

## FERTILISERS, FARMING AND PHILANTHROPY - THE PROCTOR STORY.

### Raymond Holland

(note - this article, in a slightly different format and content, first appeared in print in 'CHEMISTRY & INDUSTRY' as published by the Society of Chemical Industry, Belgrave Square, London, on 3 July 1989; and was followed up by a talk by the author, on the same subject, given to BIAS members on the evening of Thursday 21 September 1989. The editor wishes to record his thanks to both C&I and the author for their consent to republish in this Journal.)

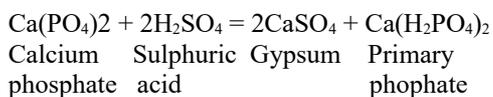
#### Netham and Superphosphate.

This story arises out of research into the Netham Chemical Company Works, Bristol, where Philip John Worsley became the manager, on six months probation, in 1861.<sup>(1)</sup> In 1871 he was made a director and in 1890, when the Netham Works was absorbed into the United Alkali Company Limited, he became a director of that organisation. He retired in 1901. All the Worsley family papers are lodged in the Bristol University special section, under the care of Mr George Mabey. They are invaluable for their wide ranging detail, particularly the recollections of P. J. Worsley written when he retired.

Referring to the Netham Works, Worsley says:-

"About 1865 we decided to add another branch to our business, making superphosphate of lime and bone manure. We found that several customers who bought our acid for making chemical manures had taken to making the acid themselves. It was especially the case when customers' trade had reached a large scale and was most valuable to us. Rather than lose trade in acid for manure, we decided to make it ourselves."

The manufacture of chemical manure meant strictly the treatment of calcium phosphate with sulphuric acid to produce the more soluble calcium superphosphate, according to the method suggested by Liebig in 1840, and introduced to this country by John Bennett Lawes.



Lawes set up a works at Deptford, which was to be the prototype of all superphosphate factories. He applied for a Patent on 23 May 1842 for the process of decomposing phosphatic material.<sup>(2)</sup> He specified :-

"to bones, bone ash, bone dust and other phosphoric substances, mix a quantity of sulphuric acid just sufficient to set free such phosphoric acid as will hold in solution the undecomposed phosphate of lime."

On the very same day, James Murray also applied for a Patent, which had priority over Lawes' Patent. In it he defined the dry absorbent matter - "such as bran, sawdust, sand, fine sifted cinders and the like" - which needed to be mixed with the pasty mass to make a "dry and powdery compost."

The practice of manufacture ranged from a very simple mixing of bone dust and acid, literally in a hole in the ground, up to the slightly more sophisticated process as described in Thorpe's 'Dictionary of Applied Chemistry' (London 1891);

"The mixer in which the reaction takes place stands on a platform, over an empty chamber known as 'the pit'. It consists of a wooden cylinder, sometimes nearly horizontal, sometimes vertical, furnished in the centre with a revolving shaft, carrying arms set on screw-wise. Into this mixer the charge is weighed; 'dust' is emptied, bag by bag, while at the same time a measured quantity of sulphuric acid is run in from a tank. When the charge is completed, agitation is continued for two minutes; a valve is then opened and the whole contents of the mixer (about 16 cwt) allowed to fall into the pit below. Ten charges can be easily worked in one hour. The pit below is built of brick or concrete on three sides, the

fourth side consists of a wooden hoarding which is taken down when the pit is being emptied. A pit will hold about 140 tons. The fluid material which enters the pit rapidly reaches a temperature of 100°, and then becomes solid. In a day or two it will be dug out with pickaxes."

Worsley continues :-

"For some years, we did well making the manure and selling it to dealers, but it required agencies and a considerable staff of travellers. So we were pleased to receive a proposal from two young men, Norrington and Hingston, to build them a small factory on the site into which we could supply acid by a pipe and so save the expence of delivery."

The United Alkali Company limited archives at Chester Record Office have a contract signed by Norrington and Hingston in 1886 for 21 years and there are subsequent leases up to 1933, when they gave formal notice in June to terminate the tenancy on 21 December 1933, but when did they actually start? In some odd notes Worsley quotes "December 1870 Norrington at Netham", and again "Norrington and Hingston before 1873." In the Bristol directories their names appear from 1870. In the H & T Proctor Ltd 150th anniversary brochure (1812-1962) it is stated that Norrington and Hingston leased the 'Great Western Works' in 1862. In another paper by Mrs A Hingston Quiggin (E A Hingston's daughter) the starting date is given as 1864.<sup>(3)</sup> There are unanswered questions, however in 1892 the two firms amalgamated to form H & T Proctor Limited, with William Proctor, Frederick Norrington and Earnest Alison Hingston as co-partners.

The Alkali etc. Works Regulations Act 1881 took under it's wing chemical manure works, but only the mixing of bones or mineral phosphates with sulphuric acid. The Inspectors had no control over some of the vile smelling ancilliary processes. A look through the alkali inspector's report of 1882 requires a strong stomach.<sup>(4)</sup> There is a list of premises inspected, entries like: "this is a manure and horse slaughtering work," and "the chief business is horse boiling."

### Fertilisers.

Fertilisers are not recent innovations, they go back beyond the production of superphosphates in the 1840's. Manures and composts were probably in use ever since man learnt to dig. In the 18th century a quantity of fine bone dust resulted from the manufacture of knife handles in the neighbourhood of Sheffield. This was found to have an exceptionally beneficial effect on arable land. Demand quickly exceeded supply and mills were erected to grind bones to powder (including one on the Warmley Brook at Oldland. - ed.) and, bone manure became a profitable industry.

So fertiliser manufacture was well established before Liebig's plant nutrition theory of 1840 or Lawes' success with superphosphate. By 1821 the national supply of bones was inadequate to meet the demand. Nitrate of soda and even ammoniacal liquor from gas works had been introduced as fertiliser before 1840.

Proctor's started as rag and bone men. Even in 1842 Mathew's Bristol Directory" gives H & T Proctor as rag & bone merchants, preparers of bones for manure and glue manufacturers. A billhead dated 14 December 1844 describes their Cathay Works, at Prewett Street near to St Mary Redcliffe Church, as 'The West of England depot for bone, guano, nitrate of soda and other portable manures'. The billhead carries two engravings; on the left is a liquid manure cart, and on the right a corn field in harvest. Underneath is the message;

"He who gives to the soil liberally will receive therefrom abundantly."

This was a Liebig theme; "enriching the soil with what is lost." It also shows that as well as making and selling fertilisers, Proctor's were also inventors and suppliers of agricultural machinery - 'drills, threshing machines, ploughs, turnip cutters, clod rollers, manure carts etc.'

