THE INTRODUCTION OF GAS-LIGHTING TO PRESTON

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By local tradition Preston was the first provincial town to be lit with gas. A relatively small group of men, cotton manufacturers, churchmen, a printer, some shopkeepers, had the energy, enthusiasm and perseverance to carry the project through. Peter Whittle's *Topographical, statistical and historical account of the borough of Preston* conveys something of the excitement of the achievement. He thought it had placed Preston alongside Manchester and Birmingham, the centres of scientific and technical advance.

Two circumstances brought gas-lighting to Preston early. The first was the friendship between Preston's leading Roman Catholic churchman, Joseph Dunn, and the gas engineer, Samuel Clegg. The other was the flourishing state of the cotton trade. Cotton spinning was already changing the town dramatically whilst the first experiments in gas-lighting were being made. In 1790, two years before coal gas was first successfully used for lighting, John Horrocks arrived in Preston and built the factory at the end of Church Street. Preston was then still a small residential and market town (see Figure 4). The gardens behind the houses fronting the three main streets had not yet given way to the tightly packed buildings of today. The land between Fishergate and Friargate lay still undeveloped. To the west, Fishergate ran down between fields towards the Ribble; to the east, the new road had not yet been laid down across what was formerly the park, whilst development in Frenchwood was only just beginning. By the time Horrocks died, only fourteen years later, Preston had been transformed into a manufacturing centre and its population had more than doubled. Whittle gives us an enthusiastic picture of these mills and of their steam engines which changed the face of Lancashire, put thousands into the pockets of such men as Arkwright, Horrocks and Sir Robert Peel, and made the cotton trade one of the dominating forces in the political scene for over a century.
Preston in the Early Nineteenth Century

To illustrate streets and buildings mentioned in text
The cotton manufacturers were quick to see the advantages of introducing gas-lighting. During the winter months mill owners had tried oil lamps and even candles to keep production going beyond the daylight hours. It was gas-lighting that first met this requirement adequately, so much so that a list of the first buildings lit with gas is almost exclusively a list of factories, and the first minute book of the Preston Gas Light Company shows that, as each extension was proposed, careful consideration was given to the number of cotton mills that could be brought into the scheme.

II

Gas-lighting was first brought into the vicinity of Preston in 1811 when the great gas engineer Samuel Clegg lit Stonyhurst college. In order to do this Clegg had first to overcome one of the remaining technical problems, of which his son, Samuel Clegg junior, wrote in 1841, ‘It became apparent, that, unless some plan were adopted to purify the gas, it could not be burnt in close rooms, the offensive effluvia proceeding from it in its impure state causing headache, and even in some cases affecting the lungs.’

And, continuing the generally accepted account of the event, the younger Clegg went on:

Among the various places lighted with gas about this time (1807, 1808), the Catholic college of Stonyhurst, Lancashire, deserves particular mention. This establishment was the first of the kind that adopted the use of gas-lights, and Mr Clegg received great encouragement in making experiments and improving his apparatus, from the liberality and kindness of the Professors of the college.

However, writing twenty-one years earlier, Clegg himself gave the following more accurate sequence of events:

In 1805, I erected a gas apparatus at the cotton mill of Henry Lodge, Esq., near Halifax, which was the first in the kingdom. In 1806, I lighted his dwelling-house, where I first attempted to purify the gas by lime introduced into the tank in which the gasometer floated. In 1807, I lighted the manufactory of Messrs T. and S. Knight, of Longsight, near Manchester. In 1809, I erected a gas apparatus in a large manufactory at Coventry, belonging to Mr Harris, in which I introduced a paddle at the bottom of the tank to agitate the lime. In 1811, I lighted a large manufactory at Dolphinholme, near Lancaster, by means of an apparatus similar to what I had erected at Coventry. In the same year, I erected an apparatus at Stonyhurst College, Lancashire, where I introduced a lime machine, the first ever employed for that purpose: a machine which has been universally adopted, and which has rendered the introduction of gas practicable in any situation.

There is no reason to doubt that Clegg made use of the facilities at Stonyhurst for experiments on purification, but this probably occurred about two years later than the time suggested by his son. Prior to the rebuilding and enlarging of the college, con-
ditions for carrying out such experiments are likely to have been very meagre, and it was only during 1808 that the money for these alterations was being raised. And if Clegg's experiments were completed in 1808, why did he wait until 1811 before installing the first lime machine? From his book it would appear that the younger Clegg brought forward the date of these events in order to strengthen his attack on the lately deceased Dr William Henry, who had first suggested the method of eliminating hydrogen sulphide by bubbling the gas through a solution of lime in water, but who doubted whether it could be done commercially on a large scale. The younger Clegg says, that his father

invited Dr Henry to visit Stonyhurst College, in order to examine the method he had there adopted for purifying, and to test the gas... Dr Henry refused to acknowledge the efficacy of Mr Clegg's apparatus for purifying, until he had repeatedly tested the gas; after which he admitted it to be perfectly satisfactory, and capable of being adopted in large manufactories.

In 1808 Dr Henry communicated a paper to the Royal Society, claiming as his own idea the use of lime-water for purification of gas from sulphuretted hydrogen in large quantities, without even mentioning the apparatus of Mr Clegg, who, having consulted Dr Henry while proceeding with his experiments at Stonyhurst, felt much pain as well as disappointment at this injustice, which was the more unexpected, from the friendship which had subsisted between them.5

The connexion between Stonyhurst and gas-lighting certainly goes back to 1808 and it probably came about through the agency of Frederick Albert Winsor, the volatile Moravian publicist, who from 1803 onwards had given regular demonstrations of gas-lighting on the stage of the Lyceum theatre. Out of his grandiose National Light and Heat Company the more practicable Gas Light and Coke Company later evolved, but the Stonyhurst shares in it, held in the name of the procurator of the college, the Rev. Charles Wright, dated back to 16 July 1808.6 Winsor's name also occurs in a list of subscribers or potential subscribers, dated 9 May 1808, to the appeal for the enlargement of the college, which was handled by Wright's relatives who were Covent Garden bankers. It was probably through Winsor that Clegg came into contact with Joseph Dunn and Stonyhurst, because it was Clegg who acted as adviser to Winsor on problems of purification.7

The problem of purification was well appreciated at Stonyhurst, as is shown by a letter of the rector, Fr Nicholas Sewall, dated 2 December 1809, in which he writes:

Should we adopt the steam, how can you contrive the conductors so as not to be an eye-sore: in the factories they pass through the middle of the rooms; that would not look well in our refectory, study place, etc. The gas tubes may be conducted without being seen and if they can be cleansed from all bad smell, as I suppose they may, we shall adopt them.8
The correspondent who was expected to devise a central heating system that should not be an eye-sore, and who was interested in the lighting of the college, was the head of the roman catholic mission in Preston, Joseph Dunn, and Gillow states unequivocally, but without any clarification, that Dunn was patron of Clegg, and also that it was due to his efforts that Stonyhurst became the first public institution to be lit with gas, just as Preston later became the first provincial town so lit.9

Dunn's connexion with the college went back many years to the time when he had taught philosophy at the English Academy in Liège. The academy was transferred to Stonyhurst in 1794 in the face of the threat from the revolutionary armies of France, but Dunn had preceded it leaving after the dissolution of the Jesuit order, and arriving in Preston in 1776 where he served the roman catholic mission for the remainder of his life. As head of the only large industrial catholic parish in the country, Mr Dunn10 took his responsibilities intensely seriously and interested himself in the practical welfare of his parishioners in ways which surprised some of his colleagues, and with a vehemence and stubbornness which sometimes antagonised them. He was noted for his public demonstrations of scientific experiments, and the similarity of proceeding is such that there can be little doubt that his exemplar in this respect was Frederick Winsor. A small note book in Mr Dunn's hand, which is preserved in St Wilfrid's presbytery in Preston, lists the materials necessary for such an exhibition which was given on Monday 7 December 1818. Evidence of his practical ability survived at Stonyhurst in a 'Japanese idol (god of the chase) fitted to serve as gas-light by Fr Dunne'.11

Gillow's words about the relationship between Clegg and Dunn imply that it was the latter who was principally responsible for admitting Clegg to the facilities at Stonyhurst, and the signing of the contract for the lighting of the college on 17 March 181012 was presumably preceded by a period of experimentation, during which Clegg was able to perfect his lime machine. On 22 November 1810 Fr Joseph Laurenson, the professor of mathematics, wrote to Dunn:

> Clegg was here on Sunday last, and is gone to Lancaster to light up a great mill he has been engaged with for some time past; from thence he returns to Stonyhurst and proposes staying some time. Indeed, he promises to have the Lower Gallery and the Refectory lighted up by Sunday week. I am surprised to find you, a professed amateur of the Gas, just going away, as it were on purpose not to see the first essay. Your reputation will be ruined... I have had Clegg to inspect my room where to fix my Gas-lamp. He brings his head man from Lancaster today or tomorrow. I think you will not find him at Manchester, and I would not come to see you there and miss the first lighting up of our House upon any consideration, especially as I know that no personal considera-
tion could induce you to wish me to be absent when a business in which you and I are so much concerned is taking place.\textsuperscript{13}

In the event the two priests had to wait until 18 February 1811 for the lighting of the college.\textsuperscript{14}

III

Whilst these activities were going forward at Stonyhurst, Dunn had found a valuable ally in Preston itself. In 1809 the Reverend John Rudd became minister at the Unitarian chapel and he was as keenly interested in science as Dunn himself. He published a pamphlet advocating the establishment in Preston of a literary and scientific society similar to the one in Manchester, and when this society was inaugurated at a meeting in the Town Hall on 12 March 1810, Rudd himself became the first president of the society and Joseph Dunn was made one of the four vice-presidents.

