horse rollers for repair of macadam streets. The contractors use both stone-crushers and steam-rollers, and their use has greatly improved the macadamized streets.

TRANSPORTATION.

The horse-railroads in the city have a total length of 119.6 miles. There are 496 cars, with 2,280 horses in use, and employment is given to 1,010 men. The total number of passengers carried annually is 19,600,000, and the rates of fare are 5 and 7 cents, tickets on all the roads, however, being sold 5 for 25 cents.

There are no omnibus lines in operation here.

WATER-WORKS.

Water from the Mississippi river was first introduced in 1830, but in 1867-'72 new works were constructed that have almost entirely superseded the old plans. The water-works are owned by the city, and their total cost has been \$7,200,000. Water is taken from the Mississippi at a point opposite the northerly limit of the city, a cast-iron tower being built in the river, resting on bed-rock, and extending a little above the highest known water-mark. Gates for the admission of water are placed at various elevations, to be used according to the stage of water in the river. An iron pipe 5 feet 6 inches in diameter and 200 feet long connects the tower with the pumping-well, where there are 3 engines, with a combined capacity of 60,000,000 gallons every 24 hours, that pump the water through 3 force-mains, each 36 inches in diameter, and 365 feet long to the settling-basins, the "lift" being from 15 to 50 feet, according to the stage of the river. There are four of these settling-basins, each 600 by 270 by 19 feet, 2 being used at a time for subsiding tanks, while one is being filled and the other emptied.

After settling, the water is taken to the high-service station, where 3 engines, with a combined capacity of 57,000,000 gallons per diem, force it to the storage reservoir of Compton Hill. This reservoir has a capacity of 60,000,000 gallons. Midway between the high-service pumps and the reservoir is a stand-pipe, 160 feet high and 48 inches in diameter. It has 1 inlet and 2 outlets, one of the latter going to the city and the other to the reservoir; and as the force-main is connected with the distribution system, only the surface-water goes into the reservoir.

The average amount pumped per diem is 25,000,000 gallons, the greatest being 35,000,000 and the least 21,000,000 gallons. The average cost of raising 1,000,000 gallons one foot high is, for the low service $11\frac{1}{2}$ cents, and for the high service $4\frac{7}{8}$ cents. The yearly cost of maintenance, aside from the cost of pumping, is \$96,000. The total expenses of the department for the year were \$225,000, and the total revenue collected is \$660,000. Water-meters are used in manufactories, breweries, hotels, livery-stables, etc., and are found to prevent waste. There are 212 miles of supply mains, varying in size from 3 to 36 inches in diameter; 1,606 gates and 1,696 fire-plugs.

GAS.

Gas is supplied by 3 private companies, their combined daily production being 1,800,000 cubic feet. The charge per 1,000 feet is \$2 50. The city pays \$27 per annum each for 7,278 street lamps.

PUBLIC BUILDINGS.

The city owns and occupies for municipal uses, wholly or in part, a city-hall, a court-house, 4 court-buildings, insane asylum, house of refuge, work-house, poor-house, city hospital, female hospital, morgue, quarantine, 20 engine-houses, and 6 market-houses. The total cost of the municipal buildings belonging to the city is \$4,000,000. The cost of the city hall is \$100,000, and it is owned and occupied entirely by the city.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 18 parks in the city, with an aggregate area of 2,107 acres, as follows:

Benton Park, area 14.30 acres, is situated at Jefferson avenue and Arsenal street, and was acquired by the city in 1866. It is tastefully laid out and improved to the highest degree.

Carondelet Park, Old, area 3.17 acres, and *Carondelet Park, New*, area 180 acres, are situated at Kansas street and Loughborough avenue, in the extreme southern portion of the city. The former was acquired by the city in 1812, and the latter was purchased in 1875. This park has a lake for boating, skating, etc., and about 6 miles of good drive-ways.

Carr Square, area 2.36 acres, situated at the corner of Washington and Sixteenth streets, was acquired by the city in 1842, and is largely used as a play-ground.

Exchange Square, area 12.86 acres, situated at Market street and the levee, was acquired by the city in 1816.

Forest Park, 1,371.94 acres, was acquired by the city in 1875. It is situated in the extreme western part of the city, midway between the northern and southern limits. So far about 20 miles of excellent drives and several large lawns have been completed, and the work of improvement is being rapidly pushed. The river Des Peres flows through the park, and it is capable of indefinite ornamentation.

Gamble Place, corner of Garrison avenue and Dayton street, was acquired by the city in 1874, and has an area of 1.15 acre.

Gravois Park, area 8.26 acres, is situated at Louisiana avenue and Potomac street, and was acquired by the city in 1812. It is handsomely ornamented and contains a number of beautiful trees.

Hyde Park, located on Salisbury street and Bremen avenue, has an area of 11.84 acres, and was acquired by the city in 1854. It is tastefully laid out and well kept.

Jackson Place, corner of Eleventh and North Market streets, was acquired by the city in 1829, and contains 1.62 acre.

Laclede Park, area 3.17 acres, was acquired by the city in 1812, and is situated on Iowa and Gasconade avenues.

Lafayette Park, area 29.94 acres, was acquired by the city in 1844, and is situated in the heart of the city. It is beautifully laid out, and is considered one of the handsomest parks in the country.

Lyon Park, corner of Carondelet and Arsenal streets, contains 10.62 acres, and was acquired by the city in 1872. It is well improved.

Missouri Park, area 3.92 acres, was acquired by the city in 1854, and is located on Thirteenth and Olive streets. It is well cared for, and contains a handsome fountain and trees.

O'Fallon Park, at Bellefontaine road and O'Fallon avenue, contains 158.32 acres, and was acquired by the city in 1875. It is well improved with trees and lawns, and has 4 miles of good drives.

Saint Louis Place, area 10.80 acres, was acquired by the city in 1850, and is situated at the corner of Benton and North Seventeenth streets. It was selected as the place for the propagation of German carp by the state fish commission.

Tower Grove Park, area 276.76 acres, is well improved in the old French style, and is the most popular park in the city. In 1869 it was donated to the city on consideration that \$25,000 in gold should be expended on its improvement. It is beautifully laid out, and contains 8 miles of drives.