When the first Thomas Proctor died in 1836, his son, another Thomas Proctor, took over. Born in 1811, he was 25 when he assumed control. He met Liebig at Oxford in the 1840's, after Liebig had outlined some proposals on the subject of mineral requirements of plants in the 1837 meeting of the British Association at Liverpool and after the publication in 1840 of Liebig's book 'Chemistry applied to Agriculture and Physiology'. One result of this meeting was that

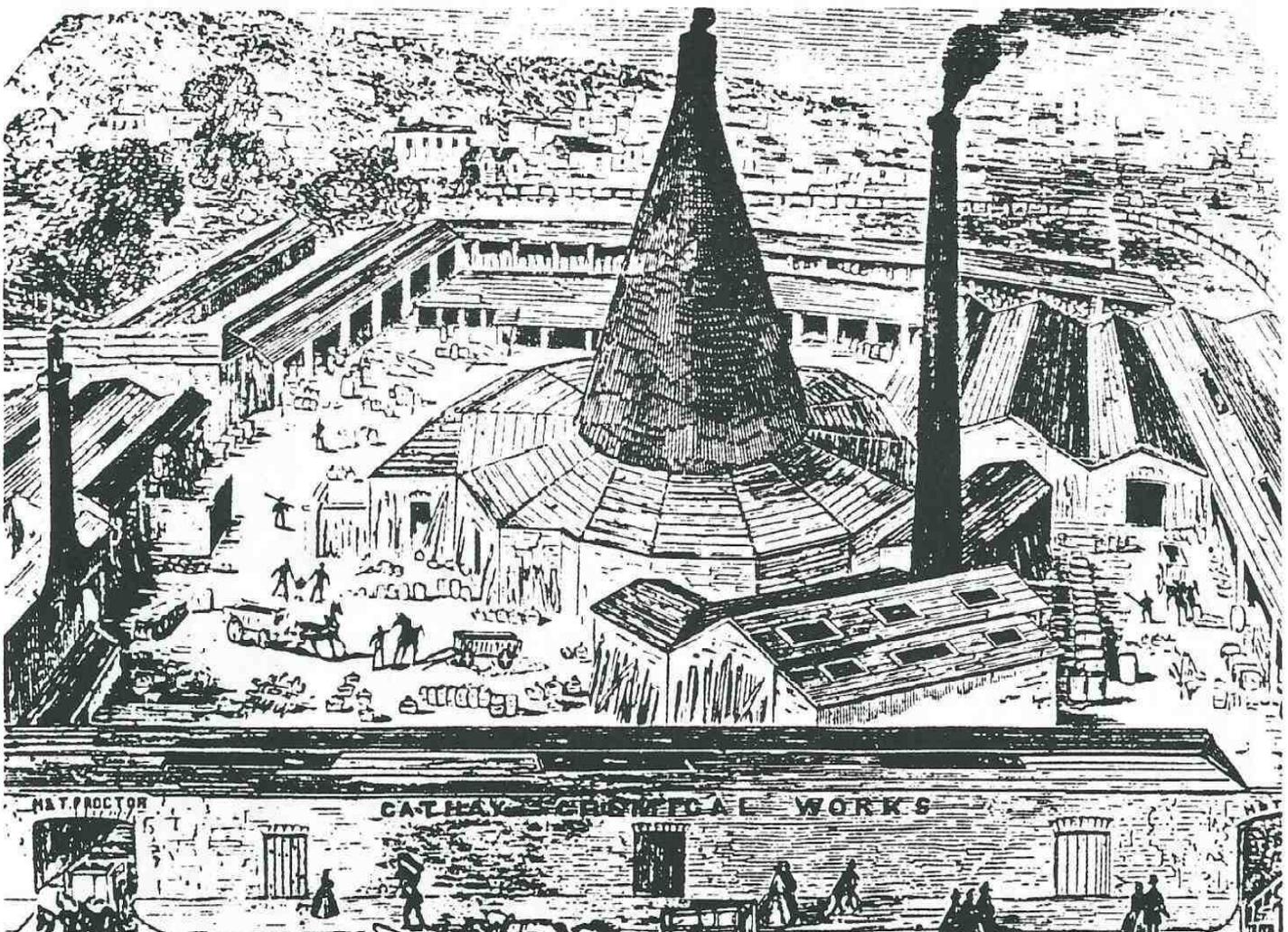
Baron von Liebig's son, Hermann, was sent to study at the Cathay Works. Another was the production of 'German Compost' at Bristol.

In 1858, Proctor's were advertising in a pamphlet on 'Manures, their properties and application' that "We have the chemist to suggest, the merchant to procure, the manufacturer to prepare, and the intelligent farmer to apply; and if each fulfils his allotted part we may look forward to results advantageous alike to individual and to the community."

Thomas Proctor had himself 'fulfilled his allotted part' when he carried out an experiment with fertilisers in the reclamation of Wallscourt Farm at Stoke Gifford between 1850 and 1861. By spending thousands of pounds on drainage and manuring with his 'composts', he

transformed 'Starve-all Farm' into a model estate. When the partnership between Thomas and his brother William was dissolved on 30th October 1869, William received £23,410.10s.0d in settlement and Thomas took over the whole of H & T Proctor at Cathay and elsewhere (there were branches of the firm at Birmingham, Warwick and Saltney, near Chester). From that date the accounts were ruled off and new account books started. Two years later, from 1871, Thomas wrote his balance sheets in an alphabetical code. (I am pleased to report that I have cracked it!)

When Thomas Proctor died in 1876, he had no son to succeed him so his son in law, who took the family name as C W Cope Proctor, together with F H Ryland and William Proctor (his nephew) formed a partnership which lasted until 1887. When this in turn was dissolved in 1887, William Proctor became the sole manager.

