CHAPTER XII

WATER

THE story of Manchester's water supply is the story of progress from the town's spring in Fountain Street to the huge undertakings of Thirlmere and Haweswater.

The earliest records of the town's water supply show that there was one principal spring or fountain, rising in the plot of land lying between what is now known as Fountain Street and Spring Gardens, off Market Street. Water was conveyed from here in stone pipes to the market-place. This spring was owned by the inhabitants and supplied them with water for over two hundred years, from 1506 to 1776, after which date the supply failed, owing to the sinking of other wells in the neighbourhood.

Towards the close of the eighteenth century the population was increasing rapidly. Mills, worked by water power, were being built on the banks of the rivers, which owners dammed up for their own use. Sir Oswald Mosley, the then Lord of the Manor of Manchester, constructed a pumping engine for raising water from the River Medlock at Holt Town, near Beswick, a short distance from the town. The water was conveyed to the Shudehill pits and the Infirmary pond, where it was stored, and from whence it was distributed by pipes to the lower parts of the town. As the amount that could be taken from the river was limited, many people had to get their supplies from wells.

It became obvious that a more abundant and a better supply of water was necessary, and in 1809 rival schemes were promoted in Parliament by private companies. These were vigorously opposed by the Police Commissioners and by crowded town's meetings, which enthusiastically adopted the report of a committee which advocated that the supply should be under the direction of the town's inhabitants. This proposal, however, was in advance of the times, and municipalization did not come for another forty years. The "Manchester and Salford Waterworks Company" succeeded in carrying its Bill and purchased the works belonging to the Lord of the Manor.

In 1844 the company was experiencing great difficulty in meeting all the demands occasioned by the rapid growth of the town, in spite of sinking new wells and of making extra reservoirs, and Mr. Bateman, at that time consulting engineer to the Waterworks Company, later to the Manchester Corporation, recommended that water should be obtained from the River Etherow and its draining area in the Longdendale Valley in Derbyshire. The Waterworks Company promoted a Bill in Parliament in 1844, and a rival, the South Lancashire Waterworks Company, promoted an alternative scheme. The new Town Council, however, was determined that the water supply should be in its own hands. It opposed the South Lancashire Waterworks Bill, and informed the Parliamentary Committee that it intended to apply for powers to buy out the Manchester and Salford Waterworks Company, to obtain additional supplies in the Longdendale Valley, and to levy a compulsory rate on householders.

A Government inquiry was held in Manchester[1] to inquire into the various schemes and the appalling state of Manchester's water supply was disclosed.

In the town there were then 46,577 houses, of which 23 per cent were supplied internally with water, but the supply was only for a short period each day. The number of houses supplied by taps in the streets, from which the water was fetched by the tenants, was 28 per cent, and the number totally unsupplied by the Company was about 49 per cent, which, at five and a half persons to a house, represented a population of 125,000 persons. To this must be added the cellar population of about 25,000, of whom 50 per cent were totally unsupplied with water.

This meant that about half the population of Manchester had no supply, except what they could get from pumps and carry to their houses. These pumps were not public, but had been put up by property owners, who charged their tenants about 1s. a quarter for access to them. Even so, most of the pumps were locked up during the greater part of the day. It is hardly surprising that many people got their only water from wells, polluted by cess-pools and graveyards, and from the filthy rivers. So scarce and valuable was the water that it was kept occasionally in cottages for weeks together and used over and over again for washing floors, until the smell

[1] January 1847.

produced by it was intolerable.[1] All the medical witnesses were agreed that the high mortality for which Manchester was then distinguished was due more to the lack of pure water than to any other single cause.

The Corporation sought power to make a compulsory rate for taking the water into every dwelling. It estimated that 10 million gallons a day was needed, and the Company was only able to provide 3 millions.

The Corporation's Bill for buying up the private Company and for bringing extra supplies from Longdendale received the Royal Assent on July 9, 1847. The chief feature of this Act was that it was the first time that a Corporation had been given powers to levy an unlimited rate—that is to say a rate to cover the whole cost of something which hitherto had been supplied by private enterprise on a profit-making basis. On the other hand, both the Domestic Water Rate levied upon the occupiers of property, and the Public Water Rate levied upon the owners, might not be greater than was necessary to cover the expenses.[2]

The Corporation, which paid £533,760 to the Manchester and Salford Waterworks Company, did not actually take over the works until January 1, 1851, in which year the new supply of water from Longdendale was introduced into the town.[3] In 1855 the supply was over 8 million gallons a day.

In spite of extensions of the waterworks[4] it soon became clear that Manchester had grossly underestimated her capacity to carry out Sir Joseph Heron's undertaking to bring a supply of water into every house. He said in 1847 that 10 million gallons a day was required, and it was not until 1855 that 8 millions were available. Meanwhile the population had grown, and also the needs of the

[1] "I have scarcely been able to beat the smell of the room produced by washing the floor with the water which had been kept several weeks to wash it over and over again, and I have a strong stomach" (Mr. Holland, Minutes of Evidence, Manchester Waterworks Bill, January 20, 1847).

[2] Manchester Waterworks Act, 1847, sec. iii.

[3] The Longdendale waterworks scheme, initiated under the Waterworks Act of 1847, was carried out under the authority of that and subsequent Acts of 1848, 1853, 1865 and 1875. The works were commenced in August 1848, and continued until the completion of the reservoirs at Audenshaw in 1884, the several reservoirs being brought into use as they were finished. The scheme was estimated to afford a supply of 24½ million gallons of water per day in addition to the compensation water.

[4] Between 1851 and 1861 half the gas profits went to help to pay for the waterworks, see below, p. 362.

district. There was no difficulty in getting people to use the water—although there were still parts of the town in which there was only one tap for the whole street or court—the difficulty was in checking the use. Water closets were being installed, which added to the difficulties of the Corporation, both by increasing the demand for water and by accentuating the main drainage problem. As we saw,[1] there were no provisions for treating the sewage at this time or until many years later, and one of the reasons why Manchester stuck to the system of privy middens, and later to pail closets, when other towns had gone over to water carriage, was the insufficiency of the water supply. The Waterworks Committee, in order to check what they considered waste of water, wanted to charge extra for each water closet, but they found that they had no legal power to do so.[2] In 1858 they brought forward a bill giving powers to charge 10s. for each water closet in houses rated at less than £30. However, the newly formed Manchester and Salford Sanitary Association, supported by twelve medical men in the town who were convinced of the injurious effect of the privy midden, took the matter up with vigour. They opposed this clause of the Corporation's Bill before the Parliamentary Committee, and called Edwin Chadwick and Robert Rawlinson as witnesses, who urged the necessity of water carriage on the grounds of health. Sir Joseph Heron, who prided himself, and with some cause, that the section of the 1844 Act[3] insisting upon a separate privy and ashpit for every house had been strictly enforced, used all his powers to prove that that system was far better than one of water closets, and indeed, as worked in Manchester, the most sanitary that could be devised. The Sanitary Association, however, won and a charge of 4s. was allowed only for extra water closets.[4]

Baths, however, were considered a luxury for many more years, and an extra charge of 10s. for houses rated under £20 was enforced until 1935.

Still the demand increased as the population of South Lancashire grew. As the years went by, the other sources of supply near Manchester were secured by surrounding towns, and in 1868 Mr. Bateman reported to his Committee that the supply would only last

[1] See above, p. 173.
[2] Minutes of Waterworks Committee, October 19, 1854.
[3] See above, p. 286.
[4] This was abolished in 1935.

for another eight or nine years at the present rate, and that it was imperative that the question of extending the supply should be considered.

Faced with the large financial outlay that the new scheme would involve, the Committee procrastinated for about ten years. All this time the demand was still increasing, consumption had reached 21 million gallons a day, and although the Longdendale works had been extended, the maximum amount that could be supplied from that source was 25 million gallons a day.[1]

In spite of all the efforts to keep the consumption in check, people were washing more freely, introducing water closets and baths, and in the suburbs using water for stables and gardens, and still water had not been brought into every house. In 1876, out of 70,366 houses, 14,000 were without an internal supply of water, and there were only about 20,000 houses with baths in the whole city.

Mr. Bateman, who was also consulting engineer to the Liverpool Corporation, had proposed that the two towns should have a joint supply from the Lake District[2]—Ullswater and Haweswater, which would supply 40 million gallons a day to each city. But the size of this scheme frightened some of the members of the Waterworks Committee, and before Manchester could make up her mind to act, Liverpool decided to have her own supply.[3] Manchester, left to solve the problem alone, now realized that the Lake District was the only possible source of supply; Haweswater, Ullswater, Thirlmere were all equally suitable from the point of view of the experts. Thirlmere was finally chosen, and Bateman intimated that between 40 and 50 million gallons a day could be obtained from it. In 1877 the plans were prepared.