Washington Square, area 6 acres, is situated at the corner of Market and Twelfth streets, and was acquired by the city in 1840. It is handsomely improved, and is much used by the children of the neighborhood as a playground. The following table shows the cost, with the total amount paid for maintenance and improvements, for all the parks:

Names.	Area in acres.	How acquired.	COST.		
			Purchase.	Improvements and maintenance.	Total.
Benton park	14.30	City commons		\$50,028 83	\$50,028 83
Carondelet park (old)	3.17	do		3,011 86	3,011 86
Carondelet park (new)	180.00	Purchase	\$140,570 10	105,530 85	246,100 05
Carr square	2.36	Donation		37,637 00	37,637 00
Exchange square	12.86	do		15,445 72	15,445 72
Forest park	1,371.94	Purchase	840,058 61	506,813 16	1,445,871 77
Gamble place	1.15	From city		5,985 05	5,985 05
Gravois park	8.26	City commons		19,573 28	19,573 28
Hyde park	11.84	Purchase	36,250 00	72,035 84	108,885 84
Jackson place	1.62	Donation		20,459 59	20,459 59
Laclede park	3.17	City commons		11,002 05	11,002 05
Lafayette park	29.94	do		333,214 28	333,214 28
Lyon park	10.62	United States donation		15,893 67	15,893 67
Missouri park	3.92	Purchase and donation	95,500 00	44,222 25	139,722 25
O'Fallon park	158.32	Purchase	259,065 35	112,000 99	371,067 34
Saint Louis place	10.80	Donation		76,689 51	76,689 51
Tower Grove park	276.76	Conditional donation		565,390 06	565,390 06
Washington square	6.00	Purchase	25,000 00	63,198 01	88,198 00
Totals	2,107.03		1,405,444 06	2,150,591 19	3,556,035 24

At present the annual cost of maintenance for Tower Grove park is \$25,000, and for Lafayette park about \$20,000, while \$30,000 is appropriated for the care of all the others. No record is kept of the number of persons visiting the parks. The designers of the larger parks were: Max G. Kern, for Forest park; Francis Tunica, for O'Fallon park; F. Soloman and Max G. Kern, for Carondelet park; Henry Shaw, for Tower Grove, and Krausevick and Kern, for Lafayette park.

Tower Grove and Lafayette parks are controlled and managed by the special boards appointed from among the citizens residing in the vicinity, while all the other parks are controlled by the park commissioner, who is a member of the board of public improvements.

During the summer a band plays in Lafayette park every Thursday afternoon, and in Tower Grove park every Sunday afternoon.

PLACES OF AMUSEMENT.

Saint Louis has the following theaters: Olympic theater, seating capacity 1,700; De Bar's opera-house, seating 1,700; Pape's theater, seating 2,000; Globe theater, 700; Canterbury, with a seating capacity for 1,000; Crystal Palace; Alhambra, seating 400; Lafayette Park theater, seating 200; and the Pickwick, seating 500. Theaters pay an annual license of \$100 each to the city.

Of concert halls and lecture rooms, not including those connected with churches, there are: Mercantile Library, seating 1,600; Armory hall; Liederkrantz hall, seating 600; Germania hall, seating 800; Druid's hall, Masonic hall, Harmonia hall, Merchants' Exchange hall, Saint George's hall, and Stolle's hall.

There are 10 or 12 large concert- and beer-gardens in the city. They pay no license, other than the ordinary dram-shop license, and no information as to their size, cost, or attendance was furnished.

DRAINAGE.

The sewerage system of Saint Louis dates from the passage by the general assembly of the state of an act (approved March 12, 1849) "To provide a general system of sewerage in the city of Saint Louis." Prior to this a number of short box drains had been built across the public landing to the river, nearly or quite all being built by private parties for the drainage of their own property. In the ordinances authorizing these sewers it was customary to provide that they should not be used for the drainage of privies. In March, 1850, the first public sewer was begun. This was a sewer 12 feet in diameter, known as the *Biddle Street sewer*. This sewer was built to drain a large pond, formed by the closing of sink-holes or openings in the rock, which were the natural outlets for a large basin centering in the vicinity of Ninth and Biddle streets. Other sewers for similar purposes soon followed.

Benton Street sewer was made from the river to Fifteenth street, thence along Fifteenth street to Howard street, draining a smaller basin adjoining the Biddle Street basin on the south and the southwestern sewer on Lesperance street, and Emmet street was made about the same time to drain the southern part of the city; while smaller sewers in the central part of the city were built on each street from the river westerly to the summit of the grades near Sixth street.

The above-mentioned main sewers, with branches, embraced nearly all the sewers built up to 1859, making a total length in round numbers of about 30 miles. On March 14, 1859, the general assembly passed an act establishing the present sewer system. One of the first sewers begun under this system was the Mill Creek sewer, which was begun in August, 1860. This sewer is 20 feet wide by 15 feet high, and is now 3 miles long. The Mill Creek valley, through which it is located, divides the southern part of the city from the central, and is the entrance into the city of all the railroad lines west of the Mississippi, except the Iron Mountain road. Several large tributaries to Mill Creek sewer have been constructed in the valleys, branching to the north and south, and the western portion will require considerable extension.

Among the main sewers may be mentioned Arsenal Street sewer, with its branches, draining an area of 700 acres west of the United States arsenal; the southern sewer, on Chippewa street, draining an area of 1,000 acres; the Stein Street sewer, in South Saint Louis, and the Trudeau Street, Carroll Street, Rutger Street, Rocky Branch, Louisa Street, Barton Street, Miller Street, Chambers Street, Bremen Avenue, and Ferry Street sewers, making a total length of 45.23 miles. To this add 157.15 miles as the total length of the district sewers, which makes a total length of sewers in Saint Louis of 202.33 miles, draining an area of 4,215 acres.

SOCIAL STATISTICS OF CITIES.

The following table shows the construction of sewers from 1861 to 1880:

Date.	BUILT DURING THE YEAR.			Total length.
	Public.	District.	Total.	
Up to April, 1861	<i>Miles.</i> 10.03	<i>Miles.</i> 20.89	<i>Miles.</i> 31.52	<i>Miles.</i> 31.52
Year ending April, 1862	0.74	.....	0.74	32.26
Year ending April, 1863	0.03	0.54	1.17	33.43
Year ending April, 1864	0.26	1.70	1.96	35.39
Year ending April, 1865	0.60	2.65	3.25	38.64
Year ending April, 1866	1.30	8.10	9.46	48.10
Year ending April, 1867	1.50	17.24	18.80	66.90
Year ending April, 1868	2.52	15.88	18.40	85.30
Year ending April, 1869	2.20	14.60	16.80	102.10
Year ending April, 1870	2.10	6.03	9.03	111.13
Year ending April, 1871	2.14	3.80	6.03	117.16
Year ending April, 1872	1.28	10.81	12.09	129.25
Year ending April, 1873	2.21	9.54	11.75	141.00
Year ending April, 1874	1.21	7.70	9.00	150.00
Year ending April, 1875	2.64	10.75	13.39	163.39
Year ending April, 1876	1.58	7.03	8.61	172.00
Year ending April, 1877	1.23	4.30	5.53	177.53
Year ending April, 1878	1.20	0.45	1.74	179.27
Year ending April, 1879	3.07	5.32	8.99	188.26
Year ending April, 1880	3.86	4.23	8.09	196.35
Total	43.71	152.64	196.35	

The following table shows the cost of sewers from 1862 to 1880, by years, ending April:

Date.	COST OF CONSTRUCTION DURING THE YEAR.			Total cost of sewers.
	Public.	District.	Total.	
1862	\$666,215 79	\$309,970 07	\$976,186 76	\$976,186 76
1863	23,209 73	8,859 13	37,068 86	1,013,255 62
1864	30,678 57	10,582 61	41,261 18	1,054,516 80
1865	49,090 58	27,236 34	60,926 92	1,124,443 72
1866	80,767 50	129,256 44	210,024 00	1,334,467 72
1867	131,083 00	409,728 97	540,812 87	1,875,280 59
1868	126,246 96	441,838 86	568,085 82	2,443,366 41
1869	240,846 50	320,368 22	570,214 81	3,013,581 22
1870	210,748 58	112,217 13	331,965 71	3,345,546 93
1871	286,653 53	52,551 24	339,204 77	3,684,751 70
1872	255,800 01	123,334 75	378,635 66	4,063,387 86
1873	304,111 00	131,695 81	435,806 87	4,499,194 23
1874	214,858 07	104,016 93	370,475 60	4,878,669 83
1875	182,445 74	179,111 82	361,567 56	5,240,237 39
1876	132,792 14	115,274 00	248,066 14	5,488,303 53
1877	78,400 41	55,386 52	133,786 93	5,622,090 46
1878	88,626 56	4,547 64	93,174 20	5,715,261 66
1879	141,178 07	63,260 86	204,438 93	5,919,700 59
1880	146,307 10	43,053 38	189,360 48	6,109,066 07
Total	3,397,169 45	2,711,896 02	6,109,066 07	

As a guide to the present cost of the work, the following tables show the work done during the past year on the public sewers, not including cost of inlets, manhole connections, and other appurtenances:

Public sewers.