It need not surprise us that Dunn should have been on such close terms with a unitarian. The broad-mindedness and benevolence of the missioners in Preston towards those of other persuasions is well attested, and an interest in the physical sciences made such contacts inevitable because so many of the leading figures in that field were nonconformists.

The Manchester Literary and Philosophical Society which had inspired Rudd to found the Preston society included among its members some of the outstanding scientists of the time. John Dalton, the quaker mathematician and physicist, served as secretary and president of the society for many years. William Henry, a unitarian, mentioned above in connexion with the purification of gas, was librarian, then secretary, and later vice-president. The Rev. Joseph Priestley, the famous chemist, also a unitarian, was an honorary member and his son was in full membership. Finally, Ashworth Clegg, Samuel Clegg's uncle, was also a member. These societies provided one of the channels through which the relatively small number of men engaged in scientific pursuits could maintain contact. In our field the continuing nature of these contacts is seen in the correspondence between Clegg and Dalton on methods of detecting impurities which took place as late as January 1815.\textsuperscript{15}

The Preston society sought from its beginning to emulate the Manchester society in furthering interest in the sciences. Books were to be bought, courses of lectures to be given, and equipment for use in scientific experiments was to be purchased. Unfortunately its founder did not remain with it long. Peter Whittle tells us:

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The Rev. John Rudd, F.L.S. . . . was a man of excellent endowments, and gentlemanly address; upon the whole, he was a person of an intuitive genius, and, at one time, was much respected. In April, 1810, discussions were agitated at this chapel upon the doctrine of the holy Trinity, and other religious topics; but were afterwards discontinued, on account of their assuming an appearance quite unexpected; not promoting, as they were first intended, the interests of piety and religion.

The one time much respected Rudd left Preston in 1812 and his name is not recorded in the official list of unitarian ministers at Preston. Whether this was on account of the unfortunate discussions on the Trinity, or because of his subsequent bankruptcy, it is not possible to say.16

Despite the fall from grace of its founder, the Literary and Philosophical Society continued to be of importance in the move to bring gas-lighting to Preston. It can not be entirely fortuitous that Clegg’s contract for lighting Stonyhurst was signed just five days after the formation of the society, whilst no fewer than eight of the twelve members of the committee which first ran the gas company were members of the Literary and Philosophical Society. These included its president, the four vice-presidents and the librarian. From 1815 until 1839 the control of the gas company was vested in the hands of five trustees, each of whom was a former member of the society. Finally the first recorded meeting of the subscribers to the gas company took place at the home of Isaac Wilcockson where the meetings of the society were also held.

IV

The need for action over the lighting of Preston’s streets was one of many civic problems which, until the advent of the Literary and Philosophical Society, were largely ignored by the authorities. The streets of Preston had been entirely unlit prior to the installation of four oil lamps in 1699. The oil lamps were placed by the Church Wall, at the top of Mainsprit Weind, near the Butter Cross and in the market place. The corporation met the expense of only one of the lamps, the other three having been donated by public spirited individuals.17 Although these lamps were later added to their effect was slight and, rather than illuminating anything, they served as stars by which to keep direction in stumbling from one to the next. Samuel Clegg junior tells us that when a London contractor for oil lamps was ‘told by the Board of Guardians that his lamps gave no light, [he] replied that this was not in his contract, which only stated that they were to be lighted from sunset to sunrise. This was literally the case—lighted they were, but light they gave none."18
A letter appeared in the *Preston Journal* on 18 April 1807 from *Miserabilis*, who complained:

You must know, Sir, that 'tis within these six months that I came to reside in Preston, and from the social disposition of its inhabitants, am inclined to prolong my stay.

But, he went on:

The streets in most parts of the Town are so intolerably dark, that I was continually getting my shoes full of water, which God knows what may be its consequences. The medical men will tell you, that it will lead to colds, coughs, rheumatism, palsy, agues, asthma, or consumptions; and I need not tell you Sir, that 'twill infallibly lead to medicines, doctors' bills, probably undertakers' shrouds, coffins, parsons, clerks, sextons, gravediggers, graves . . . all this for the want of lamps in the streets.

He resolved to carry a lantern, but

those who had not lanterns were continually cursing me as I passed them, as it deprives a person for a short time of the use of their optics, by the sudden increase and diminution of light; before I carried a lantern, it has often had the same effect on myself, and after passing one, have got my feet in the mire, or knocked my head against a wall.

Motives of philanthropy persuaded the poor man not to carry a lantern, but he soon knocked with such violence against a stoop or post, that I fear I have got a rupture, and was confined to my bed for several weeks. To guard against a similar accident, I bought a cane, and determined where I suspected a post to be, to move my stick backwards and forwards to ascertain; this I found of considerable advantage, but 'sublunary bliss is short and vain', for one very dark night I suspected a post and made use of my usual precautionary pioneer, when unfortunately I thought 'twas a post I hit it happened to be a man, that was walking slowly towards me, and whom I hit across the legs! he immediately knocked me down, seized my cane, and laid it about me with a vengeance and to more justly retaliate as he said, he almost broke my shins with his own stick.

In vain I roared, that I took him for a post, it irritated him the more, and he at last left me saying, I've posted you my gentleman . . . Good God, Sir, what am I to do, am I to have no redress, no compensation, is there no preventive? Yes, Sir, there is, let some gentlemen of public spirit propose it to the worthy inhabitants of Preston; I am confident no man would hesitate to contribute to so useful a purpose. If there was a tax laid on every housekeeper in proportion to his rates of assessment, 'twould be a mere trifle to each and would do honour to the town.

But there were more causes for dissatisfaction than bad lighting. Not only should people be prevented from falling in the mire; the mire itself ought to be cleared from the centre of the town; regular paving, with sewers and culverts was needed. In the event of fire, private citizens should not have to depend for help on the fire engine of Messrs Horrockses, which seems to have been the only one available. A more efficient policing of the town was also needed. The influx of new labour into Preston had been accompanied by an increase in lawlessness, to such an extent that two or three outrages could occur on the same night. Remedies for these problems were as much ignored by the press as by the authorities. The letter from *Miserabilis* was one of the
few comments of the *Preston Journal* on civic affairs. Such events as the lighting of Stonyhurst failed even to be mentioned.

This absence of public discussion of Preston's problems changed when Isaac Wilcockson became proprietor of the *Preston Chronicle*, which from 5 September 1812 appeared under his editorship as the *Preston Chronicle*. Wilcockson was a printer by trade, and he was probably Mr Dunn's most influential helper in the events which led up to the formation of the gas company. He had been librarian of the Literary and Philosophical Society from its beginning. The books and scientific apparatus were stored at his home, and when he moved house the books and apparatus and the society's place of meeting moved too. In his first editorial Wilcockson promised to pay more attention to civic affairs, and this he did, though in an unobtrusive way, for pride of place had still to be given to following the course of Wellington's victorious campaigns in Spain.

The signal for a sustained campaign in favour of public improvements in Preston was probably Samuel Clegg's great success of lighting the parish of St Margaret's Westminster in April 1814. Winsor's grandiose schemes had finally been set on their path to success by the securing in April 1812 of a Royal Charter for the Gas Light and Coke Company, but all would still have probably ended in fiasco had not Clegg been called in as engineer to the company in the December of that year. Clegg had to scrap most of the apparatus previously acquired and the siting of the works on swampy ground at Peter Street caused further difficulties. When Westminster bridge was lit in December 1813 fear and prejudice were still so rife that Clegg had to light the lamps himself for the first few nights. This and all other difficulties were triumphantly overcome and the lighting of the parish of St Margaret's was the final proof that Winsor's idea of lighting whole municipalities was not merely an idle dream.

A long column in the *Chronicle* of 22 October set out an 'account of the many public works now carrying on'. These included the National School, the Roman Catholic School in Fox Street, the building of a new church, the erection of a steeple on the old parish church and of a new dome on the town hall. A letter had already been published on 20 August in which 'An Inhabitant' had suggested that the clock in the new dome of the town hall should be illuminated as was the fashion abroad, especially in Prussia, and a further 'hint' in favour of this scheme was published on 3 December.

Public meetings were held at which the strength of feeling in favour of civic improvement must have made itself felt, for on 1 September the *Chronicle* carried the notice
That Application is intended to be made to Parliament in the next Session for a Bill to light, watch, pave, repair, cleanse, and improve the Streets, Highways, and Places within the Borough and Town of Preston and to provide Fire Engines and Firemen for the protection of Property within the said Borough and Town.

The petition to bring in the Bill was presented on 14 November; during March and April 1815 it passed through all its stages and on 2 May it received the royal assent.

These developments must have been a great encouragement to Mr Dunn and his friends. On 7 January 1815 Wilcockson wrote:

A correspondent had drawn our attention to the subject of lighting the streets of the town by means of Hydrogen gas instead of oil, when the time shall come for carrying into effect the provisions of the pending Police Act. The subject is well worthy of being seriously considered, and we throw out the hint now, in the hope that persons who are conversant with matters of this sort, will exercise their ingenuity, in forming plans and making estimates. The Commissioners will then be enabled to come to a speedy conclusion, as to the eligibility of adopting the new method. Our correspondent conceives, that if the measure of lighting by Gas were adopted, a considerable saving might be made to the town by suffering Shops, Inns, Private Houses, etc., to be lighted from the same Gasometer, on payment of annual, quarterly, or monthly contribution.

The first meeting of the improvement commissioner was fixed for 22 May, and in the Chronicle of 13 May Wilcockson again emphasised the advantage of gas-lighting and informed his readers that ‘A number of gentlemen are at this time forming a plan and making estimates on this subject, to be submitted to the Commissioners’. In the event, the negotiations with the commissioners were long and involved. The meeting of 22 May was concerned solely with the appointment of the commissioners and of their clerks, and an acrimonious dispute concerning one of the two clerkships could not be settled before the meeting held on 1 June.

