

THE BREWING TRADE IN NORTH EAST ENGLAND, 1869-1939. PART I

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Introduction

The title of this work has three components – an economic activity, a location and a time period – which require some explanation. By brewing trade we mean all those activities brewing firms participated in, including distribution and retailing. The expression brewing trade is therefore used in preference to brewing to indicate our intention of dealing with aspects of the industry broader than the manufacturing process itself. By North East England we mean, strictly speaking, that corner of England which embraces the old counties of Durham and Northumberland, including Newcastle, and also that area of the old North Riding of Yorkshire which skirts the south bank of the lower reaches of the Tees. Whilst this stakes out what would generally be thought of as the North East, it produces an area rather ragged around its southern edges and one that is not consistent with many of the geographical bases used in the collection of statistical data utilised in this study. However, this area around Middlesbrough, although notable in many respects and certainly a significant market for beersellers, was not important in brewing terms and its fleeting appearances in the chapters that follow could be said to reflect its peripheral role in brewing. For the most part, therefore, reference in the thesis to the North East centres on Northumberland and Durham. For simplicities sake, and to avoid confusion with the name of one of the regions largest brewers, the term North East is used throughout as both a noun and adjective.

As to the choice of time-scale, this is a vexed question for any study and one that can never be answered entirely satisfactorily. The starting point of 1869 has obvious merits: it represents an important legal milestone when open entry to the retail trade was ended and brewers were given the chance of market power through the control of licensed premises. Moreover, as well as having far-reaching implications for forward integration, 1869 is also around the time when the possibilities offered by technical change within production, which were to have an equally important influ-

ence on the evolution of the industry, were becoming apparent. Ending the study in 1939 is perhaps more difficult to justify than beginning in 1869, although on the face of it 1939 does offer a convenient punctuation mark - the clichéd end of an era - in a general historical, social and economic sense. Yet 1939 does have its significance for the North East brewing trade: a year earlier the region had witnessed the last of a series of important inter-war amalgamations and the industry was about to settle into a somewhat sterile structural equilibrium which would not be disturbed until the mid-1950s. Setting our time-scale as the period 1869-1939 provides us with a logical and manageable period of 70 years.

Whilst the thesis title spells out the main parameters of the study, it is the available source material that ultimately determines its actual scope, and in this respect there is only a scanty supply of published material on North East brewing. In the first instance, the most comprehensive history of the industry, by Mathias,¹ ends well before our investigation begins; and whilst there are two other studies of the national industry from an economic perspective,² both with useful chapters summarising the historical developments within our time-scale, they make only the odd passing reference to the North East. Furthermore, there are no regional brewing histories dealing with the English provinces, although there is an ambitious attempt to explain one companys history in the context of the Irish economy and two books focussing on Scotland.³ The Scottish works do however contain relevant information on an interesting aspect of the North East brewing trade, that is, the links between the regions beer market and producers across the border. One book which has proved a valuable reference work for other historians is that by Wilson,⁴ who as the national secretary of a teetotal society for over twenty years was primarily interested in producing a volume detailing the full extent of the liquor problem, but did nevertheless include an appendix in which he summarised a great many official statistics. One unpublished piece of work, a doctoral thesis by Baxter⁵ reliant on printed sources, outlines the organisation of the brewing

trade from earliest times but concentrates on the industry's pace-setters and therefore ignores the North East. However, like Wilson, Baxter has rendered a useful service by processing data.

The sources referred to above are of use in describing the context of a national industry in which North East brewing operated. Also useful for this purpose, and also for frequent references to developments in the North East, are the industry's trade journals.⁶ In the North East itself, there have been three histories published for individual companies⁷ which refer to the main developments within the firms but tend to dwell on personalities and contain little analysis or data. Similarly, there have been from time to time a few pamphlets and supplements issued outlining the history of brewing companies, but these are invariably abbreviated such that they contain little about a firm's early days and that which is included is often the stuff of legend rather than factual research.

Taken as a whole, the sources discussed so far would provide little more than a skeletal account of the changing structure of the North East trade and consequently we have to look to two other types of source to provide the flesh. The first of these, providing substantial case evidence, is made up of those surviving primary sources which include the minute books and other papers of some of the regions' brewing companies, local trade association documents and records kept by licensing authorities.⁸ The second category, constituting an invaluable printed source on the regions' brewing trade, is the local press, chiefly before 1914.⁹ The North East newspapers of the day occasionally reported key events in a brewery's existence but – in a more helpful way – they faithfully detailed private company registration, printed public company prospectuses, reported the candid views of company chairmen, published obituaries covering business careers, recorded the deliberations of licensing benches and, in their advertising columns, printed auctioneers' schedules which listed specifications of buildings and plant.

There are additional printed sources that provide information on specific features of the North East trade; for example, local directories, particularly the illustrated variety that appeared in the last quarter of the nineteenth century. Also, two by-products of the degree of government regulation of brewing and the trade's value to the Exchequer as a source of tax revenue were the regular generation of official statistics and the occasional Commissioned study of the trade. Unfortunately, the range and content of statistical returns was curtailed (and never re-instated) on the outbreak of the First World War, but the thoroughness of Royal Commissions was maintained and reports sometimes recorded detailed testimony from a North East witness. It must be borne in

mind, of course, that the impact of government on the operation of the trade does produce a potential hazard in the use of some sources, since what became at times a sensitive political issue meant that the participants in any debate could be prone to propagandising and exaggeration.

Looked at in its entirety, there is certainly a mass of raw material upon which to draw. Yet gaps exist in two areas and we must acknowledge the fact. Firstly, we do not have the means to systematically define the market structure. For the economist, market power is quantifiable through such measures as gross outputs, asset values or levels of employment; but such information is not generally available for the North East brewing trade, although other indicators of size and standing within the trade can be used to point to relative importance. A second weakness is the dearth of documentation on internal decision-making within organisations, which could throw light on the reasoning behind the market conduct of brewers. Annual reports and minute books offer some insight but little solid evidence exists. Having said this, however, there is little to be gained from lamenting the inevitable incompleteness of the raw material with which we have to work: we are not operating – and cannot hope to operate – where modern conditions allow rigorous analytical techniques to be applied to readily-available, comprehensive, empirical data. The surviving evidence on the brewing trade of the past may not be as all-embracing as we would wish but a sufficient amount and range exists upon which to base our investigation.

This work uses the many and varied sources available to trace and explain the evolution of the North East brewing trade between 1869 and 1939. Our approach is to begin without pre-conceived theories or hypotheses but to carefully examine the available evidence and tease out the common threads. A chronological framework is adopted, beginning with an assessment of the trade c.1869 and considering the next seventy years on the basis of appropriate shorter time periods. Within this framework certain issues are pursued as they come to the fore, with the main themes running through this study being those of the changing structure of the trade, competition and market behaviour, and the overall performance of those involved.

Section 1: c.1869

Chapter 1: The brewing trade c.1869

Introduction

An assessment of the position of the North East brewing trade c.1869 has to embrace a number of different elements.

As to the practice of brewing itself, it had developed such that by this time there was nascent acceptance of the potential offered by innovation and scientific method. With regard to the organisation of production and the structure of the industry, the pattern by 1869 had become one of co-existence of some long-established, sizeable breweries alongside smaller, craft-based operations. Other important factors determining the environment in which brewing operated were changes in licensing legislation and the growing temperance influence, both of which were to have long-term implications for the brewers conduct of their business, especially forward integration into retailing. Finally, there were the main competitive pressures felt by brewers around 1869, particularly the growing agency system adopted by brewers from outside the region, which were to act as important incentives for regional firms to improve their methods and products.

Brewing and breweries

The brewing process

Brewing is based upon what one historian calls the felicitous chemical reaction whereby sugar is converted into approximately equal parts of alcohol and carbon dioxide.¹ This conversion is triggered by the use of yeast to cause fermentation. As a production process, brewing is a relatively non-complex affair; simply a matter of preparing the raw materials in such a way as to create the necessary sugar for the fermentation process itself. Writing in 1940, Lloyd-Hind argued that if the Queens College brewer of 1340 was to visit a brewery some six hundred years later he would find the processes remained the same; the difference consisted of the environment in which they were carried out, the machinery brought into use and the revolutionised outlooks on the causes and meanings of changes from barley to beer.²

Brewing, therefore, can be reduced to a few basic steps. One text, for example, says that the making of beer involves three distinct processes:

1. The preparation of malt.
2. The preparation of the wort, or fluid which is to be fermented. This stage may be divided into a) the mashing process, or mixing of the ground malt with hot water and its sacchification; b) boiling and hopping the wort to destroy the diastase; c) cooling the wort.
3. Fermentation of the wort and the storage of the resulting beer.³

For the first stage, that of malting, barley became accepted as the basic raw material by 1735.⁴ The starch in barley is converted into sugar by the enzyme diastase created when

germination is promoted. This was done by soaking the grain, spreading it out onto a malting floor and turning regularly to aerate. When germination occurred it was then arrested by controlled drying in a kiln whereby the diastase was formed and preserved. Some firms specialised in this process of malting exclusively. The next stage in the manufacture of beer is mashing, where the malt is crushed and mixed with hot water in a mash tun. Under these conditions the diastase acts quickly to convert the starch into sugar. The liquid is freed from the spent grains and this wort, as it is known, is then boiled with hops which impart both flavour and preservative qualities. The hopped wort is then cooled ready for the addition of yeast and fermentation. When fermentation has taken place the excess yeast is removed from the beer, a process known as cleansing.

Brewing was therefore a series of linked and relatively straightforward tasks which allowed it to be operated on a craft basis and yet also lent itself to the application of mechanisation and other scientific and technical developments.

Technical progress

The rate of technical progress achieved in the brewing industry by 1869 – or at least the potential for such – was linked, if imprecisely, to inventive activity. The degree of inventive activity may itself be gauged from patent statistics. Scamell, a professional brewer and consultant, listed patents lodged up to the date of publication of the second edition of his book in 1880.⁵ From this can be extracted information on a total of 610 patents for the period pre 1700 to 1869, but the pace of inventive activity had increased so dramatically after the mid-nineteenth century that 74% of the patents fell in the period 1850-69. The 451 patents Scamell lists for 1850-69 can be analysed to show the main focus of invention in the two decades up to 1869 (Table 1).⁶

What is clear from Scamells listings is that until around 1840 patent registration was spread thinly over the many stages of the brewing process. From then on there was not only a general increase in activity but a growing concentration of such activity in certain areas. Thus the patent statistics highlight the changing focus of brewers attention and illustrate the shifting emphasis onto greater precision and control rather than simply mechanisation. However, it must be recognised that many registrations contained only minor refinement or alternative ways of performing the same task. Nor does it follow that an invention was produced or, if produced, that it was necessarily taken up by many brewers. It is likely that the absolute number of patents far outstripped the real number of adoptions and thus the rate of innovation.