Name.	Size.	Average depth.	Length.	Cost per linear foot.
O'Fallon Street sewer	<i>Feet.</i> 4 by 5	<i>Feet.</i> 10	<i>Feet.</i> 1,700	\$3 73
Wyoming Street sewer	2 by 3	18.2	1,332	2 56
Grand Avenue sewer	2 by 3	19.7	530	2 54
Cherokee Street sewer	3½ diam.	16.7	1,360	3 00
Do	2½ by 3½	16	635	2 51
Potomac Street sewer	3 diam.	13½	495	2 41
Do	2 by 3	16	517	2 31
Rocky Branch sewer	10½ diam.	23	200	16 00
Ohio Avenue sewer	7 diam.	31	187	13 05
Utah Street sewer	3½ diam.	13	822	3 50
Total			7,868	

District sewers.

District.	Size.	Length.	Cost per linear foot.	INLETS.		MANHOLES.		Cost of lumber, etc.	Total cost.
				Number.	Cost.	Number.	Cost.		
		<i>Feet.</i>							
No. 10.....	2 by 3 feet, brick.....	155	\$2 21	2	\$84 68	4	\$180 10	\$63 27	\$1,475 90
	12 inches, pipe.....	917	85						
No. 2.....	12 inches, pipe.....	937	70	3	130 88	5	270 21	48 00	1,114 09
No. 34.....	15 inches, pipe.....	1,432	80	8	492 90	7	251 09	62 00	2,079 19
	12 inches, pipe.....	178	70						
No. 4.....	12 inches, pipe.....	692	1 40	3	140 88	3	164 83	23 50	1,208 01
No. 6.....	12 inches, pipe.....	518	70	1	45 08	3	149 06	22 88	570 62
No. 33.....	15 inches, pipe.....	570	1 35	2	86 29	3	150 86	44 10	1,088 19
	12 inches, pipe.....	28	98						
No. 1.....	2½ by 3½ feet, brick.....	742	2 39	17	668 18	12	419 82	268 65	9,584 65
	2 by 3 feet, brick.....	1,032	2 14			13	531 90		
	15 inches, pipe.....	1,006	1 00						
	12 inches, pipe.....	910	90						
No. 35.....	2 by 3 feet, brick.....	172	1 80	6	247 28	1	30 98	48 50	1,045 12
	15 inches, pipe.....	432	68			5	201 15		
No. 17.....	12 inches, pipe.....	606	75						863 09
	15 inches, pipe.....	582	75	3	110 78	4	105 41	38 70	
No. 4.....	15 inches, pipe.....	244	1 10	2	80 56	3	147 85	40 61	772 02
	12 inches, pipe.....	240	94						1,238 47
No. 13.....	15 inches, pipe.....	723	97	3	130 62	4	101 12	62 07	
	12 inches, pipe.....	186	75						13,358 19
No. 11.....	2 by 3 feet, brick.....	113	4 00	27	1,202 11	7	324 30	339 77	
	2½ feet diameter, brick.....	510	2 80			15	841 06		
	2 by 3 feet, brick.....	1,380	2 70						
	18 inches, pipe.....	840	1 40						1,360 89
No. 1.....	15 inches, pipe.....	1,068	1 15	3	122 64	6	272 62	166 83	
	12 inches, pipe.....	2,533	1 00						2,568 50
No. 20.....	2 by 3 feet, brick.....	700	2 21	5	106 47	3	90 89	58 25	
	15 inches, pipe.....	492	80			2	86 46		4,158 98
No. 15.....	12 inches, pipe.....	64	70	11	442 30	2	73 87	89 03	
	2 by 3 feet, brick.....	370	2 00						414 40
No. 12.....	15 inches, pipe.....	840	84			14	630 41		
	12 inches, pipe.....	1,902	77						43,023 29
	12 inches, pipe.....	368	68	1	44 88	2	100 28	19 00	
	Total.....	25,940		97	4,359 03	118	5,280 27	1,336 36	

The following table shows the total length of all the sewers in the city, classified by diameters:

Diameter.	Length in feet.	Diameter.	Length in feet.
15 by 20 feet, stone and brick.....	15,892	8½ feet, brick.....	931
15 feet, stone and brick.....	1,207	8 feet, brick.....	150,353
12 feet, stone and brick.....	7,300	2½ feet, brick.....	424,212
10½ feet, stone and brick.....	9,905	2½ feet, brick.....	39,735
9 feet, brick.....	2,905	2 feet, brick.....	51,031
8½ feet, brick.....	1,036	21 inches, brick.....	12,613
8 feet, brick.....	6,454	18 inches, brick.....	4,383
7½ feet, brick.....	0,854	24 inches, cement pipe.....	618
7½ feet, brick.....	2,505	18 inches, cement pipe.....	15,610
7 feet, brick.....	2,707	15 inches, cement pipe.....	22,323
6½ feet, brick.....	2,024	12 inches, cement pipe.....	1,300
6 feet, brick.....	10,824	18 inches, clay pipe.....	12,080
5½ feet, brick.....	13,511	15 inches, clay pipe.....	91,086
5 feet, brick.....	7,071	12 inches, clay pipe.....	82,478
4½ feet, brick.....	9,487		
4½ feet, brick.....	41,846	Total.....	1,068,000
4 feet, brick.....	27,369	Or 202.38 miles.	
3½ feet, brick.....	38,794		

The average cost of inlet basins is \$49 32 each, and the average cost of manholes \$40 69 each.

Each sewer or sewer district is regulated according to the requirements, as it comes up, but it is made to conform to the existing systems. Though perforated manhole covers are placed on some of the sewers, as a rule the greater portion of the sewers are not ventilated. Hollow invert blocks for subsoil drainage are not used.

The mouths of the smaller sewers deliver below the surface of the river, except at low water, while the upper portions of the larger sewers are above the surface during the ordinary boating stage. The outflow of all the sewers is carried off by the Mississippi.

There are 6 men regularly employed for draining catch-basins, removing deposits, and examining and flushing sewers. They receive \$60 per month each, and their time is mostly occupied in cleaning catch-basins. No deposits have been removed by hand during the past year, and but very little was removed the previous year. It has, however, been necessary in times past to remove deposits caused by slaughter-houses, dairies, and, in a few cases, street detritus; but in most cases it can be successfully done by flushing, which amounts to the labor of two of the aforesaid men for about three months in the year, at a cost of \$360.

