

WATER SUPPLY IN THE CITY OF NEW YORK.

In our August number we inserted a paper on the various schemes by which it was proposed to supply water to the city of New York. We now resume the subject, as we have received valuable information from various quarters, which cannot fail to interest our readers.

Our acknowledgments are especially due to the Croton Aqueduct Board, for various reports, and other documents. We have compiled from these papers a chronological account of the various methods proposed since the year 1774. At that date the corporations began to construct a well, with a reservoir, and other suitable works, in a central site, on the east side of Broadway, between Pearl and White streets. To raise the necessary capital, city notes were issued to the amount of two thousand five hundred pounds, and bonds were executed in favor of certain persons for land and materials to the amount of eight thousand eight hundred and fifty pounds more. The paper currency so created was known as Water Works money, and consisted of bills of various denominations, from sixpence to eight shillings each. In the month of August of the same year, an additional capital was in a similar way created to the amount of two thousand six hundred pounds. The works proceeded, and a spacious reservoir was constructed, but as the war of the Revolution broke out, and the city was occupied by British troops, the scheme, which was originated by an ingenious citizen named Christopher Colles, was abandoned. Ten years later, when the political confusion had subsided, Samuel Ogden made proposals to the Corporation for resuming operations, and constructing suitable works. No action was taken, however, and a few months afterwards, in January, 1786, the Honrables R. Livingston and John Lawrence made proposals to construct by private enterprise the necessary works. The Corporation approved their plans, and it appeared extremely probable that what the people ought to have long before done for themselves, would, by a lack of public spirit, be devolved on others. The good sense of the citizens however, prevented an outlay, which would probably have been injurious to the growth, salubrity, and general interests of the city. The endorsement of the Corporation was not enough. Before the scheme could be carried out, the vote of the people was taken, and the result was that the plan was defeated, and the opinion was found very generally to prevail that the privilege of supplying the city with water, ought not to be a monopoly, entrusted to private individuals, but should, if possible, be undertaken by the Corporation. As nothing further was done, and the want of water was seriously felt, the subject was once more agitated, and in January, 1788, a petition was presented by the people urging that the scheme of Mr. Colles should be adopted, or any other plan that the Corporation might deem more expedient, and it so happened, that a few months later the Rumseian Society of Philadelphia, opened negotiations with a view to supply New York with water, after the patent for Mr. Rumsey's engine should be perfected. This promising scheme, so opportunely offering, was immediately welcomed, and a resolution was passed by the Board, inviting proposals. No further movement, however, was made in the affair, and at the beginning of the year 1792, Zebrina Curtis and others, made various proposals, which were referred to a circumlocution office called the Street Committee, after which nothing more was heard of them, and three years elapsed, before the agitation was renewed. The inhabitants of the city were rapidly increasing in numbers, wealth, and commercial importance, and great inconveniences resulted from the inadequate supply of water. The few old wells scattered in various parts of the city were amply sufficient for the ten thousand inhabitants it had contained in 1756, but were complained of as very inadequate now that the population had increased fourfold. Accordingly, much popular feeling was awakened, and in March, 1795, proposals were made by various citizens, who were anxious to supply a want so universally felt; and amongst other plans, that of Samuel Crane, who offered to lay pipes along Roosevelt street, from the celebrated Tea Water pump, near Chatham Square. These projects were all of them, for various reasons, discarded, and as the agitation on the subject continued, a committee of the Common

Council was directed in February, 1796, to advertise, and Joseph Brown, and associates, proposed to supply the city by means of pipes. In the following year, sealed proposals, for distributing water by means of pipes, were again advertised for, and among the various applications received, was one from the same Christopher Colles, who had undertaken the work twenty-three years before. All these plans followed the fate of their predecessors, and were consigned to the care of a committee, from whose guardianship they never emerged.

One great defect common to all the projects we have mentioned, was the inadequacy of the sources relied on. Dr. Joseph Brown was the first to meet this difficulty by a definite remedy. In the year 1798, in a communication to the Common Council, he pointed out the necessity of seeking water from sources outside the limits of the city, and recommended the Bronx River as affording an available, and ample supply.

