

2. Alfred Hugh Harman

Many people have made a contribution to the development of photography into a major industry which has profoundly influenced the way in which we live and work. It would be very difficult indeed, as technical improvements have followed each other, to single out one which, by itself, might be said to be the all-important one. It is, however, possible to establish the date on which photography first moved out of the state of being an interesting, if rather erratic pursuit of amateurs into a truly commercial, professional operation. There is little doubt, either, over the identity of one of the men who brought about this transformation. He is Alfred Hugh Harman, who made his first appearance in photographic and industrial history in 1863 when, at 22, an advertisement appeared in the *British Journal Photographic Almanac* for Dages and Harman, photographic printers, of 3 Albert Cottages, Hill Street, Peckham, London, where he also lived.

Very little is known of his early life. His father was a bootmaker and Alfred was born in 1841. At the age of 19, on 7 April 1860, he married Amelia Ann Taylor, the daughter of a greengrocer, by whom he had four sons and three daughters. Two of the sons, Alfred and Percy, emigrated to Australia and founded the Harman Engineering Co. in Melbourne.

Harman's second wife, with whom he settled in Ilford, was Nina Octavia Helvetia du Gué, the daughter of Auguste Louis Benjamin du Gué, a Swiss who had emigrated from Lausanne to Dublin and there married Julie Knobel in 1825. Alfred and Nina Harman had no children.

By 1864, he had set up in business on his own at Gunnersbury Villas, Albert Road, later called Harders Road, Peckham, London. An advertisement in the *Almanac* for that year claimed that his enlargements 'are acknowledged the best' and offered a service of printing and copying and the production of slides or large transparencies for decorative purposes from photographers' own negatives. Harman further undertook to provide a specimen stereo slide, in exchange for 6s either in stamps or as a postal order.

Stereo slides were very popular at the time and

many Victorian parlours had their stereoscopic viewer. Harman's specimen offer was, therefore, not particularly remarkable. But his offer to provide photographers with copies and enlargements was unusual. At the time, photography, even for professionals, was still very much a do-it-yourself business. Negatives and slides would probably have been made by the wet collodion process, with prints on albumenized paper. Harman would therefore have been among the first to offer such a service.

It is not known how he obtained his experience in photography or how he financed his business. He appears, however, to have met with early success: a year later, he was again advertising in the *Almanac*, this time claiming that because of numerous improvements in printing and because of the introduction of machinery in the printing process he was able to offer prints from negatives at 'very low prices for good work'.

His claim seems to have been fully justified: he offered to provide *cartes-de-visite* (visiting cards 2½ in × 3½ in carrying a portrait of the owner) at 1s 2d per dozen or 12s per gross. A decade earlier, a dozen *cartes-de-visite* cost a guinea. Moreover, parcels of negatives could be sent by rail from any part of the country or by Omnibus or Telegraph Despatch from all parts of London; so it is clear that Harman's business was no longer local, but nationwide.

By 1867, he was advertising in the *Almanac* a service providing enlargements by solar camera and artificial light. 'An exceedingly effective enlargement, half-life size, and beautifully finished in water colours' cost 30s including a cut-out mount and supporting strut. A year later he moved to more commodious premises at 79 High Street, Peckham, near his old premises at Gunnersbury Villas and also opened another studio at 110, Ewell Road, Surbiton, Surrey, to which address he transferred his household.

In 1873, Harman advertised enlargements by the collodion transfer process. This probably referred to a process of stripping the image in a collodion film and applying it to another surface such as canvas. One technique for doing this was to coat the collodion surface with gelatin and to allow it to dry. The

combined film was then stripped from the glass by cutting round the edges with a sharp knife and peeling off the layer.

Another *Almanac* advertisement in the following year was addressed 'to all photographers desirous of gaining a reputation for good and permanent work!!' It offered enlargements printed in Autotype (carbon process) on paper, artist's canvas, or opal glass. In this and subsequent advertisements he styled himself Alfred Harman & Co.

