

## XI

### GAS LIGHTING IN NEWCASTLE

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THE LAMP and Watch Act of 1763 empowered Newcastle Council to instal oil lamps in the streets within the walls and to appoint lamplighters, meeting the cost by the imposition of a lamp rate.<sup>1</sup> The lamps were lit during the hours of darkness from Michaelmas Day (29th September) to Lady Day (25th March) except at the full moon. An Act of 1812 extended the lighting area to streets outside the walls.<sup>2</sup> The Council was also responsible for fitting lamp brackets, one of which may still be seen at the South Postern on Castle Stairs. The purchase of oil for these lamps assisted the Greenland whaling trade based on the Tyne.

When gas lighting came to the streets of Newcastle in 1818 the Council had already accumulated fifty-five years of experience in town lighting, but the initiative no longer lay with the Council. The Newcastle Fire and Life Insurance Annuity Office, founded in 1783 at the head of Side, set up the town's first gas works in 1817 on the south side of Forth Street between Orchard Street and South Street. Their first concern was interior lighting for private premises, and by 15th November they were ready to enter into contracts with occupiers. There being no meters, charges varied according to the time in the evening—8, 9, 10 or 12 o'clock—at which the light was to be turned off; special arrangements were made with innkeepers whose hours were flexible. The customer was trusted to extinguish his lights at the proper time, but to assist his resolve Company inspectors moved about the town in the evenings.<sup>3</sup>

The interiors of some premises in Mosley Street were lit on Saturday 10th January 1818, but the first street lamps came on, to the cheers of the watching crowd, on Tuesday 13th January.<sup>4</sup> By 1827 there were within the walls 269 gas lamps of which only seventy were lit during full moon, and a further 122 outside the walls. The weekly charge to the Council was 1s 6d (7½p) for each lamp except for thirty-five lamps which had required extra piping and for which two shillings (10p) was charged. Oil lamps were still needed in streets where the demand for gas appeared too small to tempt the Company to lay mains, and in the suburbs to which the mains had not yet been extended.

Both manufacturers and customers were slow to learn the properties of coal gas. On 6th January 1820 Benjamin Slater, whose house in Forth Street was close to the gas main but not connected with it, was annoyed by a persistent smell of gas in his house. When the Company was notified they promised to attend to the leak next day. In the evening Mr. Slater's daughter went into a cupboard with a lighted

candle in her hand, and an explosion occurred of such violence as to injure severely four people in the house and to kill a child in the adjoining house. The child's father was awarded damages of £400 against the Company.<sup>5</sup>

A year later Mr. Simpson, a Quayside grocer, investigated a damaged connecting pipe by the light of a candle and was thrown out of his shop by the explosion, along with his assistant and the message boy.<sup>6</sup> Even in 1853 William Walker, a provision merchant in Buckingham Street who had suspected a gas leak for several days, took a candle to inspect what was under the floorboards; his wife was blown through the front wall of the shop and died from her injuries.<sup>7</sup>

Because Newcastle was situated in a major coalfield there was an excusable belief that Newcastle gas should be better, cheaper and more plentiful than elsewhere. Frequent complaints were heard about quality, quantity and price, but above all about the lack of flexibility in the Company's dealings with customers. It was alleged that the gas sometimes failed for two or three successive evenings yet the Company offered no rebate, and its inspectors were over-zealous.

Eneas Mackenzie suspected that the Fire Office was becoming altogether too powerful and he sarcastically observed: "the proprietors of this concern [i.e. gas] are understood to be the same *gentlemen* that belong to the water works and the Newcastle Insurance firm, and are therefore incapable of taking advantage of a virtual monopoly, or of knowingly harassing the public with vexatious or unreasonable demands".<sup>8</sup> The Town Council evidently did not see gas lighting as a necessity for it was agreed that the Mayor should pay the rent of gas lamps in the Mansion House "if he chooses to use gas rather than oil or candles".<sup>9</sup>

The Fire Office had land on the east side of Manor Place where their engines were stationed, and here they opened a second gas works in 1823. In 1830 however they sold out to the Newcastle upon Tyne Subscription Gas Light Company whose directors included Dr. Thomas Emerson Headlam, Armourer Donkin the solicitor and Addison Langhorne Potter the brewer. The manager was Richard Hoyle of Denton Hall. Hoyle, who had studied chemistry under Bishop Watson at Cambridge, gave a course of chemical lectures at the Literary and Philosophical Society in 1801; his other business interests included oil and colour manufacture.<sup>10</sup>

The Subscription Gas Light Company erected new works at the North Shore, a little to the east of the Swirle; this was usually described as the Sandgate works. Coal was delivered in keels and carried in sacks on the backs of men to the retort house. A limited use of meters was introduced, the charge being ten shillings per 1,000 cu. ft.