Public sewers, which are the main channels of drainage, are paid for out of the general revenue of the city, while district sewers are paid for by the property-owners within the district in proportion to the grand area.

HOUSE-DRAINAGE.

During the past year an ordinance was passed by the municipal assembly regulating the construction of house-drains, which provides that every house-drain, connecting with any sewer, hereafter to be built or extended, must be provided with a trap, so constructed as to bar the passage of air from beyond the trap into the house by at least one inch in depth of water. Between this trap and the foot of the soil-pipe an inlet-pipe for fresh air must be placed, and the soil-pipe must be continued above the roof of the house and left open.

Whenever any person desires to construct a house-drain, intended to be connected with the public or district sewer, he must first file with the sewer commissioner a full plan of the proposed work, which shall not only show the whole course of the drain, but all fixtures that are to be connected with it. If the plan conforms to all requirements, the commissioner issues a permit for the work, it being forbidden to build any drain connecting with the sewers until this permit has been obtained.

In addition, the ordinance provides that the sewer commissioner, or his authorized assistants, can at any time enter any houses that have filed plans for drains, and inspect the same to see that all requirements have been complied with.

SEWER GAUGINGS.

During the spring of 1880 Sewer Commissioner Moore made a series of observations, as a part of an investigation undertaken by George E. Waring, jr., for the National Board of Health, for the purpose of determining the relative size of sewers required to carry off the house-drainage, exclusive of the surface-drainage or storm-water. Two sewers were selected as offering the greatest facilities for observation.

The *Compton Avenue sewer* is 7½ feet in diameter, and the area drained by it is 445 acres. The area considered in connection with these observations is 240 acres within the lot lines, and having 1,370 houses with sewer-connections, the population being about 8,000. It is almost entirely a residence district, hardly any factories, and but a very small proportion of stores, being found in it.

The observations were taken by sending men into the sewer and constructing a small dam, with a section of 12-inch pipe running through the dam on the bottom of the sewer. In this manner all the flow in the sewer was made to pass through the small pipe, and it was found that in the middle of the day—when the flow is the highest, as a rule—the water was only 6½ inches deep in the small pipe. In other words, the ordinary house-drainage from a district containing 1,370 houses only a little more than half filled a 12-inch pipe. While the quantity of the flow shown seems remarkably small, it nevertheless indicates a consumption equal to over 80 gallons of water per day for every man, woman, and child in the area drained by the Compton Street sewer.

The *Ohio Avenue district* has an entire area of 570 acres, the diameter of the sewer being 7 feet. The district under consideration has an area of 44 acres within lot lines; 120 buildings, with a population of 760, are connected with the sewer, and 94, with a population of 590, are connected with both the sewer and the water systems.

Observations were made here in the same manner as in the Compton Avenue sewer, except that a 6-inch instead of a 12-inch pipe was used, and at the time of greatest flow the depth of water in the pipe was only 1½ inch.

The following table shows the measurements and gaugings in detail:

Gaugings of the dry-weather flow in Compton Avenue sewer, Saint Louis, Missouri, 1880.

Date of observations.	DATA.				DEDUCTIONS.				
	Greatest discharge in cubic feet per minute.	Greatest depth in feet.	Least discharge in cubic feet per minute.	Least depth in feet.	Average discharge in cubic feet per minute.	Average depth in feet.	Velocity in feet per second.		
							Greatest.	Least.	Average.
March 15, 10	154.25	0.5833	74.07	0.3751	92.39	0.4350	5.41	4.54	4.69
March 19	144.09	0.5341	77.64	0.3985	114.30	0.4689	5.65	4.43	5.27
March 20	132.34	0.5144	69.00	0.3751	102.18	0.4519	5.41	4.16	4.94
March 21	133.79	0.5177	68.58	0.3568	96.49	0.4298	5.86	4.27	4.93
March 23	128.57	0.4961	69.54	0.3802	101.78	0.4452	5.54	4.23	5.02
March 23	118.79	0.4701	73.95	0.3725	79.74	0.3940	5.46	4.47	4.62
Typical day, or average of March 20, 21, 22.....					100.22	0.4120	5.80	4.16	4.99

Gaugings of the dry-weather flow in Ohio Avenue sewer, Saint Louis, Missouri, 1880.

April 5, 6	5.06	0.1198	2.327	0.0755	3.58	0.0954	2.86	1.83	2.23
April 6, 7	6.29	0.1263	2.478	0.0690	3.70	0.0891	3.07	2.16	2.60
Typical day, or average of above days					3.65	0.0923	3.07	1.83	2.44

CEMETERIES.

There are 28 cemeteries connected with Saint Louis, 15 being within the city and 13 outside, varying in distance from 1 to 6 miles from the city limits. Those within the city are as follows:

Potter's Field, in the 27th ward.

Gravois-Saxon, area 12 acres, in the 26th ward.

Saint Paul's, area 9 acres, in the 25th ward.

Saint Mark's, area 27½ acres, in the same ward.

Saint Peter and Saint Paul's, area 21½ acres; also in the same ward.

New Pickers, area 9 acres; also in the same ward.

Old Pickers, or *Holy Ghost*, area 20 acres, in the 21st ward.

Rock Spring, area 8 acres, in the 27th ward.

West Lutheran, or *Papin-Saxon*, area 15 acres, in the 15th ward.

Friedensgemeinde, area 12 acres, situated partly in the 23d ward and partly outside the city.

Bellefontaine, area 333 acres, in the 23d ward.

Calvary, area 240 acres, situated near the former, in the same ward.

Holy Trinity, in the 23d ward.

Saint Matthew's, area 12 acres, in the 25th ward.

Bremen-Saxon, in the 23d ward.

Those outside the city are:

Mount Sinai, ¼ mile from the limits, on the Gravois road.

New Wesleyan, 8 miles from the court-house, on the Olive Street road.

Mount Olive, 1 mile farther out, on the same road.

Mount Shereth Israel, 8 miles out, on the Olive Street road.

Bethania, 7 miles out, on the Saint Charles Rock road.

Greenwood, 7 miles out, on the Hunt road.

Salem, the same distance out, on the Natural Bridge road.

Saint John's, 8 miles out, on the Saint Cyr road.

Mount Olive, on Lamé Ferry road, 3 miles south of city limits.

Evangelical Lutheran, 1 mile farther south, on the same road.

Oakdale, 3 miles outside of limits, on the same road.

Saint Ann's, 8 miles from city.

From the annual report of the board of health for the year ending April 1, 1879, the number of interments in each of the following cemeteries was: Bellefontaine, 665; Bethania, 142; Bremen-Saxon, 108; Calvary, 1,444; Friedensgemeinde, 131; Greenwood, 261; Holy Trinity, 580; Evangelical Lutheran, 37; Mount Olive (Lamé Ferry road), 101; Mount Olive (Olive Street road), 39; Mount Sinai, 50; Mount Shereth Israel, 2; New (or Gravois) Saxon, 66; New Pickers, 170; Saint Peter and Saint Paul's, 501; Saint Peter's, 402; Saint Paul's, 104; Saint Mark's, 236; Saint John's, 99; Saint Ann's, 6; Saint Matthew's, 25; Salem 31; Rock Spring, 30; West Lutheran, or Papin-Saxon, 59; Wesleyan, 57; Old Pickers, or Holy Ghost, 387; Oakdale 33; Potter's Field, 704. Total number of interments, 6,742.