A committee of the Common Council reported favorably, and recommended an investigation. They also proposed that an application should be made to the Legislature for an act investing the Corporation with the requisite powers, and granting them the proceeds of the tax on auction-sales, that by these funds, or by loans founded on them, the necessary capital might be raised. Mr. William Weston, a civil engineer, was appointed to survey the ground, and report on the project. His opinion was favorable; but his information seems to have been confined to the knowledge gained by walking over, and viewing the ground.

As no definite steps were taken, and no other plan seemed feasible, the Manhattan Company, within a few weeks after Mr. Weston's report, was incorporated by an act of the Legislature, and entrusted by charter with the task of supplying the city. As the population, during the last ten years, had almost doubled itself, and amounted to more than sixty thousand persons, with a probability of further increase in a similar ratio, the company were privileged to go over the whole island of New York, and into Westchester county, to seek for good water. Although the nature of the subjacent strata forbade the hope of obtaining good water except from very deep levels, they contented themselves with sinking a large well at the corner of Dunne and Cross streets, and the inferior supplies thus obtained were distributed by means of wooden pipes. These arrangements were unsatisfactory to a number of the citizens, and, in 1804, under the mayoralty of De Witt Clinton, the inhabitants numbering now seventy thousand persons, a committee was appointed to report on the practicability of supplying the city with purer and more wholesome water, and to confer with the Manhattan Company as to the terms upon which they would cede to the Corporation their works, and their privileges. There is no record of the results of this conference, and the inconvenience of permitting private speculation to withdraw from the hands of the city authorities the right of water-supply, was realized just as had been anticipated, when, in 1786, the city, by a very large vote, refused to ratify a similar project. The Manhattan Company owed its incorporation to the persistent exertions of Aaron Burr, at that time a member of the Legislature, and was not only invested with the rights we have mentioned, but possessed also the privilege of using its surplus capital in banking. The act of incorporation being obtained, the consent of the city was secured, by permission to subscribe for two thousand shares of the stock. As might have been anticipated, banking, which was the most lucrative, soon became the principal object of the company. Hence the lack of enterprise and efficiency in its functions of water-supply, out of which sprang the complaints and dissatisfaction to which we have referred.

Millions of dollars were, probably, however, saved, and much disappointment and inconvenience prevented by the act of incorporation obtained for the Manhattan Company by Aaron Burr; for it is highly probable that but for the adoption of this course, the Bronx River project, or one equally costly and inefficient, would have been substituted.

Various causes contributed, during the next twelve years, to check further agitation on this subject. After the close of the war with Great Britain, however, the question once more began to attract attention, and in 1816, the population having increased to one hundred

thousand, the prevailing anxiety caused the appointment of a committee to report on the propriety of an application to the Legislature to invest the Mayor, Aldermen, and Commonalty, with the necessary powers. What report issued from this committee we are unable to state, as no minute of it has been preserved. Robert Macomb, in the year 1819, proposed to construct a reservoir at Harlem River, and to supply the inhabitants with water for all domestic purposes. Asking no aid or compensation from the Common Council, this enterprising man engaged to supply his reservoir from Rye Pond, if permitted to lay down his pipes, and to sell the water through the city. This project was submitted to a committee, who treated it with more consideration than was usually bestowed on similar schemes; for they not only reported in its favor, but passed a series of commendatory resolutions. Fortunately for the future inhabitants of the metropolis, this plausible scheme was abandoned, and, in 1822, another survey was decided on, in connection with the River Bronx scheme. Before the completion of this survey, two more imposing plans started up, which seemed at first very likely to be realized. One of these plans was to bring the Housatonic River to New York in an open canal, and an act of incorporation was actually obtained in Connecticut. The other plan was to construct a similar canal to Sharon; and these canals were intended not only to furnish a supply of water, but to serve the purposes of commerce. These schemes were, however, soon abandoned; and Mr. White, the engineer appointed to survey the country between New York and the main source of the River Bronx, presented a favorable report, and estimated the cost of bringing the waters of that stream to a reservoir near the City Hall at about two millions of dollars. As the government of the City Hall took no further action in the affair, the New York Water Works Company was formed in 1825, about the time of the union of the Atlantic with the Canadian Lakes by the opening of the magnificent Erie Canal.