Category of Activity	Percentage of Total
Attemperators and refrigerators	20%
Malt and hops; their treatment and substitutes	17%
Malt mashing and mixing, and extracting worts	12%
Hop and yeast presses	7%
Boiling	7%
Fermenting	6%

Table 1. Brewing Patents Registered 1850-1869. Source. Scamell, G. (1880) *Breweries and Maltings: Their Arrangement, Construction, Machinery and Plant*, 2nd Ed., Revised by F. Colyer. London: E. & F.N. Spon, pp.137-78.

No information exists to identify the technical development of brewing practice within the North East in 1869. Nor is information available on the position of the industry nationally. However, we can get some impression of the general state of technical innovation – the conventional wisdom around 1869 – by reference to citations of particular developments in the descriptive accounts of the industry given by historians and in practical brewing works of the time. From such sources, for instance, it is clearly evident that technical developments were being exploited in the methods for ensuring that malt and water were thoroughly mixed. The increased use of steam in breweries encouraged the development of mechanical mashing, and then in 1853 came the important arrival of Steeles masher.⁷ Innovations were also being introduced in the design and heating of coppers. Some brewers had preferences with regard to the shape of coppers, particularly the question of whether they be open or domed. The brewing publications of the time, however, treat a lot of these controversies as unimportant or matters of fashion. When it came to the heating of coppers, Amsinck, writing in 1868, said that it can be of little consequence, whether the wort is boiled by the agency of steam, or by fire of coal as long as it does boil. I have heard of the word electricity named, but this is almost too farcical to repeat.⁸

Throughout the nineteenth century an area of great technical advance was that of cooling the wort which allowed brewing to continue through the summer months.⁹ Baxter¹⁰ selects from the Abridgements of Specifications to indicate the many and continuous efforts made to improve cooling methods and another historian of the industry writes of his temptation to call the nineteenth century the Century of Refrigeration, arguing that no inventions that man has made have had more profound effects on brewing than have a series of innovations which led progressively to

temperature control of tile process.¹¹ Back in 1868, Amsinck's view on refrigerators was that there has been of late a degree of madness, scarcely a day passes that some new invention has not been brought before the notice of the trade.¹²

The appearance of refrigerators made a significant impact on the timetable of brewing. The cooling of wort in shallow tanks, even with the old methods of fanners or air propeller, took a considerable time. By the time Scamell wrote in 1880 cooling methods using tanks or vats were considered unnecessary, but brewing writers remained divided about the best method of cleansing the fermented beer. Many firms still adopted the old system of cleansing casks by resting on stillions, allowing the yeast to find its way into the stillion and the casks topped up by hand.¹³

With regard to motive power in breweries, some attempts have been made both to identify and quantify the adoption of steam power by breweries but much of the information is incomplete and a true picture is impossible to obtain.¹⁴ In the North East there is little concrete evidence available of the adoption of steam but it is arguable whether, in the early years, many brewers felt the same competitive pressure or had the output level to make a steam engine worthwhile. Mathias states that few brewers thought seriously about an engine until annual production was well over 20,000 barrels.¹⁵ In County Durham in 1829 there were said to be 47 brewers who produced 36,942 barrels of strong and 13,898 barrels of table beer. Since this represents an average of 1,081 barrels per brewer it seems unlikely, even allowing for the possible distribution around this mean, that there would be many brewers, if any at all, in the county at that time who were achieving the sort of output that would make the use of a steam engine a worthwhile proposition on Mathias's basis.¹⁶

There is, however, some evidence of steam engines being used. In 1801 the Gateshead brewery of McCleod & Sons was described as one where Mr McCleod has lately erected a steam engine in his brewery, by which malt and grain in large quantities are ground.¹⁷ In 1835 the South Shields brewery of Wood possessed an engine but a relatively advanced brewery, Matthew Taylors of Swalwell, was still entirely horse-driven until 1845. Nevertheless, it seems to be the case that many North East brewers were operating steam engines around 1869.¹⁸ An important by-product of the steam engines entry into brewing was the creation of a bigger role for engineering and an increased interest in the industry by engineers. Steam was not only significant as the new form of motive power it brought to brewing but also for changing the outlook of the industry away from its emphasis oil wood technology to a more sophisticated awareness of engineering.

Another source of technical advance in 1869 lay in the potential offered by the use of the thermometer and hydrometer, which added a new element of precision to brewing. But such innovations, as Mathias points out, were not the result of recent inventions but more the quick-witted adaption to industrial use of instruments already known in scientific circles.¹⁹ The general adoption of these instruments was slow, as was the embracing of scientific methods generally. By 1869, however, leading brewers were beginning to employ trained chemists but an adherence to old craft knowledge and suspicion of science was still prevalent. On joining Worthington in 1866, H.T. Brown, who had studied at the Royal College of Chemistry, found that :

certain rigid rules had been laid down for the guidance of the brewer and maltster which were assumed to have been so far sanctified by experience and tradition that to throw the least doubt on general applicability laid one open to the terrible charge of being a theorist.²⁰

When Brown pressed for the establishment of a laboratory he came up against the head brewer who was one of the old school of practical brewers who distinctly discouraged any suggestions I threw out as to the desirability of fitting up a small room for the purpose.²¹

Whatever the speed at which knowledge was developed or practically applied there were some significant contributions to the scientific knowledge of brewing in the first half of the nineteenth century, even if the impact was not felt until later. The circumstances under which fermentation took place had been known and exploited for centuries, but little was known about the precise process until a real breakthrough in understanding was made with Pasteur's work, begun in 1854.²² But by 1869, despite growing recruitment of chemists, there was little in the way of scientific knowledge being applied to the industry. The brewing literature at the time was thought inadequate at disseminating knowledge. Brown recalled that he was unable to find anything helpful in the supposed authoritative sources, whilst one particular text was worthy of a place in a museum of fatuous work on brewing.²³

Working arrangements in the brewery

A useful picture of the arrangements in a working brewery in the North East in 1869 is given in a contemporary newspaper account.²⁴ The Hexham Old Brewery had been built in 1773 on a 100 year lease, but closed in 1857 with suggestions that it was to be converted into a woollen factory or blast furnace. However, it was re-opened as a brewery by Ayton & Co. in 1866 and completely re-modelled. The malt-

ing portion of the building was of three storeys in height but most of the premises were of two storeys. In 1869 the malting section consisted of three suites of malting ranges and three steeping cisterns with capacities of 14 quarters of barley each. Malt was stored and ground in the basement and lifted by chain and bucket elevators to hoppers directly above the brewery's two mash tuns.

Steam power was used to pump water into a capacious brewing liquor boiling back in which it was boiled by steam. The boiling back was placed alongside but above the mash tuns, one of which could deal with 16 quarters of malt and the other with four quarters. The liquor from the mashing went to the wort boiling copper, described as a capacious cauldron ... capable of boiling 70 to 80 barrels of wort, and was then put through a hop drainer. From there it passed into a cooler fitted with Mortons patent refrigerators which cooled 30 barrels per hour, and on into six 35-barrel fermenting guiles and large, shallow tanks called flattening squares. Casks were filled in a 66 feet by 36 feet basement and stored in another similar sized cellar.

Every possible operation – which included lifting, carrying and cleaning – was done using steam supplied by the main boiler in the centre of the brewery. A ten horse-power horizontal engine worked the malt mill, malt elevators, all pumping gear and fed its own boiler with water heated to boiling point by its own waste steam. The engine also ran lemonade machinery as well as a hay cutter and horse-corn crusher. Water was drawn from a 23 ft well.

The Old Brewery brewed twice a week, the two brewings giving a weekly output of 150 barrels. 18 men were employed in the brewery itself and another four dealing with wines and spirits. Six horses were used, which was 14 fewer than under the previous operators, but Ayton & Co. now had the help of the iron highway. The only deficiency recognised by the firm in 1869 was the want of gas works on the premises which would command more light.

Thus it was that the recently-remodelled Hexham Old Brewery of 1869 illustrated the state of the art for what was probably an unexceptional regional brewer. And here can be seen the main themes of brewing that were emerging by 1869 : the extensive use of steam both as a form of motive power and as a method of heating liquor; the arrangement, where possible, of processes and equipment that take advantage of the law of gravity; the emphasis placed on refrigerating machinery; the reliance on the brewery's own water supply; the diversification into aerated waters, wines and spirits; the continuing labour-intensity of brewing; and the growing influence of rail transport.

Years	Wholesale Brewers	Licensed Victuallers	Beer-on Retailers	Beer-off Retailers	Barrels Brewed	Number of Brewers
1851-5	2,377	25,912	13,277	901	Under 1,000	26,506
1856-60	2,244	24,816	11,631	823	1,000 and under 10,000	1,809
					10,000 and under 20,000	210
1861-5	2,262	22,800	10,740	599	20,000 and under 100,000	128
					100,000 and under 500,000	23
1866-70	2,365	20,128	9,702	484	500,000 and under 1,000,000	3

Table 2. Average Number of Brewers in England & Wales 1851-1870. Source. Wilson, G.B. (1940) *Alcohol and the Nation: a Contribution to the Study of the Liquor Problem in the United Kingdom from 1800-1935*. London: Nicholson And Watson, Table 13, p.368.

Table 3. Number of Brewers Classified by Size in 1870. Source. Wilson, G.B. (1940) *Alcohol and the Nation: a Contribution to the Study of the Liquor Problem in the United Kingdom from 1800-1935*. London: Nicholson And Watson, Table 13, p.49.

The North East brewing trade

Types of brewer

As the nineteenth century began the output of beer was not concentrated in the hands of the wholesaling common brewers but was also shared amongst beer retailers, publicans and private home-brewers. As the century progressed, however, brewing became more industrialised.

The brewing publican, characterised by Vaizey as one whose methods were archaic and his product often inferior²⁵ still accounted for 40% of national beer output in 1841, but this was to fall to 27% by 1870. The brewing publican had, however, been rarer in the North East than nationally. In 1851, the percentage of licensed victuallers brewing for themselves in Durham was 20% and in Newcastle 7.5%.²⁶ These are low in comparison to other areas, allowing Baxter to conclude that Durham and Newcastle were amongst those collections with the greatest dependence on the common brewer.²⁷ One suggestion put forward to explain the lower incidence of publican-brewing in the region was the bootlegging trade in whiskey (sic) along the drovers roads.²⁸ What is not clear, of course, given the absence of statistics, is the degree of dependency on home brewing.