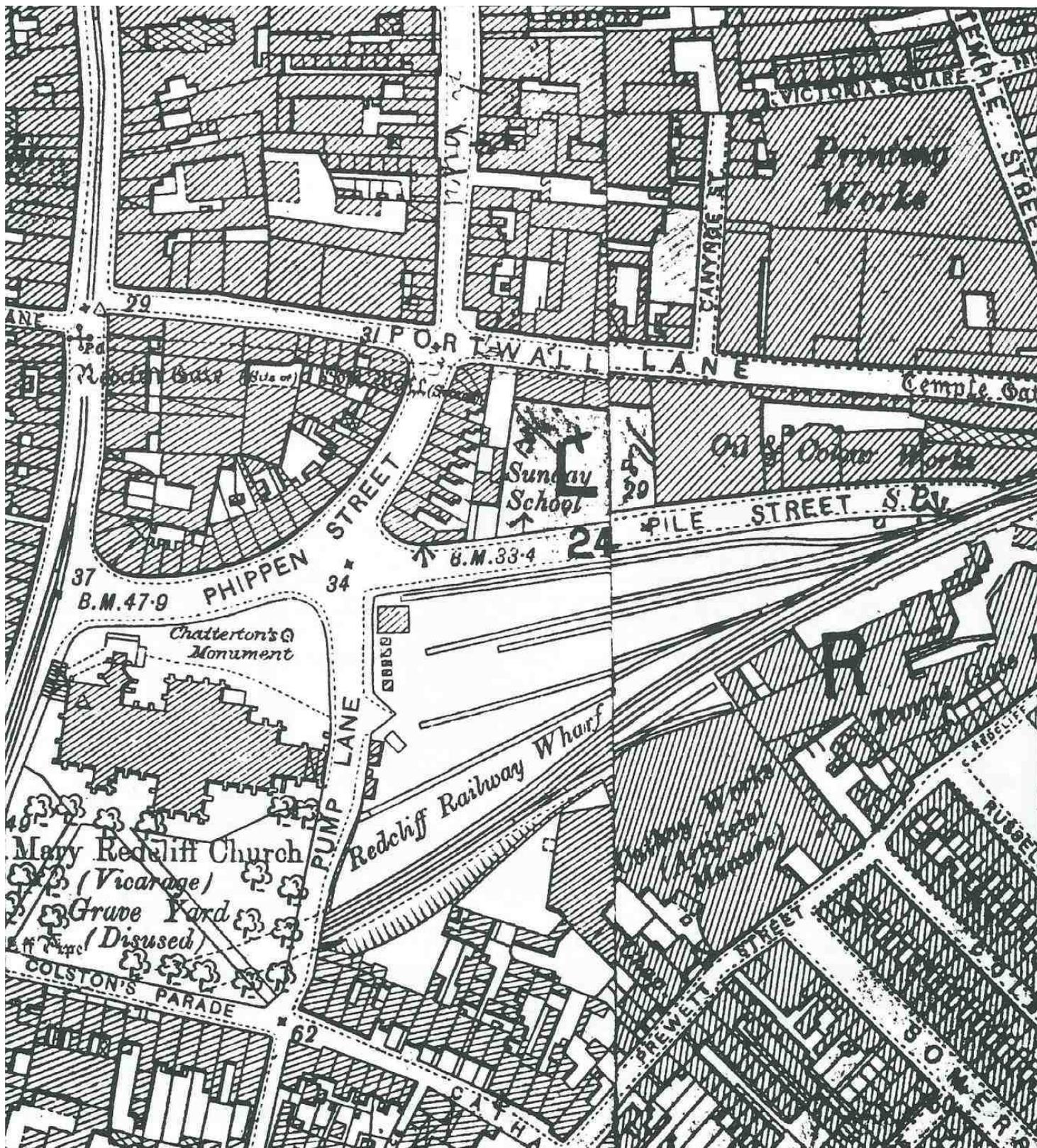


Proctor's Cathay Works — from 'Illustrated Guide to the Great Western Railway', George Meason (1860)

By the end of the 19th century the fertiliser trade was being affected by foreign competition, and in 1892 William Proctor arranged the amalgamation with the Great Western Chemical Works superphosphate firm of Norrington and Hingston, as previously mentioned. This was the

combination of the Netham Works 'artificials' with the 'muck and magic' of the Cathay Works, beneficial to both parties.

Since then various Proctors, Norringtons and Hingstons have been involved with the



management. The last Proctor was Philip. He was the youngest son of William (he too was involved in civic duties - a magistrate, twenty years on Bristol City Council and seven of those as an alderman). He was known to many as 'PKP' and he held sway from 1935 to 1961. After that he handed over chairmanship to D P Hopkins, but remained as vice chairman. C A Bailey, who was appointed general manager in 1960, became managing director in 1961, the position he held until 1985.

Cash flows were not always easy. Between the two great wars the fight for survival was intense. Many young horses were shipped from Ireland to settle fertiliser bills. Fertilisers shipped to the Channel Islands were often paid for with a shipment of tomatoes to Bristol. Straw, too, was sometimes taken in payment from west country farmers, which was then resold for banana packing at the Bristol Docks.

In 1958 H & T Proctor absorbed J H & A Cole Limited of Feeder Road, Bristol.<sup>(5)</sup> They had started in 1850 at Calne, Wiltshire, with 'organics' and had moved to Bristol (onto the site of the former Great Western Colliery) when they acquired Cottrell's Bristol Bone Manure Company and the Bristol Stone Manufacturing Company. (Perhaps this stone company was making grindstones to grind bones) Was this a planned take-over by Proctors? Well, eight years later, in 1966, the Cathay Works closed down and the business moved to the Feeder Road site. In 1885 Coles had gained much publicity by transporting a stranded dead whale 'The Littleton-on-Severn Leviathan' through the streets of Bristol to be processed at their works.<sup>(6)</sup> More recently, when 'Rosie', the Bristol Zoo elephant, died her carcass was also disposed of by Proctor's, although without a lot of publicity in order to spare the feelings of generations of Bristol children who had ridden, sideways and rather sea-sickly, on her back. The meat and bone section of the works closed down in 1980.

By November 1985 H & T Proctor was in trouble. There was a major down turn in the use of fertilisers in agriculture and having made no real move to diversify, the business was unable to compete with the big fertiliser producers and went into receivership. It went into liquidation in April 1987.<sup>(7)</sup> However the name of H & T Proctor still continues as a division of the animal feed merchants Willett & Son (Bristol) Ltd.

Willett and Son had its beginnings in 1870 as Millers and Corn Merchants, operating from a water mill at Banwell, Somerset.<sup>(8)</sup> From 1896, when Thomas Willett died, his son John became the entrepreneur of his day. In 1912 he opened a wholesale trading office at Weston-super-Mare. In 1921 the mill moved to Sandford. In 1923 his son Lance succeeded him and he moved the head office from Weston-super-Mare to Victoria Street, Bristol, only to move again in 1926 to the present head office at 51 Queen Square. It is interesting to note that this building, called Phoenix House, was rebuilt after the 1831 Bristol riots which also demolished the Mansion House. In 1955 a small grass drying plant was taken over at Bleadon, near Weston-super-Mare; it gradually developed into a compound animal feeding stuffs mill and in 1976 a major extension was opened.<sup>(9)</sup> Willetts were also operating as agricultural merchants in seeds and fertilisers, so the acquisition of Proctors fertiliser works was a logical diversification. The old Proctor headquarters building in Feeder Road has been sold off to a Satellite TV company but the works are still there, the main business being compounding granulated fertilisers. Ironically many of today's products contain a high proportion of 'organics', like 'blood, fish and bone' in response to the current vogue away from 'artificial chemical' fertilisers.

#### The Redcliffe Glass Cone.

The glass cone, or glass kiln, in Prewett Street used for the manufacture of bottles, is thought to have been built in the 1780's. It was certainly out of use in 1812 when the site was leased to H & T Proctor for development as a bone manure works. The cone and its ancillary lean-to structures were used by Proctor's for storage of the bulk ingredients, and for mixing their compound fertilisers until 1966.