It has been the tradition at Stonyhurst that the formation of Preston Gas Company occurred in 1812 when Fr Joseph Postlethwaite, the professor of chemistry, lectured on gas-lighting in the Bull Inn Preston. He could well have brought lamps with him from Stonyhurst for the occasion, because Clegg tells us that it was there that he first made portable lamps by condensing the gas in copper globes. The company is supposed to have been formed on the spot at the end of the lecture, but if such a company was in existence in January 1815, either Wilcockson knew nothing of its existence, or else he was careful to give no hint of its existence to his readers. Perhaps Fr Postlethwaite’s lecture was part of the regular programme of the Preston Literary and Philosophical Society at which the leading
members of the future gas company were present and where they were encouraged by what they saw.

The first recorded meeting of the subscribers to Preston Gas Light Company was held at Wilcockson's on 25 May 1815, and here twelve members were appointed to a committee which was to handle the negotiations with the improvement commissioners. The committee included Mr Dunn, T. B. Addison and J. Addison junior, esquires, and Messrs Taylor, Mounsey, Elsworth, Abraham and Wilcockson, who all belonged to the Literary and Philosophical Society. The Addisons were both barristers; William Taylor was manager of the Spittals Moss and Canal factories belonging to Messrs Horrockses; William Elsworth was a mechanic in the service of the same company; James Mounsey was a Friargate chemist and druggist and a member of the common council of Preston; John Abraham was a solicitor. They were joined by Mr Morris, Dunn's assistant at St Wilfred's church; W. W. Fell, esquire, another barrister; Robert Friend, a Cheapside draper, who was also a member of the common council; and Mr Throp, presumably the junior partner, or related to the junior partner, in the cotton-spinning firm of Swainson and Throp. At the Canal factory William Taylor was in charge of Horrockses' machine making foundry, and this technical background enabled him to play an important part in the day-to-day running of the company. William Elsworth presumably worked under the superintendence of William Taylor, and he was of great service to the gas undertaking, for when they lost their second engineer in 1818 he performed that duty for seventeen years.

It was also agreed to close the subscription book at £2,000, when a general meeting was to be called to approve the appointment of a committee and officers to run the concern, and also the regulations for its management. For the immediate future John Abraham was asked to act as secretary. Plans and estimates were to be procured, presumably in greater detail than hitherto, and an approach was to be made to the improvement commissioners, to see if they were inclined to adopt the proposed plan. The securing of the contract for street lighting was essential to the success of so large a scheme, for then, provided it fulfilled its obligations, the company would have in the public contract a substantial guaranteed income. Furthermore, the street lights would be a good advertisement because the superiority of gas over oil lighting was particularly evident out of doors.

Whilst Fell and the committee were waiting on the commissioners, Mr Dunn was taking the steps which were vital to the success of the whole enterprise. By 3 June he was in London, and
there he appears to have stayed for over a month, presumably in consultation with Clegg, and seeing for himself the way in which the illumination of London was being accomplished. Clegg’s employment there must have made it impossible for him to come to Preston, nor is there any evidence that he furnished Dunn with any plans. In any case, plans would be better made on the spot, so Mr Dunn must have been delighted to secure the services of Clegg’s most distinguished assistant, John Grafton. Grafton himself dated his appointment from 12 June, whilst Dunn’s letter announcing the engagement was dated 23 June. Grafton himself wrote on 1 July, and the committee lost no time in inviting him to Preston to arrange terms for his supervision of the work.

Like Clegg, John Grafton was a native of Manchester having been born there about 1795 or 1796. He was one of Clegg’s articled pupils, and one in whom Clegg placed special confidence. He first came into prominence towards the end of 1813, when he took over the second of the chartered company’s works, that at Curtain Road, which was intended for the supply of gas to the City of London. In 1814 he returned to Westminster to superintend the erection of additional equipment needed to supply the illuminations to celebrate Napoleon’s defeat and exile to Elba. The following year he collaborated with Clegg in the improvement of the Argand burner. He was also credited with the invention of the hand lamp used by the lamp-lighter in going his rounds.21

In Preston the Chronicle was stimulating further interest by advertising on 27 May the availability at its office, and also from W. Addison, bookseller, of the first manual on gas-lighting, A practical treatise on gas-light by Frederic Accum, one of the chemical staff of the Chartered Company. Later in the year Wilcockson published extracts from this work, and he also listed all the districts in London which had gas-lighting and related how the church of St John the Evangelist at Westminster had been lit with gas for over two years. From time to time short accounts of progress at the Preston gas works were given.

When Mr Fell attended the improvement commissioners he was requested to submit proposals in writing. The first minute book contains an undated letter to the commissioners which accompanied what appear to have been the required written proposals. These were to light from the Mitre Inn in Fishergate, forward into Church Street as far as the Church Gates, the Old Shambles, Cheapside, the Market Place, and Friargate as far as Mr Alderson’s. Abraham and other members of the committee had several meetings with the commissioners, and eventually
Abraham was able to report on 6 July that agreement was possible provided the commissioners were allowed to determine the places where lights were to be fixed. It was at this meeting on 6 July that the committee invited Grafton to Preston to discuss the project. They also appointed Mr Mounsey to act as Treasurer until permanent officers were approved.

Two days later the *Chronicle* reported:

We have great satisfaction in stating, that the gentlemen who have interested themselves to procure for the town, the vast advantages which inflamed gas possesses over oil or tallow, where fixed lights are required, have now so far perfected their plans that the business is likely to be proceeded in immediately. A young man of ample experience is engaged to superintend the fixing up of the apparatus and laying the pipes. Upwards of one thousand pounds in shares of 10 l. each, are already subscribed, and from an advertisement in this page it will be seen that the company have again opened the subscription books for the purpose of increasing the capital to 2,500 l. This sum there can be no doubt will speedily be raised, as the returns from public and private lights, cannot fail to produce ample interest for the money expended.

The advertisement, signed by John Abraham, secretary, also announced that future subscribers would all be required to pay one pound upon each share, and made a call of a similar amount from the present shareholders to be paid by 20 July to either of the Preston banks or direct to Mr Mounsey. On 17 July Grafton was authorised to order the first equipment, nine retorts.

A further meeting with a subcommittee of the improvement commissioners held on 21 July proved to be long, difficult, but ultimately decisive. Several commissioners had not been present at the earlier meeting, and they cavilled at the agreement reached then. Eventually the gas company was required to appoint five trustees to act on its behalf in the contract with the commissioners. On the credit side, the contract agreed was to run for a term of seven years.

The appointment of the trustees probably took place at one of the committee meetings held on 25 and 26 July no record of which was made in the minute book. It was finally minuted between the meetings of 4 August and 13 September, but the date assigned, 17 July, together with the order for the first retorts, can hardly be correct. The trustees were four committee members, Abraham, Mounsey, Taylor and Wilcockson, and, from among the ordinary subscribers, Mr Thomas German, a cotton spinner, who was also a member of the Literary and Philosophical Society. A formal, public meeting of the commissioners for the tender of proposals was still necessary however. The *Chronicle* advertised that this would be held on 14 August

at Ten o’clock in the Forenoon, for the purpose of contracting with such Person or Persons as may be willing to make proposals for lighting with Gas the following Places within the said Borough, viz.—From the Mitre
Preston Gas Inn, in Fishergate to the Church Gates; the old Shambles, Cheapside, Market Place, and to Mr Alderson's Shop in Friargate. And also for the purpose of contracting with such Person or Persons as may be willing to make Proposals for supplying Lamps, Lamp Irons, Lamp Tops and Burners; and also such other Articles as may be necessary for completing such Lamps. The number of Lamps, etc. wanted will be from 4 to 500 and each of the Articles will be separately contracted for as follows: 1st Lamps. 2d. Irons. 3d. Tops. 4th. Burners. Persons desirous of contracting for any of such Articles, are requested to send Proposals (Post Paid) to Messrs Grimshaw & Palmer, Clerks, to the Commissioners, on or before Friday the 10th day of August next.

By its contract the gas company was required to light the agreed areas more effectually than was done in other parts with oil lamps, the commissioners paying the company the sum it would have cost to light the same district with oil. The annual income from these lights was £162. 10s. od. The amount per lamp is not stated, but when the next contract was negotiated a small increase raised the payment to only £2 12s. 6d. per year, so that in the first years the payment may well have been £2 10s. od. per lamp, which would give a figure of 65 street lamps erected in the original district. The locations were to be determined by the commissioners, and each was to be equal to three oil lamps in intensity, but not more than one gas-light was to be put in the place of two oil lamps. The lamps and lamp irons together with the pipes to one foot below the surface of the ground under each lamp were to be provided by the commissioners. The mention of lamp irons sounds as though lamp posts were intended, but the lamps were more probably secured to walls by brackets, which was the usual practice in the early days of gas-lighting.

Now that the contract had been secured it was necessary to decide on a suitable site for the works. It should not be too far from the centre of the town, and it should be on as low a level as possible to allow the gas to flow up into the town under its own pressure. Grafton and John Burton, a local surveyor also employed by the water works, were asked to consider five possible sites: land near the Old Cock Yard, belonging to Messrs Bartons of Manchester; a garden behind the old bank, Pedders and Company; the gardens of Mr Lodge and Mr Park (possibly in Mount Pleasant, near the canal); Folly Field, Holmes' Gardens, the School, and the field adjoining; land in Grimshaw Street belonging to Messrs Roper and Throp. After ten days Grafton reported a preference for the upper part of Mr Brandreth's tan yard in Mainsprit Weind, but it was found that this site was not eligible. Finally, on 16 August Mr Taylor reached agreement with Mr Robinson for his land above the water works, and ten days later this plot was being cleared for the reception of apparatus. On 29 August an agreement was made with Robert Roper of
Everton Gardens, a builder, for the construction of a circular reservoir to contain the gas-holder. The trustees were soon on the ground discussing the site for a cottage, counting house and committee room, and on 22 September William Oxendale, a joiner, concluded an agreement respecting these.

