

Sidney Milnes Hawkes and the Swan Brewery Walham Green, c.1850

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On the 12th January 1882 William Bradford, accompanied by the brewer and the building contractors, marked the christening of the cast iron cap at the top of the new 120 foot chimney of the Swan Brewery in Fulham, by downing 'bumpers of champagne.'¹ The successful completion of the Swan Brewery abutting the Eel Brook Common in south west London for Messrs Stansfeld marked a turning point in Bradford's career. Much of his earlier work had been for smaller breweries or commissions for minor alterations, but by using 'inordinate amount[s] of publicity'² to bring his work at the Swan Brewery before the industry, he guaranteed that his career thereafter was successful and ensured his position as the leading brewers' architect of the late nineteenth century.³ It was Bradford's 'handsome model brewery' that Alfred Barnard so admired in his *Noted Breweries of Great Britain and Ireland*, describing it as 'a remarkable building ... somewhat novel in its construction and fittings' and commenting that a number of country breweries had also been built using the same design.⁴

The business though, had been established during the early eighteenth century and had humble beginnings. An adver-

tisement in the *London Evening Post* during August 1740 offered the site to let for a period of eight years and describing the facilities as being, 'a very convenient and well accustomed Brew House ... with the malt house, dwelling house, and all manner of useful offices.' All of this stood in a four acre site with its own hop growing ground.⁶ By 1880, the old brewery, then in the ownership Messrs. Stansfeld, was in need of modernisation. The company acquired land nearby and decided to build the new brewery designed by William Bradford. A succession of brewers had successfully plied their trade at the old Walham Green premises⁷ and in about 1852 Sidney Milnes Hawkes became the incumbent, producing a small pamphlet to advertise the business of the Swan Brewery.⁸ Although the pamphlet's fourteen pages measure only 3½" x 6½", the content provides an insight into brewing practises during the middle of the nineteenth century.

The second half of the eighteenth century belonged to the common brewers, particularly in London, where the emergence of the 'power loom brewers'⁹ concentrated production in large scale breweries catering for a mass market. In 1750 the twelve

largest breweries in London produced 41.9% of the city's output, by the turn of the century that had risen to 77.7%. London had become a major brewing centre and the ratio of public houses in the city was about one to every twenty five inhabitants. Beer was readily available and drunkenness was a constant problem even though growing popularity of tea and coffee to a lesser extent, were responsible for a decline in demand.¹⁰

Brewing during the last years of the eighteenth century and the first decades of the following century was at the centre of political and social activity. Since the sixteenth century the licensing of public drinking houses had been controlled by the magistrates.¹¹ By the beginning of the nineteenth century they were being criticised by reformers and 'free-traders' over their tight and arbitrary control of public house licences. At about the same time the attitude towards beer began to change among members of the middle class, who absented themselves from the public house, preferring to drink their liquor either at private clubs or at home. The move away from the public house represented the beginning of fundamental changes in middle class attitudes.¹² These changes in attitudes corresponded with the fall in the consumption of beer. At the time Hawkes wrote his pamphlet, per capita consumption had fallen to 21.1 gallons per head of population in England and Wales.¹³

Beer became a working class drink and publicans responded by 'courting the

custom' of the skilled workers and craftsmen and who with increased prosperity provided a demand for beer. The image of the public house was changed to cater for this new clientele and by 1800 premises had been refurbished to cater for the artisan trade. An increasing degree of differentiation developed between the custom of the tap room and the more reputable customers who made the parlour their domain.¹⁴

Yet while social reforms began to evolve, the political arguments centred on the powers of the magistrates reverberated around Parliament for many years. In 1807 a Bill to curb the 'excesses of magisterial suppression' was talked out. In 1816 a Commons committee attacked magisterial abuses, but their suggestions to amend the law were ignored and in 1818 14,000 citizens of London and Westminster unsuccessfully petitioned Parliament against the 'high price and poor quality' of beer sold in the capital.¹⁵