Nonetheless, the brewing publican had been important. His demise came, as it did elsewhere, when the more commercial and wholesale-conscious brewers in the more populous

towns exploited the potential for technical improvement to produce a better product and enjoy scale economies. This, of course, happened earlier and in a more pronounced fashion in the larger centres of population. An indication of this process was given in evidence to Parliament in 1830 when one small-scale brewer discovered that

the golden gains said to be attached to brewing were all a delusion and that those gentlemen who could deal so much larger and buy so much larger could undersell me, and that I could buy better and cheaper of them than by manufacturing the article myself.²⁹

As the brewing publicans numbers declined the number of commercial brewers rose only slightly (Table 2). A situation, albeit temporary, was thus created wherein the more technologically-based brewer was expanding his market share and yet in the rural areas particularly, many of the small craft-based undertakings could continue to survive. The disappearance of the craftsman brewer was, however, underway by 1869 but the shift towards commercial brewing was not yet a movement of big brewers as Wilsons analysis of brewers licence returns shows (Table 3).

For the brewing industry in the North East the absence of published statistics for the period makes it necessary to reconstruct a picture of the industry from a variety of available sources. We cannot expect from such sources to produce a completely accurate account of brewing in the region and the very nature of the unrecognised faults or gaps in the

Location	Number of Brewers	Location	Number of Brewers
Newcastle	34		
Durham City	7	Locations with 2 breweries each;	
Sunderland	6	Hexham, Warkworth, Ferryhill, Barnard	
Gateshead	6	Castle, Houghton-le-Spring, Bishop	
Morpeth	6	Auckland, Monkwearmouth, Chilton,	
Stockton	5	Consett, Norton	= 20
Hartlepool(s)	5		
North Shields	4		
South Shields	4	Locations with one brewery each; Wark,	
Darlington	4	Ovingham, Wooler, Blyth, Howdon,	
Alnwick	3	Ovington, Belford, Monkseaton,	
Berwick	3	Wallsend, Rothbury, Haltwhistle,	
Bishop Middleham	3	Allendale, Walker, Willington, Anfield	
Wolsingham	3	Plain, Tow Law, Seaham, Cockfield,	
Seaton Carew	3	Billingham, Blackhill, Easington, West	
Burnopfield	3	Auckland, Blaydon, Winlaton, Hetton-le-	
		Hole, Usworth, Swalwell, Timdon,	
		Wingate, Chester-le-Street, Rainton,	
		Castle Eden, Satley	= 33

Table 4.: Brewers Operating in Northumberland & Durham c.1869

Source. *Mercer & Crackers General, Topographical and Historical Directory and Gazetteer for Northumberland, Durham and Newcastle* (1868); *Walkers Durham Directory and Almanack* (1869); *Christies Newcastle and Gateshead Annual Directory* (1870); *Wards Directory Comprehending the Towns of Newcastle, Gateshead, Sunderland* (1869-70).

information ensures that we will never know the extent of the deficiency. Nonetheless, a workable sketch of the industry in 1869 is possible, although in some cases, particularly when the lack of information forces reliance upon directory entries, there may be some uncertainty.³⁰

The Structure of the North East Brewing Trade

By using directories, local press advertisements and subsequent company material, it is possible to identify 152 brewers operating in the counties of Durham and Northumberland around 1869.³¹ The origins of about one-quarter of these can be traced from details largely given some time later in prospectuses issued to accompany flotations, entries in illustrated directories published towards the end of the century, and obituaries of those connected with the trade. It is therefore inevitable that it is those brewers surviving well beyond 1869 about which most is known, although this information is by no means comprehensive.

The lack of complete information about all the brewers in the region in 1869 constitutes a form of natural selection which accords with this study, being concerned as it is with the industry's changing structure over time. Precisely how we judge the significance of a particular brewery undertaking in 1869 is a moot point, but one consideration must be how influential a role it had in the subsequent development of the industry. In this context, then, the lack of information about the large number of brewers operating in 1869, of which many disappeared shortly afterwards, does not handicap the overall study. But what it does do, of course, is preclude any attempt to define the stereo-typical brewery at that time: those breweries for which we do have information are, by virtue of their relative longevity, untypical of the rapidly falling total number. Nevertheless, we can profitably outline the background of those undertakings of 1869 for which details exist, a significant proportion of which survived for the following seventy years covered by this study.

Table 4 shows the geographical distribution of the 152 brewers in 1869. The regional capital, Newcastle, had the largest number of brewers and the most important in 1869 was Bells, Robson & Co. Their Tyne Brewery, as it was called, had operated throughout the century under a variety of partnerships. In 1867 it moved from the Sandgate area to a newly-built brewery in Bath Lane which was said to be the largest premises that had ever been erected for brewing purposes in the North East of England.³² Other long-established breweries in the city were the Hanover Square Brewery, occupied by Robert Fletcher but dating back to 1790, and the Manor Brewery, founded in 1818 and coming under the ownership of Ridley & Cutter in 1863. In 1869 J.S. Arnison was running the Sandyford Brewery, recognised at the beginning of the nineteenth century as a very large brewery ... of long-standing. The Leazes Brewery was begun in 1837 by C.B. Reid and it was his son, W.B. Reid, who acted as managing director and eventually took over the firm.³³ Elsewhere in Newcastle, John Sanderson of the Haymarket Brewery had learnt the trade with another brewer before going into business on his own account in the 1850s, Robert Newton had taken over the Victoria Brewery in 1848, and John Sutter was apprenticed to the plumbing trade before moving into the licensed trade and acquiring the Elephant and Castle and its adjoining brewery. Robert Emmerson, however, had just begun brewing in 1869 at the Flying Horse Brewery.³⁴

Another major brewing centre was Sunderland, where R. Fenwick & Co. were the oldest survivors, having been founded in 1770. The Fenwick family also owned the brewery at Chester-le-Street, had owned the Bishopwearmouth Panns Glasshouse since 1795 and were involved with bottle-works at Seaham Harbour. There is also some suggestion that R. Fenwick & Co. had an interest in a brewery at West Boldon, although there is no contemporary evidence for this.³⁵ The other notable Sunderland family were Vaux who are reputed to have been connected with brewing in Sunderland since c1805. They certainly established their own brewery in 1837 in Matlock Street and by 1844 had purchased better premises in Union Street. In 1875 the area was chosen for the new Central Station and Vaux transferred to a purpose built brewery in Castle Street.³⁶ Bramwell & Scurfield were established in the 1790s in Sunderlands then brewing centre of Low Street, but moved in 1827 to the Wear Brewery on the site of the old Bishopwearmouth waterworks. Amongst other brewers in the town in 1869 was John Smurthwaite who acquired the Mark Quay brewery in 1868. For many years before that Smurthwaite had been a shipbuilder, shipbroker and wharfinger. Another recent undertaking in 1869 was the Queen Street Brewery of William St. John. As a boy, St. John had entered the office of R. Nesbitt, a brewer and spirit merchant, for whom he worked

for 25 years, many as manager. He left to go into partnership as St. John & Barrett, and then went off on his own, adding hotels and brewing to his wine and spirits business.³⁷

Another important brewing town was Gateshead. As early as 1799 Barras was described as a well-accustomed brewery and malting business.³⁸ By 1869 Barras & Co. was being run by C. Reed, who had married into the family, became involved with the brewery in 1848, and after the demise of the Barras line had leased the brewery from the Barras trust since 1861.³⁹ Two other Gateshead breweries, Rowells and Tuckers, had been in their respective family hands since 1840 and c.1845. At the nearby Swalwell Brewery the Taylors had brewed since 1765, with the fourth generation of the family taking charge in 1866.⁴⁰

In Northumberland, Morpeth could claim to be an important brewing centre with as many breweries as Gateshead and Sunderland. At the New Brewery in 1869, A.M. Loades had recently taken over. He had joined his father, previously a traveller for a wine merchant, in setting up Win Loades & Sons as ale and porter merchants in Newcastle. When T. Jobling retired from brewing in the late 1860s the Loades partnership stepped in. At the Old Brewery, which had been functioning since at least 1826, Robert Fairley brewed. Also brewing in Morpeth were Addison & Potter, established in 1780. Their long term development, however, lay in Newcastle, where they operated as maltsters and hop merchants, and in Willington Quay where they had an expanding firebrick and cement manufacturing plant.⁴¹

In South Shields the Wood family were said in 1901 to have been associated with brewing for over 150 years, their brewery occupying the site of an early eighteenth century chemical works. The various generations of Woods had gone through a number of partnerships and in 1869 were trading as Wood & Maxwell. Close by at Tyne Dock, W.A. Falconar & Co. had taken over the Dene Brewery of James Kirkley, although the firms main operations were at Bowdon where they had been since at least the 1790s. On the north bank of the Tyne the Carr family entered the trade in the early nineteenth century at the Low Lights Brewery, North Shields. When the founder died in 1863 relatives shared the running of the firm which by 1869 was Carr, Ormston & Carr. The family also had extensive interests in pottery which pre-dated their entry into brewing.⁴² At the High Brewery, North Shields the Allison brothers brewed as W.II. Allison & Co. but also operated from the Wear as J.J. & W.H. Allison of the Monkwearmouth Brewery.⁴³ In 1869 Bartleman & Crighton were operating as wine and spirit and ale and porter merchants in Newcastle, and running the Northumberland Brewery in North Shields. The firm was formed as a result of a merger between Bartlemans North-

umberland Brewery and Crighton & Sons Preston Brewery. This partnership then took over Brummel & Gilpin, a firm made up of the recently separated ale and porter dealers half of a firm of druggists and chemists.⁴⁴

On the Tees at Hartlepool the Lion Brewery was being run in 1869 by William Waldon, whose father had built the brewery in 1852. In 1865 Waldon had recruited J.W. Cameron, a young man who had gone from Kirby Stephen Grammar School to complete a six-year apprenticeship at the Barnard Castle Brewery. In Stockton, Kirk Bros. had been formed in 1840 to rent a small brewery and then built the Castle Brewery in 1856. Of the Darlington brewers, the Hinde family were the most prominent in 1869. They had been licensees before concentrating on brewing. George Hindes sons had emigrated to New Zealand at the time of the Maori Wars to join the commissariat service and work on the movement of food to the troops. By the end of the 1860s, however, they had been recalled by their father to run the family brewery. Also in the south of the region, the Bishop Middleham Brewery was run by the Hodgson family in 1825 and was later joined by members of the Forster family with whom they were related.⁴⁵