Opposition from the owner of the estate ended with his death, but that from the Thirlmere Defence Association, which was afraid that the beauties of the Lake District would be spoiled, had to be met in Parliament. The ratepayers, in spite of the opposition of two members of the City Council, steadfastly supported the proposal both at town's meetings and at a subsequent poll, and in 1879 the Bill was passed.

The Thirlmere Aqueduct to Prestwich is 96 miles in length. It

[1] Letter to Town Clerk from Mr. Bateman, May 22, 1875.
[2] 1873.
[3] From Wales.

supplies about 55 million gallons per day, or 40 million gallons per day in dry weather, and of this, compensation water amounting to 4½ million gallons per day is sent down the St. John's Beck. Water was delivered through the first pipe to Manchester in 1894. The works were opened on October 12th at Thirlmere by Alderman Sir John Harwood, who was then the Chairman of the Waterworks Committee, and who had devoted much time and energy to carrying through the scheme since its inception, nearly twenty years previously. Speaking of the allegations made by those who opposed the scheme that it would destroy the beauty of the lake, he said: "Do you think the popularity of the district will be lost because the superfluous water from the lake which formerly flowed to the north and went to join the ocean now goes to the south to quench the thirst and invigorate the frames of tired men and women in the mills and workshops of Lancashire and Cheshire?"[1]

By 1900 the consumption of water had risen to nearly 32 million gallons per day, the increase during the previous ten years having been at the rate of over one million gallons per day per annum. As the consumption increased, additional pipes were laid from Thirlmere, the second in 1904, the third in 1915, and the fourth in 1927.

In 1918 the Waterworks Committee reported that the demand for water was fast approaching the quantity available from the two existing sources, Longdendale (20 million gallons) and Thirlmere (40 million gallons). The consumption then reached a little over 51 million gallons per day and it was estimated that by 1932 the average daily consumption would reach 65,125,000 and the resources would be exhausted. Attention was therefore again turned to Haweswater, where eventually an additional supply of about 72 million gallons a day could be secured. The Committee felt that this should meet the needs of Manchester and district for another sixty or seventy years. The Council approved the promotion of a Bill in the next session of Parliament to empower the Corporation to acquire lands and construct waterworks at Haweswater, and the necessary powers were granted on December 23, 1919.

Haweswater is about 80 miles from Manchester and lies in a

[1] The question of the amenities is not yet solved. Some Lake District lovers hold that the Corporation might make greater efforts to maintain them.

comparatively unfamiliar part of the Lake District. It has now a water surface of 346 acres, but when the water level is raised 95 feet by the intended dam across Haweswater Beck, it will have a water surface of nearly 1,000 acres. The aqueduct to the reservoir at Heaton Park will be approximately 73 miles in length.

Since the Haweswater scheme was first settled the situation has developed very differently from what was then anticipated. At the rate at which the consumption of water had increased up to 1919, the Council was certainly justified in assuming that the increase would continue. The population was increasing, and the post-war slump, that has fundamentally affected the cotton trade, was not yet in sight.

The demand for water consists mainly of two factors, domestic consumption and trade requirements. Together these had increased the demand, since the beginning of the twentieth century, at the rate of over a million gallons a day every ten years, but a different state of affairs set in after 1928, which was a peak year. In that year the average daily consumption was 57,353,000 gallons[1] and by 1932 it had fallen—instead of still increasing—to 54,719,000.

The following table shows the consumption since 1929 calculated by the year, not by the day.

ANNUAL CONSUMPTION.

(*Million Gallons*)

	Domestic	*Trade, etc.*	*Bulk*	*Total*
1929–30	10,260	6,518	2,904	19,682
1930–31	10,592	6,333	2,920	19,845
1931–32	10,753	6,445	2,829	20,027
1932–33	10,471	6,633	2,903	20,007
1933–34	10,484	6,769	3,075	20,328
1934–35	9,183	6,168	2,903	18,254
1935–36	10,542	7,054	3,046	20,642
1936–37	10,721	7,419	3,113	21,253

This shows that the trade demand is on an upward trend, but the slight increase in the domestic demand is difficult to understand as 13,718 new houses, all fitted with baths, have been built in the last eight years.

The Waterworks Committee seems to find difficulty in making

[1] About 15 per cent of the consumption relates to bulk supplies.

any satisfactory basis of calculation as to future needs and does not like to commit itself more than three years ahead. It naturally wants to be well on the safe side. That the future population, not only of Manchester, but of the area served by Manchester, will fall with a fall in the whole population of the British Isles is probably a safe assumption—the only question is whether it will fall at a faster or at a slower rate.

Meanwhile the work at Haweswater, which did not begin until 1929, was held up during the financial depression of 1931, except for the making of the tunnels. In 1934 the Waterworks Committee decided to carry out the next step, namely, the construction of the dam to raise the level of the lake. It based this decision on the fact that the demand for water had increased since 1931, but it did not propose at this stage to raise the dam to the full height originally suggested, which would be necessary if the full capacity was to be secured. Later in the year, however, while this work was proceeding there was a drought, and some of the water that flowed from the taps of Manchester consumers contained peaty matter which, although perfectly harmless, caused unpleasant letters and complaints to the Department. No suggestion to filter the water was made, and the Waterworks Committee had no difficulty in persuading the Council to continue with the full scheme, the work on which is now proceeding.

The area served wholly by the Manchester Waterworks is about 128⅝ square miles, the estimated population supplied in detail being 1¼ millions.[1] Twenty million gallons a day come from Longdendale, 40 million from Thirlmere, and when Haweswater is completed about 72 million gallons will come from there—a total of 132 million gallons a day of potential supply, and our present consumption is under 59 million gallons.

There may be some poetic, even if no financial, justice in the thought that whereas Manchester was definitely short of water for so long, and suffered in health from the consequent bad sanitary arrangements, she will soon have far more water than she is ever likely to need. There is always the possibility of other areas wanting some of the surplus supply, and that will help to meet the cost of the new works. We cannot feel, however, that the history of the Haweswater scheme is an example of far-sighted planning at its best.

[1] *The City of Manchester*, 1937, p. 55.

CHAPTER XIII

GAS

THE early history of the gas undertaking of Manchester is a romance of municipal enterprise.

Mr. William Murdoch introduced gas as an illuminant to the cotton mills of Messrs. Philips and Lee in Cross Street, Salford, in 1805. This experiment was a great success as the annual cost was only £600, whereas lighting with oil had cost £2,000. Two years later the Police and Improvement Commissioners, to whom was entrusted the duty of lighting the streets of Manchester, bought a small plant and fixed a single gas lamp over the door of their police office.[1] A great sensation was created in the town, and night after night crowds of people gathered outside the offices to gaze at it. Soon the whole of their premises were lit in this way, and they also extended it to the street lamps in some of the busiest parts of the town.

Meanwhile, the big mill-owners were installing their own plants, and as the advantage of gas over oil lamps and candles was realized, the public, in 1817, demanded that the Police Commissioners should extend their works and supply private people.

The Commissioners evidently assumed that as the Act of 1792[2] and the earlier one of 1765 had given them power to light the streets so it also gave them the power to manufacture the light. Nobody, at that date, was considering the pros and cons of municipal as opposed to private enterprise. In 1812 the London Gas Light and Coke Company had been founded, but London was far from Manchester, and no company had appeared in that city to comply with the public demand.

In 1817, therefore, after a public meeting at which a resolution had been unanimously passed authorizing the increase of the Police Rate from 1s. 3d. to 1s. 6d., gas-works were set up on a plot of land, now known as the site of the Albert Street Police Station.[3]

[1] In Police Street, at the bottom of King Street.
[2] See above, p. 52.
[3] Gas Street, leading off Albert Street, still commemorates these works.

The cost of laying mains and the gradual substitution of gas lamps for oil lamps was greater than could be borne by the increased rate which, by law, was limited to 1s. 6d. The Commissioners, therefore, supplied shops and other consumers at a price of 14s. per 1,000 cubic feet, which brought in a substantial profit, £20,000 in seven years. The debt of the gas-works was thus reduced by half.[1] It is not quite clear what actually happened to this profit. According to one authority, it was set against the original cost of the works, but according to Alderman John Shuttleworth,[2] £15,000 to £17,000 was paid towards the erection of the Town Hall in King Street.

Meanwhile, the original technical difficulties which had hampered the early use of gas had been overcome and a wide extension of gas lighting took place throughout the country. Private joint stock companies were formed at Leeds, Liverpool, Brighton, Edinburgh, etc., and so rapidly had private enterprise captured this field that when, in 1819, the inhabitants of Derby met to consider a gas supply, it was assumed that the only way of getting it would be to form a joint stock company.