Malt and hops were the traditional raw materials used in brewing, but when Fredrick Accum, a contemporary analytical chemist, published his *Treatise on Adulterations of Food and Culinary Poisons* in 1820, he disclosed an assortment of illegal substances, some of which were poisonous.¹⁶ Quantities of quassia, and the 'violently poisonous' cocculus indicus¹⁷ were imported and used to provide the bitterness in beer, usually supplied by hops. A frothy 'cauliflower' head on the beer was a mark of its strength and could be achieved artificially by

adding Salts of steel or 'copperas'¹⁸ and multum, a concoction of Spanish liquorice and quassia or cocculus indicus, was another common adulterant used in brewing.¹⁹ Even though successful convictions²⁰ were brought against brewers for defrauding the Revenue by 'stretching' their barrels during the six years between 1813 and 1819, the effects of the noxious additives on the health of the drinkers, was ignored.²¹

During the final years of the eighteenth century, small brewers and the brewing victuallers found their profit margins declining and the price of their raw materials rising. They found it difficult to compete with the large industrial brewers so it became financially worthwhile for them to imitate the taste, colour and strength of beer by using drugs. The adulteration of beer was rife particularly amongst those struggling to compete with the larger brewers.²² Even as late as 1852, Hawkes appears to have been brewing at a time when the trade was still tainted by the adulteration of beer by less scrupulous brewers looking for financial gain. In his pamphlet, Hawkes quotes Mitchell's treatise on the falsification of food, saying 'beer is perhaps one of the fluids in most general use as a beverage, and is, unfortunately, the one which is most adulterated.'²³ It was against this background that Sidney Hawkes carried out his business.

Brewing at the Swan Brewery involved the use of the traditional materials, malt and hops and Hawkes provided a

detailed account of the preparation of both ingredients before brewing commenced. Sidney Hawkes is rather vague about the source of malt used at the Swan Brewery, but his account of the malting process, unlike that of the brewing process, is particularly detailed.²⁴ The first stage of the process of making a pale malt was to steep the barley in cold water. This process was regulated by law, and required the grains to stand for a period of at least forty hours. During this period the grain 'imbibes'²⁵ moisture and increased in bulk. The average increase in bulk was calculated at about 5% and there was an average increase in weight of 47%. When the process of steeping was completed, the water was drained off and the grains were thrown onto the malt floors and formed into a heap or couch. At this point the temperature of the grains was the same as the malt-house temperature. Slowly the temperature increased and the grains were turned, gradually lowering their depth and the temperature. After about ninety-six hours it was estimated the grains were about 10° hotter than the atmospheric temperature and 'sweating,' emitted 'an agreeable apple-like odour.'²⁶ Under such conditions germination took place and small rootlets appeared from the base of the grain, pushing out to form three rootlets.

A day later, the growth was arrested by drying the grains on a kiln with the temperature starting at 90°(F) and gradually raising it to around 140°. When this process was completed, he calculated that the malt had lost about 8% of its

original weight and the grains should have crumbled into a white powder between the fingers of the maltster, Hawkes used four types of malt in his brewing, pale, amber, which was a little darker subjected to a slightly higher temperatures; brown or blown which was dried at an even higher temperature, to, as he claimed, impart more flavour, and dark or patent malt which was subject to such high temperatures that the saccharine quality of the malt was almost destroyed. Dark malt was used to provide the colouring for porter at the Swan Brewery.

The harvesting of the hops was a labour intensive job as they needed to be collected quickly so as to capture them at their prime. Hawkes describes workers, men and women leaving their towns, villages and hamlets to work in the Kent hop fields, not knowing where they might lodge. The origin of these workers is unspecified, but there is no mention of them coming from London.²⁸ An old proverb, apparently current in the 1850s, suggested that hops came to England in 1524, along with turkeys, carp, piccarel and beer²⁹ and certainly Hawkes in his descriptions of the hop pickers and the harvesting of the crop harked back to a 'poetic' age when the 'old rural picturesque and genial life of England' was common place and typified by the hop fields. It was then that he saw 'the true English pastoral life bloom and fade annually with the hop flowers in September' as the flowers matured to a golden hue.