In 1838 it was decided to amalgamate with the Gateshead gas undertaking, and the Newcastle upon Tyne and Gateshead Union Subscription Gas Company was launched with a capital of £60,000. For the Gateshead works (founded in Pipewellgate by a joint stock company in 1818) the Union Company paid £5,528 compared with £42,336 for the Newcastle works.<sup>11</sup> Richard Grainger had laid gas pipes and erected lamps in his new streets, intending originally to manufacture his own gas, but he sold out his interest to the new Company for £20,000. This gave the Company a virtual monopoly of the main commercial streets.<sup>12</sup>

Company organisation and manufacturing facilities were both improving, but the complaints continued. The Council was in an invidious position for though it had a statutory responsibility to light the town it was dependent on the Company for the provision and maintenance of lamps. During a debate in which it was seriously asked if Newcastle were not the worst lit town in the realm, the inhabitants of Arthurs Hill sought exemption from the lighting rate until the Company improved the lighting.<sup>13</sup> The ratepayers in Blandford Street presented a memorial that there was only one lamp in the street. In response it was pleaded that "it was not the Council but the Company that was neglecting its duty. Deputations had at various times waited on the Company, when they were always received with civility and with promises, but the lamps remained unsupplied."<sup>14</sup>

Not surprisingly, voices were raised in the Council in favour of municipal control of the gas works. Some cited the example of Manchester where the corporation was alleged to have made a profit of £40,000 in one year.<sup>15</sup> The more cautious saw this as a profit on paper only, explaining that the Manchester lamps were lit and extinguished by policemen in consequence of which the corporation had employed extra police. Nevertheless, in 1847 the Council began negotiations to purchase the gas works (as an Act of 1846 allowed them to do) offering £7 10s per share; the Company held out for £8 10s. There was some popular support for the Council's move, for in May 1851 a petition from All Saints ward prayed the Council to take the manufacture of gas into its own hands, and another from St. Andrew's ward urged the Council to build new works of its own. A protest meeting in the Guildhall concluded "it is a disgrace to the capital of the coal district to tolerate such a wretched material. The old adage—shoemakers' children are the worst shod—is again true."<sup>16</sup>

To complicate the issue, the rival Newcastle and Gateshead Equitable Gas Consumers' Company was floated in the belief that the price of gas would be forced down. It was noted that in Liverpool a second company had indeed led to reductions in the price of gas, but after a few years the two companies had amalgamated to place the town in the hands of a larger and more powerful monopoly. This, coupled with the prospect of two companies digging up the roads, and the old company's tenure of Grainger's developments, reduced enthusiasm for a second company and the Council bought out the embryonic rival for £5,000.<sup>17</sup>

Meanwhile the established Company was by no means standing still. In 1859 the works at Manors and Sandgate were shut down and production transferred to a site at Low Elswick purchased from the Whittle Dene Water Company.<sup>18</sup> The gas company sought an Act of incorporation in 1864 in which the word "Union" was dropped from the title. A clause in the draft bill would have given the Company power to license competent plumbers and gas fitters, but this was taken out at the insistence of the Council's Gas Committee. The Act laid down standards for illuminating power and sulphur content, and empowered the Council to appoint a gas inspector. John Pattinson, an analyst of wide experience who later became Newcastle's first Public Analyst, was appointed to report each month on the quality of both gas and water; his annual income from this work was one hundred guineas.<sup>19</sup>

The Elswick works featured in two kinds of conflict with local people. The first concerned insufficiency of supply. The lamps adjacent to St. Mary's Church in Rye Hill were frequently out, and a meeting of Elswick ratepayers described the lighting in Scotswood Road as "miserable". A complaint from Leazes Terrace said they would all be better served by reverting to candles, and after a failure of supply in the Summerhill area it was said that "the whole question of the gas was in a shocking state in this town".<sup>20</sup>

The second cause for concern was the smell, as of rotten eggs, which arose from the Elswick works. This was regularly noted in the Rye Hill area, at that time one of the best residential districts in the town. When a complaint was first presented, the Company promised a speedy remedy; a second complaint however was met with a firm denial that the smell came from the gas works. A petition from the Elswick ratepayers however declared plainly: "an abominable stench arises from the gas works".<sup>21</sup> The Council appeared to treat the complaints very lightly. Mr. Gregson (a director of the Company) said that people paid good money to take the sulphide waters of Harrogate for their health, whilst the inhabitants of West Newcastle could get their sulphide from the air for nothing. He also pointed to the fine physique of the gas workers as evidence that there was nothing to complain about.<sup>22</sup>