In 1823 private enterprise woke up in Manchester under the magnificent name of the "Manchester Imperial Joint Stock Oil and Gas Company." Its promoters intended to apply to Parliament for an Act which should authorize them to "light with oil and other gas the town and parish of Manchester." At the same time, and probably not unconnected with this move, the Commissioners were threatened with litigation, on the grounds that they had no statutory authority to use the funds of the Police Rate for the manufacture of gas. Criticism was also directed to the high price at which they sold the gas. They decided, therefore, to apply to Parliament for powers which they had exercised unchallenged for seven years and at the same time to oppose the Joint Stock Company's Bill. Public opinion was on their side, for although there was no discussion of the advantages or disadvantages of municipal as opposed to private enterprise, there was a feeling that Manchester was well served and that "strangers"—for the promoters were mostly not Manchester men—wanted to come in and take the profits.

Parliament, however, would have wanted reasons not feelings,

[1] To £20,788 in June 1824. *Municipal Code*, 1896, vol. iii, pp. 357–400.
[2] "Some Account of the Manchester Gas Works," Statistical Section of the British Association, 1861.

and the company was promising a cheaper supply. But, like so many other causes in these days, it was wrecked because the promoters were not too particular about their methods. When it was proved that many of the signatures attached to the petition of the gas company were forged or fictitious, the committee of the House of Commons threw out the Joint Stock Bill, and speedily passed that of the Police Commissioners.[1]

This Act laid the foundation of municipal trading, not only in Manchester but in the whole country, for it was the first time that Parliament had sanctioned the use of rates for trading purposes.[2] Under it, Manchester also got the power to supply the out-townships. Profits from the undertaking were to be applied in relief of the Police Rate of the township of Manchester.

Thirty of the Commissioners were elected as Gas Directors. At this time the method of election of Commissioners that we have described on page 53 had not come into force, and any man who was rated at £30 a year was entitled to act as Police Commissioner if he wished. This opportunity was not lost by the frustrated supporters of the Joint Stock Company and other critics of the Commissioners, and meetings of over nine hundred people, in which no semblance of order could be kept, were held in the next few years, when angry discussions on the price of gas and the conduct of the undertaking made efficient business management impossible.

A controversy continued for some years between the shopkeepers, who were the chief consumers of gas and who naturally wanted it as cheaply as possible, and the business men, mostly mill-owners, who made their own gas and who were glad that profits from the gas undertaking should go towards improvements and relief of rates. At that time gas was not used in warehouses, offices and dwelling-houses. "The small trader, whose shop, situated in some dark, narrow street, required much artificial light, complained that the enormous warehouses of the Bridgewater Trust, and the great factories of the Birleys, the M'Connels, the Murrays, and the Houldsworths, paid nothing towards the supply

[1] 5 Geo. IV, c. 133.

[2] In 1822, Chorlton in its first Act setting up Police Commissioners obtained the power to manufacture gas and appropriate half the profits to improvements, but it was never exercised.

of the town's lamps with gas, while the whole of that cost was defrayed out of the profits derived from excessively high prices paid,"[1] the gas at that time being 14s. per 1,000 cubic feet. The question became a political one; the taxed shopkeeper who wanted a reduction of the burden was the Radical, and the untaxed warehouseman, who thought the gas consumers paid only a reasonable price for their light and who opposed fiercely any reduction in the charge, was the Conservative.

The fact that there was still no statutory authority for using the profits for improvements put the Commissioners in a difficulty, and in 1828, after more stormy meetings, during which several of the Commissioners engaged in personal combats, an Act[2] was secured which not only gave statutory authority for defraying the cost of improvements out of the gas profits, but altered the constitution of the Commissioners.[3]

In future the Gas Directors were to be elected by the body of Commissioners, themselves elected by the public. Although this arrangement made the conduct of the gas undertaking much easier, the controversy whether the gas consumer should pay more than cost price in order to save the pockets of the ratepayers as a whole continued. It was not finally settled until 1921. In 1828, unlike to-day, gas consumers were only a small percentage of the ratepayers. The shopkeepers and publicans, who objected also to compulsory purchase of property for improvements, demanded a reduction in the price of gas. It was alleged that the Improvement Committee "sat in a comfortable room at the Town Hall, determining what part of a man's property they would take and then one of them said, 'Oh, how shall we get the money for these improvements?' Another would say, 'We are eighteen of us also on the Gas Committee; we are sure to have a majority' and they had just to step into another room and then decide how much the consumers should pay for their gas in order to raise the money for carrying these cursed improvements into effect."[4]

Meanwhile, the demand for gas was fast increasing. The Rochdale Road works were built in 1824, a third works, on the place where Oxford Road Station now stands, a few years later, and a fourth

[1] *English Local Government. Statutory Authorities*, by S. and B. Webb, p. 266.
[2] 9 Geo. IV, c. 117.
[3] See above, p. 52.
[4] *English Local Government. Statutory Authorities*, by S. and B. Webb, p. 272.

in Every Street in 1831. The price of gas was reduced from 14s. to 12s. in 1828, and again reduced to 10s. 6d. in 1831. Arrangements were also made to supply Chorlton-on-Medlock,[1] Hulme[2] and Ardwick[3] with gas, but owing to a dispute about the price, Chorlton-on-Medlock contracted with the only private company that ever existed in Manchester[4] for four years. At the end of this period, Mr. Fernley, the owner, was unable any longer to compete against the municipal supply and he sold out to the Commissioners. From 1837 Chorlton received its gas from Manchester. In the same year the Commissioners also arranged to supply the township of Newton Heath.

To the difficulties of this early trading were added the increasing doubts of some of the Conservative Commissioners that perhaps, after all, gas was a field for private enterprise. Two leading Conservatives, Mr. Hugh Hornby Birley[5] and Mr. Braidley,[6] proposed that the gas-works should be sold. Fortunately, an amendment moved by William Neild, one of the founders of the Town Council, and seconded by Joseph Adshead, one of the first councillors, was carried. This expressed approval of the past management and declared the desirability of maintaining the works, both because it was the best way of ensuring a good supply at a reasonable price, and because it created a fund for public improvements so especially necessary in a town like Manchester.

Mr. Thomas Wroe was appointed chief official, both of the gas-works and of the Commissioners. He kept these posts for ten years and retired when, after the fight for the charter had ended in victory, the gas-works as well as the other duties of the Police Commissioners were handed over to the Council.[7] Owing to his excellent management the price of gas was reduced. During the ten years it dropped from 10s. 6d. to 5s. 9d., which was lower than the price charged by private companies in Liverpool, and the profits increased from £10,200 to £31,700 a year. Many of the mill-owners, who had formerly made their own gas, and the new ones who were coming to Manchester now purchased from the town. Since 1828, £370,000 from profits had been used for paying for improvements.

[1] 1822. [2] 1831. [3] 1831.

[4] The Provincial Portable Gas Co. of London had bought land in Hulme in 1825 and erected gas-works. They sold gas in containers, so did not need mains. The works were not very successful, and were sold to a Mr. Fernley in 1831.

[5] See above, p. 32. [6] See above, pp. 29, 30. [7] In 1843.

The Commissioners, appointed by the Government to inquire into the state of large towns,[1] examined Mr. Wroe on the relative advantages of municipal and joint stock management. He admitted none in favour of the latter, and added that if the interior pipes and fittings could also be done under one contract, it would be 10 per cent cheaper, and the work would be better, "but what is to become of the seventy master tradesmen employed now in supplying gas fittings?"[2] Later the Gas Committee took powers to extend municipal trading in this way.

At that time there was no other large town and only a few small ones who had a municipal supply of gas. The enterprise of these early Commissioners had been well justified. If, however, it had not been for William Neild in 1834, Manchester might have lost all that they had built up. Since then there has never been a suggestion that the gas-works should be sold to private enterprise, and the most die-hard Conservative is usually surprised when he hears the gas undertaking spoken of as "municipal Socialism." An inquiry carried out by American investigators in 1907 into the operation of public utilities in Europe, says, "It is worthy of special notice that the one undertaking that comes in for practically no criticism at the hands of the engineers is Manchester—the only one which has been public from the start. . . ."[3]

The success with which money could be raised for improvements by making a profit on the sale of gas which, in those towns in which a private company operated, went to the shareholder, led the Corporation to turn to this undertaking when in financial trouble.

In 1850 it was realized that the new Longdendale water scheme, for which the Council had obtained Parliamentary sanction, was going to be a big strain on the finances of the Corporation. Accordingly it was decided to seek power to divert for the next ten years half the gas profits—such was the prosperous condition of its finances—from the carrying out of improvements within the town towards the expenses of the waterworks scheme and in reduction of the Water Rate. Power to do so was obtained in the General Improvement Act of 1851, and from 1851 to 1861 the profits paid to the Waterworks Department amounted to £166,264.

[1] 1844. [2] Appendix to First Report, 1844, p. 174.
[3] *National Civic Federation Report*, 1907, Part I, vol. 1, p. 185.