The hop plant, with its strong course climbing nature was grown on poles,³⁰ principally in Kent, the Garden of England, Sussex, and Herefordshire but not exclusively so, as there were growers in Worcestershire, Gloucestershire, Wiltshire, Surrey and Hampshire and other counties.³¹ Hawkes describes how the 'process in the hop ground' was organised. First, the poles were taken down with the stems still attached. These were then cut no lower than three feet from the ground.³² The poles were laid sloping over a strong wooden frame with the upper part of the hop plant still attached. A piece of cloth was stretched across this frame forming a 'bin'. Three adults or four children would pick the hops. The hops were separated according to their colour and hence quality into three baskets. Green hops were not quite ripe, dark hops were passed their best and light yellow-brown were ripe and perfect.

After picking, the hops were dried in the loft of the maltings before being bagged. In this floor was positioned a round hole, through which the mouth of the sack was held by a large hoop. By this means the mouth of the sack was kept open with the sack hanging from the ceiling. A handful of hops was placed in each corner and tightly tied in by cord so no air remained in the spaces. Several bushels of hops were then put into the sack, which were then trodden down by one of the workers so that the hops were compacted into the sack. This process was repeated until the sack was full. The hoop was then

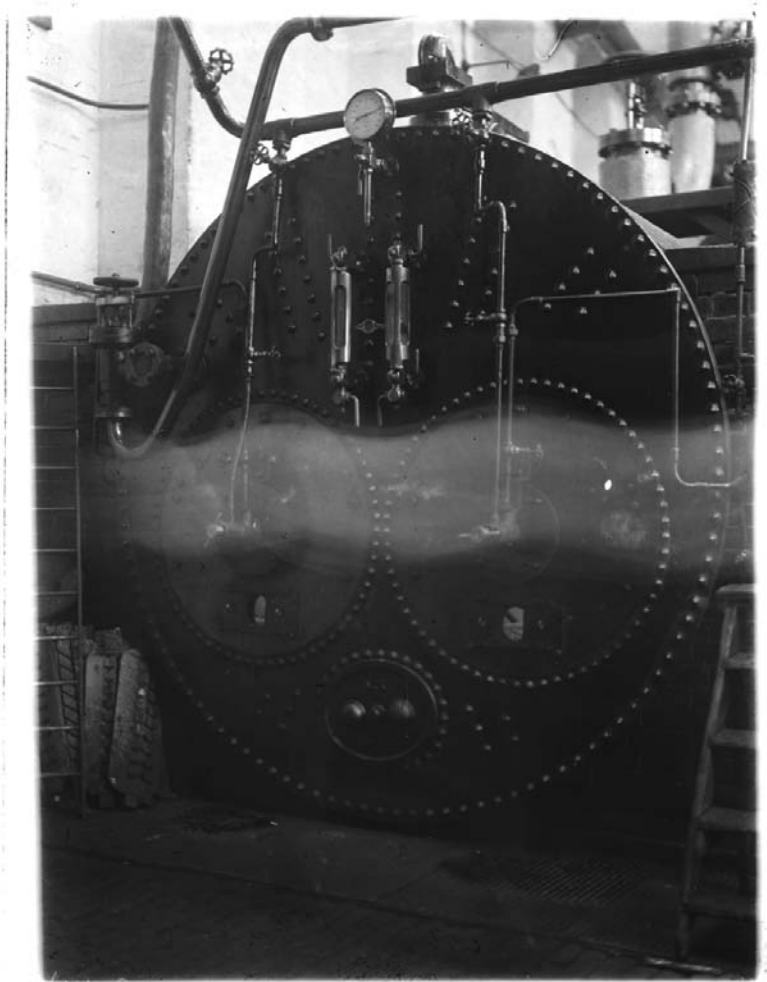


Figure 1. Boiler

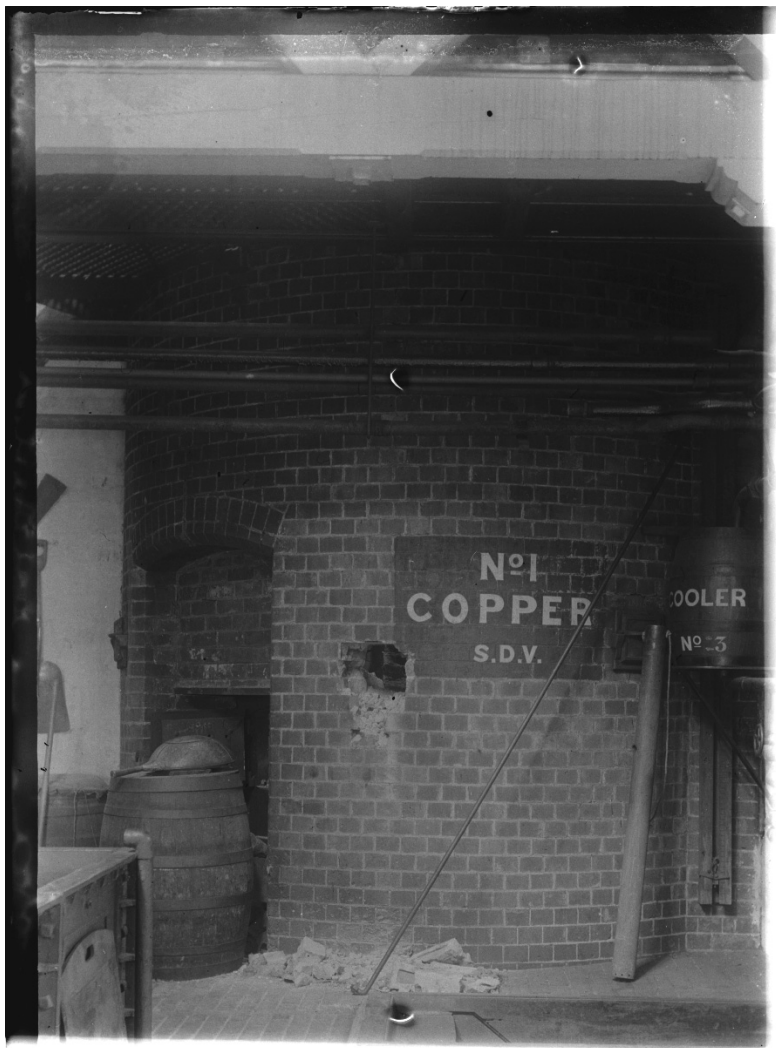


Figure 2. No.1 Copper

Figure 3. Mash Tun No.2

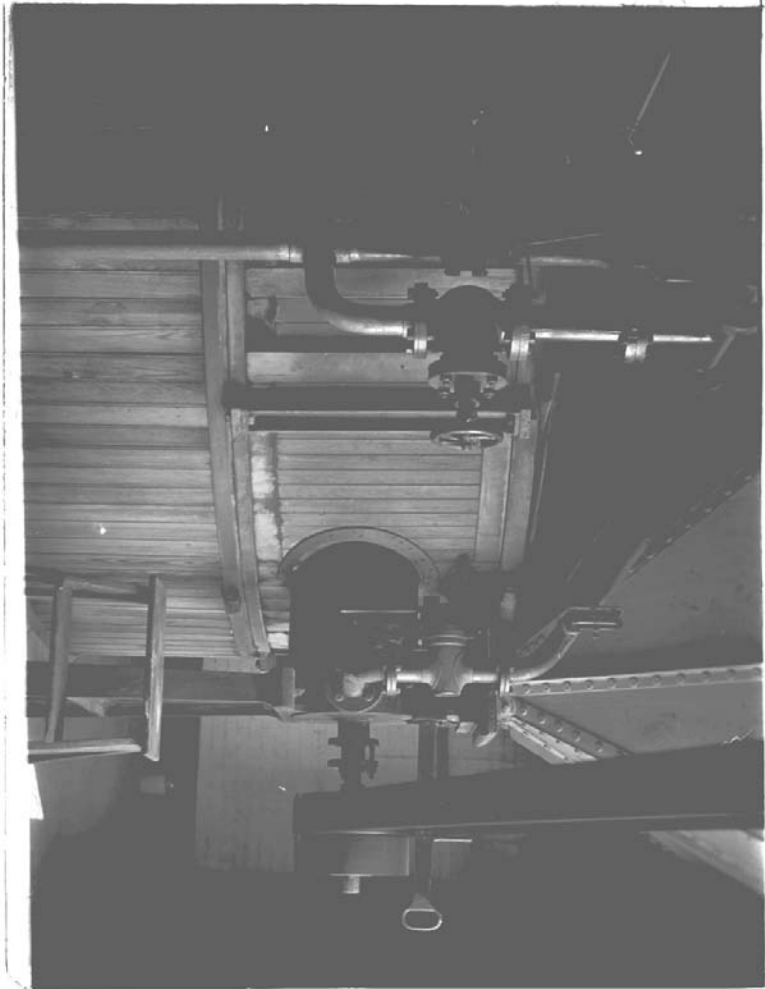




Figure 4. Fermenting room

Figure 5. Skimming room





Figure 6. Beer stores

removed and the corners, as before carefully filled before the sack was sewed up leaving no room for air. Whether the full sack was supported from below is not clear and Hawkes does not comment on how it was lowered to the ground. Once full, sacks were either stored for use or sold at market, the greatest of which in the 1850s, was apparently the Weyhill Fair near Andover.

The whole process of preparing malt and hops and ultimately brewing was represented by an engraving which served as the cover for Hawkes's pamphlet. On the top left side of the cover was a scene depicting countrymen harvesting barley. In the distance stands a windmill, below the harvest scene stands the maltings. Down the right hand side of the engraving are the hop poles and bunches of hops adorn the Swan brewery logo at the top centre of the page. Beneath is the Swan Brewery with wagons approaching the brewery yard from each side with essential supplies of malt and hops. In Alfred Barnard's account of Messrs. Stansfeld's brewery the same picture is said to have been the 'frontispiece to an ancient price list.'³⁴

In the 1850s, the chemistry of the brewing process was not fully understood, but the introduction of the thermometer, saccharometer and the need for attestation brought to the larger eighteenth century London brewers the facility of greater regulation over the whole process. As a result they were able to produce a beer of more consistent quali-

ty and this led to a greater efficiency and increases in the scale of production.³⁵ The inability, however, to control fermentation temperatures during the summer months meant that the eighteenth century London brewers had introduced a 'brewing season' during the winter months and it was during this period, usually running from September to early June that the complete stock for the year had to be brewed.³⁶ As a consequence brewers had large amounts of capital tied up in stock stored in the cellars. Although a patent for machinery to control summer fermentation temperatures was lodged in June 1790, brewers for the next century still continued with the 'brewing season', unable to control summer fermentation.³⁷