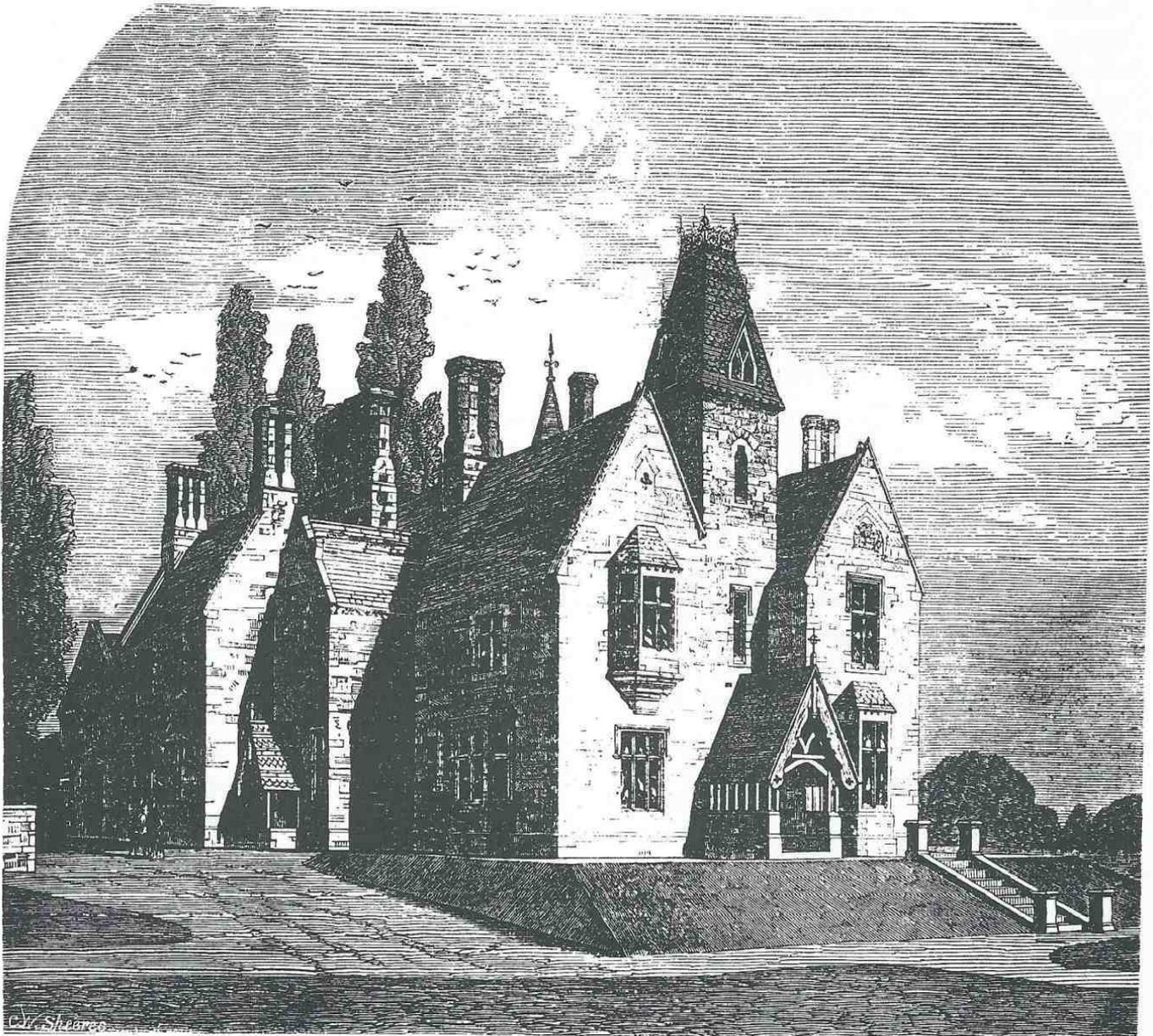
This was not a 'bottle kiln' as for pottery, but a central furnace to melt the glass, from which the glass bowers took a molten lump back to their workspace on the periphery of the conical building, returning to reheat the article at the central furnace as necessary. There were two large arches opposite one another and thirteen smaller arches. Rather strangely, this meant that there were seven on one side and six on the other. In 1936 the 65 feet high cone was in a dangerous state due to a crack, so it was truncated to 25 feet and fitted with a

corrugated iron roof supported by an umbrella-like structure. (for details of the history and techniques of the local glassmaking industry see 'Bristol glassmakers: Their role in an emergent industry' by Cyril Weeden, BIAS Journal No.17, 1985).

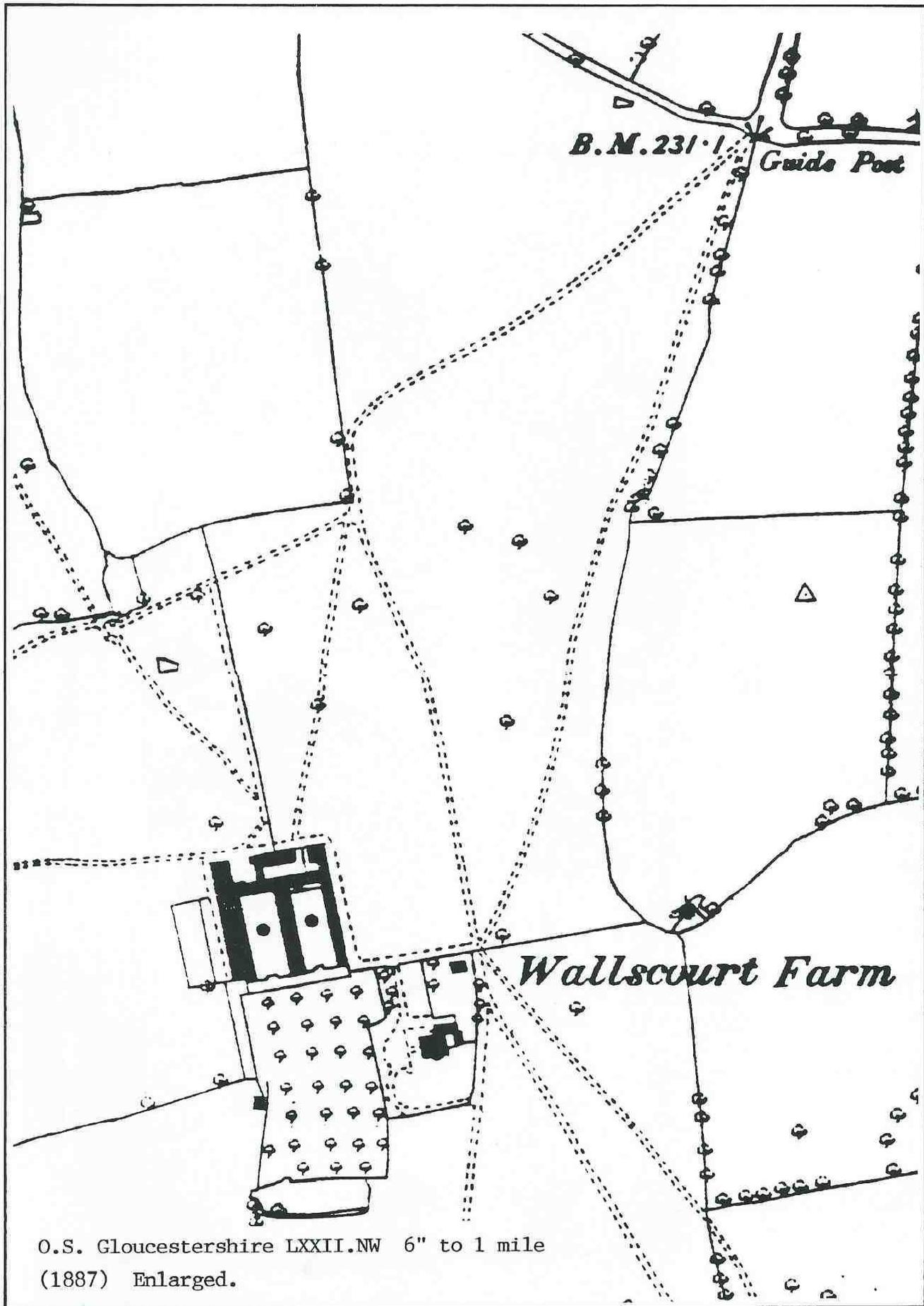
In 1966, when the Cathay Works was closed and H & T Proctor Ltd moved to the Feeder Road site, a report to the City Museum Committee, 30th November 1966, enthused upon the cone's great potential as a museum building; possibly as a