But the consumer had at last to be reckoned with, and a revolt was organized in 1859 when a Gas Consumers' Association was formed. This demanded a reduction in the price of gas instead of profits being divided between improvements and the Water Rate, and that consumers should be allowed to hire gas meters instead of having to purchase them. The agitation was directed against Alderman Shuttleworth, the Chairman of the Gas Committee, who had been a member of it for nineteen years. A resolution reducing the price of gas to 4s. 6d. was carried by the Council in spite of his opposition, and the following November he was not re-elected as alderman. He was also turned off the Gas Committee. The proposal to continue giving gas profits in aid of the waterworks was defeated, and a system of hiring meters was adopted. The only demand which was not conceded was that profits should no longer go to improvements.

The Gas Committee, in pursuance of its policy of extending the area of supply, bought out small works whenever possible, and in 1869 took over the Droylesden works so that it could supply gas to that township. Consumption was still increasing and new works were now needed. After six years of acrimonious and often frivolous discussion, and much referring back of the Committee's proposals, the Bradford Road works were erected.[1]

Each extension of the city brought an increase of consumption and this meant extension of the works. There now occurred also a period of rapid technical improvements, so that more efficient production from coal and a development of by-products to include aniline dyes, liquid ammonia and chloride sulphate, as well as coke, increased the profits from by-products.

The invention of the incandescent mantle, which gave eight times the light of the open flame, and the Bunsen burner made possible the use of gas for cooking and heating. In 1884 the Gas Committee began to hire cooking stoves and gas fires to consumers, but it was not until 1903, when these were supplied and fixed free of charge,[2] that the demand increased rapidly. The follow-

[1] Some of the opposition to the new works was the proposed site near Philips park, one of the lungs of the city. Barton was considered—later to be the site of the Electricity Works, but the fact that the Committee had actually bought the Bradford Road site, although it infuriated the opposition, won the day.

[2] At that time Manchester and St. Helens were the only municipalities where this was done.

ing figures show the growth in the number of cooking and heating appliances between 1887 and 1937:

1887	1,609
1897	4,094
1907	36,214
1917	150,800
1927	214,941
1937	239,347

The "shilling in the slot" meter was introduced in 1890, and helped considerably in the expansion of the use of gas.

By 1917 most of the existing houses had been supplied. In the new houses built after the war the Gas Committee had to meet severe competition from the Electricity Committee. The fact that the number of gas cookers and heaters continues to increase, although at a slower rate, shows that there is still a separate field for both methods.

The advantage of gas over coal as the most potent method of smoke abatement was first realized in 1891, when the Council passed a special resolution asking for a further reduction of the price of gas for power, heating and cooking "having regard to the urgent need in the interests of the community of reducing the present pollution of the air." This was impossible at that date when consumption was rapidly increasing and continuous extensions of the works had to be made, but in 1895 the price of gas was reduced to 2s. 3d. and the gas meters were installed free of charge

There is no doubt that the extended use of gas for cooking has been largely responsible for the improvement that has taken place in the purity of the atmosphere. Since domestic grates cause more than half the smoke in our city, gas cookers, which obviate the use of the range in the summer except for heating water, have made a great difference. If the cost of heating water and warming the room by gas were as cheap as by coal, the problem of smoke abatement would be solved—as it is, we must look to improved forms of coke, burnt in specially constructed grates and lit by gas, for a solution within the reach of the smallest incomes.

In 1923 the Gas Committee decided to close the Gaythorn and Rochdale Road works, and manufacture at Bradford Road and at a new works to be built at Partington. In view of the experience

of the ten years after the first part of the scheme was built, experts were doubtful whether the cost of erecting so large a plant outside the city had been justified, and whether the increased demand—which, owing to competition from electricity, and to the fact that Stretford decided to manufacture its own gas, had not been as great as had been anticipated—could not have been met more cheaply by extensions at the Gaythorn works. The original plans were modified after Stretford's decision, and some of the gas is still manufactured at Rochdale Road. At the present time, 49 per cent of the supply comes from the Bradford Road works, 31 per cent from Partington, 17 per cent from Rochdale Road, and 3 per cent from the Droylesden works.

The area of supply is 53¼ square miles, and there are 220,251 consumers, which means that 94·2 per cent of all the buildings in Manchester consume gas in one form or another. The two-part tariff introduced in 1935 by which the price of gas is reduced after a minimum fixed charge, is helping to increase the consumption for domestic purposes.

CHAPTER XIV

ELECTRICITY

Electricity is a modern discovery compared with gas, for it was only when, in 1880, the invention of the carbon-filament lamp made electricity practicable for lighting that its history began. Neither can Manchester claim to have been a pioneer in municipal enterprise in this field, but her forty years' experience of municipal enterprise in gas and water made her anxious that the new arrival should be managed in the same way. Belief in the principle of municipal trading was probably reinforced by a fear that electricity might in the future prove a dangerous rival to gas and that, therefore, it would be as well to have it under the same control. Private companies were applying to Parliament for powers to supply Manchester. The Corporation opposed these in her own Bill of 1881, and asked for power to produce and supply electricity in the area of her gas supply. However, the Board of Trade had just decided that public legislation was necessary on this subject, and so the clause was withdrawn.

Public opinion, as represented in Parliament, had become gradually more favourable to municipal enterprise so far as public utilities were concerned, and the first Electric Lighting Act[1] gave the preference to municipal authorities. If, however, they failed to take the powers, then a private company might step in. Immediately the Act was passed, Manchester applied for a Provisional Order under it. The procedure had been settled by an order given to the Bradford Corporation, under which a small area was allowed, and within this area the Corporation had to undertake to supply any person who asked for it within three years. If it failed, the order could be revoked and one granted to a company instead.

These conditions were intended to prevent municipalities from getting an order, excluding private companies, and then taking no steps to implement it, so that would-be electricity consumers suffered. This was what the Manchester Gas Committee had prob-

[1] 1882.

ably intended to do, otherwise it was difficult to understand why it objected to the condition of compulsory supply. The reason it gave was that having no works of its own, in order to supply within the three years, it would have to contract with a private company, and this it was determined not to do. As the Act provided that if a private company got an order, it had to give the local authority the option of laying the mains along the streets, Manchester felt that she could afford to "wait and see."

The industry developed very slowly during the next seven years. Private companies felt that the 1881 Act had been unfair to them. Not only had the original option of doing the work been given to local authorities, but if they did not take it, and a private company got the order, the local authority at the end of twenty-one years could purchase the undertaking compulsorily at what the companies did not consider a fair valuation. Another reason for the slow development of the industry at this period was the high cost of production compared to that of gas.

One of the Manchester aldermen, Alderman Thompson, was invited during this period to become director of a company which proposed to light the city with electricity. He declined the offer for the reason that Manchester was supplying gas at so low a rate, 2s. 6d. per 1,000 cubic feet, that he felt that a private company would have very little chance of success. Many of the public buildings throughout the country had adopted the electric lighting system, but very few had maintained it. The Manchester Royal Exchange was lit by electricity for a time, but had also given it up. Up to 1888, although the Board of Trade had granted fifty-nine Provisional Orders and five licences to companies, and fifteen Provisional Orders and two licences to local authorities, none of these powers were then being exercised.

The 1888 Act made certain concessions to private companies, and six companies gave notice to Manchester that they intended to apply for powers to operate in the area. At the instance of Alderman Sir John Harwood, deputy-chairman of the Gas Committee, the Corporation again opposed all of them and made its own application instead. In addition to a belief that electricity was as suitable as gas for municipal management, it was clear that electric lighting would go ahead under the new Act and that if the Corporation did not apply for powers, they would be granted to private com-

panies. A canvass by one of the private companies showed a demand for this form of lighting that surprised the Council. The first extension of the city (1885) had taken place, and those who looked ahead realized that it was only a question of time before more of the outlying districts were absorbed. If a private company supplied these areas, Manchester would eventually have to buy it out at a much greater price than it would cost to supply them herself.[1] The 1888 Act still gave preference to municipalities, and the Corporation received its order in September 1890.

The area to be supplied seems small to us now. It was about two-thirds of a square mile in the centre of the city.

An Electric Lighting sub-Committee of the Gas Committee was appointed, and Dr. John Hopkinson made Consulting Engineer. The Corporation still had to decide whether to carry out the work itself or whether it would contract with a private company to do it. It decided in favour of complete municipalization, borrowing powers were granted, and the first generating station in Dickinson Street was opened in 1893.

Progress was rapid, so rapid that the original plant had to be twice increased in the first year. Eight thousand 16 candle-power lamps were increased to 70,000 within three years. The first year expenses were covered; the second year a handsome profit was made; the third year it was possible to make a contribution of £11,000 to the rates, and also to reduce the cost to consumers 25 per cent. The following year the cost was reduced another 25 per cent, while still more was given to the rates.