Although Sidney Hawkes provided empirical data about malting temperatures he makes no mention in the pamphlet of using any such equipment in the Swan Brewery and freely admitted that little was known of the scientific principles involved in the brewing process. For him the brewer's experience was the only guide. This contrasts with John Harris in Hook Norton, who at about the same time was beginning commercial brewing and using rudimentary scientific principles.³⁹ Whether Hawkes operated a 'brewing season' is unclear, he makes no mention of it, but with his professed lack of scientific knowledge it seems probable. Even though, he seems to have relied on his experience. He understood that the basic brewing process was a chemical reaction involving the extraction of a 'saccharine solution' from malt and converting it into a

fermented beverage called beer or ale. The practise by which this was achieved appears to have had regional differences and he suggests that brewing practise 'in hardly any two counties' followed the same routine. His point is demonstrated with the preparation of the malt before mashing with brewers failing to agree on the ideal size of the grist fed into the mashtun, some preferring fine grist while others used a courser grain.

Hawkes description of the mashing process is largely descriptive and he provides virtually no technical detail about the process. He makes no mention of how much malt was used or the quantities of liquor added to make the mash. Neither does he give any indication of the temperatures involved or the duration of the mash, but he does describe the mashtun as a wooden vessel with a false floor allowing the grains to be separated from the liquor at the end of the process. Once the hot water had been added to the grist it was mixed either manually using a mashing oar or mechanically with a machine with vertical arms which rose from a horizontal axle which continually revolved within the tun. The mixture was known as the 'goods' and was worked to a 'perfectly homogeneous mass.' Once complete the mash was left to stand for an unspecified time before the sweet wort was run off into the copper for boiling.

The type of copper used depended on the size of the brewery. Smaller brewers used open coppers while those of the larger brewers were domed and extreme-

ly expensive. The copper at the Swan Brewery was of 'moderate size', costing £1,500 and having a capacity of 2,700 gallons.⁴¹ Hops were added to the wort at this stage and those coppers of 'superior design' were fitted with 'a rouser', which he described as an 'ingenious piece of equipment' with pendant chains which dragged around the bottom of the copper to stop the hops from burning. There are no practical details of boiling the wort and the decision when to release the contents of the copper into the hop back or jack-back relied on the 'skilful eye of the practical brewer'. Hawkes called it a 'point of great delicacy'.⁴²

After the hops and wort had been separated the wort was left to cool in 'large square or oblong floors with raise edges'. Wooden louvers were opened to allow a free flow of air over the wort and in ordinary circumstances it cooled rapidly but other devices were employed to accelerate this process. A fan or blowers could be fitted above the cooling floor to aid the air flow, but the use of a refrigerator, whereby the wort was passed in close juxtaposition to a continual stream of cold water, was deemed to give the best results.

Once cooled, the wort was placed in the fermentation tun and yeast added. This Hawkes noted was the most difficult part of the brewer's job and it appears there was no consensus on what temperature fermentation should be carried out. Some brewers preferring a low fermentation heat while others favoured a 'high

heat'. Hawkes preference is unknown and used none of the scientific instruments available to help him decide when fermentation was complete, relying instead on his personal observations. In its first stages he observed, there was a 'creamy scum' on the dark surface of the wort, but after a time a 'cauliflower' head formed looking rugged or rocky, but it was not until the wort exhibited a rich yeasty brown head that the fermentation was deemed to have finished. At this point the fermented liquor was ready for cleansing with the removal of the yeast. There again appears to have been differences in how this was carried out. Some brewers chose to 'cleanse' the beer of yeast while others continually beat the yeast back into the wort. Beer brewed 'in the best manner' needed only a little fining and this could be carried out by either the brewer or the publican. Isinglass was used in the fining process to produce a clear and bright beer. Hawkes described how this was achieved.