museum of glass and glass technology. That was not the way things went, for the Ladbroke Dragonara Hotel was opened in 1973 with the cone retained and featured as the 'Kiln Restaurant'. The acoustics in the Kiln Restaurant are very strange. The regular pianist told me that while he is playing, he can hear the waiter, diametrically opposite, telephoning orders to the kitchen. The building is like the 'whispering gallery' at St Pauls. The hotel is now the Bristol Hilton and the restaurant has been refurbished and is known as the 'Kiln Brasserie'.

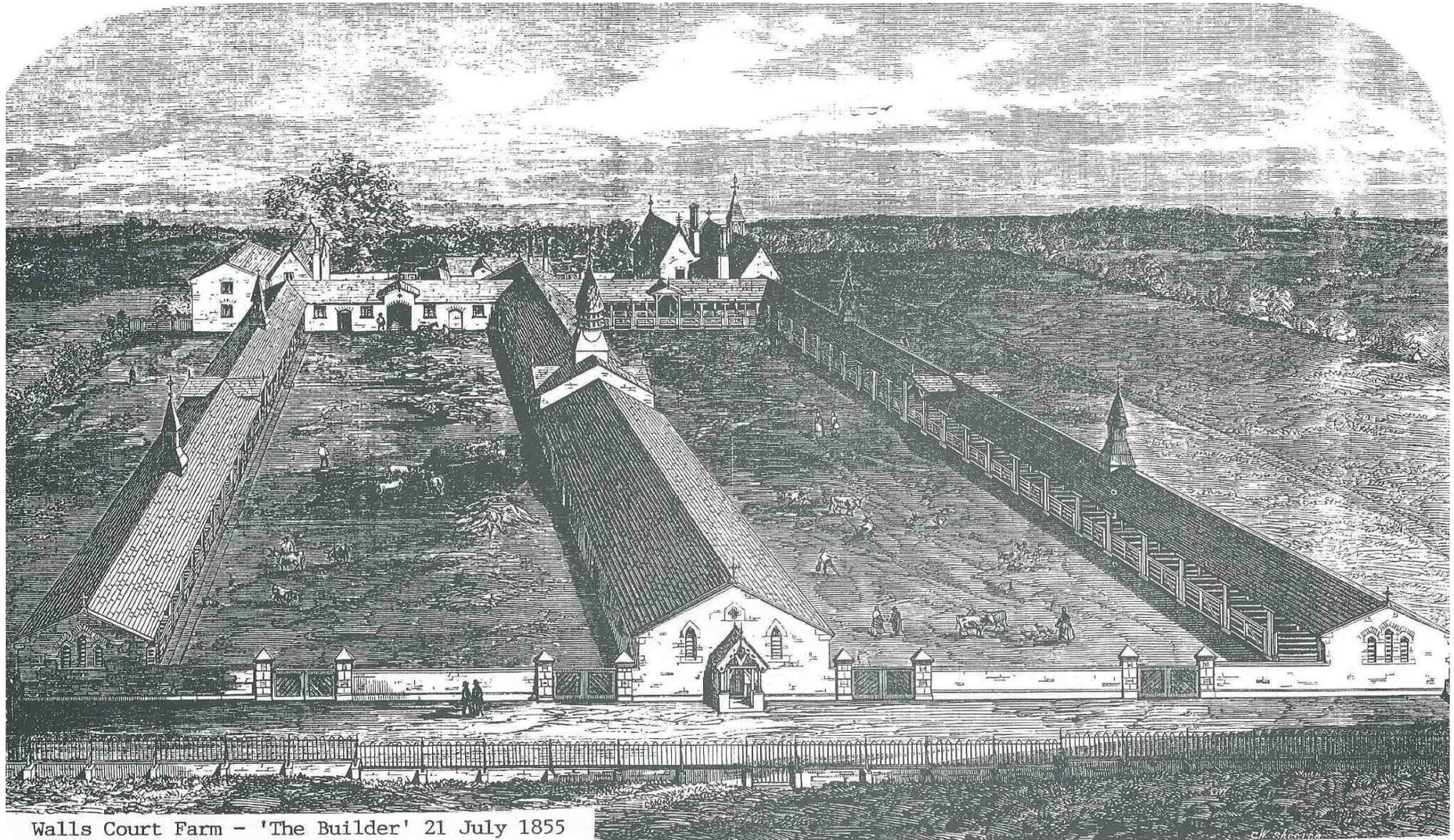
Wallscourt Farm.