Two events at this time help to illuminate Harman's character. The first was a law suit, heard at the Lambeth County Court before Pitt Taylor on 18 July 1873, when Harman sued a Mr D. H. Cussons of Southport, dealer in photographic goods, for the value of an enlarged photograph coloured with oil paint. In July 1872, Cussons sent Harman a *carte-de-visite* of a freemason in full regalia and asked for it to be enlarged and coloured at a fee of seven guineas. Upon completion, Cussons sent an insulting letter of complaint to Harman suggesting alterations which would have necessitated repainting the picture.

Harman replied on 20 August, asking for the picture to be returned saying that he would keep it and not let Cussons have it at any price. When the picture arrived back the following day, however, he

wrote again to Cussons saying that unless the fee were paid he would sue Cussons for the amount. Cussons replied to both these letters accepting the terms offered in Harman's letter of 20 August.

The main point at issue was that the picture had been painted without white gloves which Cussons said were visible in the *carte-de-visite*. However, the judge ruled that the gloves were not visible and that the colour of the gloves had not been stated on the order. Harman won his case and costs of £4.

The second incident was a letter to *Photographic News* in 1877 in which he stated that 'if any person engaged in photography were always to take a substantial meal in the middle of the day, we should hear less of the cry that it is an unhealthy occupation'. In later years, after the establishment of his plate factory, he was still concerned that his employees should be able to obtain hot meals during the day.

In 1878, he applied for a provisional patent for a process of retouching negatives to give the appearance of being finished by hand. During this period he must also have been experimenting with the new dry plate emulsions described by Maddox in 1871 for, in 1879, he decided to give up his photographic business and concentrate on the manufacture of dry plates.