'Isinglass ... is dissolved in cold acid beer before being added to the proper beer, separates itself from the liquids which held it in solution, spreads in the shape of gelatine, through the whole body of the liquor, collects all thick particles to itself, and when it has thoroughly done its work, very obligingly takes itself out of the way with the rubbish it has collected, up at the top of the vessel, leaving the beer below, beautifully clear and bright.'⁴³

Ten different beers were brewed at the Swan Brewery in 1819, ranging from 4X

Ale, described as a 'full, rich, mellow and spirituous' and retailing at 15 shillings for a nine gallon cask, to three Pale Bitter Ales, P.A., K.A, and I.P.A. These were similar beers made from the same quality malt and Kentish hops, differing only in their strength. They were priced respectively at 7/6d, 10/- and 12/6d per nine gallon cask.⁴⁴ Sidney Hawkes claimed to have been an honest brewer, having no interest in the nefarious practices of those who felt the need to adulterate their beer. Confident in the product, he left the strength and the flavour of his beer to speak for itself, guaranteeing to both large and small customers, a pure unadulterated beverage at a price that that was competitive and undercut the 'worthless [and] even poisonous' competition. He also appears to have paid some attention to good customer relations by expecting his 'civil and obliging servants' to give 'prompt attention' to the customer's order. These were to be delivered promptly, at the customer's convenience and if required, the drayman would set up the cask ready for use. As part of the service, Hawkes made it quite clear that he did not expect, or desire that his employees would be offered, or should expect gratuities for carrying out their duties.

Sidney Hawkes seems to have been a successful brewer, even though his methods appear basic. The pamphlet provides no information about the size of his 'economic marketing area', but with the high cost of road transport in the pre-railway era, it would have been within a radius of four to six miles of the brewery.⁴⁵ To be

able to sell ten different types of beer when sales were declining, without having to adulterate his beer in a highly competitive market, dominated by the large scale London brewers, appears to be the measure of his success. His pamphlet provides us with a fascinating snapshot of the industry in London during the 1850s.

Footnotes

Text - Sidney Milne Hawkes' pamphlet is not dated. With the help of the Department of Early Printed Collections at the British Library and British History Online at www.british-history.ac.uk, it has been possible to date the publication of the pamphlet to the period between 1848 and 1852. British History Online suggest that Hawkes purchased the Swan Brewery 'about the year 1852,' but provide no footnote giving the source. As this statement is not precise or substantiated by a reference, I have given the date of the pamphlet as c.1850.

Illustrations - The six photographs in the centre of this piece are taken from glass negatives dating from 1911. It is interesting to compare them with the line drawings from Barnard's article on the Swan Brewery (*Brewery History*, No. 115, pp.26-39) produced some 20 years earlier. We are very grateful to Ken Smith, Brewery History Society committee member, for permission to reproduce the negatives.

References

1. Pearson, L. (1999) *British Breweries - An architectural history*. Hambledon Press: London. p.88
2. *ibid.*, p.89
3. *ibid.*, p.87
4. Barnard, A. (1889-91) 'Messrs. Stansfeld & Co., Swan Brewery, Fulham', *Noted Breweries of Great Britain and Ireland*, 4 Vols. Quoted in *Brewery History*, Summer 2004, p.27
5. *ibid.*, p.238.
6. British History Online: www.british-history.ac.uk
7. Barnard, A. (1889-91) *op.cit.* p.28.
8. Hawkes, S.M., (c.1850) *The Swan Brewery, Walham Green*.
9. Gourvish, T. & Wilson, R. (1994) *The British Brewing Industry 1830-1980*. C.U.P.: Cambridge. p.12. The term was used to describe the large London Brewers by Charles Barclay giving evidence to the Committee on the Sale of Beer by Retail in March 1830.
10. Woolley, R.M. (2005) *The Development of the Hook Norton Brewery 1849-1913*. M.Phil Thesis. University of Wolverhampton, January, pp.11-15
11. Clark, P. (1983) *The English Alehouse: A Social History. 1200-1830*. Longman: London. pp.40-44
12. Clark, P. (1983) *op.cit.* p.307
13. Gourvish, T. & Wilson, R. (1994) *op.cit.* p.30 Table 3
14. Clark, P. (1983) *op.cit.* p.307
15. Clark, P. (1983) *op.cit.* p.334. It was not until the end of the following decade that reform was achieved with the passing of the 1830 Beerhouse Act.