Elsewhere in County Durham, Fenwick & Story were brewing at the Chester Brewery which could trace its origins back to the latter years of the eighteenth century. The City Brewery in Durham had changed hands a number of times before being acquired in 1867 by Joseph Johnson, who moved into brewing having previously carried on an extensive business as a timber merchant at Hetton and South Dock, Sunderland. A year after buying the brewery, Johnson, in partnership with others, opened the Ilamsteels Collieries. The West Auckland Brewery Co. had been formed in 1840 but by 1858 was in the sole hands of J.H. Tamplin who brewed at a farm, before leasing other premises. At Castle Eden, brewing began in 1826 in outbuildings of the Castle Eden Inn and it was not until 1850 that the Castle Eden Brewery itself was established, although the proprietor was described as a brewer and farmer. By 1869 the firm had become John Nimmo & Son, brewers and wine and spirit merchants. The Seaham Harbour Brewery had been founded by Thomas Chilton, who had earlier been engaged in fanning and shipping; whilst at Houghton-le-Spring, the brewery of Robinson Bros. had been in family hands since 1754. Thomas Lamb had founded the Hetton-le-Hole Brewery in 1823 and was operating as a sole proprietor in 1869.⁴⁶

In north Northumberland there were two well-established breweries in Berwick. The Border Brewery, with a history going back to around 1800, was being run in 1869 by Robert Douglas as a sole trader. Johnson and Co. had evolved from Carr & Co. and, as well as brewers and maltsters, were

chemical manure manufacturers and coal merchants. In Alnwick, Thompson & Davison had operated the Alnwick Brewery from the late 1840s and Smarts Brewery had originally been part of a brewing, malting and rope and twine making business. At Warkworth, Lamb had acquired his brewery in 1860.⁴⁷

Table 4 shows that in 1869 the organisation of brewing in the North East region still covered an extensive geographical area but brewers were concentrated in the larger urban areas, which effectively meant in the large markets on the lower reaches of the Tyne, Wear and Tees. In these latter areas were situated over 50% of the 152 brewers of 1869; and the important towns of Durham, Darlington, Morpeth, Alnwick, Berwick and Wolsingham also accounted for another 18%. But whilst Table 4 highlights the urban based pattern of concentration, it also indicates the continuing survival of the rural brewer. In Northumberland, for example, beer was being produced at Haltwhistle, Warkworth, Wark, Ovingham, Ovington, Rethbury and Allendale. What Table 4 also demonstrates is that in County Durham small coalfield villages (for example, Anfield Plain, Willington, Chilton and Trimdon) housed brewers. Table 4 does indeed point to a strong urban concentration of brewing but in 1869 the overall picture of North East brewing geographically, as well as in terms of individual size of operation, was still one of diversity.

Public regulation and public concern

The changing public climate

Long before 1869 the sale of drink had become subject to the vagaries of public regulation and it was inevitable that brewers would increasingly concern themselves with this regulation and the ownership of their products retail outlets.

In 1552 a statute had given Justices of the Peace the discretion to decide who would be given licences to keep a common alehouse and from that time, according to the Webbs, the occupation became an exceptional privilege.⁴⁸ By the early nineteenth century, however, pressure for free trade in alcoholic liquors developed strong influential voices. It became, say the Webbs,

almost an obsession of the mind of the very enlightened legislator, Tory and Radical alike, that every person ought to be left free to invest his capital and employ talents in whatever way he thought best; that cheapness and good quality could only be secured by an absolutely unrestricted competition; and that there was no reason why the number and position of public houses should not be left as free as those of bakers shops.⁴⁹

There were also other, less philosophical concerns. In particular, there was the belief amongst some temperance advocates that the way to greater sobriety was through the greater availability of beer which would then challenge the easy availability of spirits.⁵⁰ These motives, and the reports of Select Committees which recommended more tolerant approaches to licence applications, led to the 1830 Beerhouse Act. From then until 1869 the brewing industry flourished under an official policy of free licensing, as the Act effectively allowed any ratepayer to sell beer on his own premises without the need of a magistrates licence. The beerhouse was thus created and the number of retail outlets grew.⁵¹ There were some minor restrictive measures introduced later,⁵² but the atmosphere within the industry remained one of free-trade.

From the outset, free-licensing attracted its critics. Some publicans were against the competition from beershops which emerged quickly and threateningly. Magistrates were often against this burgeoning of licensed premises. The anti-drink section of the temperance movement saw the act as dangerously permissive and their propagandists cited the deregulation of beer selling as the main cause of increased consumption. By 1869 the public climate had changed and an act of that year imposed fundamental changes that reimposed the pre-1830 restrictive licensing.

The end of free licensing

The 1869 Wine and Beerhouse Act encompassed beerhouses, beershops and beer retailers and from hereon a justices licence was required just as it had been for all other full licences. There were now eight types of licence which applied to the retailing of beer. The most important was the licensed victuallers licence which permitted beer to be sold in any quantity for consumption on or off the premises. The beerhouse licence allowed sales in retail quantities of beer, cider and perry for consumption on or off the premises, whilst beershop licences permitted similar sales but only off the premises.⁵³ A fourth licence in existence was an off-licence that had been introduced in 1861 for the so-called Swankey Shops. These had previously been allowed to operate without a licence but only dealt in table beer. A fifth retailing licence had been created in 1863 when a beer dealer was allowed to pay an additional licence fee and thereby supplement his existing licence to sell minimum quantities with a licence to sell smaller, retail quantities for consumption off the premises. Another three retail licences covered particular premises; places of entertainment, passenger boats and canteens regulated by the War Office. Table 5 shows the numbers of retail licences held in 1870.

Licensed victuallers	69,895
Beerhouses	44,501
Beershops	3,078
Table beer retailers	1,540
Beer dealers with additional license	3,256
Passenger boats	236

Table 5: Beer Retailing Licences, England & Wales 1870. Source. Based on Wilson, G.B. (1940) *Alcohol and the Nation: a Contribution to the Study of the Liquor Problem in the United Kingdom from 1800-1935*. London: Nicholson And Watson. p.396.

Thus, by 1870, the justices had the power to refuse to grant or renew licences for all types of retail outlet. This was the chance many had waited for. Their own professional misgivings about drunkenness and disorderly conduct, and the pressure and influence of temperance agitators, police and employers, led them to take what they felt to be appropriate action.⁵⁴ The first brewster sessions following the 1869 Act were reported as follows by the *Newcastle Daily Chronicle*:

Brewster Sessions held ... throughout the district were remarkable for this, that it was the first opportunity magistrates had fairly of dealing with the beerhouse question, and they seemed determined, as far as they could, to severely restrict this class of house; and for another circumstance, the determined hostility of large employers of labour, especially in the Jarrow, Hebburn and district for any further extension of public house licences. Messrs Leslie & Co. had no public houses within the property over which they have control. Messrs Tennant & Co. are making strenuous efforts to get rid of public houses in the neighbourhood of the works and workmens dwellings, and Mr. Richardson, the proprietor of the Jarrow Paper Mills, is a strong opponent of the present licensing system. The Tynemouth County Magistrates on the Bench on Tuesday last, who were employers of labour, refused to grant any new licences in the extensive colliery districts within their jurisdiction.⁵⁵

Organised opposition

The more restrictive licensing laws and their stricter application by the justices were symptomatic of a changing public attitude towards the beer trade, something which the brewers could not afford to ignore. Formal opposition was embodied in the temperance movement which had become a highly organised and influential pressure group. More particularly, a shift in emphasis in the mid-nineteenth century had switched the focus of temperance agitation away from consumption to all-out attack on the producers and traders in alcoholic beverages.⁵⁶ By the 1850s the moral suasionist

approach had given way to the legal suppressionist school. The prohibitionist United Kingdom Alliance for the Suppression of the Liquor Traffic in all Intoxicating Liquors was formed in 1853 and switched the attack from the evils of drink to the drink trade itself by advocating an interventionist role for the state in the elimination of drink supplies. In 1858 the North of England Temperance League was founded under the slogan Total Abstinence for the Individual and Prohibition for the Nation. With many distinguished citizens involved, the League worked effectively to mobilise support for legislation and canvass local licensing benches.⁵⁷ At this stage the prohibitionists formalised their enthusiasms into a precise legislative objective called the Permissive Bill. This was to appear and reappear in many forms but all were based on the principle of an act being passed at national level which would empower each local district to vote, if it so desired, for the suppression of all licences within its boundaries.

The brewers and licensed victuallers, faced with the mounting public attacks upon them, the mass meetings and lengthy petitions presented to Parliament and put before brewster sessions, were forced to respond. Licensed Victuallers Associations had been formed and were now required to organise and propagandise as effectively as the temperance agitators. Paradoxically, their first task in the late 1860s was to support calls for legislative changes to ensure greater control of certain licensed premises. It was well-recognised by the trade and brewers, who themselves were running beerhouses, that a lot of public and official antipathy towards licensed premises was based on examples of beerhouses which were generally less well conducted than those of the licensed victuallers. With this issue dealt with by the 1869 Act, there were more difficult legislative proposals to consider.

Although the first Permissive Bill of 1864 was defeated by 257 votes, by 1869 the majority against was down to 106 and then in 1870 fell to 31. This pointed to the way opinion was shifting both in Parliament and the country at large. Because of this the Home Secretary of the time felt able to introduce a bill⁵⁸ designed to reduce opening hours, introduce Sunday closing, appoint public house inspectors to ensure stricter regulations were adhered to, and ultimately reduce the number of licensed houses.