Having made the decision, Harman sought a site

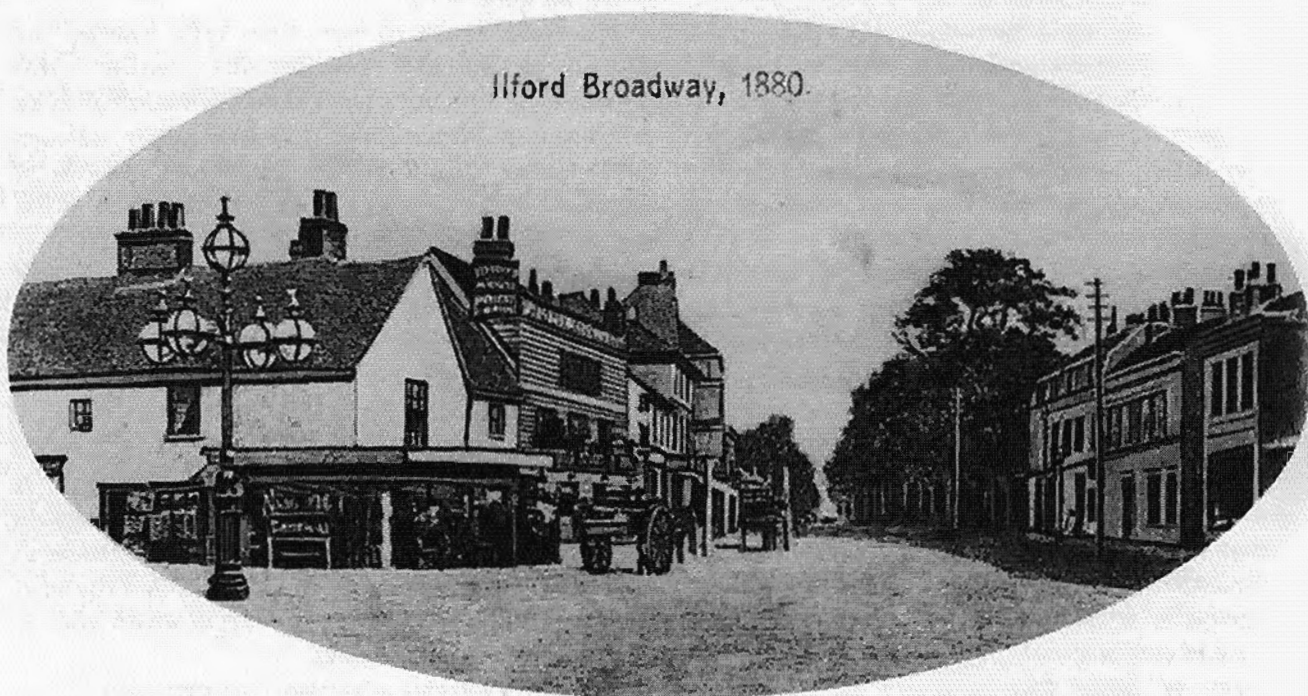


Figure 2 Ilford Broadway, 1880. An engraving from a contemporary photograph. The country road ahead led to Romford and Brentwood. Cranbrook Road, where Harman started the business in his private house, leads off to the left of the picture. The cottages he subsequently bought, on the site where the Ilford factory was situated for 95 years, lies to the right. (Courtesy: Central Library, London Borough of Redbridge.)

close to London with a clean, dust-free atmosphere. He settled on the then small village of Ilford (Figure 2), east of London in the county of Essex, and acquired a house called 'Elmhurst' on the corner of Park Avenue and Cranbrook Road. There, he set up the Britannia Works (see Appendix 1).

Limited, employing thousands of people.

In the cellar and ground floor of 'Elmhurst' Harman, with two men and three boys, made dry plates. Helped in busy times by his wife and housekeeper, he drove daily to London in a horse and trap to deliver his latest consignment of dry plates.

When Harman began to manufacture dry plates in 1879, his small staff included three boys: J. P. Coyle, known as Peter, H. Gosling and William Rowlinson. Peter stayed with the firm until he retired in the early 1930s. One of his descendants, E. C. Coyle, was employed until 1972. H. Gosling left the firm when it moved to the Clyde Estate; he joined Boots, the chemists, as a photographer, but was re-engaged as an emulsion maker when Selo Limited was formed after the First World War. William Rowlinson left to join the Co-operative Society. H. E. Gosling, a nephew of H. Gosling, and P. Juniper, a grand-nephew of Rowlinson, still work at the Basildon site of Ilford Limited.

The formation of this company was one of the vital steps which took photography out of the hands of amateurs and set it firmly on the path to becoming a major, highly skilled and professional industry. The plates made by the Britannia Works were soon to be renamed 'Ilford' and the company's birth, 100 years ago, provided the foundation for the modern Ilford

The Britannia Works prospered and very soon Harman rented a cottage for 10s a week on the Clyde Estate, south of the High Road, where plates were coated with emulsion made in Cranbrook Road. Almost immediately afterwards, Harman purchased houses in Grove Terrace (later Uphall Road). Thereafter, the emulsion was made in the cottage and

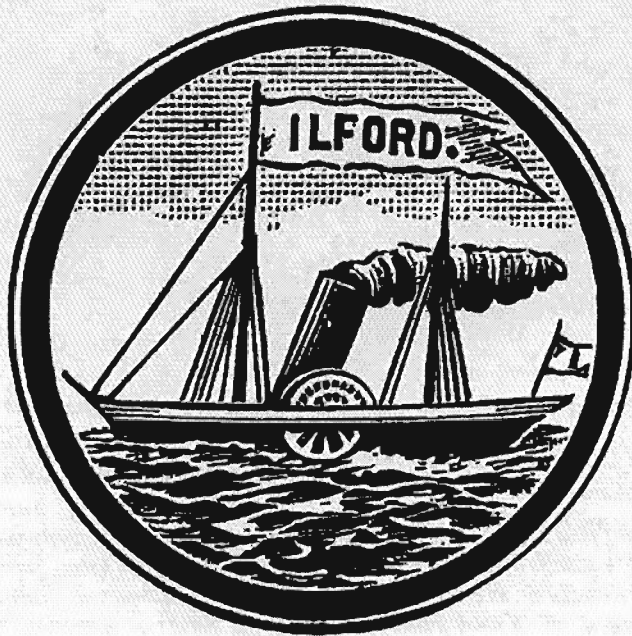


Figure 3 The trademark Harman introduced in 1886.