Because of the rapid development it was decided in 1897, on the recommendation of the Gas Committee, that the time had arrived when the Electric Lighting sub-Committee should become a separate Standing Committee of the Council. But even at that time no one seriously thought that electricity would become a competitor of the gas undertaking. Neither in London nor in Bradford had the introduction of electric lighting decreased the consumption of gas.

As a result of a visit to Continental plant, the Electricity Committee arranged for the purchase of about eight acres of land in Stuart Street, Bradford, for a site for the new generating station,[2] to be used for light and for traction. The Corporation had taken

[1] Council Minutes, March 18, 1903.

[2] December 22, 1898.

over the tramways in 1897 and was preparing to turn over from horse to electric traction.

The Corporation adopted the policy of supplying the out districts on the same terms as the city, and the first agreement was entered into with Levenshulme Urban District Council for the transfer of their Electric Lighting Order to the Corporation for a period of twenty-one years.[1] This principle was followed in subsequent agreements with the other outside authorities, so that the area of supply was thus increased in less than twenty years from two-thirds of a square mile to forty-five square miles.

Electrification of the trams was begun in 1897, and the following year saw Market Street, Piccadilly, London Road, Deansgate and other main roads lit by electric lamps. All this extra demand necessitated extensions of the existing works as well as the erection of the new one at Stuart Street.

In 1903, Mr. (now Sir) S. L. Pearce was made Chief Engineer and Manager, and Manchester became the largest municipal undertaking in the country. He was responsible for the erection of the generating station at Barton, near the Ship Canal, which, held up by the war, was opened in 1923. For some years the Barton station enjoyed the distinction of maintaining a higher thermal efficiency than that of any other steam-driven station in the country. Extensions were made to it in 1928 and again in 1931. Alterations were also made at the Stuart Street station, and Dickinson Street was converted into a distribution station.

During the war the fact that there was complete lack of co-ordination in the electricity supply industry was brought to the attention of the Government. Electricity had made such headway in supplanting coal for power purposes, both in industry and in transport, that it held a position in the national economy different from that of gas.

In 1926 the Central Electricity Board was set up by Parliament, appointed by the Minister of Transport, and the construction of the "Grid" was begun.

The Board selected about a hundred and thirty stations, those which it considered the most efficient, in which all the electrical power required is generated at a considerable saving of cost. Nearly 4,000 miles of high voltage transmission lines carried over the

[1] 1896.

country, up hill and down dale, by the now familiar "pylons," connect up these stations with the points of distribution. The Central Electricity Board does not own these stations, but has a certain amount of control over them. Manchester's stations at Barton and Stuart Street were "selected" by the Board, and connected with the "Grid" in 1934.

The electricity undertaking in Manchester is now the second largest municipal plant in the country, Birmingham being the largest. The Manchester area of supply covers 57 square miles with 153,657 consumers.[1] It includes the city and some outlying areas, and bulk supplies are sold to Stretford, Middleton, Sale, Cheadle and the Lancashire Electric Power Company.

COMPETITION BETWEEN GAS AND ELECTRICITY

From the beginning of the present century electricity has steadily become an increasingly keen competitor of gas, invading one field after another.

As regards industry, the main advance of electricity has been for power, in which field gas now plays a very minor role, though gas still holds its own for other important industrial purposes.

As regards street lighting, the Electricity and Gas Committees have for years waged a very keen war in Manchester. Having been established first and having been strengthened by new technical inventions, the bulk of street lighting is still done by gas, but electricity is gaining fast, and all the new street lighting in Manchester is now done by electricity.

In the domestic field lighting is, of course, done by electricity, but a few years ago gas looked like having a monopoly of cooking. Here again electricity is encroaching, and both for cooking and domestic heating there is keen competition between the two.

Both of the Committees spend money in advertising and in showrooms in the city. Very fine showrooms have been fitted up in the extension of the Town Hall. Energetic branches of the Women's Electrical Association and the Women's Gas Council exist in the city. They carry out excellent propaganda work by

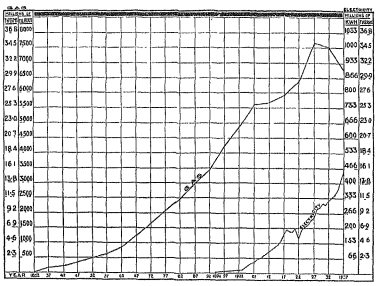
[1] In 1927 there were only 42,888 consumers.

means of cooking demonstrations, travelling showrooms, lectures and visits to works and institutions using electricity or gas.

The following table shows the proportions in which gas and electricity are now being used for the different purposes in Manchester:

	Gas	*Electricity*
Industrial and commercial ..	27·2 per cent	61·9 per cent
Domestic	62·7 „ „	15·2 „ „
Trams	—	8·4 „ „
Street lighting	9·3 „ „	1·9 „ „
Bulk supplies	0·6 „ „	12·5 „ „

The curves on page 372 show the total production of electricity and gas in Manchester during the last century. Perhaps the most striking thing is that gas is still so far ahead of electricity. The graphs show the total amounts of gas and electricity produced in millions of cubic feet and in millions of kilowatt hours respectively. They also show the total quantity produced in each case measured in therms, and it will be seen that while the electricity produced in the last year was equivalent to under sixteen million therms, the gas produced was equivalent to nearly double the amount. On the other hand, gas attained its maximum in 1927 and is now 10 per cent less; during the same period the output of electricity has increased by over 50 per cent. It is an interesting speculation, to which we offer no answer, at what date the two curves will cross one another.



AMOUNTS OF GAS AND ELECTRICITY PRODUCED IN MANCHESTER EACH YEAR AND EQUIVALENT HEAT VALUES.

This diagram can be criticized on the grounds that electricity is mainly produced for power and not for heat, but so long as this is borne in mind, we believe that it best shows the relative positions of the amount of the production of gas and electricity.

CHAPTER XV

TRANSPORT

A CENTURY ago the stage-coach was being superseded by the railway. Before then, the stage-coach had been the accepted means of mail and passenger transport between one town and another. In 1754 the "flying coach"—otherwise a stage-coach which travelled at an accelerated speed—made its appearance in Manchester, and it was announced that "incredible as it may appear, this coach will actually arrive in London four days and a half after leaving Manchester." Manchester got a three-day stage-coach to London in 1770, and seven years later communication by stage-coach was opened between Manchester and Liverpool.

As regards transport within the town of Manchester itself, this was of much later development than transport between one town and another, in view of the fact that the extremities of the town were in easy walking distance of each other. Hackney carriages were established in Manchester in 1810, and in 1815 as many as twenty coaches, but not more, were allowed to ply for hire in Manchester and Salford, or within four miles of the town. They stood in St. Ann's Square and at the top of Market Street. About this time the horse omnibus emerged and the first service, in 1824, was run by a certain John Greenwood. This was started to accommodate merchants and others. The buses at first used to run mainly to places like Pendleton, Ardwick and Cheetham Hill, where the middle class of those days resided, and after some thirty years had elapsed, an entirely new style of vehicle, much longer than those in use and double decked, drawn by three horses abreast, was introduced by a Mr. McEwen. It had accommodation for seventeen passengers inside and twenty-five outside, and the fare was reduced from 6d. to 3d. In a short time McEwen, finding his capital insufficient, disposed of his property to Mr. Alderman Mackie,[1] who made considerable additions to the plant, started several new routes and greatly stimulated the traffic. By the year 1865, omnibuses were

[1] Member of the Council and Mayor from 1857 to 1860.

being run on a fairly extensive scale in Manchester by different people, and in that year a step was taken towards unifying the system by the formation of the Manchester Carriage Company. Alderman Mackie was the first chairman of the new company and Mr. John Greenwood, son of the originator of the first omnibuses in Manchester, vice-chairman and managing director. The operations of the company were gradually extended until a service of three-horse buses ran along most of the main roads. The minimum fares charged were 3d. inside the omnibus and 2d. outside.

Until 1858, tramways were unknown in Great Britain. Convinced of their commercial value, an enterprising American, Mr. George Francis Train, came to this country and determined to introduce tramways, or street railways, as they were called in America, here. Mr. Train first tried at Liverpool, but that city would not listen to his propositon; however, the Commissioners of Birkenhead gave him permission to lay a tramway four miles long. The work completed, he next attacked London. Here he met with decided opposition from the omnibus interests, but he finally obtained permission to lay one or two miles of tram lines in 1861.[1] He seems to have shown his models to some people in Manchester who invited him to a trial in this city, but nothing came of the invitation.

In 1862, Mr. John Haworth, a Manchester town councillor, got permission to put down a tramway from Salford to Pendleton, which was also used by the omnibuses because of the smoothness of the track compared with the ordinary paving of those days.