VI

It was one thing to make plans for buildings and to see that local craftsmen carried them out, quite another to secure the necessary apparatus when there were no established sources of supply near at hand. Supplies would have to be brought from London or Birmingham, either by canal which was slow, or by road which was expensive. In September Grafton was authorised to order samples of brass burners, chandeliers, pendant lamps, wall brackets, plain pillars, a glass vase and a pattern book from London. The urgent letter sent to Messrs Lawton and Debaufer, founders, of Cow Lane, Snow Hill, London, over a month later, asking them to send the brass work ordered by Pickford’s wagon to Manchester, together with 30 feet of each size of copper pipe, must have referred to this order. A further letter dated 28 October elicited the reply that the goods would be sent the following week. A month went by, and on 7 December the secretary wrote again. These brass fittings were at last available for display on 29 December when they were set up in Mr Abraham’s office for shopkeepers and others to see, considerably more than three months after the original resolution to obtain them.

Unfortunately this delay was not really exceptional. Even in the case of cast iron pipes, for which there had been an enormous demand during the previous decade from the metropolitan water works companies, delivery was slow and the quality variable. The chartered company had obtained cast iron main pipes from the Horseley Ironworks, Tipton, Staffordshire, so it was natural that Grafton should turn there with his orders. The first order was for cast iron pipes and for samples of wrought iron tubes. The samples were soon received, and 500 feet of the half inch tubes were ordered on 15 September to be delivered in six weeks. Chains and pulleys for the gas-holder were also ordered from the Horseley Company. Despite the long journey to Liverpool by canal, and from there by sea, first deliveries occurred early in November, so that pipe laying was able to start as soon as permission to take up the streets and pavements had been obtained. Unfortunately the first consignment did not include any branch pipes—slowness in delivery of these was to be a problem for the gas engineer for
years to come—and, since the remainder of the material ordered does not seem to have arrived in Preston until early in February 1816, the laying of pipes must have been a lengthy business and a source of much inconvenience in the streets of the town.

The wrought iron tubes would be used as service pipes, that is to lead from the main pipes into the building that was to be lighted. As they were much more expensive than cast iron pipes Grafton economised by using as service pipes a supply of surplus musket barrels which were joined muzzle into breech. These barrels were ordered from Joseph Smith, 82 Bull Street, Birmingham, and they seem to have arrived in Preston some time during December.

Some of the coarser iron work, including six and eight inch pipes, was ordered from Alexander Haliburton of Wigan. This may have been a wise choice as far as price and transport were concerned but this order was the last to be completed. As late as 1 February the trustees heard that it was not nearly ready. Since pipes of these dimensions are likely to have been intended for use within the gas works itself this order was the one on which all else depended.

Meanwhile the trustees had troubles enough in Preston. Their meetings were usually held on Thursdays or Fridays but on some occasions attendance was sparse. The exasperated secretary included in his accounts for July, ‘A sufficient number of the Committee not assembling at the weekly meetings, the business then intended to be proceeded upon could not—Writing letter to each member of the Committee stating this and requesting better attendance, or else the design be given up.’ Abraham sent written notices for the meetings of 25 and 26 July and 4 and 14 August; on 28 and 29 August and again on 13 September he went personally to summon them.

Another difficulty was that though people had eagerly enrolled in the subscription books, so that 100 shares were sold in six weeks, when calls were made for the money it was not so readily forthcoming. It will be recalled that the day set for payment of the first pound on each share was 20 July. On 28 July the second call was made, for a further four pounds on each share, to be paid by 4 August. Over three weeks later much of this money had still not come in and the secretary and treasurer had to make a three-hour door-to-door collection on 29 August to remedy the situation.

On 2 September an appeal was sent to a gentleman in Lancaster urging him to interest people there in the purchase of shares.

Gradually steps were being taken to place the affairs of the gas company on a more regular basis. John Abraham obtained a copy of the act of parliament which had established the chartered
company, together with a copy of its by-laws. Working from these he prepared the draft of a governing instrument for the company which was approved by the trustees and was engrossed on parchment on 19 September. Official stamped forms for the receipt of payments were designed and in December the bankers, Pedders, Newsham and Lomax, who had now taken over the company’s account, relieved Mounsey of the treasurership.

On the works one of the main problems was the recruitment of trained staff. To begin with there was no alternative to bringing in outside labour and at the end of September Grafton was sent to London and Birmingham for ten days to recruit two mechanics, who were to be offered not more than £1 11s. 6d. per week, and a bricksetter to set the retorts and for other skilled building work, who was to have not more than £1 6s. od. We know little about the equipment in this first year but it can be surmised that the retorts were being set in nests of three since they were ordered in multiples of that figure.

As stokers local people could be used since no special skill was required. The retorts had merely to be cleared and recharged at regular intervals so as to reduce wear and tear. If the works was large enough to bear the cost day and night foremen were an advantage in order to see to matters of this sort, but at Preston it was not possible to afford such a luxury until October 1819. During the first lighting season only two stokers seem to have been employed. The senior one, Isaac Bird, was paid one pound per week, and the second, John Varty, received eighteen shillings.

The main laying was done so badly in the first season that George Dawson, a well-sinker, was employed in the summer of 1816 to search out the leaks. In the market place all the main pipes had to be laid bare under the superintendence of William Taylor, and his men, presumably employees of Messrs Horrockses, were given the task of making good the connexions.

John Walker, a Church Street ironmonger, laid the service pipes. He did it extremely badly and in March 1816 was ordered to hand over the remaining gun-barrels to ‘John from London’, but this must have been largely a matter of inexperience because he was still the most frequently employed contractor in subsequent years.

VII

After all these things had been put in hand it remained to convince prospective customers of the safety and superiority of gas-lighting. One has to imagine a public opinion that was far less ready to accept new and unusual scientific discoveries than is
the case today. Even Sir Humphry Davy was contemptuous, and he is supposed to have asked whether it was proposed to use the dome of St Paul’s as a gas-holder. When the houses of parliament were lit members touched the pipes cautiously and were surprised to find they were not hot. It was perhaps in this frame of mind that the mayor of Preston summoned Abraham and Grafton to his presence to assure him that the ‘works would not be any nuisance’. He requested Abraham to attend the common council on the same errand, and in this Abraham must have been successful because less than three weeks later the company had been granted permission to take up the streets for pipe-laying and negotiations were in progress for lighting the council room. A meeting held at the town hall on 6 December was a great triumph for Grafton, who, according to the Chronicle, ‘exhibited a model of gas apparatus . . . with specimens of light from burners of various forms, which gave great satisfaction to a numerous company, and demonstrated, in a very forcible manner, the brilliant superiority of gas as an illuminating body’.

Efforts were also being made to secure the custom of the cotton spinners. Grafton was ordered to co-operate with Mr Taylor in working out the type of burner best adapted to the lighting of factories and to draw up a scale of charges. This took them four weeks but by 22 November the scale was ready and one week later they reached agreement for lighting Horrocks and Jacson’s factory at the bottom of Turk’s Head Court, not far from the gas works. At the same time a scale was worked out for non-industrial users, that is, those who used fewer than twenty lights. These charges were known as rents and were payable in May and November. The rents were based on the type of burner used and on the hour at night up to which it was to burn. A satisfactory meter was not available at this time and in Preston rents remained general until 1834. There were several drawbacks. Consumers often exceeded the hours of lighting they had contracted for and this was so general that the trustees ultimately decided to take action only in cases where the time had been exceeded by more than a quarter of an hour. Another means of defrauding the company was to enlarge the openings of the jets to secure a bigger flame. The rents were based on the most economical use of the gas with a flame of approximately three inches in height. If the tap were turned on to its fullest extent a flame of eight or nine inches might be obtained, but though there was an increase in illuminating power this was not proportionate to the extra gas used much of which was wasted in the form of smoke. Under the rental system the gas company paid for this waste.

It had been hoped to light the parish church but when
Abraham and Grafton first attended a vestry meeting on 19 October a decision was deferred because of the ‘uncertainty of the evening lectures continuing’. At a further meeting held in November the subject of discussion was the lighting of the church yard, and the only decision recorded in the minute book was that the light over the church gates was to consist of four batswing burners. The lighting of the church itself was postponed until the following year.

In January 1816 a determined effort was made to secure contracts with the smaller consumers beginning with the demonstration of the various kinds of burners in Abraham’s office on 2 January. On this occasion gas was supplied from Moon’s mill, Higher Walton, the only evidence that any factory in the Preston area had its own gas before the company’s supply became available. Abraham and Grafton followed up this demonstration with a day of canvassing among shopkeepers and the Chronicle of 6 January carried a notice offering to supply gas very shortly to all manufactories, shops, dwelling-houses, warehouses, etc., within reach of the mains.

Originally it had been hoped to light the town early in November but at an early stage this date had been postponed to 1 February. Chief responsibility for the delay was ascribed to Haliburton who was told that he might cause the company to suffer a £50 fine, presumably at the hands of the improvement commissioners. There is no record of such a fine actually being inflicted. Even late in January it was still hoped to light on 1 February but when the great day arrived it was learned that Haliburton’s order was not nearly ready and the trustees realised that they would be lucky to light the town by the end of the month. The precise date of lighting is given by Peter Whittle, who writes:

This truly ancient and improving borough of Preston is become the first town, excepting London, in which gas has been extensively introduced; and was first contracted for, by the inhabitants, on the 20th day of February, 1816.24

On 24 February the Chronicle announced to its ‘distant readers’ the Gas Light Company in this town, having nearly completed the undertaking to the extent proposed as a first trial of its utility, this week gave us a specimen of the light obtained from the distillation of coal, which filled with astonishment all who had not before witnessed the effects of similar exhibitions. The street lights shone with an effulgence that at once annihilated every doubtful persage [sic]. The greater part of Messrs Horrocks & Jacson’s spinning factory was also lighted and the comparison between those parts illuminated by the gas and the rest of the factory gave full demonstration of the advantage to be derived from the new method.
The inhabitants of other less fortunate towns looked on with envious eyes, the *Liverpool Mercury* of 22 March scolding Liverpudlians, and remarking that ‘in parts of the country where coals are considerably dear, the plan is adopted; in Preston, we understand, it has exceeded expectation’.