This company, in 1827, found itself unable to proceed, and the New York Well Company was incorporated. Their scheme was to procure water from wells, sunk in the city, but the enterprise failed; as experiments proved, here as in Nottingham, Wolverhampton, Leicester, Manchester, and Liverpool, in England, and in other places in red sandstone districts, that an ample supply of the best water to large cities cannot be procured from wells. Levi Drisboil proposed, in 1828, the sinking of a number of artesian wells to obtain water from deeper levels. He met with some success; but the cost of the undertaking, and uncertainty of the supply, with some other circumstances, prevented the prosecution of this scheme. A number of destructive fires, which caused an immense loss of property, necessitated the adoption of some place for providing water, adequate and available in such emergencies. With considerable difficulty, in the year 1829, the city authorities were constrained to give a reluctant consent to a plan recommended by Alderman Samuel Stevens. This scheme proposed the construction of a well and reservoir in Fourteenth street, whence water was to be distributed in iron pipes. In the following year, a more ample supply of water was proposed to be obtained from other sources, among which was mentioned the Croton River. The adequate supply of pure water obtainable from this source had been incidentally pointed out in former years; but to the memorial of Francis B. Phelps, Esq., presented on the 17th of May, 1830, the city is indebted for the first definite proposal in regard to it.

From that time the opinion gained ground that the Croton River could be carried into the city, and that without it a supply adequate to the present and future wants of the metropolis could not be had. In November, 1832, De Witt Clinton, Esq., of the United States corps of engineers, in conjunction with Aldermen James Palmer, Chairman of the Committee on Fire and Water, Myndert Van Schaick, Chairman of the Committee on Finance, and James B. Murray, Chairman of the Street Committee, made an impartial, thorough and personal examination of the rival schemes, and in December prepared a report in which this opinion is ably supported. They proposed the construction of an open aqueduct, at the estimated cost of \$2,500,000. The Legislature, on the 26th of February, 1833, passed an act for the appointment by the Governor and Senate of five persons as Water Commissioners.

This act was drawn up by the Honorable Myndert Van Schaick, and gave the first effectual impulse to the work. The sum of \$5,000 being on the fifth of June appropriated by the Common Council, the requisite surveys and estimates, connected with various schemes, were proceeded with by Major Douglas, an eminent engineer, and on the following May another act was passed by the Legislature giving new powers to the Commissioners, and authorizing the Common Council, if they approved any plan adopted by the Commissioners, to submit it to the electors, and to raise \$2,500,000 by the creation of a public fund or stock, to be called "The Water Stock of the City of New York." In April, 1835, the Croton plan, having secured the approval both of the Water Commissioners and of the Common Council, was submitted to the electors, when 17,330 votes were given for the scheme, and 5,963 against it.

It is worthy of note, that the wards which contributed the largest amount of taxes gave also the largest vote in favor of the Croton project. In the Ninth, Tenth, and Thirteenth Wards the negative vote preponderated, but in all the others the affirmative was carried by a large majority. The first ward, paying \$256,181 of taxes, recorded twenty-seven negatives against 1,417 affirmatives, while the three wards above mentioned recorded 2,251 affirmative and 2,784 negative votes, while the aggregate taxation of the three wards amounted to less than one-third of that paid by the first ward.

After an outlay of nine millions of dollars, this vast undertaking was, by the untiring exertions of the chief engineer John B. Jervis, at length completed; and on the fourth of July, 1842, the gates of the new reservoir were thrown open by the President of the Board of Water Commissioners, and the pure, limpid stream, diverted more than forty miles from its course, flowed through the new channel prepared for it. On the fourteenth of October following, the mains and pipes were completed, and a public celebration took place in honor of the event. The day was ushered in at sunrise by the roaring of cannon, and by merry peals from all the bells in the city. At nine o'clock a banner was handed, with imposing ceremony, to the Mayor; who, in behalf of the Common Council, presented it to the officers and members of the Fire Department. On one side of this banner the ocean king, Neptune, was represented as victorious over the demon of fire, and on the other side the Queen of Cities was pointing to the magnificent work whose completion was being celebrated. Immediately afterwards a procession seven miles long, composed of citizens and soldiers, left the battery, at the southern extremity of the city, with flags and banners bearing every imaginable device, and attended by numerous bands of music playing national and triumphant airs. At several points the progress of the procession was greeted with the sudden opening of various fountains in different parts of the city. At half-past four in the afternoon an immense concourse of people gathered around the City Hall to listen to the orations of Samuel Stevens and J. L. Lawrence, the former of whom, as President of the State Board of Water Commissioners, entrusted to the latter, as President of the Croton Aqueduct Board, the care of this gigantic work.