All graves must be at least 6 feet in depth from the surface of the ground. No interment may be made unless a permit is first granted by the health department.

MARKETS.

The people of Saint Louis depend greatly on the public markets for the purchase of their daily food supplies, and there are several markets located for the convenience of different sections, some of which are remarkable for the display of their general supplies. The German market-gardeners have from early years supplied fresh vegetables; the local fish supply is considerable, and some of the fresh fruits are of remarkable quality.

Detailed statistics of the markets were not furnished.

SANITARY AUTHORITY—BOARD OF HEALTH.

The entire sanitary interests of Saint Louis, and of all medical and strictly eleemosynary institutions, are in charge of the health department, composed of a board of health and the health commissioner. The board of health consists of the mayor, the presiding officer of the assembly, a commissioner of police, to be designated by the mayor, and 2 regular practicing physicians, who are appointed by the mayor and confirmed by the assembly. The members of the board hold office for four years, or until their successors are appointed, and the two last named receive a salary of \$500 each per annum. The health commissioner, who is a member of the board, and, in the absence of the mayor, the presiding officer, is appointed by the mayor and confirmed by the assembly. He holds office for four years, and his salary is \$3,000 per annum.

The health commissioner is the executive officer of the board, and has general supervision over the public health of the city. He sees that all health laws and ordinances are enforced, and for that purpose he is authorized to make such rules and regulations, with the approval of the board of health, as will tend to preserve and promote the health of the city; with the approval of the board he appoints all employes that may be necessary for the execution of his orders; he can call on the police force for assistance; he can enter and inspect premises; and can declare and abate nuisances, if his action is approved by the board. He provides for the registration of all vital statistics. He has charge of all city hospitals, quarantine, insane asylum, morgue, and city dispensary, and, with the advice and consent of the board, makes all necessary rules for their government. His office is in the city hall, and is open every day. The board is required to meet twice each week during the year, and can meet at any time in special session.

The annual expenses of the department, based on estimates for the year ending April, 1880, are \$270,000, as follows: Board of health, for salaries, printing, stationery, vaccine virus, disinfectants, etc., \$17,000; city dispensary, \$15,000; quarantine and small-pox hospital, \$9,500; city hospital, \$15,000; female hospital, \$38,000; insane asylum, \$66,500; poor-house, \$51,000; and for abating nuisances and also for general sanitary measures, \$10,000. During an epidemic the expenses must not exceed the amount appropriated by the assembly.

NUISANCES, ETC.

It is made the duty of all police officers to observe the sanitary condition of their districts, and promptly report to the health commissioner any nuisance or accumulated filth found to exist in any part of the city. When a nuisance has been reported to the board, and by it declared to exist, the health commissioner notifies the parties responsible to abate the same. If this is not done, or if the owners or agents of the property on which the nuisance exists can not be found, the health commissioner has the work performed and charges the cost against the property. Defective house-drainage, sewerage, and street-cleaning are controlled by the board of public improvements. When any nuisance exists on any street or alley, or public place, the board of public improvements abates the same in the manner recommended by the board of health.

The removal of garbage is under the direction of the board of health, as is also its final disposition.

BURIAL OF THE DEAD.

The board of health designates such cemeteries as shall be used for burials, and forbids interments anywhere else in the city, except under special permission from the health commissioner. All cemeteries are in charge of either a sexton or an overseer, who must be certified to and recorded in the office of the health commissioner by the person or corporation owning the cemetery. The health commissioner grants burial permits only on the certificate of a physician, given at the place of death, or the certificate of the coroner of Saint Louis.

INFECTIOUS DISEASES.

Whenever a case of any infectious, malignant, or contagious disease is found to exist, the patient is removed to the hospital provided by the city for the treatment of all such cases. If, however, it is impracticable to remove the patient, the house is quarantined and steps are taken to make the quarantine effective, a printed placard stating the nature of the disease being displayed on the premises.

Every physician having cognizance of any case of malignant, infectious, or contagious disease, either within the city or within a radius of ten miles outside, must report the same within twelve hours, either to the health commissioner or to the nearest police station. All keepers of hotels or boarding-houses, owners of tenement houses or private residences, etc., must promptly report all cases of infectious diseases to the office of the health commissioner. Children from a family in which any contagious disease exists are prohibited from attending school, and principals or teachers either in public or in private schools are required to see that no child from any family so infected shall attend.

The health commissioner, with the approval of the board, has authority to establish and enforce special or general quarantine regulations within the limits of Saint Louis, whenever in his judgment the sanitary interests of the city demand it. Last year over 4,000 persons were vaccinated at the public expense, the work being performed under the direction of the health commissioner.

REGISTRATION AND REPORTS.

A full record of all births, marriages, and deaths is kept by the health commissioner. All births are required to be reported at his office by the physician or midwife in attendance, or by the parents. Marriages are required to be reported within ten days by the persons performing the ceremony. Deaths are reported by physicians or by the coroner in weekly reports, in addition to the certificate of death which is given and on which permits are issued.

The health commissioner reports annually to the mayor, and the report is published with the regular city documents.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city and with its own force. The work is done wholly by hand, no sweeping machines being used. As a large proportion of the paved streets are macadamized, no regular time can be set for cleaning, neither can a regular force be employed. The street commissioner has to use his own judgment as to where, when, and with what force the cleaning is to be done. The nature of the pavement does not permit very effective cleaning at any time, and during certain seasons the whole force of street-cleaners, which is frequently increased to several hundred men, can not even keep the street-crossings in a passable condition. This is more particularly the case in spring-time, when the frost is coming out of the ground. The streets paved with block pavement, as well as the gutters all through the city, are very efficiently cleaned.

During the past year there were 64,160 cubic yards of dirt removed from the streets, at a cost of \$68,993 13, or \$1 07 per cubic yard, the cost of the day labor being \$63,593 13, and for supervision \$5,400. The sweepings are used for grading public streets and alleys, filling ponds, etc. The street commissioner strongly recommended the placing of barges along the levee to be used as dumps, and thus reduce the cost of the work. At present the average number of trips a cart makes during the day is ten, and this number could be nearly doubled by having the distance to the dumps reduced. It is reported that the present system in use is the only one that can be recommended, since the time of cleaning and the force to be employed depend entirely upon the weather. In some seasons the amount of cleaning required may be small, while in others it is much greater. Contractors would have to bid high enough to leave a large margin for contingencies, and then the city would have to pay more than at present; while if a contract was made at too low a figure it would be difficult to enforce thorough cleaning, as no definite provisions as to time and force to be employed could be fixed by contract.