The competitive environment

Consumption

In his work on the temperance question, Harrison considered why drinking had become so widespread in the nineteenth

century amongst those social classes who could least afford it. Part of the answer, he argued, must be the extensive social functions performed by drink and drinksellers.⁵⁹ Beer was a safe, thirst quenching drink available at a time when modern equivalents were either not easily acquired or, if available, were uncompetitively priced. It was also the case that workers in some industries regarded beer as indispensable, providing the energy and physical stamina required for many occupations. For example, a correspondent argued in a Tyneside newspaper in 1870 that in the iron and puddling trades it is a physical impossibility to make men who are daily before hot fires work without beer.⁶⁰ But it was also the case, of course, that beer and other alcoholic drinks were consumed by the less energetic professions and drink had an important role in all communities as a means of enhancing festivity. It was also argued that within the expanding factory system drink overcame the monotony of work and fostered drunkenness by forcing migrant labour into a strange environment and by weakening traditional sanctions on conduct.⁶¹ The same view was advanced at the end of the nineteenth century by the Chief Constable of Newcastle who suggested that the increase in male drunkenness may be accounted for by the large numbers of labouring classes attracted to the city by tramway and railway extensions and other works.⁶²

Table 6 shows beer consumption rising steadily from 1850-1869. Precisely what caused the rise is not entirely clear, although there is widespread acceptance of the view that it was something to do with the general state of the economy.⁶³ If real wages are taken as a proxy for general prosperity, then Table 6 supports the view that a rise in beer consumption from 1860 can be explained as a result of rising incomes and, therefore, the state of the economy. The temperance movement, however, argued that consumption was not demand led but that it was changes in supply following the introduction of free licensing that had the major influence on consumption. But it may be a mistake to seek to represent consumption as being exclusively a function of the more obvious economic factors. This view is best summed up by Dingle who suggests that there was "a significant degree of autonomous consumption ... a manifestation of a deep rooted complex of social and cultural patterns of which drinking was an integral part."⁶⁴

Housing conditions, for example, may have persuaded many to visit the public house to enjoy warmth and comforts not available in their homes. Licensed premises offered a relief from the overcrowded tenements that were common in many urban centres around 1869.⁶⁵ Rising beer consumption as real wages rose bears witness to the role of the public house as the only escape from squalid surroundings. By the same token, however, as housing improved and leisure opportunit-

Year	Per capita consumption (gallons)	Average real wage (1850 = 100)
1850-54	22.5	101.2
1853-59	22.0	96.2
1860-64	24.7	105.4
1865-69	28.8	111.6

Table 6. Beer consumption and real wages 1850-69. Source. Hawkins, K.H. and Pass, C.L. (1979) *The Brewing Industry. A Study in Industrial Organisation and Public Policy*. London: Heinemann, Table 2.1 p.17, based upon Wilson, G.B. (1940) and Mitchell, B.R. and Deane, P. (1962) *Abstract of British Historical Statistics*. Cambridge: Cambridge University Press.

ties widened, there was a marked negative impact upon beer drinking.

What aggregate and per capital consumption cannot indicate is the variation in drinking patterns between classes, sexes and regions. No contemporary investigations by social commentators were carried out or estimates of consumption made in the North East. The only evidence of regional drinking habits available were statistics for drunkenness convictions which showed the counties of Northumberland and Durham to have the worst records.⁶⁶ Some of this could, of course, have been due to the vigour with which the police and the local bench pursued their tasks, but the consistent relative position of the region and the fact that outside brewers regarded the region as an extremely valuable market suggests that beer consumption was perhaps higher in this region than many others.

Products

At the beginning of the nineteenth century individual brewers produced individual products, but all their output fell within three broad categories: whatever the variations, what was brewed was either beer, ale or porter. Beer and ale were both brewed using malt, the distinction between them being that hops were added during the preparation of beer but not ale. By the middle of the nineteenth century changing tastes and techniques meant that brewers were more likely to be producing beer products rather than ales. Nevertheless, the term ale was still adopted by brewers and the public to describe certain products and it would seem that from then on the terms beer and ale became somewhat synonymous. A similar imprecision crept into the use of the term porter which became synonymous with the term stout.⁶⁷ So, by

1869, there was not only a wide range of brewery products but amongst those given the same general classification there could be great differences.

A striking feature of the brewing industry in the nineteenth century was the high degree of geographical specialisation which was reflected in generic terms such as London porter, Burton ales, Dublin stout and Scotch ales. Such specialization was usually put down to differences in water supplies and there is no doubt that the water in certain localities was more suitable for some products than others.⁶⁸ But with the increasing interest in the chemistry of brewing it became apparent that the established pattern of production was not immutable and perhaps too much store was put on the conventional view about what could and could not be brewed in a particular location. This was certainly being questioned by the middle of the nineteenth century by writers of brewing treatises. Black, for example, stated that when it came to water a great deal more importance is attached to this indispensable article than it perhaps deserves.⁶⁹ Ways of treating water to allow imitation of the most popular Burton and Edinburgh products were now possible. Muspratt, writing in 1853, explained how it was possible to impregnate waters such that the ale obtained from such artificial water has nearly equalled the renowned products of Burton.⁷⁰ Likewise, Amsinck said in 1868 that:

I have brewed in about 50 brewhouses, during the last ten years, I have of course met with a variety of water. With all these different waters, I have found no difficulty in producing first class Yale Ales, and Strong quite equal to Burton, in some instances, superior.⁷¹

In the North East in the early 1860s the breweries were using what were described as the indifferent water supply of the immediate neighbourhood and the commonly partly-ripened barleys of the district⁷² to produce the local specialism called Newcastle Mild. This was said to be a very sweet, dark-coloured ale with a sub-acid flavour which at that time was the common beer, in many cases the only beer, supplied in the houses of the district.⁷³

Imports into the North East

As tastes changed in favour of the paler beers, North East brewers at first had difficulty brewing such beers and

in the course of time, the Burton and Edinburgh brewers pushed their sound, clear, and better-flavoured beers by the establishment of agencies in all large towns. Newcastle proved, as might have been prophesied, a very profitable ground to work, and rapidly became one of their chief centres of distribution.⁷⁴

**Location of
brewing plant** **Number of brewers
from each location**

Edinburgh	22 (i)	
Falkirk	1	
Alloa	4	
Seggie	1	
Leith	1	
Dundee	<u>1</u>	30
Newry	1	
Dublin	<u>5</u>	6
Burton		5
London		5
Leeds		2 (ii)
Sheffield		1 (iii)
Norwich		2

Table 7. Outside brewers with agencies in the North East c.1869. All agents located in Newcastle except : (i) one in Sunderland (ii) one in Cramlington and (iii) in Stockton. Source. Mercer & Crockers *General, Topographical and Historical Directory and Gazetteer for Northumberland, Durham and Newcastle* (1868); *Walkers Durham Directory and Almanack* (1869); *Christies Newcastle and Gateshead Annual Directory* (1870); *Wards Directory Comprehending the Towns of Newcastle, Gateshead, Sunderland* (1969-70); *Newcastle Daily Journal, Newcastle Courant and Newcastle Daily Chronicle* for 1869.

The initial limitations of local brewers, amidst changing tastes and the development of an extensive rail network, made the North East an attractive market for the leading Burton and Scottish brewers and the London porter producers. In 1852 it was claimed that beer made in Newcastle did not amount to one-third of that brought from other places and consumed in the town and neighbourhood.⁷⁵

By 1869 an agency system was well-advanced in the North East. Table 7 shows those breweries from outside the region but selling within it around 1869. These outside brewers were able to adopt a number of methods for ensuring that their products reached potential customers. Some sent their own travellers to manage offices and stores, usually in Newcastle, whilst others appointed sole agents from amongst local merchants or brewers. Outside brewers could also supply the network of ale and spirit merchants across Northumberland and Durham, many of whom would carry out the important function of bottling. For the larger, well-organised brewers these different methods of distribution were not alternatives. In order to meet the

maximum market amongst both the licensed trade and home-consumers, a combination of these complementary methods was necessary.

The brewery travellers usually operated single-handedly, often over large distances. F.M. Laing, Ushers agent for the northern counties, was required to travel as far south as Nottingham. Bass, on the other hand, seemed to expect their agents to work a smaller territory more intensively. J. Short-hose, Basss agent, covered a radius of about 20 miles. He had joined the company in 1844 as a clerk and was sent to Newcastle to develop an agency in 1851. In that first year the total sales in the region were £1,693 but 50 years later, when he was still the agent, the sales totalled £217,000. Bass moved their beer north by rail and had extensive stores in Newcastle's Trafalgar Goods Station. By 1870 one Yorkshire brewer, H. Bentley, was finding that his level of business on Tyneside made it necessary to move to more commodious premises. At the same time, Bradley & Co. of Sheffield were about to enter the North East market by sending one of their long-serving employees to Stockton to become their first agent.⁷⁶ Some outside brewers appointed travellers from experienced agents within the region. The traveller for Newcastle's Northumberland Brewery, for example, was recruited in 1869 as agent by J.J. Morrison & Thomson of Edinburgh.⁷⁷

A number of Newcastle brewers were appointed agents for outside brewers, providing them with the opportunity to extend the range of beers they were able to supply to their own houses and trade customers. Amongst these were John Sutter who became sole agent for Carmichaels and Messrs Young & Co. who operated in a similar capacity for the City of Dublin Brewery.⁷⁸ But for these and some other local brewers a sole agency was a prelude to a change in direction, eventually leading them away from brewing altogether. Bartleman & Crighton, for instance, although owning a brewery in North Shields, also dealt in the Burton beers of Bass and Allsopp, distributed Devonshire cider, imported Dautzic black beers and sold the London porter of Barclay, Perkins. By 1869 Wilkinson & Co. of the Westgate Brewery had abandoned brewing to act as sole agents for Campbell & Co., Courage & Co. and DArcy & Co.⁷⁹

The growing market for beers of other regions meant increasing business for the North East ale and porter merchants and also those wine and spirit merchants who doubled as ale and porter merchants. For many firms, acting as an agency for a brewer was but one aspect of their business. Fultons of Edinburgh were solely represented by James Elliot of Newcastle who was essentially an importer of foreign wines and a cigar merchant. Another Newcastle businessman, J.J. Bell, had learnt the trade with ale and spirit merchants, Gilpin & Co.

for nine years before setting up on his own account. He acted as sole agent for Raggets London stout whilst, amongst other interests, manufactured aerated waters and imported Whenham Lake ice.⁸⁰

By 1869, however, a number of North East brewers had developed products to compete against regional imports and a wide variety of beers were being brewed. The Tyne Brewery, for instance, was continuing to produce the traditional mild but was now also brewing East India Pale Ale, porter, stout and bitter beer;⁸¹ products which corresponded to the specialities of Burton, London, Dublin and Edinburgh. This policy of import substitution was followed by many local brewers who added a porter and a pale or bitter ale to their range. It was clear that the regional palate had come to prefer the brighter, more stable beers that outside brewers had introduced to the North East. Indigenous brewers, therefore, developed such products and emphasised those qualities that the public had found attractive in imported beers. Thus, whilst some brewers continued to advertise on the basis of strength,⁸² most stressed the features much admired in Burton and Edinburgh ales. Bramwell & Schofield, for example, advertised their products as being all of the finest quality, brilliant in condition and colour, rich in aroma, and unsurpassed for keeping quality.⁸³

Summary

By 1869, brewing in the North East had reached something of a watershed: change was abroad in the industry but had not yet made a significant impact. Technical advances and improved, scientific methods had gathered pace in the previous few decades, but their adoption by North East brewers appears to have been limited. Similarly, there was an emerging growth in size and a geographical concentration in the industry structurally, but brewing still remained well distributed across the region in a range of plant sizes. Change was perhaps more clearly evident in the competitive environment in which North East brewers operated. The outlets through which they supplied their products had become subject to much greater regulation but the demand for beer was growing steadily and the public was becoming much more demanding in a qualitative sense, with changing tastes, informed by increasing exposure to products from more progressive brewing areas, putting pressure on the regions brewers to improve their products and extend their range.