Meanwhile, in the late 'sixties, English engineers seem to have awakened to the advantage of tramways and a considerable number of designs for laying them were patented. Glasgow was one of the first local authorities to obtain Parliamentary power to lay tramlines and lease them to a tramway company.[2]

In 1870 a general Tramways Act enabled local authorities to obtain a Provisional Order to construct and own tramways, and the consent of the local authority was required before an order was granted to a company. At the end of twenty-one years the local authority had the right of compulsory purchase of the undertaking and thereafter, at the termination of recurring periods of

[1] *My Life in Many States and in Foreign Lands*, by George F. Train.
[2] Glasgow Tramways Act, 1870. The first lines were opened in 1872.

seven years, on the basis of its structural value, without any allowance for goodwill. This Act did not, however, authorize any local authority to operate trams itself and between 1870 and 1882 all tramways constructed by local authorities were invariably leased to companies at an annual rental. The Standing Orders of both Houses were amended so as to forbid the introduction of clauses in local Bills empowering a local authority to work a tramway.

As soon as the Act was passed, various companies gave notice of their intention to apply for powers to lay tramways in Manchester. The city authorities decided to oppose these Bills on the ground that powers to lay down, maintain, regulate and control tramways ought to be alone conferred upon the local authority. In 1875 the Council itself obtained power to construct tramways in certain streets.[1] Thus, as in the case of gas and water and electricity, Manchester decided itself to control the development of the new public services.

The first part of the system was ready for use by horse cars in 1877, and an agreement was made with Messrs. Turton and Busby who arranged to pay a rental of 10 per cent per annum of the cost of construction. The lessees were required to run workmen's cars morning and evening at fares of not more than ½d. per mile; to limit fares for adults to 3d. for a seat inside the car and 2d. outside, and to affix no advertisements. Out of the rental of 10 per cent, the city had to pay all the fixed charges and to maintain the track and paving in proper condition. From time to time other lines were constructed and leased to the Manchester Carriage and Tramway Company,[2] and the agreements which were made terminated at various dates between 1898 and 1901.

Manchester's tramways proved a financial success. In the first seventeen years the rent paid by the companies not only wiped out the capital account, but enabled £97,600 to be paid in aid of the city rates, an annual average of about £5,740. The lessees, too, did well. For many years they were able to pay a dividend of from 8 to 10 per cent, as well as to build up a reserve fund.

During these early years the whole system was in an experimental stage. Bargains as regards leases were made in the dark. Few of the

[1] *Manchester Corporation Tramways Orders Confirmation Act, 1875.*
[2] This company had taken over the undertaking owned by Turton and Busby.

lessees had more than a crude idea of the cost of maintenance. Some insisted on their maximum legal rates and, making poor progress, allowed their plant and lines to fall into disrepair; in other large towns, tramway companies did exceedingly well. But prosperous or not prosperous, when these companies were asked to reduce fares, to give greater convenience as regards the service, reduce the hours of labour, or improve the means of traction, the response, with few exceptions, was that with such a limited tenure they could not take any risks or make any sacrifices. Their policy was to make what profit they could against the possibility of compulsory sale at the end of the lease.

It was perhaps the success of the municipalization of Glasgow's tramways that was largely responsible for the growth of this movement in other towns. In her private Act of 1870 she had obtained the option of working the tramways herself as well as the power to construct and lease them.[1] They were leased to a private company for twenty-three years. During a considerable part of its term, the company had paid annual dividends of 10 to 14 per cent, and for another considerable series of years from 20 to 24 per cent. When the City Council asked the company to reduce fares, raise wages, shorten hours, it said it could not afford it. Glasgow tried in every possible way to reach a fair and just arrangement, but without success, and only went into municipal operation in 1894 when forced to the conclusion that no plan which would safeguard the interests of its citizens would be acceptable to the company. The city introduced electric traction, reduced fares, increased wages, and reduced hours. The service was extended and improved, and the city made, not a deficit, but a considerable profit for the ratepayers.

The Standing Order forbidding the insertion of clauses in local Bills authorizing the authority to work the tramways, was not revoked until 1896, when, the success of the tramways at Glasgow being assured, other towns were demanding the same privileges. In the session of 1897, Liverpool, Manchester, Edinburgh and seven other towns secured the same powers, including, as in the former cases, power to introduce mechanical traction.

The first definite move in Manchester towards municipal operation was made on February 20, 1895, when a special committee was

[1] The Glasgow Street Tramways Act, 1870, sec. 86.

appointed to consider and report upon its desirability. Some members of the Council thought the step premature, others thought it inopportune, and that if the tramways were worked by the Corporation, the probability would be that they would not be worked so economically and the rates would suffer. The Committee, however, recommended the Council to obtain powers to operate the tramways, not so much with the idea of actually exercising them, as of putting the city in a better position to bargain with the company when the leases expired. The first leases expired in 1898, but the principal leases did not expire until April 27, 1901. The Council approved the report, but at the town's meeting, held on November 13th[1] to secure permission to promote a Bill, the recommendation regarding the tramways was rejected. The application was regarded as being in "indecent haste," and it was held that the Corporation was not as competent as the company to buy horses and materials. The Committee reconsidered the matter, but were still of the opinion that power to operate should be obtained, and at a town's meeting on March 4, 1897, the first to be held at night, the recommendation regarding the tramways was approved. The general feeling, however, was still against municipal operation, if satisfactory terms could be secured from the company. A Bill giving the city the necessary authority to operate the tramways, if it wished, was passed in 1897.

Negotiations were entered into with the company with the object of getting a better service, through the introduction of mechanical traction. Apart from this question, the service rendered by the company had been on the whole satisfactory. The fares had been high, but public agitation had resulted in a considerable reduction. Many of the men worked as many as seventy hours per week, but no movement for municipal control had grown out of that fact. The principal arguments advanced in favour of municipalization were:

(1) The need for an improvement of the services, especially as regards the mode of traction.
(2) The transfer of the profits from the shareholders to the public, the company having been very prosperous.
(3) Lower fares.

[1] 1895.

(4) The wisdom of having all local monopolies in the hands of the authority, especially those which had a close connection with the streets.
(5) Relief of congestion of population by making suburban areas more accessible. A municipality, unlike a company, could afford, for social reasons, to lay and operate a line that would not be at first remunerative.

In opposition it was urged:

(1) That the responsibility and extent of the undertaking was too great for the City Council.
(2) That the difficulties of unifying a system running through so many local areas were insuperable.
(3) That the present service was good, fares low and the financial profit to the city quite satisfactory.

The debate continued, and in December 1897 the Special Committee submitted another report giving information on the working of municipal tramways in Glasgow, Leeds, Liverpool, Birmingham, Sheffield, Huddersfield, Bristol, Brussels, Vienna and Milan. Salford had also decided to municipalize, and some of the surrounding local authorities had expressed a willingness to lease their lines to Manchester, if it would operate them upon reasonable terms. The Committee recommended buying out the tramway company, and the substitution of electric traction for horses. The report was adopted with only two or three dissentients.

In January 1898, Mr. John Moffatt McElroy was appointed Secretary to the Tramways Committee, and two years later General Manager of the Tramways Department.

The change-over from private to municipal operation was made in Manchester later than in other big cities, probably because the private company was on the whole well managed. Although the Council was determined from the first to own the tramlines, it regarded the question of operation as one not of principle but of expediency.

In 1897 the Council got power to adopt electric traction for its tramways and, in 1899, to make agreements with certain outside local authorities for the working of their lines in connection with the Manchester system, and by 1903, when all the leases with

the company had run out, the whole system was worked by the city.

For the fifty-six miles of track owned by the Corporation, the company had paid an annual rent of £22,500. When the Corporation had paid interest and sinking fund charges out of this sum, between £4,000 and £5,000 went to the relief of rates. The fares charged by the Corporation in 1909, as compared with those charged by the old company, showed an average reduction of 40 per cent, whereas the total amount paid in the relief of the rates during the eight years ending in March 1909 was an average of £47,125 a year, ten times as much as the annual average sums previously paid in relief of rates. The hours of labour were reduced from seventy to fifty-four a week, and wages were increased. These concessions to the ratepayers, the travelling public and the employees did not undermine the financial stability of the undertaking, but it is impossible to draw any valid comparison between the company's operation of the service and the city's, since the introduction of electric traction made so great a difference.

Shortly after the municipal system was in full working order in Manchester, the Tramways Department organized a somewhat ambitious parcel-carrying scheme. Special electric freight cars were built, a considerable number of horses and vans were purchased, and some one hundred and fifty collecting and distributing agencies were established. Parcels were collected and delivered in Manchester and over sixty-six districts outside, including all the large towns except Bolton within an average radius of some eight miles around Manchester. Operations began early in 1905, but in May of that year a writ was issued on behalf of a carrier company in the city. Judgment was given in February of the following year to the effect that the Corporation was only allowed to carry on business as carriers in connection with the tramway undertaking, and that it had considerably exceeded its legal powers. A new system was begun on October 29, 1906, which was limited to the area served by the Corporation tramways and to small parcels such as could be carried by ordinary trams. In spite of the limitation, this side of the transport undertaking has greatly increased. Thirty years ago 141,715 parcels were carried, and this year (1937) 3,000,000.