Walls Court Farm



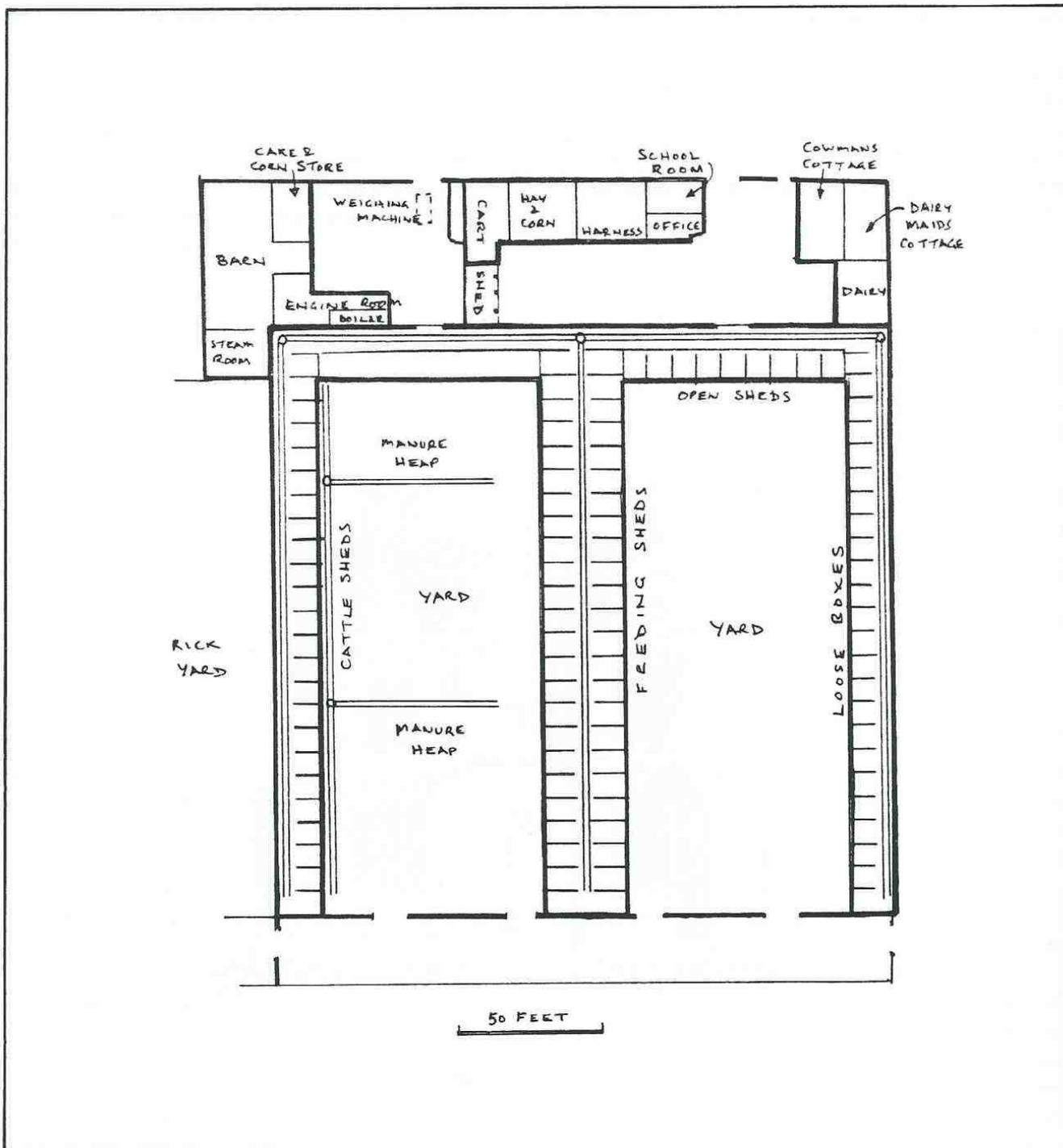
O.S. Gloucestershire LXXII.NW 6" to 1 mile  
(1887) Enlarged.



Walls Court Farm - 'The Builder' 21 July 1855

It is possible that Wallscourt Farm existed for many centuries before the first written records were compiled in the 14th century. The Manor of 'Walls' is recorded as being the third manor which makes up the parish of Stoke Gifford and was an area of considerable woodland which changed very little from the time John Gifford purchased a wooded area known as 'Le Walls' in 1327, until the 19th century.<sup>(10)</sup> The whole of the parish of Stoke Gifford was owned by His Grace the Duke of Beaufort. Here Thomas Proctor leased 600 acres of land, mostly so poor that nothing would grow on it, thus earning the name of 'Starve-all Farm'.

Wallscourt Farm was designed by George Godwin (1815-88) to be a model farm and was completed in 1855. It was eventually coupled with Stanley Farm, designed by George Godwin's son (E W Godwin 1833-66) completed in 1860. Then these two units formed one farm of about 600 acres. By spending thousands of pounds on draining the land and manuring it with his 'composts' Thomas Proctor transformed Wallscourt Farm into a model estate; "with rich herbage, dotted with cattle such as Sidney Cooper would delight to paint," as a reporter noted in 'The Builder' in July 1855. He was impressed not only with the excellence of the pasturage, the sleekness of

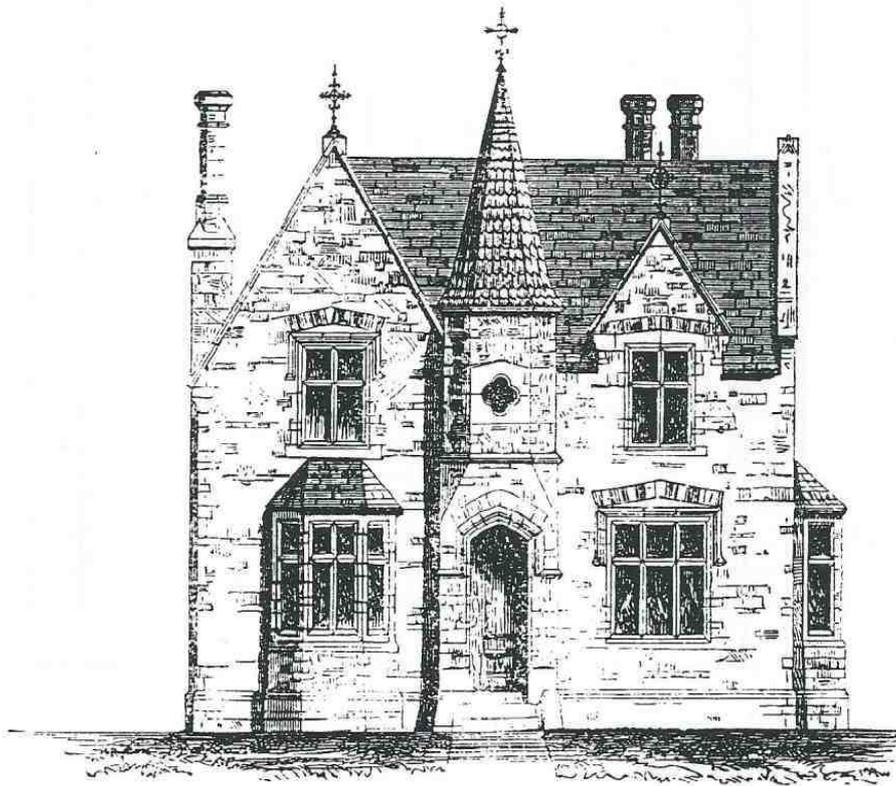


the cattle, the magnificent 'E' shaped farm buildings, and the comfortable cottages for the workmen, but with two much more surprising features, a railway and a school. The railway carried fodder to the cattle. The reporter waxed lyrical; "At morning and evening you may hear and see train waggons thundering along through these handsome sheds." The schoolroom was an airy building fitted up with desks and forms, a clock, maps and pictures on the wall, and "an intelligent mistress" who gave lessons to 16 younger children in the mornings and to ten of the boys working on the farm, who came voluntarily in the evenings. From the 1861 census, the 'intelligent' schoolmistress's name was Louise Bromley, aged 43

Thomas Proctor left Wallscourt in 1861. Almost 100 years later, in 1960, part of the land was sold to build Bristol Polytechnic. An American firm, Hewlett Packard Ltd, making computer peripherals, aquired the rest of the site in 1981.<sup>(11)</sup>

Farming ended when Mr Campbell Hill left in Autumn 1984 and. Hewlett Packard Ltd started building on the site. They were faced with a dilemma; should they restore the farmhouse and buildings to their original glory; or should they knock down the already dilapidated and crumbling structures? As Americans they appreciated. the historic significance of the site and. so chose a classic compromise. They completely refurbished the farmhouse, putting in a damp course, and rewiring the electrics. There was only one small change to the inside of the building and. that was to make an archway to provide a bar. The farmhouse was to be used as a staff amenity centre. They cleaned and restored the stonework making the buiding fit for another hundred years.