By 1869, however, there were signs of a more progressive brewer emerging in the North East, one who was responding to competitive pressures and attempting to meet the increasingly discerning local taste by replicating the popular beers

from outside the region. Although the growing demand for beer helped shield the less imaginative or innovative brewer from extinction in the short term, it was those firms with a demonstrable willingness to be more enterprising that were to form the hard core of the industry's long-term survivors. Such firms were also recognising in 1869 that competition had to be carried forward from the production of beers and into the newly-restricted retail trade itself.

Section 2: 1870-1890

Chapter 2: the organisation of production

Introduction

It is misleading to write of the brewing trade nationally as if it signified a high degree of homogeneity. In fact, brewing in the various centres of England and Scotland developed along slightly different paths. This was recognised by the trade itself and in particular a distinction was made between the brewers of Burton, London and the rest of the country. Implicit in much of the literature, however, is an assumption that all brewers, provincial as much as metropolitan, shared some common experience between 1870 and 1890.¹

Structurally, the essential feature of the industry during the period was characterised as a process of concentration caused by the decline of the small brewer. In terms of the size and the internal arrangement of breweries, the period was seen as one where the larger brewers remodelled their facilities on more modern lines and also extended the capacities of their breweries. What the national pattern of change was, and how closely the North East brewing industry accorded with it, is considered below.

The structure of the trade

Closure

The two decades after 1869 saw a marked decline in the number of brewers. Nationally, the process is shown in Table 8 which reveals an overall drop of 58% between 1870 and 1890. Table 9 summarises the structure of brewing in the region during the period 1870-90. Of the original 152 brewers in 1869, only 69 survived to 1890. In addition there were at least 13 new entrants into the industry during the period, eleven of which survived until 1890. This gave a total of 80 brewers operating in the region in 1890 compared with 152 two decades earlier, a drop of around 47%; but the death rate amongst the original 152 was 55%, almost the national figure.

Barrels brewed	1870	1875	1880	1885	1890
Under 1,000	26,506	22,138	16,770	12,608	9,986
1,000 - 10,000	1,809	1,864	1,768	1,537	1,447
10,000 - 20,000	210	260	272	270	274
20,000 - 100,000	128	194	203	187	255
100,000 - 500,000	23	25	23	27	34
Over 500,000	3	4	4	4	4
	28,679	24,485	19,040	14,633	12,000

Table 8. Number of Brewers in each size category in the United Kingdom 1870-90. Source. Annual Returns of Brewers Licences 1870-1890.

Group	Category of brewery	Number of brewers
A	Breweries operating throughout the period under same ownership.	49
B	Breweries operating both in 1870 and 1890 but with distinct change in ownership during the period.	20
C	Breweries operating in 1870 but ceased by 1890	83
D	Breweries beginning and ceasing operations between 1870 and 1890	2
E	New entrants	11

Table 9. Summary of the Structure of North East Brewing 1870-90. Source. As Appendices 1, 2, 3 & 4.

Table 8 shows the broad, national incidence of closure within the different size categories of brewer, with the overwhelming emphasis being on the fall in numbers of the smallest breweries. Although the table indicates that this reduction took place to approximately the same extent in each decade (37% between 1870 and 1880, and 40% between 1880 and 1890), the trade itself put most of the blame for the growing concentration of the industry on Gladstones replacement of the malt tax by a beer duty in 1880. In the first year of the new duty 4,113 small brewers left the industry² (a drop of 25% in one year), but the claim that this is entirely due to the new measures ignores the trend already in motion and oversimplifies the process of closure.

Certainly, the imposition on brewers of a monthly collection of duty instead of the previous arrangement by which brew-

ers bought duty-paid malt, often on long-term credit, may well have created cash flow problems for smaller brewers operating on the margin. Equally, the extra administrative burden imposed by the duty may have been enough to persuade the insecure craft-based brewer finally to withdraw from the trade. But the real cause of closure was an already existent underlying weakness in their competitive position which the new system highlighted and aggravated. The beer duty was levied on either the materials used or the gravity of the resulting worts, whichever was the most advantageous to the tax authorities, and it was assumed by them that a given quantity of materials produced a barrel of standard strength. It was here that the small brewer suffered if his materials were poor, his mashing process inefficient, or he was unable successfully to convert the full amount of worts into good beer. On the introduction of the 1880 Act, a correspondent

Cause	1870s	1880s	Total
Financial problems	4	3	7
Liquidation	1	4	5
Death	2	3	5
Dissolution/retirement	5	4	9
Transfer of activities		2	2
Moved into other branches	3	4	7
Publicans	7	3	10
Unknown	<u>12</u>	<u>8</u>	<u>20</u>
	34	31	65

Table 10. North East brewery closures 1870-1890. Source. As Appendix 1.

quoted in a trade journal and writing on behalf of the great number of small brewers in his town, cited the manner in which the manufacture of beer is conducted by them, ... the small capacity of their brewery utensils and premises, ... the want of space and proper cooling power, especially through the limited quantity and high temperature of the water supplied them ...³ as putting them at a disadvantage. Towards the end of the decade the *Brewers Guardian* spoke of the continued diminution in the number of brewers which began with the 1880 Act, saying that

the decrease is mainly amongst the class of brewers who brew under 1,000 barrels per annum; these small brewers who are also beer retailers, find that neither the quality of the beer they brew nor its cost of production enable them to compete with the large brewers, and consequently by degrees they are retiring from the trade. The next class of brewers, who brew under 10,000 barrels per annum, that is those who work about a five quarter plant, are numerically declining; a few manage to increase their trade, but far more fall back into the smallest grade, eventually to be obliterated altogether. The next class, the medium-sized brewers, producing from 10,000 to 100,000 barrels, that is with from 8-80 quarter plants, are apparently holding their own. The very largest concerns are holding their own.⁴

In the North East, only 69 breweries (categories A and B, Table 9) of the 152 thought to be operating in 1869 were still brewing by 1890. There were therefore 83 deaths during the period. However, in order to make the task of analysis more manageable, we have eliminated from our study the

eighteen breweries about which doubts existed as to whether or not they were actually brewing c1869 or, if they were, ceased brewing immediately afterwards.⁵ We therefore concentrate on those 65 brewers known to be brewing in 1869 and known to have stopped by 1890. These disappearances from the trade are sufficiently well documented to permit analysis and point to certain factors at work.

Appendix 1 identifies the group of 65 and the date, or approximate date, when they ceased brewing. Table 10 analyses these closures as to the decade when they closed and the reason for closure when known. Financial problems inevitably account for a proportion of closures. In the 1870s, for example, bankruptcy meant the end of the County Brewery, Newcastle and the brewing activities of Oyston at Perryhill.⁶ Financial failure also hit the long-established Hindmarsh & Co., which had originally operated at Panns Quay but switched to the Wellington Brewery in the east of Sunderland. In 1880 a petition for liquidation was filed, the creditors resolved to wind up the company and the plant was put up for sale in a series of unsuccessful attempts to sell the brewery for use as sawmill, foundry or conversion to housing.⁷ Another failure in 1880 was that of E. Huntley who brewed in property belonging to the Felling Chemical Works.⁸

A change in ownership proved unsuccessful at the Old Brewery, Morpeth, where R. Fairley brewed until 1873 when the Morpeth Old Brewery Co. was formed to take over the remaining twenty years of the lease. By 1878, however,

the company had decided upon a voluntary winding up. As happened elsewhere, it was impossible to attract the interest of a would-be brewer to facilities that had been worked unprofitably. Serious financial trouble also contributed to the withdrawal from business of George Fowler of Durham, albeit from an unusual quarter. He stood as surety for a rate collector and was required to pay over a considerable amount of money as a result of a bond he had signed.⁹ Probably the most celebrated closure during the period was that of the Tyne Brewery which had been carried on by the Tyne Brewery Co. from 1874. By 1882 the firm had suspended brewing operations and put the premises up for sale. It was bought and refitted by J. Barras & Co., with the Tyne Brewery Co. holding on to most of its licensed houses and not finally going into liquidation until 1891.¹⁰

Liquidation, retirement and death did not of themselves mean inevitable closure, but when they came, as they did, at a time when conditions in the market left a shortage of potential new entrants willing to take over breweries as going concerns, they provoked closure. Thus it was that brewing ceased in Winlaton when James Elliott of the Ladywell Brewery went into liquidation in 1875, and the pattern was repeated elsewhere in the region.¹¹ A notable liquidation was that of Bartleman & Crighton, which was just one of the partnerships between Wm. Crighton and C.P. Crighton. It went into voluntary liquidation in 1879 and the brewing side was carried on by Wm. Crighton who himself went into liquidation in 1883. The brewing plant was sold, the brewery then being offered for rent as an empty building.¹²

Deaths of proprietors spelled the end of brewing at two important Newcastle firms. The Northumberland Brewery of Young & Co. closed in 1876 after the death of one of the partners and the Stag Brewery, occupying a large site in Percy Street, ceased brewing on the death of its owner, John Angus, in 1884.¹³ It was a combination of both death and unsuccessful trading that led to the closure of Newcastle's Grey Horse Brewery. When the owner, Wm. Elliott, died in 1875 the intended auction of premises was postponed when two members of his family made financial arrangements which allowed them to take over the running of the brewery. Within two years, however, the brewery was being offered for sale under powers made in the mortgage deed. Here again, the building proved difficult to dispose of and finally became the City Livery Stables.¹⁴

It was dissolution and death that ended brewing in Hexham. Here, Ayton & Co. of the Old Brewery had, in 1873, begun to produce their own lager, but within a year one partner had retired from the firm and in 1875 the remaining members dissolved the partnership. The brewery went to auction but was never purchased as a going concern. This left the towns

other brewer, Thomas Pearson, as the only one within a ten mile radius. However, when Pearson retired in 1880 no brewer came forward to continue the business.¹⁵ A similar situation arose in Wolsingham, which had been left with only two breweries after the disappearance of a third in the early 1870s, but both these closed within a year of one another a decade later. Following the death of the proprietor and a legal dispute within the family, the Wear Valley brewery went on the market in 1884 but never brewed again. Similarly, the neighbouring Wolsingham Brewery had been worked by the Hindmarch family for sixty years but when they retired in 1883 brewing stopped.¹⁶ At the Rothbury Brewery, the Storeys had brewed for 50 years until they retired on the expiration of the lease in 1883. Not surprisingly, the landlord was unable to find anyone willing to rent this small, isolated brewery and eventually put it up for auction with other buildings as suitable for conversion to workmens dwellings by a speculative builder.¹⁷ Retirement or dissolution was also the reason for the closure of a further three Newcastle breweries, two at Hartlepool and one in Durham.¹⁸