The most ambitious project of this first season was undoubtedly the lighting of the market place. This was to be achieved from the top of the obelisk, a height of nearly forty feet from the ground. To do this, it was necessary to dismantle the obelisk, and run a gas pipe through the centre of it. Great opposition was aroused and delicate negotiations with the commissioners were needed, but after a fortnight of debate the *Chronicle* announced on 6 January that:

> the whole of our extensive market place will be illuminated from one point. To effect this a tube will be conveyed up the centre of the obelisk, and a burner placed within a glass globe on the top of it; over which a reflector will be fixed, so that the rays may be equally diffused on every part of the square.

Peter Whittle gives us the additional information that the glass globe measured twenty-two inches in diameter and that the pipes were inserted by Mr Wilkie, the builder. Glass globes were ordered from Jackson and Alderson of Warrington, and from Mackay, West and Company of St Helens. Still another globe had to be ordered from Jackson and Alderson on 8 March because pockets of air in the rim of the first globe had expanded in the heat, shattering the glass within five minutes of the gas being turned full on. In May the light was restored with some success but trouble recurred in August and December 1816 and in the January following. The frontispiece of Whittle’s book illustrates the beacon but later views of the market place show the obelisk carrying normal gas lanterns about half way up its sides and the experiment was certainly abandoned before 1840.25

The *Preston Chronicle* of 18 May 1816 reported that the gas company was raising a further £1,200 for new extensions and commented, ‘The excellent manner in which the works have hitherto operated, do great credit to the Engineer, Mr Grafton, under whose superintendence the whole has been conducted.’ A fortnight earlier it had reported:

> These lights, which have now been in operation upwards of two months, in the central parts of this town, are so universally approved, that we are glad to find a very general wish prevail to extend the works beyond the limits of the present main pipes.

Within a fortnight of lighting Abraham had informed the committee that Horrockses were anxious to have gas-lights in their Frenchwood and Church Street factories and that Messrs Ains-
worth, Catterall and Company wished their Church Street factory to be lit too. This was the measure of the success attained; Preston had had a taste of gas-lighting and its inhabitants were eager for more.

VIII

Among the defects and problems left by the first season we have already noted the leaky joints in the main pipes under the market place. The gas-holder erected by Robert Roper also leaked, and as this trouble still continued after the application of a further coat of tar ordered for its west side on 9 August, he was asked to deduct something from his account. After further gas-holders had been built this first one was probably converted into a condenser because Peter Whittle mentions a gas-holder which ‘will hold four thousand cubic feet of gas, and is used for condensing the gas before it passes through the purifier’. In the first season it is probable that there was no separate machinery and that the hydraulic main, which was used to ensure that no gas could flow back into the retorts, was also relied on to effect condensing.

Further difficulties arose from the use of the lime-water process of purification. The volume of polluted liquid to be disposed of may have exceeded Grafton’s expectations if, as seems likely, cannel coal was being used in the retorts. The advantage of cannel coal was an exceptionally high yield of gas, the disadvantage, a correspondingly large amount of hydrogen sulphide. A lime pit was dug into which the spent liquid from the purifier could be run, and after the impure lime had settled, the polluted liquid was run off into the Syke sewer. This meant that two drains of pure water belonging to the water works had to be crossed, after which the Syke ran down past the water works, reeking of sulphur compounds, especially after the pit had been in use for some time and was becoming choked up. Mrs Tipping, the proprietor of the water works, complained about this and her agent, John Burton, had to be satisfied that a proper sough would be constructed to take the liquid past the drains. But trouble still went on and in January 1817 the gas company had to agree to open up a new spring for Mrs Tipping to replace one that had been polluted. One reason for keeping on good terms with Mrs Tipping was that the gas company depended on her for a supply of water for its gas-holder tanks and when a new contract was needed for this supply great efforts were made to placate her.

It was Mrs Tipping’s agent, John Burton, who again surveyed the areas which it was hoped to supply with gas in the autumn of 1816. Three extensions were considered. The first would extend
down Church Street as far as Cotton Court, would take in Water Street and Leeming Street, and from it four factories were to be lit, those of Messrs Ainsworth, Catterall and Company and of Messrs Horrockses in Church Street, that of Messrs Swainson and Throp in Leeming Street, and the Frenchwood factory of Messrs Horrockses. The second extension would be taken down Friargate as far as Mr Clayton’s factory in Moor Lane, the oldest factory in Preston. This extension was considerable and would bring four other factories belonging to Horrockses and Messrs Riley and Paley within reach of the mains. The third extension would be down Fishergate as far as Mount Street and would embrace Winckley Street, Winckley Place, Chapel Street, and with it, of course, Mr Dunn’s church, St Wilfrid’s.

The capital at 1 May 1816 was calculated to be £3,750 and Grafton estimated that it would be necessary to increase this to £7,500 in order to carry out the first extension. The third extension could be accomplished with an increase up to £4,500, but Grafton calculated that these two schemes could best be carried out together with an increase of capital up to £8,000. The much larger increase in the case of the Church Street extension was on account of the four large factories in that area, to light which major extensions at the gas works would be needed. On the other hand, the Fishergate scheme involved little more than the laying of mains. The Friargate extension would involve a further £3,500 and the trustees decided to recommend its postponement for the present.

These proposals were to be put to a public meeting to be held at Mr Holland’s Red Lion Inn on 16 May, but among cotton spinners there was at this time considerable apprehension about the financial implications of the bill to limit the use of child labour in cotton mills which Sir Robert Peel was sponsoring in parliament. Already on 20 March Swainsons had expressed doubts about proceeding with lighting on this account and on 20 April Mr Taylor went up to London to oppose the bill. About the same time a letter was sent to the Horseley Iron Works stating that further orders depended on the issue of this bill.

The proposals that came before the meeting at the Red Lion are probably those embodied in a statement of capital and revenue among the Stonyhurst MSS. This excluded the factory of Swainson and Throp from among those to be lighted and envisaged an extension of capital to £7,545. The revenue included three items: firstly, the rent for the street lights in the district already lit in February which was £162. 10s.; secondly, the rent for private lights in that district and in the Fishergate and Church Street extensions, together with the rent for the street
lights in those areas, which it was estimated would be £635; thirdly, the rent from the lights in the factories, including Messrs Horrocks and Jackson's Turk's Head Court factory, which had been lit in February, which was expected to total £520 and form no less than two fifths of the revenue. From this £1,317 10s. revenue had to be deducted the annual expenditure on the works which, after making a deduction for sales of coke, tar and ammoniacal liquor, amounted to £560, leaving a profit of £757. 10s. which seems to have been carefully calculated to represent a return of about ten per cent on the capital. The public meeting endorsed the trustees' proposal and passed votes of thanks in appreciation of the efforts of the trustees, Mr Grafton and Mr Dunn.

The following day Abraham and German were both out canvassing and they sold forty-five shares of which Messrs Ainsworth and Catterall took fifteen. As John Horrocks junior, then living near Glasgow, had already bought fifteen more shares this meant that shares worth £600 had been taken up on the first day. Subscription books containing minutes of the public meeting were left at coffee houses and taverns throughout the town. At the beginning of July there were three days more of intensive solicitation and on 6 July the Chronicle reported that since 16 May the gas company had raised the astonishing sum of £5,500.

In order to avoid the delays experienced the previous year the trustees resolved to use legal instruments to bind the contractors to fixed dates of delivery and completion, under heavy financial penalties. A great increase in holder space was needed, and this year it was decided to allot different parts of the work to different contractors. The contract for the walling of the tank went to William Cooper, a stone mason. The most important name in the nineteenth century for the manufacture of gas-holders was Horton but there seem to have been several persons of that name in the field. Josiah Horton, a steam boiler maker from Tipton, was in Preston on 18 July to tender for the sheet metal. He offered a rectangular gas-holder of No. 16 wire gauge sheet iron at £51 per ton. The dimensions given indicate that the capacity of the new holder would be nearly 15,000 cubic feet and it was to be delivered and made ready, warranted air-tight, within eight weeks. It might be thought that the gas-holder could now be completed without further trouble but events took an unexpected turn as the following letter addressed to Josiah Horton will show:

Sir,

When you were over in Preston on the 18th ultimo, you stated yourself as acting for Daniel Horton, and for and on his account said you would
make a gasometer—and then gave Mr Grafton to understand it would be the same as if Daniel Horton had specified himself. Mr Grafton then looked to Daniel Horton to do this work, because he was the person Mr Hargraves of Liverpool had spoken of to Mr Grafton as having made him a good gasometer. Daniel Horton a little while ago was here, and it then appeared there was not that understanding between him and you, as you had represented. But Daniel undertook to make the gasometer we wanted, therefore the Trustees of the Company direct me to inform you that they look to Daniel Horton to make them a gasometer, and not to you, because they find there is not that understanding between him and you, which you represented. Mr Grafton received a letter signed ‘Daniel Horton’ dated 27th July, which Daniel Horton when he saw it, said it was not his handwriting, nor had it been written with his knowledge.