The chief transport problem of the last fifteen years in Manchester, as elsewhere, has been the supersession of electrically

driven trams by motor buses. In 1914, Manchester obtained an extension of her somewhat limited powers to run buses[1] and ran them partly in order to safeguard the tramway receipts from the competition of outside bus companies. Later, they were used to link up the outside tramway districts and to run express services at higher fares. The first of these express services was the Cheadle and Heywood route (1927), followed by the Rochdale, Altrincham, Bolton, Hyde and other services. These proved so successful that they were developed on a comprehensive scale.

The policy of abandoning tramways altogether in favour of buses came gradually. There were many sides to the question, not always appreciated by the ordinary passenger, who is naturally concerned only to get a fast and convenient service at the lowest cost. Much capital has been sunk in the tramlines, rolling stock, and overhead wires. If trams were abandoned, not only would this capital have to be repaid, as well as the loans for the buses, but the undertaking would have to relay the track as an ordinary roadway. Even if the buses should eventually prove profitable enough to carry this charge, there were other considerations that affect the ratepayers as ratepayers and not as passengers.

The Transport Department, as it has been called since November 1929, pays rates on its tracks, overhead wires and buildings. In 1937 this amounted to £41,264, the tramway section paying £33,100 and the buses £8,164. Although buses would need the tramway sheds as garages, there would still be a distinct loss to the rates when the substitution was complete. The Tramways Department not only constructed the tracks, but renewed them from time to time when necessary. If they were abandoned, the Highway Committee would have to maintain the whole roadway.[2] This extra charge is estimated at £28,000 per annum. Finally, but perhaps most important of all, the Electricity Department would lose one of its best customers if petrol- or oil-driven buses were substituted for electrically driven trams.

Until a few years ago it was doubtful if buses would prove cheaper as well as more convenient, because the double-deck bus, which alone could carry the requisite number of passengers to make

[1] Obtained in 1900, Manchester Corporation Tramways Act.

[2] The Transport Department contributes a capital sum towards the cost of replacing the road.

it pay, was not allowed by the Watch Committee to run alongside the trams in Manchester, thereby increasing the number of vehicles in the streets. Under conditions then existing, the policy of the Tramways Committee[1] was sound, but it would probably have been better if Manchester had started gradually to convert to buses earlier. This start was made in 1929, when Mr. Stuart Pilcher succeeded Mr. Henry Mattinson as General Manager.

The success of the first route to be converted justified the conversion of other routes. It was, however, only in July of this year (1937) that the Council definitely adopted the policy of the gradual abandonment of all its tramways. Buses had proved quicker and cheaper, and much more popular with the public. The outstanding debt on the tramways will not be liquidated until 1974, although the bulk of it will have been repaid by 1950, and the success of the buses shows that the undertaking will be in a financial position to carry it.

To-day, December 1937, 38 per cent of the system has been converted from trams to buses, and 54 per cent of the total revenue is earned by the buses.[2] The number of passengers on buses and trams together has increased by more than eleven millions since 1933.[3]

The electric tram is disappearing all over England and in the chief countries abroad. In Paris, Berlin, Rome, New York, the process is going on, and in London the complete elimination of the tramway is expected in about five years. In fifty-one of the smaller local authorities and in the case of forty-five companies, trams have now been entirely abandoned. Liverpool and Sheffield are the only places where an increase in miles of tramway track has taken place in recent years.

The tram is doomed, but it is not yet clear what will take its place, whether the petrol- or oil-driven bus, or the electrically driven trolley-bus. The advantages of the latter are mainly the continued use of electricity, made from British coal, which benefits the consumers of electricity through lowering the price, and the avoidance of fumes which are still inseparable from the petrol- and

[1] Before the setting up of Traffic Commissioners by the Road Traffic Act, 1930, the local authority was the licensing authority.

[2] Report of Transport Committee and Finance Committee on Tramway Abandonment (No. 1,000), July 1, 1937.

[3] Annual Report and Abstract of Accounts of Transport Department, 1937.

oil-driven bus, which uses imported oil. The rates also will continue to be paid on the overhead equipment as in the case of trams. The chief disadvantage is that, although the mobility of the trolley-bus is greater than that of the tram, it is not so great as that of the motor bus, as its sphere of activity is still limited. Also one trolley-bus cannot pass another, so that a full bus blocks the wires for those coming behind it. It appears, too, as if the running costs per mile will be higher than those of the buses. However, the experiment is about to be made, and by the beginning of 1938 two routes will have been converted. The final decision will rest upon the results of this experiment.[1]

Apart from ensuring that the method of transport is the best and cheapest possible, the Transport Committee plays an important part in the housing policy of the Council. The cost and the time involved in getting to and from work is a vital factor in deciding a family to move from the congested inner quarters of the city to one or other of the housing estates in the suburbs. After rent, it is no exaggeration to say that the cost of transport, especially if there are many earning members of a family, is what determines it in its choice of estate. Many who would otherwise like to live at Wythenshawe, where the return fare to the centre of the city is 8d., have to stay in Ardwick or Hulme, where 1d. single fare takes them to work, or where they can walk there and back. The Transport Committee is fully aware of this aspect of the problem, and is doing its best to meet it consistently with treating fairly its other passengers, and with keeping the undertaking from being a burden on the rates. Three years ago, for instance, when a reduction of fares was possible, all stages to the housing estates were reduced by ½d. For Wythenshawe, a special fare of 8d. return from all parts of the estate was fixed, which is about ⅓d. a mile. There are some members of the Council who would like a flat rate throughout the city, so that whether a distance of one mile or seven miles were covered, the payment would be the same. A policy of this kind would undoubtedly facilitate the movement of the population from the centre to the circumference, but whether it would be fair to those residents who would still have to live in Collyhurst, Hulme,

[1] The decision to convert these two routes to trolley buses was taken by the Council, which accepted an amendment to that effect without even asking for the opinion of the Transport Committee on the matter.

and Ardwick, and who now benefit by the long 1d. fare, is not so certain.

Until 1921 the Transport Committee, like the other trading committees, contributed annually a handsome sum in relief of rates, but this was stopped when the Council decided[1] that all the public utilities should spend profits on reduction of charges.

In 1937 the Transport Department operated 17,820,733 miles on its tramways, and 19,369,625 miles on its bus routes. It carried over 346 million passengers, of which 56·3 per cent were carried on the trams. The average length of the 1d. stage was 1·36 miles on the trams and 1·41 on the buses (converted tram routes), 1·12 miles on local services and ·86 of a mile on the express services.

[1] See above, p. 144.

CHAPTER XVI

THE SHIP CANAL

THE Ship Canal is different from the Corporation trading committees and the part played in it by the City Council is, we believe, unique. The enterprise, which was intended to be a money-making concern, was launched in the usual way as a joint stock company, the capital being subscribed by the public. When the capital proved insufficient and the project was on the point of failure, the City Council, realizing the benefit to Manchester which would follow the completion of the canal, stepped in and lent the Company the necessary money to continue. It risked the ratepayers' money in an undertaking which, unlike markets, gas, electricity and transport, was not a monopoly, and could not become one. The Ship Canal had to meet the competition of the railways, and later of road transport.

The Manchester Corporation Act of 1891 was the first Act of Parliament which gave power to a municipality to invest in an outside undertaking, and we can well understand the strong opposition that was raised to the proposal. Many of the members of the City Council had privately invested in the Company, and their holdings were in danger. It could easily have been, and in some counties would have been, represented as a municipal scandal. But apart from the fact that many working men had also invested their savings in the Company the public seems to have soon realized that it was going to be of benefit to the city, and therefore worthy of the support of the ratepayers.

The idea of a ship canal to Manchester had simmered in the public mind there since 1825, when a proposal to construct a canal from Manchester to the mouth of the River Dee was put forward. In 1838 and 1840 more modest proposals were made but nothing came of them. The idea, however, was not lost sight of, and in 1877 petitions and reports were brought before the Manchester Chamber of Commerce by Mr. George Hicks, with the assistance of a London engineer, Mr. Fulton, and after some discussion a

resolution was passed that "it would be of the greatest service to the interests of Manchester and the trade of the district to have an improved waterway."