Some breweries ceased when their owners centred their brewing activities in other locations. After Brown vacated the West End Brewery, Durham it was occupied by P.B. Junor, who had come from Scotland in 1873 to take up a post at the Houghton-le-Spring Brewery. In 1883 Junor left to take over the Tower Brewery, Tudhoe and the West End Brewery was adapted for the production of botanic beers. The Tower Brewery had only been completed in 1871 when George Ogleby leased it from the Salvin estate. By 1877 Ogleby had retired from brewing and the remaining 95 years of the brewery lease was put up for sale, but the brewery stood idle until Junor moved there.¹⁹ At the Horns Lane Brewery, Sunderland, the partnership of Tysack & Forster was dissolved in 1874 on the death of Tysack. The brewery was then carried on by the Forster brothers whose principal premises were at Bishop Middleham. Efforts were made to sell the brewery in 1883 but it stayed with the Forsters and was used for auxiliary rather than brewing activities.²⁰

In certain cases the closure of breweries signalled the end of manufacture but not the loss of a firm to the wider beer trade, as some abandoned their brewing interests to concentrate on wine and spirit and ale and porter dealing. George Cockburn, for example, had originally hoped to sell the Angel Inn and Brewery at Alnwick in 1874, but when this failed he stopped brewing, disposed of the plant and let the empty premises. He did, however, carry on as a brewery agent and wine and spirit merchant. Similarly, in Durham after the death of T.C. Forster in 1886, brewing ceased but his wife continued to run the wines, spirits and bottling side of the enterprise. Brewing ended at the Star Brewery, Monk-

wearmouth when wine, spirits and ale merchants Laing & Co. took over around 1884. The Allendale Brewery brewed until 1887 when the then manager formed a new firm to utilise the premises as a wine and spirit merchants, and although the Wallsend Brewery was still brewing in 1877,

Years	Number
1871-5	18,342
1876-80	14,185
1881-5	8,673
1886-90	7,080

Table 11. Average Number of Licensed Victualler Brewers 1871-90. Source: Wilson, G.B. (1940) *Alcohol and the Nation: a Contribution to the Study of the Liquor Problem in the United Kingdom from 1800-1935*. London: Nicholson and Watson. Table 13, p.368.

F.J. Mordue stopped shortly afterwards and concentrated on beer retailing and running his public house. The firm of Addison Potter appear to have left brewing to look after their malting and other interests.²¹

Above all, in the context of the closure of brewing facilities, the period 1870-90 saw the decline of the publican brewer. This process nationally is shown in Table 11 which highlights the particular fall in the mid to late 1870s. A series of closures in the North East complies with this trend. Around 1874, breweries attached to five public houses in Consett Tow Law and on Tyneside closed. In 1878, the Bulmers Brewery at the Kings Head, Easington closed, as did the brewery at the Fox and Hounds, Merrington. In both these cases the end of brewing was precipitated by the deaths of owners and the sale of property. Brewing continued at the Oak Leaf Inn, Newcastle and the Brandling Arms, Gateshead until the early 1880s. In Durham, Colpitts, who had entered brewing when he became licensee of the Puncheon Inn, carried on brewing until c.1887.²²

The ten public houses mentioned here were known to have been brewing in 1869 and therefore included in Group C of Table 9. There is also further evidence of the decline of the brewing publican in press advertisements. In the early 1870s a number of brewhouses adjoining licenced premises were described as unused or being put to alternative uses such as stabling or candlemaking. Other public houses with breweries which went on sale at the time (for example, at Gateshead, Houghton-le-Spring, Bishop Auckland, Spennymoor, Greenside, Darlington and Durham) appear from subsequent directory entries to have ceased

brewing on the change of ownership. Some breweries, like the Green Tree, Newcastle, disappeared when the houses were demolished and rebuilt.²³ On other occasions the licensed property could be acquired by a local brewer to add to his chain of public houses, and who would naturally have no need of the brewing facilities.²⁴ But not all public house breweries ceased operations in the early 1870s. At the Seven Stars, Ponteland, John Wilkinson had facilities for brewing 27 half barrels. This was small by the standards of the time, and when the property went to auction in 1877 it attracted no bids above the upset price of £2,000. Brewing then went on until 1881 when Wilkinson retired.²⁵

Little is known about the remaining deaths of the c.1869 brewers but directory entries and press announcements point to approximate times of disappearance. Some were small scale, small town or village-based brewers at Wolsingham, Haltwhistle, Morpeth, Easington and Trimdon, who did not survive long into the next decade. Another three breweries ceased production in Newcastle in the mid-1870s, and by 1880, other closures had taken place at Bishop Auckland, Ferryhill, Anfield Plain and Wingate. At Belford, a shopkeeper-turned-brewer reverted to her former role, and the Shieldfield Brewery, Newcastle changed hands at auction in 1878 but was only kept going for another three years. The early 1880s also saw closures at Stockton, Wark, Cockfield, Usworth and Durham City. A few years later Henry Milburn gave up brewing in Barnard Castle.²⁶

The 65 closures for the period 1870-90 analysed in Table 10 show that the regional decline, like that nationally, divided reasonably equally between the two decades. However, when the actual dates are analysed we find that 20 of the 1880s closures occurred in the early rather than mid or late 1880s. Thus 83% of the closures between 1869 and 1890 had taken place by 1883, which follows the national pattern of a higher death rate in the years immediately after Gladstones Act. From the information available we cannot apportion blame for the closures on this particular piece of legislation except to say that as well as the unequivocal cases of financial failure, the willingness to dissolve partnerships and retire, along with the concentration of activities into more efficient plants or branches of the trade, all point to a growing awareness amongst brewers of the changing competitive environment. For some breweries, their underlying vulnerability may well have been confirmed by the introduction of the beer duty and it was certainly recognized by the market where there was an obvious refusal of entrepreneurs to enter the industry and take over these vacated breweries.

The national statistics show the vast majority of closures to be amongst small brewers, characterised in the trade press

as being those who were no doubt in a very small way of business, and struggled hard, often unsuccessfully, to eke out a livelihood with the aid of small plants and not fitted with the elaborate and perfect plant and machinery such is found in the largest establishments.²⁷ Amongst the North East closures the same pattern seems to be at work. Of the 65 deaths, 10 were publican brewers and another 19 village-based undertakings, all of which can be assumed to be small. Some closures were small brewers in urban areas already served by bigger, presumably more efficient outfits. For example, eight such breweries closed in Newcastle during the period and at least another dozen in various towns in the region that could be included in this category. In these cases the ability to compete was as much a function of relative size as absolute size.²⁸

All closures cannot, however, be written off as part of this wave of small brewery closures. If we take a rule of thumb used by the *Brewers' Guardian*²⁹ at the time and regard a medium sized brewery as one of over eight quarters capacity, then some breweries which closed and for which the capacity is known cannot be classified as small. The Tyne Brewery Co. illustrates the danger of regarding all closures as the result of small brewers falling victim to the fierceness of competition from bigger firms. This was a case of mismanagement and misjudgement; and far from being caused by smallness of scale or inadequate investment in plant, it was overambitious expansion that lay at the core of its demise. Two other breweries, firmly in the medium class, were both in Wolsingham and both of some ten quarters capacity.³⁰ The closure of the Wear Valley Brewery and Hindmarchs brewery were brought about in the first instance by the respective death and retirement of their owners. Why nobody came forward to carry on the business is explained not only by the general state of brewing but also a particular trend that appears to be emerging at that time: the geographical concentration of the industry and the decline of the isolated brewer. Output was not only becoming concentrated in fewer hands but in urban areas. This goes some way to explaining the termination of brewing at relatively well-organised and modern breweries such as those at Hexham and Allendale. By 1890 closures in the previous twenty years had meant the end of brewing in some 13 towns and villages in County Durham and seven in Northumberland.

Survivors

Table 9 separates the survivors into those which continued in the same hands during the period and those which underwent changes in ownership. Since most of the brewers discussed in Chapter I, 'The structure of the North East

brewing trade' came !it the first two categories of Table 9, it is not intended to repeat that discussion here, except to point out some changes in location or command.

The 49 brewers in group A of Table 9 are listed in Appendix 2 and can be further sub-divided as in Table 12. In some established breweries, new generations took over the reins

Category of Brewery	Number of Breweries
Those well-established by 1870	27
Those recently established in 1870	5
Others about which little is known of their history	<u>17</u>
	49

Table 12: North East Breweries under the same ownership 1870-1890. Source. As Appendix 2.

between 1869 and 1890. After the death of Robert Newton, the Victoria Brewery, Newcastle was run by his widow with the help of a partner. This partnership was dissolved by mutual consent in 1882 and the founders son took on the management. In Gateshead, Rowells was run by the founder until his death in 1875 when his son assumed control and at Smarts in Alnwick a son took over in 1873 when the founder died. In the latter case, George Smart set about updating the brewery and converted an adjoining building into maltings, and by 1890 had also acquired and remodelled a number of licensed properties. In Stockton, the Castle Brewery was enlarged in 1876 when W. and T.L. Kirk, the next generation of Kirk brothers, took over; and at the New Brewery, Morpeth, William Loades son became the sole proprietor on his fathers death³¹

In other breweries there were occasional, minor changes in partnerships. At the Wear Brewery, Sunderland, Scurfield left the Bramwell & Scurfield partnership in 1885 and the firm continued as Bramwell & Co. Similarly, at South Shields the Wood & Maxwell partnership was dissolved around 1875 and henceforth operated as Matthew Wood. The Border Brewery continued to be operated as a sole proprietorship until 1887 when Robert Douglas formed a partnership with William Henning who was brought from Germany to take over the management. With the death of J.B. Hodgson the Bishop Middleham Brewery became entirely owned by the Forsters, and around 1879 Fenwick & Story of the Chester Brewery became Fenwick & Co.³²

Three firms, which had not been long-founded in 1870, survived until 1890. Robert Emmerson began brewing at the