I am, for the Trustees of the Preston Gas Light Company
John Abraham
Secretary

P.S. The Daniel Horton above mentioned lives at Brierley Hill, near Dudley, Staffordshire.

Despite these difficulties Daniel Horton’s men were at work in Preston before the end of August and on 20 September the top of the gas-holder was ready to hoist.

James Holmes had been engaged to build a gasometer-house which was intended to contain the force of any possible explosion. The use of such gasometer-houses had been recommended to the chartered company by a committee of the Royal Society which investigated an explosion at the Peter Street works caused by a defect in a purifier. Such was their ignorance they did not realise that, in the event of a leak, building a house round the gas-holder would increase the risk of an explosive mixture being formed.

The order for fire-bricks and tiles was first sent to the Haigh Foundry Company of Lord Balcarres but the patterns were later recalled and sent to Francis Rufford and Company of Stourbridge, the good quality of whose work soon earned a fine reputation. No reminders concerning this order were recorded and Ruffords were able to count the Preston Gas Company among their best customers for many years. The 40,000 ordinary bricks needed in 1816 were ordered from Wren and Company, Preston.

Samples of pipes were ordered from numerous firms in order to find a really good supplier. In June Abraham visited Manchester to obtain estimates from Peel, Williams and Company of Shude Hill, from Mr Ormerod of Minshull Street and from Bateman and Sherratt of Salford. He also visited Liverpool to confer with Mr Bibby, an iron merchant. By correspondence the Low Moor Ironworks of Bradford, Gibbons and Company of Brittle Lane, near Stourbridge, and Messrs Thwaites, Cochrane, Hicks and Company of Bolton were approached. Despite all these enquiries the bulk of the orders for cast iron again went to the Horseley Company. The order included most of the cast
iron pipes, including branch, quadrant and taper pipes, a six-inch hydraulic valve, chains and wheels for the new gas-holder, a roof, rafters, wall plates and ends for the new retort house.

The letter book of the gas company contains an interesting sketch of the type of retort ordered that year from the Horseley Company. It was of 6' 5" internal length, which was quite usual, but tapered from 12 1/2" diameter at the mouth to 10 1/2" at the vertex. A similar retort is depicted in Accum’s *Practical treatise on gas-light*, the book advertised for sale by Wilcockson in 1815, and in his second book on gas-lighting, published in 1819, Accum described retorts whose greatest diameter at the mouth was from 12 to 15" and whose smallest diameter at the vertex was from 9 to 10", which he alleged were in use at some gas works in London. Within a few years retorts of this description had been completely superseded by elliptical or D-shaped retorts and their use at Preston is quite surprising.

Wrought iron welded pipes were also ordered from the Horseley Company but new names occur here. On 8 August James Russell of Wednesbury was asked to send samples of wrought iron pipes. Russell had previously been employed at the Horseley works and the order must have reached him shortly after he had set up in business on his own. Clegg junior wrote of him:

Mr Russell, the first inventor of the process, is still one of the best makers ... Many manufacturers were applied to to make pipes, but without success; they would not expend money for machinery to construct anything connected with such a ‘foolish unlucky thing’ as gas! At length however Mr James Russell, at that time in the employ of Mr Aaron Manby, of the Horseley Iron Works, and to whom it is believed the original idea is due of substituting machinery for manual labour in the welding of gas tubes, undertook the matter.

Perhaps it is no coincidence that the quality of the pipes received from the Horseley Company was this year considered to be far less satisfactory than that of the year before.

Wrought iron pipes to the value of £100 were ordered during 1817 from Mr Edge. This must be Thomas Edge, who erected the handsome lamp posts which still adorn the precincts of St James’s Palace, who introduced gas-lighting to the Channel Islands and who supplied lamp posts to countries as distant as Spain.

Burners were again obtained from Lawton and Debaufier but this year orders were placed with local suppliers too. Francis Sleddon of Back Lane undertook to supply cockspur burners and Mr Pennington contracted for the supply of Argand burners equal in quality to those obtained from London. Factory burners were ordered from Stephen Simpson.

William Oxendale erected the new retort house and in August
the trustees invited Charles Gray, a retort setter, to come from London offering him £3 travelling expenses and 28s. per week whilst employed at Preston. This must have proved quite expensive; a month later the fifteen retorts ordered from the Horseley Company had not arrived, so Gray was instructed to instal three that the trustees had 'found'. When the retorts did arrive the mouth pieces would not fit, so they had to be turned properly at the Canal Foundry of Lord Balcarres. Even when they were at last ready retort setting took a long time. Gray set six retorts in October and on 3 December he contracted to set twelve more, at three to a fire, in eight weeks for £15, so that this work must have gone on until the end of January.

In order to ensure better pipe laying this year the contractor was required to guarantee the pipes free from leaks for a period of one year under the penalty of £200, with an additional fine of one pound for each leak discovered. Small wonder that on the day set for tenders no contractor appeared. Abraham was sent out to cajole smiths and mechanics into undertaking the work. Eventually the job was entrusted to George Dawson who had made good the leaks of the previous year.

A stoppage on the Bridgewater Canal delayed the arrival of the pipes at Liverpool so that Jonathan Atkinson's boat sailed without them. As the next spring tide could not be waited for the pipes had to be carted from Liverpool. Pipe laying commenced about the middle of August and although Dawson was negligent—he laid the branch pipes at the wrong angle and failed to tar them properly—the junction with the Fishergate extension was made on 16 September. The Church Street extension came next and on 13 October the parish church was illuminated, with Ainsworth and Catterall's factory being scheduled for lighting on 21 October.

The contractors for fitting up the lamps in the autumn of 1816 were John Leeming and the John Walker who had been so much complained of earlier in the year. A new problem was presented by the one and a half inch pipes from the Horseley Company which had not been provided with any belks or bosses to tap the service pipes into. Clips had to be purchased from the Canal Foundry to go round the joints and it is of interest that this practice became general in gas-lighting in the eighteen twenties. This was not the only trouble with the Horseley Company's pipes. Many of them were badly cast and the presence of sand in most of them made the trustees suspect that they had not been properly proved before leaving the works. In order to get on, however, the bad parts of the pipes were cut off and the sound parts utilised.
On 28 October the trustees instructed Mr German to see that all the lamps in the new districts had been put up. This suggests that 1 November was the date that had been agreed with the improvement commissioners for commencing street-lighting in the new districts. Enthusiasm over this progress reached a high pitch and at a public meeting on 15 November the company declared its first dividend of five per cent. We may suspect that it was at this meeting that the raising of the capital to finance the Friargate extension was approved because it was in November that attention was first turned in that direction and pipes were soon laid as far as the Black Horse Inn. It seems, however, that the estimate of £3,500 as the capital necessary to finance this extension was a grievous underestimate because at a public meeting held on 10 March 1817 the subscription book was closed at the required amount, £11,000, but with the extension still incomplete. A few days later a letter was received from Daniel Horton in which he undertook to complete the extension himself, and the Chronicle of 22 March carried notice of a meeting of subscribers to be held at the Red Lion Inn on 8 April to consider this offer and to create the necessary new shares should it be decided to go ahead.

IX

In preparation for this meeting, at which he may have been expected to take the chair, Mr Dunn set down his thoughts in his note book as Observations on the Gas Lights March 25 1817. He was keen for the factories in Friargate to be lit so that the gas light company might secure the lighting of the whole town. He hoped to persuade a body he names the Knights of St Wilfrid to take ten or twenty shares in the concern—Stonyhurst college already had twenty shares—and reckoned that there were only two possible dangers to be considered. The first was that the works might be destroyed and he queried whether they were insured. The second was that the cotton factories might fail in which case the profits of the gas company might be reduced from ten to fifteen per cent to around three or four. At the time all branches of manufacture were reeling under the impact of the post-war depression, and after the over-expansion that had taken place during the war years the fear of bankruptcy was a very real one. However, Mr Dunn hoped that if these shares were taken, the trustees might be encouraged to:

propose to the meeting to make an offer of the Lights gratis in the House, the Chapel or the School or all [of] them in return for Mr Dunn's ser-
vices... This, to produce its effect, should be mentioned often to Grafton who is favourable, Abram, German, Wilcockson, Mounsey, John Crane, Mr Dalton [a trustee of St Wilfrid's church], Arrowsmith, Dr Gradwell, John Smith, Quaker Alderson and others by Messrs Bird, Gore [his fellow priests] and others.
N.B. There can be little doubt if the Gas Lights be extended to the Friargate Factories that the shares will bear a premium and the Knights may sell out to advantage.

‘Daddy’ Dunn’s reference to himself in the third person, and his determination to get the trustees of the gas company and the most prominent members of the roman catholic community and of the common council lobbied to saturation point, are entirely characteristic of his style. Now in his seventy-second year his energy seemed undiminished.

Among Mr Dunn’s remarks was one to the effect that Mr Grafton intended to take many shares. Whether Grafton’s intention to leave Preston was already known and this was a parting gesture on his part is not clear. This however is the last mention of him in connexion with Preston Gas Light Company for he is not alluded to in the books of the company after 18 February. He probably felt that the routine work now required could be equally well performed by someone of less experience and that lighting other towns would earn him greater laurels than could be gained at Preston. He had made a visit to Dublin in March 1816 and this may have been in connexion with the lighting of that town which took place in 1818.

At Preston Grafton’s place was taken by Ralph Spooner who now acted both as engineer and clerk. John Walmsley had been appointed clerk early in 1816 but the company quickly tired of him. He was given notice on 26 August and Spooner was engaged as clerk at 28s. per week in the first instance. It is probable that he had had previous experience of gas-lighting, because when Grafton was convalescing from illness in Lytham and Buxton during 1816 and had endeavoured to direct operations from his sick bed, Spooner was given such tasks as fitting up burners and testing service pipes with the force pump. He also had to remedy defects in the street lamps in Winckley Square, Water Street, Mainsprit Weind and near Avenham Lane, and in the gas supply to Messrs Horrocks and Jacson’s and at Mr Dunn’s. Other tasks he was given were the equipping of all premises with stop-cocks and the drawing up of a time-table for retort charging. After Grafton’s departure Spooner was ordered to devise a measuring machine, presumably a gas-meter, but no further mention of this project was made.