Figure 4 Edward Ball Knobel (1841–1930) was a man of many parts; he studied law and geology before working as a chemist with Bass and Co., brewers, of Burton-on-Trent, becoming head brewer. He transferred to Courtaulds, as chief dye chemist, before joining Harman at the Britannia Works Co. in 1893, at the age of 52. Knobel published a number of papers on astronomy, including English translations of ancient Persian, Greek, and Latin manuscripts. He was an accomplished violinist, playing in many concerts at the Crystal Palace, London.

coated, packed, and stored in the Grove Terrace houses (see Appendix 1).

By 1883, only four years after its foundation, the business had expanded so well that a special factory was built on the Clyde Estate for plate manufacture. Two years later, Harman quarrelled with Marion and Co. and terminated their agreement. In 1886, he tried to obtain an injunction to prevent their using the name 'Britannia'. Harman lost his case: Mr Justice Chitty ruled that, as Marion and Co. had registered the mark, they were entitled to use it. Harman reacted to the decision by changing the name of his plates from 'Britannia' to 'Ilford' and the name Britannia Works to the Britannia Works Company. He also introduced the paddle steamer trademark (Figure 3) and reduced his prices. For example, the price of one dozen Ordinary quarter-plates (3¼ in × 4½ in) was reduced from 2s to 1s.

The business continued to expand and in 1888, he engaged a chemist, Joseph J. Acworth who left two years later and ultimately became managing director of the Imperial Dry Plate Company, which was purchased by Ilford in 1918. In 1889, he engaged Andrew Agnew to supervise the quality of the plates produced. One reason for Harman's success, in a business in which so many others failed, was his insistence that only plates of the finest quality left his factory. In the same year, he engaged John Howson as business manager: he was responsible for a more active advertising campaign and he introduced *Photographic Scraps*, the *Ilford Manual of Photography* and other useful publications for promoting Ilford products.

In 1891, when he was 50, Harman converted the Britannia Works Co. into a private limited company and introduced a profit-sharing scheme for his employees.

Harman by now began to contemplate retirement because of ill health, but before he could do so he had to find a competent person to run the factory. In June 1893, he engaged Edward Ball Knobel as a scientific expert. Within a month, Knobel was appointed a director. Shortly afterwards Harman took a holiday and spent six months touring Europe and North Africa.

On his return, in 1894, Harman bought Lower Grayswood House (later Grayswood Place) near Haslemere, Surrey. This large house was built for Mrs Humphry Ward, the novelist, in 1890 with the proceeds of her first novel (£3200). She sold it two years later because she said it was too new and too noisy. It is said that Harman actually bought the house from Dame Adelina Patti, but documents relating to the house for that period are missing.

Knobel was made managing director in December 1894, and Harman's attendances at board meetings became less frequent. However, as when he was on holiday, an almost daily correspondence was carried on with Knobel concerning the running of the factory.

On 10 March 1898 a special board meeting was called at which Harman announced that negotiations had been going on for two months for the creation of a public company. The disposal of the private company realized £380 000; £260 000 was paid in cash, the rest in 60 000 £1 preference shares and 60 000 £1 ordinary shares. As the major shareholder, 80 per cent of this sum went to Harman. However, he refused a directorship in the new company and ceased to have an active interest in its day-to-day running, but he did not sever the connection entirely and it seems that he was consulted on various matters.

In June 1898, he offered a camera which he had patented to the company, but withdrew the offer three weeks later for unspecified reasons. A year later he offered to do experimental emulsion-making for the company provided that they bore the expense of an assistant and the rental and the cost of fitting up of a suitable laboratory. This offer was not taken up immediately, but meanwhile he was advising Knobel on emulsion-making matters. In a letter dated 18 April 1900, he apologized for not being able to test a trial plate which he had been sent, on account of the presence of visitors in the house and he made suggestions for the improvement of Rapid plates.