The 'eighties were a period of bad trade in Manchester. For the first time since the incorporation of the city rateable value declined and did not fully recover until 1891. People tried to find a reason for the decay of Manchester's trade. When times were prosperous and profits high little attention was given to the details of expense, but when the reverse was the case costs were carefully scanned and people soon began to complain of the charges made by the Liverpool dock authorities and by the railway companies. Glasgow, too, at this time had singled herself out for attention by bringing the sea to her doors and making the town an important and busy port, and it was thought that Manchester might profitably emulate her example. Thus the idea of the Ship Canal was born, and its success in the initial stages was undoubtedly due to a forcible and convincing pamphlet published in May 1882 under the pseudonym of "Mancuniensis." This had an immense sale, and passed through several editions. But the real start of the canal dates from a meeting in The Towers, Didsbury, on June 27, 1882, summoned by Mr. Daniel Adamson.[1] To him belongs the credit of launching this great enterprise and courageously fighting its battles in Parliament against tremendous odds until victory was achieved. To this meeting were invited the Mayors of Manchester and the surrounding towns, the heads of the principal commercial houses in the city, the leaders of co-operative and labour movements, and several well-known capitalists. A provisional committee was appointed, and a guarantee fund started of £25,000 to cover preliminary expenses. Councillor—later Sir Bosdin—Leech raised the question of aid from the rates in the Council, but although many aldermen and councillors contributed personally to the guarantee fund the Corporation at this stage only gave moral support. With the exception of the *City News* the Manchester Press was cautious in its attitude, and in some cases even unfriendly to the scheme.

The provisional committee set to work with vigour, and held public meetings all over the area. The scheme was supported by the Corporations of Manchester and Salford, and by many of the surrounding towns. The Manchester Chamber of Commerce also

[1] *History of the Manchester Ship Canal*, by Sir Bosdin Leech, vol. i, p. 80.

agreed to support the Bill which the provisional committee were promoting.

The chief opposition came from the Mersey Docks and Harbour Board and the railways, and although the Bill passed through the House of Commons it was thrown out by the House of Lords. The following year, 1884, a new Bill was introduced which passed the Lords but was thrown out by the Commons, owing to the united opposition of the Liverpool Corporation, the Liverpool Chamber of Commerce and the Mersey Docks Board. The provisional committee did not mean to give up the fight, and the Manchester City Council now gave practical proof of its support by the grant of £18,000—a 2d. rate—towards the Parliamentary expenses.[1] Salford and Warrington also contributed, and a third Bill was introduced. In order to meet Liverpool's opposition a drastic alteration in the scheme was made, which necessitated the construction of fifteen additional miles of canal. In spite of this concession the Liverpool opposition continued, but this time the Bill passed through both Houses of Parliament and received the Royal Assent July 1885.

Great jubilation marked its passing. Mr. Adamson's homecoming was made the occasion for a great demonstration, and the Corporation of Manchester invited him to a banquet in honour of the event. Church bells were rung, flags were put out, and bands of music paraded the streets, while a great trades procession, four miles in length, was organized.

But money did not come in as quickly as the promoters had hoped, and the opponents of the canal were not idle. They ridiculed the scheme and prophesied all manner of evil in order to frighten investors. It was therefore decided in November 1885 to deposit a Bill for the purpose of obtaining power to pay interest during construction, and this was passed in the following year. But still the progress of the canal was hindered for want of support. The situation was now becoming desperate since if before the following August (1887) a certain sum of capital was not raised, the time limit fixed by Parliament would be passed, and the powers would lapse. In order to restore public confidence in the scheme, it was decided to appoint a consultative committee, entirely independent of the Board of Directors and consisting of leading business men of

[1] City Council Minutes, October 29, 1884.

influence, who were to go into the whole matter and report as to its practicability and soundness, and also to advise as to the obtaining of capital. The Mayor of Manchester[1] was made chairman, and the committee, after a painstaking investigation, issued a favourable report on November 26, 1886.[2] As practical evidence of their belief in the scheme the consultative committee agreed to put their names down for £68,200. In the report it was made a condition of success that the Board of Directors should be reconstituted and strengthened. To this Mr. Adamson, the then chairman of the company, took exception, and in consequence of differences of opinion on this point between himself and his co-directors he retired early in 1887. Without his dogged determination, it is said, the Bill would never have been obtained, and the canal in all probability never have been constructed. His retirement ended his official connection with the Ship Canal, but he continued to work for its success until his death, which occurred early in 1890. Lord Egerton was appointed chairman in his stead. A canvass for funds was organized, and well within the specified time the directors had secured the necessary capital.[3] By the end of the year 1887 the construction of the canal was started in earnest.

The early history of the canal was a record of calamity after calamity. The perversity of man was overcome only to be followed by that of Nature. The death of the contractor in 1889 was followed next year by disastrous floods which caused immense damage and delayed the progress of the work.

Owing to this extra expense it was discovered in January 1891 that there was not sufficient capital to complete the work, and on being approached the City Council finally agreed to advance £3,000,000 and become debenture holders. In return for this assistance it was thought desirable that the Corporation should nominate five of the fifteen directors. Although at first it was suggested that Salford should also assist to the extent of £1,000,000, it was finally decided "to leave to Manchester all the honour, glory and possible loss in the transaction."

The Corporation's Bill for power to assist the canal passed in July 1891, and the money was raised by the issue by the Corporation

[1] Sir J. J. Harwood.
[2] *History of the Manchester Ship Canal*, by Sir Bosdin Leech, vol. ii, p. 1.
[3] Ibid., vol. ii, p. 6.

of 3 per cent Debenture Stock. Five Corporation directors were appointed on the Ship Canal Board.

There soon arose a divergence of opinion between the shareholders' directors and those appointed by the Corporation, particularly Alderman Sir John Harwood and Councillor Southern. The Corporation directors had come to the conclusion that the business was not being economically administered, and they felt that a complete reconstruction of the management was necessary. A report submitted to the City Council to this effect in December 1891[1] created a great sensation, and the Press teemed with articles and letters on the question.

The outcome was, however, an arrangement whereby the executive or spending department of the Ship Canal was composed of four directors from the Manchester Corporation and three shareholders' directors, Sir John Harwood being elected the chairman of the committee. But even this plan was not successful in enabling the canal to be constructed on the capital already borrowed, including the three millions lent by the Corporation, and in October 1892 the Council decided that Parliamentary powers should be sought to advance a further two million pounds to complete the canal, on 4½ per cent debentures as before, and that in return for this aid the Corporation should ask for power to nominate a further five directors on the Ship Canal Board, making ten out of fifteen. The Board would not agree to this representation, and suggested that the number of directors should be increased to twenty-one, the Corporation having power to appoint eleven. The relations between the canal company and the Corporation became somewhat strained, and the situation complicated by a belated offer from Salford and Oldham to lend one million pounds respectively, and all three Corporations deposited Bills in Parliament. When the Bills came before a Select Committee of the Lords in 1893, however, agreement had been reached with the Manchester Corporation, who made a firm offer of two millions. The city was to be assured of a clear majority on the Board, and the election of the Deputy Chairman was to vest in the Corporation until the loan was paid off. Unless these terms were agreed to, the Corporation had stated that they would not allow other loans to rank *pari passu* with their first loan of three millions. Salford and Oldham, some-

[1] City Council Minutes, December 9, 1891.

what disgruntled, were obliged to withdraw their Bills, but as some recompense for their disappointment the Ship Canal Company paid their expenses. The Corporation's loan to the Ship Canal Company was therefore increased to five million pounds.

After this good progress was made, and on January 1, 1894, "hundreds of people were trooping about Albert Square to let in the New Year and with the intention of commemorating the opening of the Ship Canal."[1] By the middle of January large steamers laded with cotton had begun to arrive, and the Canal was officially opened by Queen Victoria on May 21, 1894.

The troubles of the canal were not yet over, however, for a month later Sir John Harwood made a somewhat depressing speech to the City Council which was followed by his resignation from the directorate.

The canal, however, again emerged from its difficulties. In December 1898 for the first time the Company was able to pay out of revenue not only the whole of the interest on the first and second debentures, but also a small proportion of the half-year's interest due to the Corporation. It was hoped that this marked a new era in the history of the Company, although it was thought well "not to indulge in undue or premature elation as there is an element of uncertainty in shipping matters."[2]

From time to time since then the Corporation has come to the help of the canal. In return for this help, the right of the Corporation to appoint directors was continued in perpetuity, and the number of these directors was always to exceed by one the number elected by the shareholders. There are to-day twenty-one directors, eleven appointed by the City Council, and ten elected by the shareholders. The chairman is elected by the shareholders' directors and the deputy-chairman by the Corporation directors. The City Council fills any vacancy in its representation on the Board by election, and for some years now there has been an agreement when a vacancy occurs to get proportional representation of parties on the Ship Canal directorate. Within the political party the question is generally settled by a vote of the caucus, and although an impartial observer might sometimes wonder on what principle the final selection is made, the system works satisfactorily.

[1] *History of the Manchester Ship Canal*, by Sir Bosdin Leech, vol. ii, pp. 186 and 188.
[2] City Council Minutes, March 1, 1899.