Another interesting experiment early in 1817 was the trial of slack from Mr Taylor’s yard in three of the retorts. Here again, no mention of the result occurs but up to 1839 no other departure
Preston Gas

from coal carbonisation is mentioned, so probably the experiment was not a success.

The lowest point in the line of supply was at the bottom of Mainsprit Weind and it was there that the water and other impurities deposited in the mains collected. A syphon which emptied into the impure lime drain was placed there and due attention to this was needed to keep the gas flowing through into the town. Near at hand must have been the main valve which was kept closed from dawn to dusk in the early days when gas was used only for lighting.

Not until 1831 did the improvement commissioners apply for gas to be supplied during the summer months. Up to that time street lighting was discontinued from May until September but the works were kept in operation nearly the whole year round for the benefit of private consumers. This was far from being the practice followed by most gas companies because profit depended on the works being operated at full capacity which was not possible during the summer. Clearly the requirements of the cotton mills were the consideration that influenced the Preston company. On the other hand, a sense of public responsibility was quite characteristic of the trustees. For instance, in later years, when the commissioners requested them to light new streets in the expanding town, this was always done without demur although profits were hardly likely until the new areas had been more thoroughly built upon. In 1825 the trustees resolved to supply gas free to Dr Shepherd’s Library, if the library wished to remain open after dusk. On the occasion of the 1822 Preston Guild, the balloon of Mr Livingston, in which he flew as far as Whalley, was inflated free of charge. The use of coal gas in balloons had been initiated by the famous William Green in the previous year and when he came to Preston in 1825 and flew to Long Preston the company refunded the ten pounds charged for gas.

These were perhaps useful opportunities for advertising the utility of coal gas but the company also proceeded in a most reasonable manner in the matter of disciplining its employees. In 1829 it was discovered after he had left the company’s service that Mr Redmayne, the clerk, had embezzled £239 but the trustees were content to recover ten shillings in the pound from the unfortunate gentlemen who had bound themselves for his good behaviour. In January 1817 two employees were arrested for stealing the company’s coke but proceedings against them were dropped after they had made a full confession.
The departure of John Grafton made it almost inevitable that the meeting of 10 April should accept Daniel Horton’s offer if it was intended to go ahead with the remainder of the Friargate extension. The meeting agreed to the creation of three hundred more £10 shares to provide the necessary capital. Horton and the trustees conferred the following day and an agreement was drawn up in which Horton not only agreed to complete the extension, but bound himself under a penalty of £2,000 to maintain it for five years. He was to erect two more rectangular gas-holders, each of 11,000 cubic feet capacity, to be floated in one tank and on this occasion a metal tank was to be provided for the first time at Preston.

For main pipes a new supplier, J. P. Firmstone of Highfields and Rough Hill Iron Works, near Bilston, was turned to. He agreed to supply over 1,400 yards of cast iron pipes, ranging in diameter from two to six inches, at £400 delivered in Preston in one month. Both the time of delivery and the price, which would be in the region of 9s. per hundredweight, reflect the prevailing depression. Orders were scarce and customers made their own terms.

Twenty retorts were needed and these were ordered, ten from Thwaites and Company of Bolton at 14s. per cwt. freight extra, and ten from the Low Moor Iron Works at 13s. per cwt. delivered in Blackburn. They were to be cast mouth upwards from a mixture of five kinds of iron and were to be ready within a month. As the orders were now placed in multiples of five we may presume that the new retorts were to be set five to an oven for the first time.

Firmstone’s pipes proved a great disappointment. A large part of them arrived within a fortnight of the agreed date but they were of very poor quality, the bulk of them pronounced quite useless by an inspection committee consisting of Messrs Taylor, Elsworth, Paley and Park. Three months later Firmstone had still not delivered sound pipes to the quantity of his contract, so frantic efforts had to be made once more to procure pipes locally.

The first of Horton’s gas-holders was to have been erected by 1 October, the second by 1 November, but work on both was still in progress in January 1818, so not all the applications for gas could be met in the areas to which mains had been laid. When Horton applied for payment in June 1818 he was told that not only were the holders less in capacity than specified but that so
much gas was escaping from their tops that it could be ignited. As the gas-holders were enclosed in the usual houses the situation must have been dangerous. In addition there was trouble with their foundations to remedy which James Wilkie, the mason who had worked on the obelisk, was called in.

Other misfortunes followed. Spooner received a good offer of employment from the newly formed Bolton Gas Light Company in April 1818. As he was responsible for the book-keeping at Preston the trustees limited his attendance at Bolton to one day a week until the half-yearly meeting passed the accounts in August, but then he went. Fortunately, Horrockses were generous enough to place the services of William Elsworth at the disposal of the company, an arrangement that gave satisfaction for no less than seventeen years.

Badly relaid pavements were a further source of trouble but in such cases the trustees merely passed the complaint on to George Dawson whose contract obliged him to relay the pavements satisfactorily. The trustees also had trouble over the assessment of the gas works to the poor rate, and before negotiations for a reduction had been completed they received a summons for non-payment of the rate.

Another lime pit was required and the system of purification as a whole left much to be desired. For many years the lime-water was agitated by hand on Clegg's old method and fresh lime was regularly added to the purifiers at 10 a.m. and 5 p.m. Enquiries were made of the Exeter Gas Company concerning the dry-lime system introduced there under the patent of Reuben Phillips. The waste matter from dry-lime purification was much more compact and easier to dispose of but for some reason it was not introduced at Preston. Another method considered was one patented by another of Clegg's pupils, George Palmer, in which the gas was passed over heated iron clippings. This was really a forerunner of the iron oxide system used in most gas works by the 1890s, but Palmer's method was not adopted widely, and though he was invited to Preston to demonstrate it, there is no evidence that the invitation was accepted. The dry-lime method was not even tried in Preston until 1828 and eventually, in 1830, another of Clegg's purifying machines, the cream of lime purifier, was installed and shortly afterwards a steam engine was ordered from the Haigh Foundry Company to operate it.

The Friargate extensions made even larger demands on the company than had been anticipated. The retort house built in 1817 was not large enough to provide gas for the whole area so a third retort house had to be built. The financial climate was now so unfavourable that very little of the £3,000 called for by
the meeting of April 1817 was forthcoming. It will be recalled
that the share capital in March of that year had been £11,000.
Whittle tells us that in July 1820 this had grown by only £535
and that the remainder of the £16,759 capital was obtained by
ploughing back profits to the extent of £2,759 and by borrowing
£1,977. The amount borrowed up to the half-yearly meeting
of August 1818 was £1,500 at five per cent interest and this
meeting, chaired again by Mr Dunn, agreed to declare no further
dividend until the debt should have been liquidated. The meeting
also approved a small increase in the factory rentals. Since a
single cockspur burner consumed more gas than half the amount
consumed by the two-jet cockspur the rent of the former was
increased from eight to nine shillings, whilst the rent for the
two-jet burner remained at sixteen shillings.

On the credit side, the freehold of the gas works had been
purchased in the spring of 1817, though it was not until 1824
that the chief rent was brought up, and all the principal parts
of the town were now within reach of the company’s mains
and almost all the major factories were being supplied with
gas.

Another field in which small but significant successes were
being obtained was that of by-product sales. The company had
advertised the availability of coke at one shilling per hundred­
weight in the Chronicle of 16 March 1816 ‘suitable for malt
kilns, laundry stoves, common fires, etc.’ A precise figure for
receipts from coke sales cannot be worked out because the figures
given include also sales of burners but the amount was probably
in the region of £100 in each of the first two years. In 1818 a
contract was signed to supply ammoniacal liquor to Benjamin
Gilgrest of Hatton Garden, Liverpool, at about one penny per
gallon. Gilgrest was to take all the supply for three years. This
contract marked a stage in the growth of the chemical industry
and it was unusual because in London and many other places
the liquor had to be got rid of at this time by burning it under the
retorts. Tar was one of the items it was hoped to sell but the
company records do not mention any sales. The manuals of the
period indicate that if it could not be sold for about fourpence
per gallon it was more profitable to use it as fuel beneath the
retorts and Mr Braddock, who was engineer from 1835 to 1837,
did this and reckoned that as fuel it was worth about twopence
the gallon to him.

After two years of economy a dividend of six per cent was
declared in January 1821 and dividends of from six to ten per
cent per annum were regular features of the balance sheets from
this time onwards. The rental, which had been £1,024 7s. 4d.
in April 1817, rose to £4,000 by 1826, and by 1839 this had been doubled so that the figure for the debts which fluctuated greatly, being as high as £5,000 in 1825, but transforming itself into a credit of £1,500 in 1832, was by no means so serious as it would have appeared to the half-yearly meeting of 1818 which decided on dividend suspension. The profits were quite reasonable. For instance, in 1820, when the capital in the concern was £17,000, the profits totalled £1,153, a return of nearly seven per cent.

By 1820 one of the main difficulties was overcome. Satisfactory cast iron equipment was being obtained from Richard Salisbury and Company of Dudley and this company had a near monopoly of the supply of main pipes to Preston during the 1820s. They also supplied lamp posts to the improvement commissioners, among them the handsome ones erected in Fishergate about 1820 which Whittle said, ‘added much to the beauty of the entrance from Liverpool’. Some of the posts until recently standing in the back streets of Preston closely resembled those formerly in Finsbury Square, London, which is remembered as the first place to have been regularly lit by lamp posts, so it may be that these are the ones supplied by Salisbury and Company, but no longer considered elegant enough to maintain their place of honour in Fishergate. In 1830 the orders for cast iron pipes were transferred to another famous Dudley firm, Grazebrooks.