Such treatment goaded the petitioners to appeal to the Home Secretary over the heads of the Council, in the belief that any action against the Company would be blocked by those members of the Council who were directors or employees. The Mayor took this point seriously, for on two occasions he stopped directors who rose to speak. In fact, the Company was trying to make the manufacturing process more efficient by converting waste ammonia into sulphate of ammonia for sale as a fertilizer, and it was from this part of the plant that the nuisance was thought to arise. With regard to sulphide impurities the Company had three options at that time; it could be released into the atmosphere where it caused a smell; it could be trapped in lime, the removal and disposal of which caused a worse smell; or it could be left in the gas, where its presence caused other troubles. In 1862 Mr. Newton had drawn attention to the damage to book bindings at the Literary and Philosophical Society since gas lighting was introduced; this was not specifically a Newcastle problem for the books in the Athenaeum Club in London were similarly harmed.<sup>23</sup> John Pattinson's analyses however regularly showed the gas to be up to the statutory standards, although the pressure was often low. He was inclined to blame poor burning for many of the troubles and, speaking on the gas question at a meeting of the Newcastle Chemical Society, he described the burners in Newcastle street lamps as "wretched".<sup>24</sup>

New troubles did not drive away the old, for the Company was still fighting the charge of poor lighting. In 1872 a meeting of ratepayers was held in the Guildhall to consider implementing the Public Libraries Act; the lighting was so bad that the Mayor could not see exactly how many hands were raised, or even if some voters raised both hands.<sup>25</sup> While thus involved, the Company pushed ahead with the construction of another new works on a twenty-five acre site at Redheugh.

Gas was still sold on the basis of illuminating power, and the lamps were little more than naked flares. The purer the gas, the lower the illuminating power so impurities such as benzene were left in the gas instead of being used to manufacture dyestuffs, perfumes, medicinals and—later—motor spirit. That situation was changed by the invention of an Austrian chemist, Carl Auer von Welsbach. Using an old principle embodied in the theatrical limelight, he observed that an envelope of cotton impregnated with salts of thorium and cerium would glow brilliantly when strongly heated. In 1885 he patented this envelope as a gas mantle.<sup>26</sup>

Now gas began to be sold on the basis of calorific value (heating power) and could be made more efficient for industrial use and for domestic heating and cooking. Welsbach's invention came just in time to stave off the threat to gas lighting posed by Joseph Wilson Swan's incandescent filament bulb, first demonstrated in Newcastle in 1879. Domestic gas lighting, at least, was saved for another sixty years. It finally succumbed, not to technical change but to the rise of firms willing to instal electric light in the homes of poorer people for a few coppers per week, and in the late 1940s Heaton, Byker, Benwell and Elswick fell before this onslaught.

## NOTES

- <sup>1</sup> 3 Geo. III, cap. 55.
- <sup>2</sup> 52 Geo. III, cap. 76.
- <sup>3</sup> 1817 Prospectus in Jackson, J. F., *A short history of the Newcastle and Gateshead Gas Company*, Newcastle, 1947, 37.
- <sup>4</sup> Sykes, J., *Local Records*, vol. II, new ed. Newcastle, 1866, 109.
- <sup>5</sup> Sykes, J., *loc. cit.*, 126.
- <sup>6</sup> Sykes, J., *loc. cit.*, 144.
- <sup>7</sup> Latimer, J., *Local Records 1832-1857*, Newcastle, 1857, 323.
- <sup>8</sup> Mackenzie, E., *Descriptive and historical account of the Town and County of Newcastle*, Newcastle, 1827, vol. II, 725 footnote.
- <sup>9</sup> Common Council Book, 19th July 1833, 241.
- <sup>10</sup> Tomlinson, W. W., *Denton Hall and its associations*, London, 1894, 97.
- <sup>11</sup> Mander, F. W. D., *A History of Gateshead*, Gateshead, 1973, 289.
- <sup>12</sup> Newcastle Council Report, 11th June 1851, 94, 102.
- <sup>13</sup> *Ibid.*, 7th February 1838, 10.
- <sup>14</sup> *Ibid.*, 10th January 1838, 16.
- <sup>15</sup> *Ibid.*, 10th September 1845, 393.
- <sup>16</sup> *Northern Tribune* No. 1, January 1854, 32.
- <sup>17</sup> Newcastle Council Report, 17th March 1847, 137.
- <sup>18</sup> Tyne Industrial Archaeology Group Newsletter, 9th November 1973, 2.
- <sup>19</sup> Newcastle Council Report, 1st December 1869, 41.
- <sup>20</sup> *Ibid.*, 22nd February 1870, 184.
- <sup>21</sup> *Ibid.*, 11th January 1871, 123.
- <sup>22</sup> *Ibid.*, 7th December 1870, 53; 11th January 1871, 125.
- <sup>23</sup> *Ibid.*, 4th March 1863, 205; for the attempt by the Lit. & Phil. to prepare its own gas see Watson, R. Spence, *History of the Literary and Philosophical Society of Newcastle upon Tyne*, Lodon, 1897, 91-97.
- <sup>24</sup> *Trans. Newcastle Chemical Society*, vol. III, 1876, 156.
- <sup>25</sup> Newcastle Council Report, 5th June 1872, 316.
- <sup>26</sup> Williams, T. I., *History of the British Gas Industry*, Oxford, 1981, 33.