Removal of garbage and ashes.—All garbage is removed at the expense of the city, under contract, while ashes are removed at the expense of the householders. The garbage, which includes all house offal or waste, except ashes, must be kept in iron or tight wooden vessels, set in a convenient place in either the street or alley, where it can be moved by the contractor as he makes his rounds. Alleys are universally used as a place for the vessels containing the garbage. Ashes and garbage are not allowed to be kept in the same vessel. All garbage is hauled to the scavenger dumps, established by the city, and discharged into the Mississippi river. Ashes are disposed of by the householders, and are generally used for filling lots. The city pays \$12,000 annually for the removal of garbage, while the removal of ashes costs each householder about 10 cents per week, on an average.

The whole matter of the removal of garbage (or slops) is under the direction of the board of health, which makes the contract. It is said that no nuisance or injury to health results from the manner of collecting or handling the garbage, and that the system gives general satisfaction; no complaint has been made in regard to the execution of the contract.

Dead animals.—The city has made a contract with a rendering company, which provides that the carcasses of all animals dying within the limits of the city must be promptly removed. As the company is granted the exclusive privilege of taking all carcasses, the city pays nothing for the removal. The company is required to remove every dead animal within six hours after a report has been made to it, either by the police or by an agent of the board of health, that a carcass requires removal. No record is kept of the number of dead animals removed annually. It is reported that the system is good and that it is well carried out.

Liquid household wastes.—The city is provided with over 200 miles of sewers, and wherever they extend all liquid household wastes are run into them. Where there are no sewers the wastes are run into cesspools, not more than 1 per cent. of the houses in the city delivering their liquid wastes into the gutters. The cesspools are built

and cleaned in the same manner as privy-vaults, and receive the wastes from water-closets. They rarely have overflows, except into the sewers. It is said that they are tight when built in solid clay, but that when they are constructed in "made ground" they generally are only nominally tight.

The water from many wells, dug in the made ground, was subjected to a chemical analysis, and chlorine was generally found to such an extent that its presence could be accounted for only on the theory of the infiltration of the contents of the vaults and cesspools in the neighborhood. In many instances ammonia was largely represented.

Human excreta.—It is estimated that out of the 43,000 dwelling-houses in the city 15 per cent. are provided with water-closets, the remaining 85 per cent. depending on privy-vaults. With the exception of 300 or 400, all the water-closets deliver into the public sewers; those that deliver into the cesspools soon create a nuisance, and the construction of sewers becomes an urgent necessity.

Privy-vaults are required to be 10 feet deep, walled up with either brick or stone, and not nearer than 2 feet to any street, alley, or party line. In his annual report of 1879 the health commissioner says:

The common privy-vault exists in numerous portions of the city, and is a nuisance wherever found. As a factor in the defiling of well-water it is equaled by no other agency. They are often of the rudest construction, but in the remoter parts of the city they can not be well regulated in this respect. When these vaults are emptied the existing nuisance is often aggravated tenfold by the means adopted to clean them—a common method being by bucket and cart.

Privy-vaults are not allowed to be emptied between the 15th day of May and the 15th day of October, except by special permission of the health commissioner, and they must be cleaned between the hours of 12 p. m. and 3 a. m. The night-soil is almost entirely thrown into the river, none of it being used as manure within the city limits nor in the country adjacent.

Earth-closets are not used at all.

Manufacturing wastes.—Both liquid and solid manufacturing wastes are disposed of in the same manner as household wastes.

POLICE.

The police force of Saint Louis is appointed and governed by the board of police commissioners, which is composed of 4 members, who are appointed for a term of 4 years each, with the mayor a member *ex officio*. The executive officer is the chief of police, salary \$3,500 a year, who exercises general supervision over the force and administers it in accordance with rules and regulations making the usual provisions. The remainder of the force in the several grades and the annual salaries of each member are as follows: 6 captains at \$1,800; 40 sergeants at \$1,200; 10 detectives at \$1,200; 401 patrolmen at \$900; 1 armorer at \$900; 1 carpenter at \$900; 13 turnkeys at \$720; 11 hostlers at \$650; 5 janitors at \$600.

The winter uniform consists of a navy-blue cloth overcoat, dress coat, and pantaloons, in army style, with a blue flannel blouse for summer wear. The men provide their own uniforms. The patrolmen are armed with clubs (or batons) and pistols, and are divided into 10 divisions or platoons, the first platoon serving from 11 p. m. to 11 a. m., and the second platoon the other 12 hours. The platoons alternate their hours of duty every three months. The city is divided into 6 police districts, aggregating 62½ square miles of police territory, all of which is patrolled by the force.

The total number of arrests made by the force during the past year was 15,443, the principal causes for which were as follows:

Assault	243	Inhabiting bawdy-house	418
Careless driving	212	Larceny	1,037
Carrying concealed weapons	291	Street-walking	298
Disturbing the peace	1,715	Using profane or obscene language	2,604
Drunkenness	4,623	Vagrancy	1,213
Gambling	466	Violating city ordinance	355

In the final disposition of the persons arrested it is stated that 2,326 were sent to the workhouse. During the past year the total amount of property lost or stolen that was reported to the police amounted to \$245,501 55, and of this \$176,178 75 was recovered and returned to the owners.

The police co-operate with the fire, health, and building departments by reporting all cases belonging to their jurisdiction. Among the miscellaneous duties performed by the force may be noted the following: Nuisances found, 15,439, 13,927 of which were abated by verbal notice; nuisances reported to the health officer, 622; lost children returned to their parents, 550; doors, stores, etc., found open and secured, 896; number of dead animals reported, 2,308; dangerous walls, buildings, holes, and depressions reported, 862; broken and stopped-up sewers and inlets reported, 865; and broken sidewalks reported, 1,078.

There are on an average 189 watchmen employed throughout the city at the sole expense of the employers, who are, however, sworn in by the board of police commissioners, and required to give earnest and prompt assistance to the regular force as it may be required. They are furnished with a badge of authority by the department, and are required to report to the officer in charge of the district in which they serve, being borne on the police-rolls of such district.

During the year an officer, while in the performance of his duty, was shot and killed by a thief.

The total cost of the police force during the past year was \$489,998 42.

In addition to the regular force there is a voluntary auxiliary organization, known as the "police reserves", numbering about 500 men, which was called into existence during the riots of 1877, and has been perpetuated in the interests of law and social order.

FIRE DEPARTMENT.

The manual force of the department consists of 7 officers and 199 men. The fire apparatus consists of 19 steam fire-engines, 19 hose-carriages, 4 hook-and-ladder trucks, 1 large chemical engine, 5 fuel wagons, about 20,000 feet of 2½-inch rubber and cotton hose, all in good condition, and 127 horses, all in active service, with one steam fire-engine and 1 hose-carriage held in reserve.

In his report for 1879 the chief engineer states that there were 291 alarms, only 8 of which were false. The loss of property by fire was \$606,925, and the amount of loss to the insurance companies was \$558,025, leaving a loss to owners of property not insured of \$49,260.

A fire-alarm telegraph is in operation, by which immediate notice of fire can be sent to the engine-houses from the most distant residence districts. The cost of supporting the department is about \$270,000 per annum, including the alarm system.

The value of property in charge of the department is \$339,000, as follows: Engine-houses, \$168,000; fire-engines, hose-carriages, etc., \$137,000; and horses, harness, furniture, wagons, etc., \$34,000.

CITY GOVERNMENT.