Coal was usually obtained from the Wigan area, Lord Balcarres, Hurstler and Company, Haliburton and Company, Woodcock and Mr James Caunce being among the suppliers. The price fell gradually from about 16s. 6d. per ton in 1818 to about 15s. by 1850. At the shareholders’ meetings much was made of the fact that Preston paid more for its coal than other gas companies. It was claimed at the meeting of 1826 that gas was being supplied to shops and dwellings at a cheaper rate than in any other town, though the factories were being charged about ten per cent more, and this despite the fact that Preston was paying three times as much for coal as some other towns. Good management may have been partly responsible for this but the main factor was presumably the use at Preston of cannel coal giving an exceptionally high yield of gas.

A reduction had actually been made in the factory rentals in 1822 but some of the factory owners were clearly dissatisfied with the situation because in 1827 they started a rival concern, the United Gas Company, in the area west of the canal between Marsh Lane and Fishergate. The fall in the rental due to these defections was felt less than it might have been because of the policy of constant expansion that was being followed, and in
1839 the rival company was bought out some of its plant being taken over and the remainder sold. Perhaps, however, its purpose had already been served because the price of gas sold by meter had fallen from 15s. per 1000 cubic feet in 1821 to 1os. in 1834, and in the latter year a seven and a half per cent discount was introduced for factory owners.

The trustees' instruction to Ralph Spooner that he construct a measuring machine shows that as early as 1818 they were well aware of the advantages that a successful gas-meter would bring. The first indication that they were being introduced is a payment ordered to be made in January 1820 to Samuel Crosley. The regular purchase of gas-meters began much later, in 1828, but from that date onwards their use was encouraged and in 1834 they were made obligatory for all consumers except the owners of factories and front shops. In addition to Samuel Crosley, John Beverley of Leeds and Thomas West of Oldham were suppliers of meters.

At the gas works additional retorts were installed in the old retort-house in 1823 and the following year gas-holders for an additional 30,000 cubic feet of gas were supplied by Daniel Horton. Mr Elsworth supervised the puddling of a new bottom for the condensing tank in the same year and in 1826 further land to the east of the gas works was purchased from Howards and Haydock. By 1835 it had become necessary to find a new site from which to supply the western extensions of the town and a site was purchased in Walker Street for £614. This was used for the erection of two new gas-holders, manufactured on this occasion by Messrs Galway, Bowman and Glasgow, and instead of building a new retort-house the size of the retorts in the old one was increased, presumably from six feet six inches to seven feet six inches, the other usual size.

The purchase of the water works in 1833 removed another of the gas company's major difficulties. In 1827 the trustees had been obliged to lay out about £200 in providing fresh springs and in settlement of damages. The proprietors of the water works had offered to sell out in 1828 but protracted negotiations and arbitration were needed before a settlement could be reached. At last the sum of £2,999 19s. 9d. was fixed for the sale of the whole concern, the gas company taking over some of the machinery, and the new water works company buying what could be moved and made use of at their new premises.

In 1837 the trustees appointed John Rofe engineer in place of Mr Braddock. He had previously been at Reading and he evidently served the Preston company well for he retained the post until 1861. New offices were built in 1838 in Glover Street,
Preston Gas
described as being ‘a Grecian building ... neat in its kind, and embellished with an illuminated clock over its portico’.

XI

Shortly before the five trustees were to end their third term of seven years, in 1836, the proposal was made that a charter of incorporation be applied for. A similar proposal made in 1823 had not had sufficient support, but on this occasion the proposal was accepted and in 1839 the charter was obtained. When the trustees came to hand over the gas works to the new directors they were able to present them with a prosperous and still growing concern. For twenty-four years the same five trustees had guided the company to the satisfaction of the shareholders and of the townspeople at large. Each seven years they had been re-elected to their posts and on these occasions the opportunity was taken to remunerate them for their services with a grant of £100 each. At the end of twenty-one years’ service in 1837, the trustees stated:

On surrendering, for a third time, the trust which has been confided to the same individuals, during a period of twenty-one years, the persons who have been thus highly honoured and most singularly favoured, are impelled, by sentiments of gratitude, to express their sincere thanks for the confidence and kindness with which their labours to promote the interests of the Company, and the good of the Town in general, have been cheered and supported.

Indeed, the works itself was a model and example for others in the neighbourhood. Some of the men who found employment at Preston went far. Ralph Spooner not only built the gas works at Bolton but remained there as engineer for many years. John Grafton went on to build the gas works at Sheffield, Edinburgh and Cambridge. At first he was proprietor of the Cambridge Gas Works, but after the incorporation of a gas company which purchased the works he acted as engineer there for many years and was connected with that company until 1866. It was Grafton who patented the fireclay retort which eventually ousted the cast iron ones. He established a gas-meter factory in Paris and his fireclay retorts were erected at many places on the continent. Later in life he was a director of the Leamington and the Brighton and Hove gas companies. He died in 1872, the last survivor of the pioneers of gas-lighting.

The Rev. Joseph Dunn who was so largely responsible for the introduction of gas-lighting to Preston died in December 1827. The trustees acknowledged their indebtedness to him and authorised a contribution towards the erection of a tablet in his memory. His portrait, together with that of Isaac Wilcockson,
remained in the board room of the Preston Gas Light Company for over a century and is now housed at the Catholic College in Chapel Street. And what of the story that gas was supplied free of charge to St Wilfrid’s church on account of Mr Dunn’s association with it? It will be remembered that in 1817 he had hoped for ‘an offer of the Lights gratis in the House, the Chapel or the School or all of them in return for Mr Dunn’s services’. A minute of the gas company seems to indicate that though his most sanguine hopes were not realised ‘Daddy’ Dunn was able to secure this concession for his Fox Street School. The minute was made in 1829 and it runs: ‘That the Catholic School be charged for light commencing in 1828.’

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NOTES

1 S. Clegg, the younger, _A practical treatise on the manufacture and distribution of coal gas_ (1841), p. 13.
2 It is accepted in D. Chandler and A. D. Lacey, _The rise of the gas industry in Britain_ (1949), p. 47, the only really satisfactory history of the gas industry available.
3 Clegg, _op. cit._ p. 13.
4 W. Matthews, _An historical sketch of the origin, progress and present state of gas-lighting_ (1827), pp. 328–9. Matthews is here quoting from ‘Mr Clegg’s own account of his inventions, extracted from a small pamphlet published by him in 1820’.
6 The list of subscribers is Stonyhurst mss. C.IV.1. 6. The shares are recorded on a certificate preserved at Stonyhurst and dated 3 April 1811 enabling Samuel Clegg to vote in respect of Rev. Charles Wright’s and W. F. Brockholes Esquire’s shares in the National Light and Heat Company, Wright’s five shares dating from 16 July 1808 and Brockholes’s ten shares from 2 Sept 1807.
8 Stonyhurst mss. A.II.28. 82.
9 J. Gillow, _A literary and biographical history, or bibliographical dictionary of the English catholics_ (1885–1902).
10 Joseph Dunn never renewed his vows after the restoration of the Jesuit order, and is usually referred to as ‘Mr Dunn’ in the contemporary literature. On this point see L. Warren, _A short history of St Wilfrid’s church, Preston_ (1972), passim.

12 J. Quinn, S.J., ‘Daddy Dunn, 1746–1827’, The monthly magazine of St Wilfrid’s and St Mary’s churches Preston, 16 (1949).

13 Stonyhurst mss. A.II.28. 87. I am indebted to the Rev. F. J. Turner, S.J. Librarian of Stonyhurst College, for kindly sending me a transcript of this letter, and also for his help on my visit there.


15 Clegg, op. cit. p. 44.


17 A. Hewitson, History from A.D. 1705 to 1883 of Preston in the County of Lancaster (1883), p. 267.


20 W. Matthews, ibid.

21 Particulars of John Grafton’s early work with the Chartered Gas Light and Coke Company were kindly supplied to the author by Mr Stirling Everard. Information concerning his later years can be found in an obituary notice in the Gas Journal, 27 Feb 1872. His work on the Argand burner is mentioned in Clegg, op. cit. p. 191. His death certificate records that he died on 19 Feb 1872 aged 75 years. The census return of 1861 for 7 Blomfield Crescent, Paddington, gives his place of birth as Manchester. A search of Bishop’s Transcripts for the Manchester area was fruitless, and I am indebted to Mr R. Sharpe France for examining Manchester nonconformist records also without success.

22 Stonyhurst mss. F.2. 2. A document probably drafted for the meeting of 16 May 1816 at the Red Lion Inn to consider the 1816 extensions. The 65 street lights calculated on the basis of the £162 10s. rental mentioned in this document seems a much more reasonable number for the limited area lit in the first season than the 4 or 500 mentioned in the improvement commissioners’ advertisement of July 1815. One would imagine that this figure referred to lamps of both sorts and this is supported by the fact that in June 1817, after a much larger area had been lit with gas, the commissioners advertised a meeting for the purpose of contracting for 300 oil lamps.

23 Clegg, op. cit. p. 17.

24 Whittle, op. cit. I, p. 100.

25 For glass vase see Whittle, op. cit. p. 39. Pigot and Company’s Directory for 1829 still mentions the light, but a water colour at St Wilfrid’s Presbytery by Edwin Beattie dated 1840 shows ordinary lanterns.

26 Whittle, op. cit. I, p. 100.

27 Stonyhurst mss. F.2. 2.


30 I am indebted to Mr Leo Warren of the Catholic College, Preston, for a transcript of Mr Dunn’s Observations.


33 Preston Chronicle, 12 April 1817.