16. Burnett, J. (1999) *Liquid Pleasures-A Social History of Drinks in Modern Britain*. Routledge: London. p.122
17. O.E.D. (1968) 'Cocculus indicus' the dried berry of the Anamirta, a climbing plant found in Sri Lanka, p333. 'Quassia' the wood, bark or root of South American tree Quassia arama; the bitter damson of Simaruba amara of the West Indies and South America. p.1638
18. Burnett J. (1999) op.cit. p.122, Mathias.P. (1959) *The Brewing Industry in England 1700-1830*. C.U.P.: Cambridge. p.420
19. O.E.D. (1968) p.1297
20. Mathias, P. (1959) op.cit. p.230 says there were 34 convictions during this period. Burnett J., (1999) op.cit. p.122 says 'there were nearly a hundred convictions.'
21. Burnett, J. (1999) op.cit. p.122
22. Mathias, P. (1959) op.cit. p.420
23. Mitchell, J. (1848) *Falsification of Foods*. p.84
24. Hawkes, S.M. (c.1850) op.cit. pp.6-7, frontispiece. Where Hawkes obtained the information about malting is unknown.
25. Hawkes, S.M. (c.1850) op.cit. p.6
26. Hawkes, S.M. (c.1850) op.cit. p.7
27. Barnard, A. Vol 2 1889-91.p.245
28. Winter, G. (1971) *A Cockney Camera*. Penguin Books: London. p.98 Hop picking was traditionally a cockney holiday. It began to die out in the 1960s with the introduction of mechanical hop-picking machinery, long holidays and improving standards of living which made it economically outdated.
29. Hawkes, S.M. (c.1850) op.cit. p.10. Clark P., (1983) op.cit. pp.31-32. A Norwich ale-seller was charged with selling 'Flanders Beer privily' and that in the early fifteenth century hops for brewing were brought into England.
30. Winter, G. (1971) op.cit. p.98. Photograph of hop picking.
31. Hawkes, S.M. (c.1850) op.cit. p.9. Harrison and Trinder (1969) *Drink and Sobriety in a Country Town 1830-1860* describes hops being grown in Banbury.
32. Hawkes, S.M. (c.1850) op.cit. p.9. Cutting the stems shorter than 3 feet would weaken the roots because of the running or bleeding of the sap.
33. Barnard.A. (1889-91) Vol 2. p.241
34. Barnard.A. (1889-91) Quoted in *Brewery History*. Summer 2004, p.29
35. Mathias, P. (1959) op.cit. pp.63-66,
36. Mathias, P. (1959) op.cit. p.72-76
37. Mathias, P. (1959) op.cit. p.74.fn1 Patent Office. Spec number 1754. 4th June 1790. Woolley.R.M., (2005) op.cit. p.76. Allsops Brewery still operated a brewing season in 1853 and Flower & Sons of Stratford on Avon continued with a brewing season until the end of the century.
38. Barnard, A. (1889-91) Vol 2. p.247
39. Woolley,.R.M. (2005) op.cit. p.188 Appendix 2. *Brewing Book* entry 24th November 1856
40. Barnard, A. (1889-91) Vol 2. p.252
41. Hawkes, S.M. (c.1850) op.cit. pp.12-13 The copper had a capacity equivalent to 75 barrels per brew.
42. Hawkes, S.M. (c.1850) op.cit. p.14
43. Hawkes, S.M. (c.1850) op.cit. pp.12-13
44. Hawkes, S.M. (c.1850) op.cit. pp.14-15. The range of beers included five 'X' beers which differed in strength and maturation, single and double Stout, Porter, table beer and the three Pale Ales. They were priced according to strength, with 'old 4X' the most expensive at 18/- for a nine gallon cask.
45. Mathias, P. (1959) op.cit. p.xxii