The present plan of the municipal government presents some peculiar features. The existing charter was prepared under authority granted by the state constitution in a special provision relating to Saint Louis. Formerly the city was embraced in the county of Saint Louis, and a county and a city government were both administered within the municipal limits. The new constitution authorized a separation of the city from the county, and the work of preparing the scheme of separation and a charter for the city was intrusted to a board of thirteen freeholders, elected by the people for that purpose. The scheme and the charter when completed were submitted to the people at a special election held in 1876, and were adopted. They went into operation the ensuing year, and a reorganization took place under the new law. The city became wholly independent of county control. It levies and collects its own revenue and the state revenue within its limits, and manages and conducts its own affairs, except so far as the constitution admits of action by the legislature. The constant changes in the charter in past years exercised a detrimental effect on the welfare of the city, and it was partly to prevent this evil that the new plan was devised. The present charter can be amended at intervals of two years by proposals therefor submitted by the law-making authorities of the city to the qualified voters at a general or at a special election. The legislature may amend the charter, but only under the restrictions respecting special legislation.

The legislative power of the city is vested in a council and a house of delegates, styled the municipal assembly. The council is composed of 13 members, chosen on a general ticket by the voters of the city, and the house of delegates consists of one member from each of the 28 wards, elected by the voters in said ward. The mayor and heads of departments, including the president of the board of public improvements, are elected by the people for a term of four years, and the rest of the more important officers are appointed by the mayor, with the approval of the council.

It is claimed that under the operation of this charter a better execution of public work and a more economical system of expenditures have been secured.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Saint Louis for 1880, being taken from tables prepared for the Tenth Census by David B. Gould, chief special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries	2,024	\$50,892,885	33,980	4,761	3,084	\$17,743,592	\$75,379,867	\$114,393,375
Agricultural implements	7	434,000	443	.....	5	190,179	478,140	856,430
Artificial feathers and flowers	3	36,000	9	50	15	25,450	66,000	147,250
Awnings and tents	9	127,200	47	165	5	54,850	249,185	388,940
Bagging, flax, hemp, and jute	3	370,000	149	161	76	150,216	545,000	867,305
Bags, paper	4	88,250	12	30	42	29,700	174,800	231,530
Baking and yeast powders (see also Drugs and chemicals)	8	111,700	48	26	10	39,714	182,000	323,500
Baskets, rattan and willow ware	7	9,015	13	.....	.....	6,140	3,000	18,020
Blacksmithing (see also Wheelwrighting)	168	224,745	343	.....	6	188,954	201,698	616,909
Bookbinding and blank-book making	10	182,500	148	56	7	80,700	105,600	257,087
Boot and shoe uppers	3	12,000	13	.....	.....	7,052	17,400	29,200

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Boots and shoes, including custom work and repairing	184	\$679,630	658	217	197	\$125,664	\$874,812	\$1,034,504
Boxes, cigar	6	57,550	51	22	11	34,100	47,700	105,000
Boxes, fancy and paper	6	21,500	27	44	19	23,300	45,800	91,200
Boxes, wooden packing	11	40,600	80	.....	2	33,601	75,430	140,400
Brass castings	14	186,100	149	.....	8	70,087	305,275	570,450
Bread and other bakery products	105	719,070	614	57	68	312,913	1,672,843	2,573,350
Brick and tile	45	727,250	787	.....	153	307,581	197,588	701,032
Brooms and brushes	25	95,175	117	2	110	83,340	149,770	281,280
Carpentering	185	361,840	1,108	.....	9	667,900	1,585,094	3,003,411
Carpets, rag	2	350	2	.....	.....	450	900	6,100
Carriage and wagon materials	3	126,000	189	.....	3	91,638	134,440	204,600
Carriages and wagons (see also Wheelwrighting)	39	740,050	1,012	8	51	447,831	811,865	1,614,236
Cars, railroad, street, and repairs	7	314,200	691	.....	.....	293,384	732,400	1,100,809
Clothing, men's	100	1,351,355	1,191	1,632	12	779,908	1,895,342	3,425,167
Clothing, women's	13	140,800	75	451	30	110,775	238,700	483,000
Coffee and spices, roasted and ground	6	230,000	90	2	4	41,840	391,500	563,000
Coffins, burial cases, and undertakers' goods	5	30,500	23	4	.....	12,530	160,200	157,300
Confectionery	31	307,560	207	185	21	159,640	774,790	1,158,185
Cooperage	78	493,295	800	.....	88	377,056	798,262	1,431,405
Coppersmithing (see also Tinware, copperware, and sheet-iron ware)	3	3,500	9	.....	1	6,200	12,000	24,000
Cordage and twine	14	12,875	37	.....	40	16,423	33,250	67,664
Corsets	3	720	2	3	.....	1,450	2,410	6,460
Cotton goods	3	823,500	106	171	163	86,325	335,381	453,295
Cutlery and edge tools (see also Hardware)	4	4,000	20	.....	.....	9,596	8,450	24,400
Dentistry, mechanical	8	6,700	5	3	1	4,184	6,400	32,400
Drugs and chemicals (see also Baking and yeast powders; Patent medicines and compounds)	15	696,000	216	57	28	123,940	665,365	1,166,743
Dyeing and cleaning	5	16,450	17	6	1	6,650	2,650	23,000
Dyeing and finishing textiles	3	16,000	14	5	4	7,500	5,500	22,200
Electroplating	8	17,600	29	1	2	12,725	9,420	43,260
Engraving and die-sinking	7	9,675	14	.....	1	7,165	10,750	30,000
Engraving, steel	10	72,100	47	2	3	25,050	62,500	120,900
Engraving, wood	3	12,200	22	.....	2	11,350	1,370	21,070
Files	6	38,900	35	.....	.....	17,142	7,870	34,300
Flouring and grist-mill products	24	2,067,500	668	.....	.....	488,879	12,031,364	13,783,178
Food preparations	4	17,100	13	.....	.....	4,800	11,375	30,840
Foundry and machine-shop products (see also Iron work; architectural and ornamental)	62	3,605,713	3,433	.....	33	1,854,040	2,700,844	5,952,770
Fruits and vegetables, canned and preserved	3	31,500	38	8	1	11,614	51,902	123,250
Furniture (see also Mattresses and spring beds; Upholstering)	54	929,792	1,044	11	68	511,615	1,082,825	1,079,683
Glass	5	280,000	395	.....	220	261,698	238,946	597,277
Glass, cut, stained, and ornamented	3	11,000	16	.....	.....	9,450	7,100	27,000
Gloves and mittens	3	13,000	29	35	4	18,000	19,000	46,000
Glue	5	34,350	24	.....	4	13,220	41,575	73,800
Grease and tallow	6	43,250	20	.....	.....	9,150	66,220	107,300
Hairwork	8	17,000	6	23	.....	7,375	10,350	40,700
Hardware (see also Cutlery and edge tools)	10	210,150	111	.....	1	61,321	102,256	188,862
Hats and caps, not including wool hats	9	60,400	49	82	4	42,865	77,740	177,531
Ink	3	9,000	8	.....	.....	3,568	7,200	16,234
Instruments, professional and scientific	4	54,660	22	.....	.....	12,700	35,725	81,450
Iron and steel	10	5,960,000	2,188	.....	110	616,575	2,823,058	3,050,536
Iron bolts, nuts, washers, and rivets	4	235,000	123	.....	14	60,498	361,637	493,560
Iron railing, wrought	6	23,400	34	.....	5	20,760	25,360	63,400
Iron work, architectural and ornamental (see also Foundry and machine-shop products)	4	34,000	44	.....	.....	17,850	31,860	67,610
Jewelry	8	52,000	55	.....	7	37,600	68,000	189,500
Labels and tags	3	10,300	12	.....	.....	7,868	10,910	25,500
Lamps and reflectors	7	291,000	139	.....	20	74,139	376,540	519,300
Leather, curried	7	59,250	40	.....	.....	16,595	240,797	282,417
Leather, tanned	17	123,450	82	3	7	99,101	299,026	399,063
Lightning-rods	3	54,000	16	.....	.....	7,250	14,401	39,202
Lime	4	64,500	33	.....	.....	13,800	32,925	63,200
Liquors, malt	23	4,184,600	1,230	.....	105	634,988	2,565,074	4,535,630

