

SAINT LOUIS:
THE
FUTURE GREAT CITY
OF
THE WORLD,
WITH
BIOGRAPHICAL SKETCHES OF THE REPRESENTATIVE MEN AND
WOMEN OF ST. LOUIS AND MISSOURI.

BY L. U. REAVIS.

"Had St. Louis been destined to remain a village, her history might have been dispatched in a few lines; but future generations will inquire of us all that concerns the origin of the 'River Queen,' the destined Queen of the Western Empire."—*Nicollet*.

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LOCAL INSTITUTIONS.

THE WATER WORKS.

A LIBERAL supply of water has at all times been considered one of the chief necessities to the growth and prosperity of a large city. In many parts of Syria and Palestine large reservoirs and tanks were constructed in the past, which at the present time are the only resources for water during the dry season, and a failure of them involves drought and calamity.

The most celebrated of the pools mentioned in Scripture are the pools of Solomon, about three miles southwest of Bethlehem, from which an aqueduct was carried which still supplies Jerusalem with water. These pools are said to be three in number, partly hewn out of the rock, and partly built with masonry, but all lined with cement. The largest of them is 582 feet long by 207 feet wide and 50 feet deep.

The Romans spared no expense to procure for their city an abundant supply of pure water. Their aqueducts, some of which are still in operation, at one time carried to that city 350,000,000 gallons of water daily, or 290 gallons daily for each inhabitant. Some of these aqueducts had a length from thirty to seventy miles, and in magnificence and costliness far surpassed the most celebrated works of modern origin.

The earliest and most liberal provisions for a water supply on our own continent were made by the cities of Philadelphia, New York, and Boston; and to this must be ascribed in a great measure, the rapid growth of these cities. In 1860 the amount of water supplied daily to each inhabitant of these cities averaged ninety-seven gallons in Boston, fifty-two gallons in New York, and thirty-six gallons in Philadelphia. The works in these cities when designed, seemed to be of sufficient capacity to furnish a supply for many years, but their growth has been so rapid that they already feel the necessity of husbanding their resources, and of taking measures to extend their works so as to be enabled to meet the increased and increasing consumption. In fact, during the severe drought of last year a scarcity of water was experienced in each of these cities, owing to the inadequacy of their sources of supply.

The great advantage possessed by St. Louis in this respect, consists in the fact that its source of supply is inexhaustible. The Mississippi, in time of an ordinary stage, carries past the city about 1,000,000 gallons of water per second, or enough in six seconds to supply the present necessities of its inhabitants for a whole day. It is not only abundant, but is one of the most wholesome waters

known. It is true that in time of high water it contains a large per centage of sedimentary matter, brought down by the swift current of the Missouri river, but of this it is easily freed by settling and filtering. And it is worthy of mention here that the old inhabitants of our city are so far from being adverse to this admixture of sedimentary matter, that they almost regret that the new works now in course of construction will furnish them settled or clear water.

The most recent analysis of our river water is that made by Dr. Theodore Fay, chemist of the Board of Water Commissioners, which is given in the following form, exhibiting the comparative quality of the water obtained from the old and new reservoirs :

WATER DRAWN FROM HYDRANT (OLD SUPPLY).

Solid matter separated by filter.....	232	grains per gallon.
Hardness.....	7.05	
Oxydizable organic matter.....	504	grains per gallon.
Carbonate of lime.....	5.60	" "

SETTLED WATER DRAWN FROM HYDRANT (NEW SUPPLY).

Hardness.....	8.75	
Oxydizable organic matter.....	.784	grains per gallon.
Carbonate of lime.....	7.17	" "
Animalculæ	in considerable numbers.	

Dr. Fay, in connection with the above, makes the following explanation :

“ The above statement in regard to the difference in organic matter and hardness is hardly a fair test, on account of the excess of time that the water remained exposed to the sun, and solution of a portion of the lime used in the construction of the reservoirs and culverts, in which many thousands of bushels have been used. It is my opinion that we will have as good water from the Mississippi as any in the United States when the clay and sand are removed.

The first water-works in St. Louis consisted of a reservoir on the Big Mound, supplied by a small engine from the Mississippi river. It was constructed in 1829-30, and designed to contain 300,000 gallons. The city of St. Louis then numbered 5,852 inhabitants. In 1850, the population being then 77,860, a larger reservoir was completed, holding about 8,000,000 gallons. This reservoir has also been out of use for many years. The reservoir by which the city is now supplied was finished in 1855, when the city contained 125,000 inhabitants. The water is pumped into it by three pumps located at the foot of Bates street, and having a total capacity of about 11,000,000 gallons per day. One of these pumps was procured by the present Board of Water Commissioners in 1868, the other two not having sufficient capacity to supply the city beyond a contingency. Previous to the year 1860 it had become apparent that the existing works would soon be insufficient to supply the city. In fact, the area of the city had been extended so much, and in the direction of grounds so much higher than the reservoir, that a large portion of the territory included in the new limits could not be supplied. The question of new and more extended works was agitated for several years, but without any result, until the Governor of the State, under a law passed in January

1865, appointed a Board of Water Commissioners. These gentlemen appointed Mr. James P Kirkwood, the acknowledged head of hydraulic engineers in the United States, since his completion of the Brooklyn waterworks, their Chief Engineer.

In October 1865, Mr. Kirkwood submitted several plans of works to the Commissioners. The one adopted by them was subsequently rejected by the Common Council, to whom, according to the then existing law, belonged the final decision of the matter. The members of the Board of Water Commissioners resigned, and a new Board appointed by the Governor, having retained Mr. Kirkwood's services, submitted new plans to the Common Council for approval, after Mr. Kirkwood had modified his former plans so as to bring them in accordance with the expressed opinion of the Council. There seeming to be but little hope that the conflicting opinions of the members of our City Council would ever admit of their approving any plan, a new law was passed by the Legislature which placed the whole matter in the hands of a commission of three members, and authorized them to apply the proceeds of three and a half million of bonds, to be issued by the city, to the construction of the works. The new Board appointed as their Chief Engineer Mr. Thomas J. Whitman, an engineer of long experience in hydraulic works. Mr. Kirkwood had declined to accept the position again, but consented to act as consulting engineer.

The Water Department, as now organized and operated, was created by act of the Legislature entitled "An Act to enable the City of St. Louis to procure a supply of wholesome water," approved March 13, 1867.

This department of the city government is managed by a board of three Commissioners and the Mayor of the city, who is *ex-officio* president of the board.

The present board consists of Mayor Overstolz, Joseph Brown, James Sweeney and Edward Walsh, Jr.

The officers of the board are as follows: Edward Walsh, Jr., acting president; Samuel Pepper, secretary; T. J. Whitman, chief engineer and superintendent; Ashton P. Johnson, assessor of water rates; Arden R. Smith, collector of water rates.

The total number of employees required to operate the entire department are about one hundred and fifty, including the pumping department and street service.

The total annual expenses of operating the department are about \$260,000.

Pumping capacity, 56,000,000 gallons per day. Average daily consumption of water during the past year, 20,250,000 gallons.

Receipts for the use of water for the past year were \$450,448.46.

Total length of water-pipe laid, 176.85 miles, at a cost of \$3,517,872.21.

Length of the force main pipe from the river, at Bissell's Point, to the Compton Hill reservoir, is a little over five miles; the diameter of this pipe is thirty-six inches.

The total cost of the present water-works, including real estate, is about \$9,000,000. Twenty-year six per cent. gold bonds have been issued by the city, in aid of the water-works, to the amount of \$5,200,000.