Regretably, there is very little of the original farm buildings left as the majority had to be knocked down as unsafe, retaining only the tips of the three legs of the 'E' and the wagon arch. They then landscaped the area and made a feature of the wagon archway, converting it into an open



Stanley Farm

air museum with some of the features from the original buildings, including one of the cast-iron turntables from the railway that used to run through the sheds. Another turntable and other artifacts are displayed inside 'The North Gate Museum' buildings in a manner similar to the way they would have been originally installed,

The large cast-iron pulley wheel, located in the centre of the building, was the original fly-wheel driven by a single cylinder stationary steam engine. Belts were used to transmit the power from one pulley wheel to another, with 'dogtooth' clutches to engage the various machines. One such item of equipment was the grain conveyor, which is displayed on an angle of 45°. A similar piece of equipment was used in the farm to raise chaff material to the cutting room to make cattle feed. A single horse plough is displayed. It is finished in the colours traditionally employed on such equipment in this area, but Thomas Proctor must be turning in his grave, for the plough on show is made by 'Ransomes'.

Stanley Farm, about 700 yards away, was only of 84 acres but had its own new farmhouse erected by Thomas Proctor in 1855-58, evidently for occupation by the Farm Bailiff for the combined holding. There is a story that signaling by semaphore took place between the two farms from their respective towers but this is difficult to imagine, as Stanley farmhouse tower only had one quatrefoil window, unlike the large multiple windows of the Wallscourt farmhouse tower. It is very sad to relate the rapid deterioration of this farmhouse in the five years from 1984 to 1989. After becoming unoccupied, it has now been demolished, as the site is to be developed.

### **Philanthropy.**

In 1812 Thomas Proctor was a churchwarden of St Mary Redcliffe, so near his Cathay Works. In that year an appeal was made to restore the church to its ancient and pristine beauty at an estimated cost of £40,000.<sup>(12)</sup> After a slow start, the church was extensively restored between 1846 and 1877. Thomas Proctor was elected chairman of the restoration committee for many years and there is a plaque to his memory erected on the north wall of the nave, near the back of the church, which was unveiled by the Duchess of Beaufort

during the 'great service of thanksgiving' held on 3rd November 1933. (It is between two other plaques recording restoration works in 1930-33 and 1961-65). The middle plaque reads:-

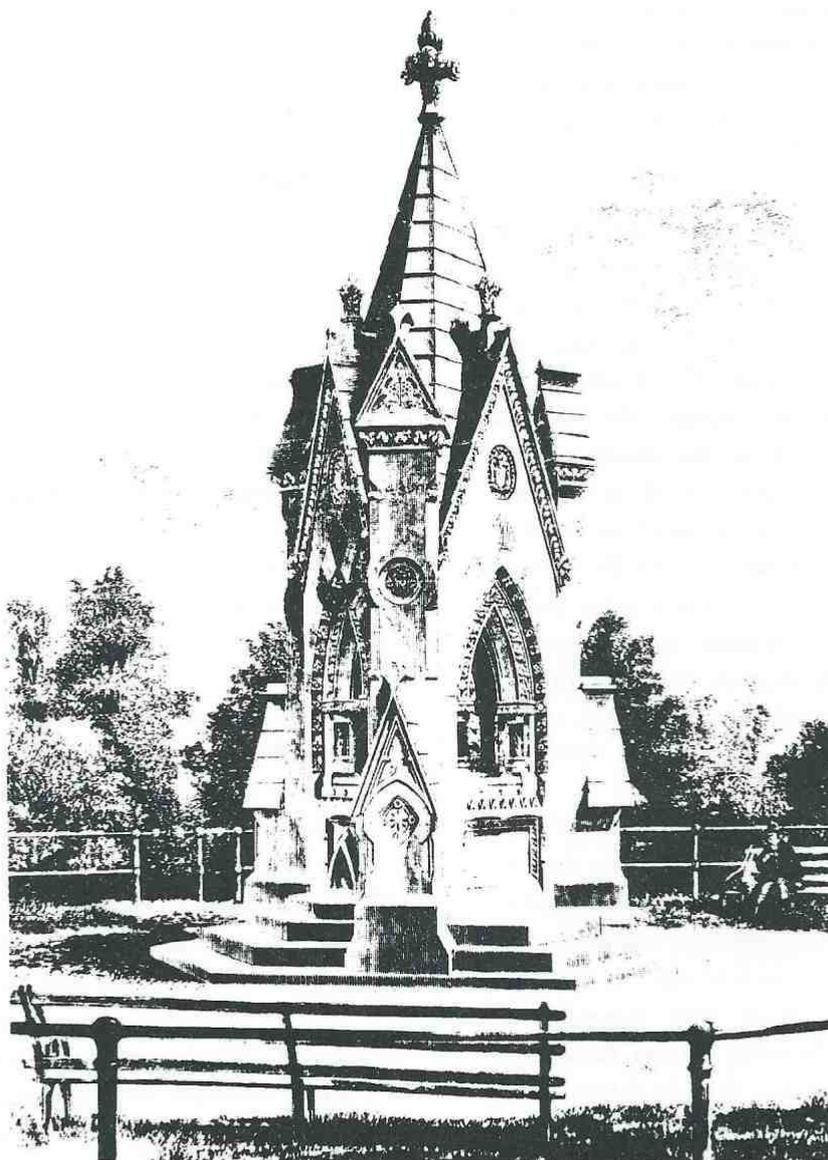
Having mind of those who nobly restored this Church 1846-1877 and herein especially of Thomas Proctor, who as "Nil Desperandum", repaired the North Porch and greatly encouraged the work.

In Thomas Proctor's account books it is recorded that he donated £2,533.8s.8d between 25 September 1848 and 17 September 1853 to the porch works. Then on 26 May 1860 he gave a further £66 for the north porch doors. Between 1867 and 1874 he was giving annual donations of £100 to St Mary Redcliffe, and between 1865 and 1872 similar donations to Emmanuel Church in Guthrie Road. This latter church has now been demolished and flats built on its site.