However, in January 1901 a house at 2 Museum Hill, Haslemere, was rented for three years for £40 per annum and an assistant, R. S. Potter, was engaged at £200 per annum. In October 1901, Harman was instructing Knobel on the preparation of a warm-toned paper and three months later he reported the results of work done at Haslemere which he claimed would be of great value to the company. No record of these results has survived.

On 1 December 1902 he wrote that he found the new Special Rapid plates coated at Ilford identical to the original SR plate and 'very much behind those made here by the formula given you. I consider it a great mistake to have dropped the method given you from here'. His letter continued:

We have experimented with the dye sent to Potter by Renwick, we find it the best in every respect we have yet tried. It gives plates equal to Cadetts and is far and away superior to our usual dye for the reds, while the yellow and greens do not suffer in the least. It gives a slight fog which we are trying to get over. I shall be glad if you will let me have the name and address of the man who supplied it.

We shall be glad to do something for the Bromide paper but as you have not yet reported on the formula given you about 6 months ago, it is disheartening as we are left in the dark as to whether our work is of utility or otherwise. These remarks apply to the suggestion for Alpha emulsions given you a few weeks ago and to many other things.

It is obvious from this letter that the company was experimenting with the production of panchromatic plates and also that the relationship between the company and Harman was not running as smoothly as might be wished. In the event, it was later agreed to terminate the lease of the Haslemere laboratory on 25 March 1904, the reason given being that Potter's services were required at Ilford.

In addition to his experimental work, Harman was also advising the company on other matters. He approved the purchase of a plot of land at Brentwood for a new plate factory in December 1899 and in January 1901 was asked to approach the Ilford Gas Company about sulphurous fumes which affected plate production. Three months later he was consulted on the advisability of increasing discounts and raising the price of plates: he advised against doing so and his advice was accepted.

On 27 November 1902, he was elected a director of the company; he held the appointment until 3 February 1904, when ill health forced him to resign.

As his working life drew to a close Harman appears to have taken an increasing interest in local affairs. In 1898, he decided to finance and endow a church and vicarage for Grayswood provided that a new parish was formed. This was done by taking parts of the Chiddingfold, Haslemere, Thursley, and Witley parishes. Lord Derby donated one and a half acres of land beside the main Haslemere-Guildford Road. The church was built during 1900 and 1901 with local stone in an Early Gothic style at a cost of £4200. The architect was a Swede named Axel Herman Haag, later changed to Haig, who lived in Grayswood.

The vicarage was built some distance from the church near the grounds of Grayswood Place for £2000 and the Rev. John Sherlock Leake, a friend of Harman, was appointed the first vicar. The living was in the gift of the Bishop of Winchester and endowed with £279 per annum by Harman and £21 per annum by the Ecclesiastical Commission.

The church, which had the dedication of All Saints, was consecrated on 11 February 1902; the first person to be buried in the churchyard was Harman's second wife Nina Octavia Helvetia who died in January 1902.

At the north end of the transept is a window,

dedicated to Knobel L. B. du Gué who died at St Leonards-on-Sea on 22 August 1890, which was donated by his most loving sister Nina O. H. Harman. There is reason to believe that Edward Knobel was distantly related to Harman's wife, hence the occurrence of Knobel as a Christian name of Louis du Gué and possibly the preferment of Edward Knobel by Harman.

After his wife's death in 1902, he adopted Margaret Knobel, one of Edward Knobel's daughters. She changed her name to Knobel-Harman by deed poll in September 1902 and went to live at Grayswood.

Harman's presence in Grayswood made sufficient impact on the inhabitants that G. R. Rolston in his *Haslemere 1850-1950* thought fit to mention him driving a smart four-in-hand down Haslemere High Street. He contributed to various local causes and when his gardener retired Harman presented him with a sum of money sufficient to enable him to erect two semi-detached cottages for himself and his family.

He died, at the age of 72, on 23 May 1913 and is buried beside his wife in Grayswood churchyard. There is a memorial, surrounded by chains, to them both against the east wall of the church and a tablet to Harman inside the church from the parishioners of Grayswood.