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Liquors, vinous	8	\$380,000	80	.....	.....	\$18,830	\$52,000	\$131,000
Lithographing (see also Printing and publishing)	5	71,500	04	6	17	51,265	83,344	214,989
Lock and gun-smithing	17	5,325	18	.....	.....	8,514	4,970	24,714
Looking-glass and picture frames	10	323,900	129	1	22	80,251	102,825	208,682
Lumber, planed (see also Sash, doors, and blinds; Wood, turned and carved)	9	272,850	335	2	22	152,609	502,742	750,936
Lumber, sawed	3	620,000	119	.....	.....	72,086	251,000	412,000
Marble and stone work	56	237,825	478	.....	18	237,207	245,707	707,721
Mattresses and spring beds (see also Furniture)	8	21,750	50	19	10	24,934	75,430	135,300
Masonry, brick and stone	98	82,375	380	.....	.....	200,389	210,321	575,700
Mineral and soda waters	11	112,100	97	5	27	45,846	58,000	193,000
Models and patterns	3	11,700	10	.....	.....	6,400	1,420	10,400
Musical instruments and materials (not specified)	8	60,000	10	1	1	5,350	8,775	28,250
Musical instruments, organs and materials	3	10,600	9	.....	.....	6,000	5,200	10,600
Musical instruments, pianos and materials	7	21,350	19	.....	.....	10,308	8,060	27,500
Oil, lard	3	90,000	25	.....	.....	13,050	505,750	539,000
Paints (see also Varnish)	13	1,688,350	522	10	4	250,532	2,006,480	2,570,860
Painting and paperhanging	110	369,945	863	15	18	303,032	540,054	1,255,552
Patent medicines and compounds (see also Drugs and chemicals)	24	1,383,200	108	87	13	131,696	482,235	1,145,000
Photographing	25	86,050	59	18	0	43,130	48,950	170,004
Pickles, preserves, and sauces	3	48,200	58	25	25	41,999	134,200	211,200
Plumbing and gasfitting	61	116,775	239	.....	7	120,000	214,958	404,083
Printing and publishing (see also Lithographing)	101	2,480,060	1,978	175	117	1,239,299	1,249,004	3,688,287
Pumps, not including steam-pumps	9	529,850	109	.....	2	65,900	701,570	926,750
Refrigerators	3	28,700	86	.....	15	42,950	183,300	309,500
Roofing and roofing materials	5	53,700	75	.....	.....	48,000	81,000	177,800
Saddlery and harness	92	1,370,350	1,143	4	73	533,442	1,332,074	2,304,858
Sash, doors, and blinds (see also Lumber, planed; Wood, turned and carved)	12	580,105	601	.....	43	275,321	660,871	1,191,070
Shipbuilding	7	243,000	270	.....	.....	187,380	205,592	506,712
Shirts	17	122,100	52	274	.....	84,416	127,100	278,700
Show-cases	4	23,000	74	4	1	28,409	11,750	80,100
Slaughtering and meat packing, not including retail butchering	32	1,243,000	564	.....	20	269,703	7,085,009	8,424,064
Soap and candles	15	718,927	253	2	2	95,501	1,262,701	1,007,541
Stencils and brands	6	4,750	11	.....	2	5,925	5,563	21,425
Stone and earthen-ware	5	34,500	31	.....	10	16,000	10,985	40,430
Tinware, copperware, and sheet-iron ware (see also Coppersmithing)	120	418,325	598	18	62	227,546	553,208	1,095,950
Tobacco, chewing, smoking, and snuff (see also Tobacco, cigars and cigarettes)	21	1,146,200	763	146	325	402,959	3,950,950	4,813,760
Tobacco, cigars and cigarettes (see also Tobacco, chewing, smoking, and snuff)	201	272,925	576	6	72	265,067	812,725	888,993
Trunks and valises	14	105,500	156	.....	8	73,125	205,775	340,560
Umbrellas and canes	4	1,400	3	.....	.....	1,020	1,150	4,370
Upholstering (see also Furniture)	18	209,025	48	4	6	20,850	62,100	148,727
Varnish (see also Paints)	3	26,500	10	.....	.....	8,962	35,000	54,600
Vinegar	14	240,650	115	12	4	99,520	290,000	572,400
Watch and clock repairing	17	36,250	19	.....	1	9,367	13,175	39,740
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	52	51,950	110	.....	3	47,598	42,632	140,121
Whips	4	1,260	12	.....	.....	4,630	8,960	17,414
Wirework	8	153,700	134	4	38	60,890	112,620	371,000
Wood, turned and carved (see also Lumber, planed; Sash, doors, and blinds)	18	28,725	42	.....	2	19,183	10,945	84,207
All other industries (a)	85	6,300,338	2,944	381	288	1,471,217	13,722,533	17,270,752

a Embracing artificial limbs; babbitt metal and solder; bags, other than paper; belting and hose, leather; billiard tables and materials; bluing; bone, ivory, and lamp-black; bridges; carriages and sleds, children's; cordials and sirups; cork cutting; dentists' materials; explosives and fireworks; fertilizers; flavoring extracts; furniture, chairs; furs, dressed; gold and silver, reduced and refined; hosiery and knit goods; ice, artificial; iron forgings; jewelry and instrument cases; lard, refined; lead, bar, pipe, sheet, and shot; liquors, distilled; malt; mantels, slate, marble, and marbleized; oil, castor; oil, cottonseed and cake; oil, lubricating; oil, neat's-foot; paving-materials; perfumery and cosmetics; photographic apparatus; plated and britannia ware; regalia and society banners and emblems; safes, doors, and vaults, fire-proof; saws; silk and silk goods; silversmithing; sporting goods; stamped ware; stationery goods; steam fittings and heating apparatus; stereotyping and electrotyping; sugar and molasses, refined; surgical appliances; tar and turpentine; telegraph and telephone apparatus; terra-cotta ware; toys and games; type founding; upholstering materials; washing-machines and clothes-wringers; watch cases; window blinds and shades; wire; and wooden ware.

From the foregoing table it appears that the average capital of all establishments is \$17,384 70; that the average wages of all hands employed is \$424 23 per annum; and that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$32,891 03.