Thomas Proctor also secured the preservation of the Hogarth Triptych which was in St Mary Redcliffe, though in 1853 it was advertised for sale. No one bought it and in 1858 it was given to the Fine Arts Academy for preservation. It is now in the St Nicholas Church Museum. George Godwin (the same who designed Wallscourt Farm) was Architect for St Mary Redcliffe Church from 1845 to 1877, and maybe longer, and designed an ornate 'Gothic revival' Reredos in Caen stone which replaced the triptych, (this Reredos was removed in 1956). He also was responsible for the design of the new spire which was completed in 1872. On 10th May 1872 the capstone was laid by the Mayor and Mayoress, Mr & Mrs W Proctor Baker, in the presence of Mr Rice the clerk of works. They made the perilous ascent in a steam hoist basket.<sup>(12)</sup> Proctor House, a block of flats in Prewett Street, is another reminder of the Proctor connection in the Redcliffe area.

The next benefaction, also a Godwin design, was Proctor's Fountain. This drinking fountain was erected on Clifton Down, at the top of Bridge Valley Road (not too far from the Zoo). It bears the inscription; -

'Erected by Alderman Thomas Proctor of Bristol to record the liberal gift of certain rights over Clifton Down made to the citizens of Bristol by the Society of Merchant Venturers under the provision of the Clifton and Durdham Down Acts of Parliament 1861 whereby the



Proctor's Fountain - 'The Builder' 3 August 1872

enjoyment of these Downs is preserved to the citizens of Bristol for ever.'

This is a three sided structure and displays three Coats of Arms, namely those of the Merchant Venturers, the City Arms of Bristol, and of Alderman Thomas Proctor. It was not built in 1861, but in 1872. The idea of providing drinking fountains was suggested in 1859 by a Mr Robert Lang, who started the ball rolling by offering a donation of £100 for that purpose. Soon several were erected in different parts of the City, and by 1906 there were 90 different fountains. <sup>(13)</sup>

The account books indicate that the original idea for Proctor's Fountain dated from about 1869, for in 1869, 1870 and 1871 there were preliminary expenses. Men's wages were being paid from 16th March 1872, and by 27 July the expenditure had reached £518.1s.5d. There was a final payment of £4.13s.11d, making a grand total of £522.15s.4d of which Godwin's Fee was £26.5.0d (ie 25 guineas) and 14s.0d paid for a photograph of the Fountain taken on 4th July 1872.

In 1987 it was decided that the Fountain restricted the line of site for traffic at the

road junction and so it was dismantled, cleaned, restored and re-erected on the opposite side, on the grass near the Mansion House, with the additional bonus of the long disused water supply being reconnected.

Another benefaction was Proctor's Riverside Walk. At the November meeting of the City Council in 1873 it was announced that Alderman Proctor would plant trees along the riverside footpath on the south side of the New Cut (alongside York Road and Coronation Road) from Bath Bridge to Vauxhall Ferry. The cost was estimated at £500. Thousands of trees were planted and seats provided at suitable intervals to make a beautiful riverside walk. Latimer's Annals of Bristol records;— "A foolish attempt was made to style this parade a 'boulevard', but the public have declined to adopt this misnomer.' Today there is very little to see of this 'beautiful riverside walk'.

Thomas Proctor's most widely known act of philanthropy was the gift to the City of the Mansion House. Less widely known is that the transfer took place at the request of Mrs Proctor on 1 May 1874, their 39th wedding anniversary. Thomas Proctor had given up his connection with Wallscourt Farm in 1861 to concentrate on his business and civic matters. He was already a Magistrate and an Alderman, and was to become Sheriff to the City in 1869/70. He moved from the Farm to 'Elmdale House, Clifton Down', but 'Elmdale' on the Promenade, Clifton, the result of yet another co-operation with the Architect George Godwin, which was the building he gave to the City for use as the Mansion House was not built until 1867. This problem remains to be solved, perhaps the present house was built in the grounds of the earlier one?

The original Mansion House was on the north side of Queens Square in the heart of the City, and



Elmdale House - 'The Builder' 19 Oct. 1867

was destroyed by fire during the riots on 30th October 1831. Before the fire, the old Corporation had resolved on establishing a new Mansion House in Great George Street. A house was purchased there in 1829, but in 1830 public indignation was strongly pronounced at the proposed cost of its transformation into a Mansion House, and when the reformed Corporation came into being in 1836 it was given up. From then until 1874 the City was without an official residence for its Mayors.

'Elmdale' was valued, in 1876 as "upwards of £16,000" and, in accepting the property, the City attempted to honour Alderman Thomas Proctor by a proposal to make him Chief Magistrate, ie Mayor, but he was too ill to accept. Thomas Proctor died in 1876. The 'Bristol Directories' show that his widow continued to live at Elmdale until around 1883; there is no entry in 1884. According to Mary Williams the first Mayor occupied the Mansion House in 1875.<sup>(14)</sup>

In 1875 Thomas Proctor's final gift to the City was Fishponds Park, which he fitted up for the entertainment of schoolchildren, some thousands of whom were taken there yearly on summer excursions. This is clearly stated in Latimer's Annals of Bristol but at the present Fishponds Park, by St Mary's Church, also known as Victoria Park, there is nothing to connect it with Proctor. The fountain bears the following inscription:-

This Fountain presented by  
John Yalland Esqre JP  
The First Chairman of the  
Local Board  
to commemorate  
the laying out of this  
Pleasure Groud  
for Public Use in 1888  
Erected 1893

Enquiries continue to find further evidence, but so far without success. Perhaps there was another park in Fishponds?

### Conclusion.

This has been a fascinating research project; the story of probably the oldest fertiliser manufacturing business in the world, in operation since 1812, a Victorian model farm, the inspiration of a tenant farmer, who was a civic dignity and a great benefactor to the City of Bristol.

The writer acknowledges the help and information given by H & T Proctor, Willett and Son (Corn Merchants) Ltd and Hewlett Packard Ltd in the preparation of this story.

### References

1. 'The Netham Chemical Company Ltd - alkali production in Bristol', R A Holland, Chemistry & Industry, London, 1985.
2. Superphosphate, M Speter, 5,75, 1932
3. Fertiliser and Feeding Stuffs Journal, A H Quiggin, 26 September 1936.
4. '19th alkali inspector's report', 1882.
5. Western Daily Press, 2 August 1958.
6. Bristol in the 1880's. R Winstone, p92.
7. Bristol Evening Post, 24 April 1987.
8. The Somerset Farmer, October 1976.
9. Willett News, 13 December 1976.
10. Plaque in the Hewlett Packard Ltd 'North Gate Museum'.
11. Western Daily Press, 20th July 1961.
12. The Anals of Bristol - Vol 3, 19th Century. J Latimer.
13. Directory of Bristol, Arrowsmith, 1908.
14. The Civic Treasures of Bristol, M E Williams, 1984.