He left £266 000, after paying duties of £66 000. Of this, £50 000, the house and grounds, stable and lodges, waterworks and water tower of Grayswood Place, together with all furniture, silver plate, pictures, jewellery, horses, and carriages and motors were bequeathed to his adopted daughter, Margaret. The sum of £200 was left in trust with the Vicar and churchwardens of All Saints to maintain his grave. To Mrs Antoinette Lees and to Mrs Ada du Gué, the sister and sister-in-law respectively of his wife, Nina, went annuities of £1000 per annum.

The remainder of his estate was distributed in bequests to his friends and acquaintances and charities, many of which were for boys and orphans. His domestic servants (and they appeared to have been many, indoor and outdoor, coachman, motor driver, groom, gardener, and mechanic being noted) received £5 for each year of service.

The house was put up for sale for £9800 in 1916 but no buyer appeared. It was instead let to a Mrs Graham Cooper in 1920 and finally sold in 1922 to J. S. Whatton. The solicitor handling the transaction was Alfred Dinn who had been associated with Harman since the early days of the Britannia Works Company. The house has since been divided into two and other houses have been built in the grounds.

Harman is said to have been a friendly man. He did

not seek publicity for himself and took little part in the activities of the various photographic societies which flourished in and around London at the time, as did other manufacturers such as J. B. B. Wellington and Alexander Cowan.

On only two occasions has it been recorded that Harman took part in the meetings of the London and Provincial Photographic Association, both held at the beginning of 1887 at Masons' Hall Tavern in the City of London. At the first, when a lecture was given by J. B. B. Wellington on 'Orthochromatic Photography', Harman stated that he had no experience of ortho plates which he did not make. He thought that it was a good material to use especially in large towns and dim light and that the use of a yellow screen was a disadvantage. He did not consider them much good unless they kept well. He presided at the second meeting a week later and during the discussion stated that collodio-chloride prints were more stable than albumen prints. The best way of keeping sensitized paper was to cut it to size and store in wide-mouthed, stoppered bottles. (Printing papers at the time were sold in rolls and were cut to the required size by the user.)

He was clearly an astute business man, who insisted on quality, but kept a careful watch on wastage. He was reluctant to spend money on factory improvements until it was absolutely necessary. Towards the end of his active control of the company, when the business had become well established, he became even

more cautious and unwilling to accept innovations, the usual reason he gave being that 'the time is premature'.

Although it is not known whether he received any scientific training, it is obvious that he was a very practical man, good at empirical research. During the first nine years of the company's existence, as far as is known, he was responsible for devising and controlling during manufacture, all the emulsions produced.

His attitude to his employees seems to have been one of strict benevolent Victorian paternalism. He treated them generously by the standards of the time and cared for their general welfare. In some respects, his ideas on industrial relations seem to have been in advance of his time. Concern for the well being of employees was by no means a universal factor of Victorian industry.

But, perhaps because he did not court publicity, Harman remains a rather shadowy figure. The two court cases recorded here—one of them over what might seem a relatively trivial disagreement—indicates that he was a determined man not lightly deterred from any course of action he considered right.

The bequests in his will indicate that he was a warm, family man with a typical, Victorian awareness of the duties of his position as a wealthy manufacturer.

But on the size and value of Harman's contribution to the development of photography, there can be no doubt at all.

IN 1879 . . .

In the year in which Alfred Harman decided to manufacture dry plates, most of the things which are commonplace today did not exist. The whole world of electronics and nuclear physics was in the future, as was the discovery of alpha, beta, gamma, and X-rays.

Because there were no cinemas, no record players, no radio or television receivers, people thought and behaved differently. They worked longer hours: they were more self-contained, more self-reliant. Ideas and new concepts took longer to percolate through society: government played a much less pervasive role in the country's life.

But affairs were on the move. As the industrial revolution gained momentum, invention had followed invention. The great improvement in transport and communications, which took place in Queen Victoria's reign, had produced a network of railways which was probably more extensive than that of today. In the years between 1850 and 1897, the length of track grew from 6600 to 21 000 miles.