The following ode, composed in honor of the occasion by Gen. G. P. Morris, was then sung by the members of the New York Harmonic Society around the sparkling waters of the fountain in the Park:

I.

"Gushing from this living fountain,
Music pours a falling strain,
As the Goddess of the Mountain
Comes with all her sparkling train;
From her grotto-springs advancing,
Glittering in her feathery spray,
Woodland fauns beside her dancing,
She pursues her winding way.

II.

"Gently o'er the rippling water,
In her coral shallop bright,
Glides the rock-king's dove-eyed daughter,
Glistening fair in virgin white.
Nymphs and naiads, sweetly smiling,
Urge her back with pearly hand,
Merrily the sylph beguiling
From the nooks of fairy land.

III.

"Swimming on the snow-curl'd billow,
See the river spirits fair,

Lay their cheeks, as on a pillow,
With the foam-beads in their hair.
Thus attended, hither wending,
Floats the lovely Oread now,
Eden's arch of promise bending
Over her translucent brow.

IV.

"Hail the wanderer from a far-land!
Bind her flowing tresses up!
Crown her with a fadeless garland,
And with crystal brim the cup.
From her haunts of deep seclusion,
Let Intemperance greet her too,
And the heat of his delusion
Sprinkle with this mountain-dew.

V.

"Water leaps as if delighted,
While her conquered foes retire!
Pale Contagion flies affrighted
With the baffled demon, Fire!
Safety dwells in her dominions,
Health and Beauty with her move,
And entwine their circling pinions
In a sisterhood of love.

VI.

"Water shouts a glad hosanna!
Bubbles up the Earth to bliss!
Cheers it like the precious manna,
In the barren wilderness.
Here we wondering gaze, assembled
Like the grateful Hebrew band,
When the hidden fountain trembled,
And obeyed the Prophet's wand.

VII.

"Round the aqueducts of story,
As the mists of Lethe throng,
Croton's waves, in all their glory,
Troop in melody along,
Ever sparkling, bright, and single,
Will this rock-ribbed stream appear,
When posterity shall mingle
Like the gathered waters here."

As the strains of music died away, the voices of the vast surging multitudes were raised, and a succession of hearty cheers closed the ceremonies of this eventful day.

Thus was achieved, during a time of commercial embarrassment, one of the most celebrated aqueducts of ancient or modern times—a monument of the genius and enterprise of the Empire-City of the Western Hemisphere.

THE MAMMOTH GAS CHANDELIER.

Messrs. CORNELIUS & BAKER, of Philadelphia, the pioneers in American gas-apparatus manufacture, have just added another triumph to their already numerous artistic laurels, by the production of a magnificent gas-chandelier intended for the Boston (Mass.) Theatre.

This chandelier is sixteen feet in diameter, twenty-four feet in height; it weighs four thousand pounds and has two hundred and forty burners in imitation of candles, arranged in five rows, diminishing in diameter as they descend. Between the rows of lights are thousands of suspended brilliants hung in festoons, and reflecting, when in full blaze, the most exquisite and delicate tints of the rainbow blended in the softest hues. The style and design of this elaborate work of art is chaste and elegant, while its effect upon an audience, and their surroundings will be gorgeous in the extreme.

TO CANVASSERS.

NOTICE is hereby given that all authority to canvass for the AMERICAN GAS-LIGHT JOURNAL is hereby revoked. All contracts entered into by our canvassers up to the date when this number of the JOURNAL reaches their several residences will be fulfilled by us, but after that the progress of the JOURNAL must be left to itself, unstimulated by the personal application of canvassers.

From the Pittsburgh (Pa.) Dispatch.

THE AMERICAN GAS-LIGHT JOURNAL is a (comparatively) new monthly publication, devoted to light, water, and sewerage, published by John B. Murray, 40 Wall street, New York, at three dollars per annum. It is invaluable to gas and water companies and engineers, giving, as it does, whatever relates to the scientific or practical improvements going on in the manufacture and use of gas. Those interested in sewerage will find it of value in imparting new ideas upon that subject. We recommend it to members of our city councils.