Road transport, however, still depended upon the horse. The main roads were metalled, but many minor ones were in bad condition. (In 1893, Harman complained to the local authority about the condition of the road leading to his factory. The authority agreed to pave the road with wood—presumably wooden blocks—if the firm paid half the cost.)

The first street railway had been opened in 1860 in Birkenhead by Francis Train: it covered 2½ miles. Each coach was drawn by two horses and carried up to 30 passengers at between 7 and 8 mph. The electric tram, which first appeared in Germany in 1883, did not become commonplace in Britain until near the end of the century. The Metropolitan Railway, forerunner of the underground system, using a broad gauge and steam engines, had been opened in 1863, covering the 3½ miles from Paddington to Holborn Hill.

At sea, steam was replacing sail. The paddle steamer *The Great Western*, which was the first designed to cross the Atlantic, had been launched in 1837. By 1840, there were 600 steamers totalling 95 000 tons (3 per cent of total tonnage): the number increased to 8500, totalling 6 million tons (two-thirds of the total) by 1897. The tonnage in sail remained constant: the whole of the increase in tonnage in this period was in steam.

Although the telegraph system existed in 1879, the telephone, invented three years previously, had not yet been developed commercially. The Post Office, however, offered a service which seems fantastic by today's standards. There were eleven deliveries of letters daily in London: six in the suburbs. Letters posted before 6 pm were guaranteed delivery the same evening within a radius of 6 miles: answers to letters addressed to London from Ilford were received the following day. All of this was for 1d per ounce.

Modern photographers would have been most inconvenienced by the lack of artificial light sources. The arc lamp and the limelight existed, but they were very intense sources of illumination. Furthermore, the former needed an electric generator, driven by a steam or gas engine: there was no electric-mains network. To run a limelight, the operator had to make his own oxygen and store it in bags. If no gas mains supply was available, gas had to be stored in the same way. For other purposes, only candles, oil lamps, or gas jets were available. In the days of collodion dissolved in ether and alcohol, the fire hazards were considerable.

The carbon filament lamp had been invented in 1878, but for many years to come either primary batteries or a private electric generator had to be installed before they could be used.

Income tax in 1879 was 5d in the £ and it varied between 2d and 8d in the £ for the rest of the century. No tax was paid on incomes below £150 per annum and an abatement of £120 was allowed on incomes of between £150 and £400 per annum. This meant that most workers paid no income tax: a skilled engineer earned £80, and a labourer £25, per annum.

The range of goods available was narrower and people's needs and expectations were lower, but there is no doubt that the workman of the late nineteenth century lived more comfortably than his forebears. It is difficult to equate the value of the pound then with that of 1979, but its purchasing power was probably at least twenty times greater. A man's earnings were therefore worth considerably more than today.

He could buy a good business suit in Scots tweed for £2.15s: a pair of trousers cost him 15s. He paid less than 1d per pint for beer, 3s 6d for a bottle of whisky and 2s 6d for a bottle of either gin or rum. For about £10 he could, if he wished, buy a gold watch: for £2.15s he could buy a silver one—or a good sewing machine. A company could give its employees an exceptionally fine dinner, with local transport thrown in, for around £1 per head, while an ordinary simple meal could be had for a few pence.

Bricks cost 9s per 1000 and a substantial red brick house could be built for less than £300. Such a house would be let at between 7s and 9s a week.

During Queen Victoria's reign, Britain had become more and more prosperous and some of this prosperity had filtered downwards, especially to skilled and semi-skilled workers, although it brought little joy to the really poor.

In 1879, more was yet to come: between then and the end of the century, the real value of wages was to increase by 80 per cent as earnings rose and prices, especially of food, fell, thanks to the principles of free trade and the repeal of the Corn Laws. It was not a particularly exceptional year for Britain. But it was one in a period of continuing Victorian expansion: a thrusting period in which there seemed little limit to what the British might do and the Empire seemed likely to last forever.