Flying Horse Brewery, Newcastle in 1869 and established the Burton Brewery around 1880. Emmerson retired from the partnership with his sons in 1883, the business being carried on by three sons and then later by two. At Newcastle Manor Brewery, Ridley & Cutter became the owners in 1863 and the partnership became Ridley, Cutter and Firth in 1888. John Smurthwaite and partner acquired the Mark Quay Brewery, Sunderland in 1868 and was still brewing there in 1890 after four changes of partnership.³³ The end of the period 1870-90 also saw the first hint that the more prominent North East brewery firms were to embark upon changes in their legal status. Blyth Brewery, which became the Blyth & Tyne Brewery in 1884, was, in 1889, drawing up an agreement which would form the basis of incorporation.³⁴ One brewery that did convert to a limited company in 1889 was Barras & Co. C.J. Reed continued to lease and run the brewery, with several partnership changes, until the Barras trust was wound up in 1882. On behalf of Barras & Co. he purchased nineteen licensed houses from the trust but moved across river to Newcastle to buy the Tyne Brewery. By 1889 C.J. Reeds interest in the partnership was such that he was regarded as having 11,202 shares to the other six partners 133.³⁵

There are other survivors who went from 1870 to 1890 under more or less the same ownership, but about which little is known of their history or age. In some cases we can identify minor partnership changes due to death or retirement and directory entries can also be used to discover the approximate time at which ownership or management passed to another member of the family.³⁶ Amongst the survivors there is also the special case of the Hinde family of Darlington, who were involved in brewing in 1869 and 1890, but relinquished control for a period between. Their brewery had been sold in the late 1870s to a Mr. Buckle who presented it to his son, but it proved unsuccessful and the Eastbourne Brewery, as it had been christened, was put onto the market in 1884. The announcement of the forthcoming auction in a Darlington newspaper was read in California by T.P. Hinde, who bought the brewery and remodelled it in 1885 under the name of the National Brewery.³⁷

In category B of Table 9 there are 20 breweries which survived the period 1870-90 but underwent at least one distinct change in ownership. These breweries are listed in Appendix 3. Precisely why these breweries changed hands is not clear in perhaps half the cases. However, it is possible from the remainder to identify several influences at work, with retirement and death at the root of a number of the changes. For example, at the West Auckland Brewery J. Tamplin had been in sole control since 1859, but in 1877 decided to retire from his active role and the West Auckland Brewery Co. was formed, taking a 21 year lease on the premises at a rent

of £150 per annum. At the Lion Brewery, West Hartlepool, following William Waldons death in 1872, the brewery and its 21 properties were leased by J.W. Cameron who had joined the firm in 1865. Retirement and liquidation also prompted changes at the Alnwick Brewery, the Ferry Brewery, South Shields and the Hanover Square Brewery, Newcastle.³⁸ Two changes of ownership at the end of the 1880s were highly significant in that they heralded the entrance into large-scale brewing of the Deuchar family. In 1888, when the Allison's; resolved to hive off the Monkwearmouth Brewery after 55 years, it was James Deuchar who took possession. When he had first arrived from Scotland he became a publican in Gateshead and then formed a partnership to trade in wines, spirits, ale and porter. In 1874 Deuchar became owner of the Ridley Arms in Newcastle and a year later carried out extensions and alterations to the attached brewery and began brewing. Further improvements were made to the brewery in 1882 and another three licensed houses were bought in Newcastle. By 1888 he was ready to extend his brewing activities at Monkwearmouth. James Deuchars brother Robert concentrated on developing his wine and spirits business and building up a chain of licensed houses until the opportunity came around 1888 to lease the Sandyford Stone Brewery. The brewery had been run since the 1860s by J.S. Arnison who by the mid-1880s had relinquished his interest in glassmaking and was preparing to retire from brewing.³⁹

Other changes in ownership were brought on by financial difficulties. For example, the Wooler brewery and farm, owned by the Chillingham Estate, were vacated by J.D. Bell in 1878 and the plant offered for sale under distress of rent. Bankruptcy was responsible for changes at the Monkseaton Brewery, where D. Matthews & Son had acquired the brewery following T. Davisons bankruptcy in 1864. When Matthews died in 1879 the firm went into liquidation and the brewery offered for sale at £2,200. It was purchased by the partnership of Forster & Wood, but when this was dissolved Forster ran it alone until his own bankruptcy. Thus the brewery changed hands again in 1886 for £1,025 when it was bought by George Wright who was already brewing at Belford.⁴⁰

In one change of ownership a wine and spirit merchant moved into brewing at a time when more brewers were moving in the reverse direction. When Renwick & Montgomery of the Lambton Brewery, Sunderland dissolved their partnership in 1874, T.E. Chapman & Co., wine and spirit merchants in the town since the late eighteenth century, took the chance to enter the trade. In another case, unique at the time, the Brunswick Brewery, Hartlepool was taken over by a newly-formed partnership from outside the region. In 1880 the brewery had been in a dilapidated state and was bought by Messrs. Nixey & Coleclough who immediately spent £20,000 enlarging and

restoring the brewery. By the end of the decade they were preparing to incorporate with another local business.⁴¹

Two other breweries, both in County Durham, closed during the period on account of financial failure and were not to open again until the 1890s. The Rainton Brewery had been carried on by the Legge family for many years until vacated in 1883 when G.A. Nimmo, a manager for his family's firm of John Nimmo & Son, began working on his own account at Rainton. By 1885, however, Nimmo was bankrupt and, as attempts to sell the brewery failed, it stayed closed until 1897.⁴² In Darlington, Matthew Hutchinson worked the South Durham Brewery until 1882 when the South Durham Brewery Co. was formed. Within two years the company had tried to dispose of the brewery and in 1885 a provisional liquidator was appointed and a compulsory winding up order made. However, a motion was introduced to stay the winding up and a scheme for reconstruction was prepared and approved by the creditors. When the court was petitioned for sanction of the scheme it ruled it was unable to do so but this was followed by an immediate and successful appeal against that decision. All efforts proved to be in vain, however, and by 1886 the creditors, aware that the reconstruction scheme had foundered, asked for the winding up order and the company offered no opposition. The brewery lay unused until 1894.⁴³

The other breweries in this group of twenty changed hands in circumstances that are not entirely clear, although some clues as to when this happened are available. For example, J. Jamieson brewed at the Elswick Brewery, Newcastle until about 1877 when the brewery was then offered for sale on the instructions of the mortgagees. It was taken over by L.B. Wilkinson & Co. who were not new to the industry, having previously brewed at a smaller brewery in the east of the city. In another instance it is known that the Bank Brewery, Barnard Castle was taken over by the partnership of McLean & Co. in 1889. W.H. Mawson, a local wine and spirit merchant, was the principal partner who put up over four-fifths of the capital, but it was John McLean who was the experienced brewer. McLean managed the brewery, lived rent-free and received a salary of 25 shillings per week.⁴⁴ Like the majority of breweries that did not change hands, there were many within Group B that could point to a long history. Equally, when they did change hands the new owners were not necessarily strangers to the business. The new owners of the West Auckland Brewery, Monkseaton Brewery, the Brunswick Brewery, Monkwearmouth Brewery, Elswick Brewery, Blandford Brewery and the Lion Brewery, West Hartlepool had all previously brewed elsewhere. Similarly, the entry into the industry of wine and spirit merchants and licensed victuallers brought in people with wide experience of allied trades.

New Entrants

The regions brewers in 1890 include eleven post-1870 entrants to the industry, and details are available on some. These are listed in Appendix 4. The Victoria Brewery, Darlington was built in 1874 by Manners who in 1880 formed the Darlington Brewery Co. Around 1888 the brewery passed into the hands of George Kitchen of Leeds but he died a year later and the brewery was put on the market. The Tynemouth Brewery was set up by Openshaw Bros. in 1877 and also around this time, in rural Northumberland, breweries were established at Felton, Harbottle and Belford. At Morpeth, the Hope & Anchor Brewery, used in the early 1870s by a grocer and wine and spirit merchant, was restored to its original purpose by Messrs. Hopper & Anderson. In Hartlepool, wine and spirit merchants, M. Rickinson & Son bought new premises and began to brew, and Plews of Darlington became another wine merchant to enter brewing, this time by combining with another side of the family with a brewery in North Yorkshire.⁴⁵

In what was an uncompromising time for the creation of breweries, three new ones were established in the South Shields area; the Victoria Brewery, the Rekendyke Brewery and the Westoe Brewery. Two of these were opened by individuals already experienced in the trade: the Victoria Brewery was founded by a traveller for another South Shields brewer and the Westoe Brewery by someone who had worked for a Newcastle brewery and had latterly been brewer at the newly established Victoria Brewery.⁴⁶ But at least two new entries after 1870 had disappeared by 1890. One was Knights, Stocks & Co. of South Stockton. The company had been formed in 1881 to acquire the business of J.A. Knights but by 1884 a resolution was put to an extraordinary meeting to wind up the company. Much of the blame for the state of affairs – the company made a loss of £12,000 during the year – was put on the heavy investment in special plant and fittings for the production of lager beer. Sales had not justified the high outlay and a scheme for reconstruction was drawn up, but within a few years the brewery was up for sale. On a less spectacular scale, Welsh & Willey set up the Bleachfield Brewery, Winlaton shortly after 1873 but had ceased by 1878.⁴⁷ Such short-lived and smaller entries into brewing may well have been mirrored elsewhere in the region but the spasmodic and transient nature of these experiments at the time of the decline of longer established undertakings suggest that they would not be regarded as noteworthy and would tend to go unreported. It is quite possible, therefore, that where dates of birth and death fall close to one another little is known of their existence.

Structure in 1890

The structural change evolving in the North East brewing industry between 1870 and 1890 had been one of concentration, and this was to be accelerated by the wave of incorporation in the following decade. However, whilst the concentration of output into fewer hands was clearly the trend, the essential characteristic of the industry in 1890 remained one of diversity.

Town	Number of Breweries
Newcastle	11
Sunderland	7
South Shields	7
Darlington	5
Hartlepool(s)	5
Gateshead	<u>5</u>
	40

Table 13. Number of breweries operating in some North East Towns in 1890. Source. As Appendices 1 & 2.

Town	Number of Breweries
North Shields	4
Houghton-le-Spring	4
Stockton	4
Bishop Auckland	<u>4</u>
	16

Table 14. Number of breweries operating within a five mile radius of some North East towns in 1890. Source. As Appendices 1 & 2.

County Durham	Northumberland
Barnard Castle	Belford
Bishop Middleham	Blyth
Castle Eden	Felton
Durham	Harbottle
Satley	Warkworth
Seaham	Wooler

Table 15. Towns and villages with one brewery operating in 1890 and with no other brewery within a five mile radius. Source. As Appendices 1 & 2.

The overall pattern of change indicated by Table 9 is that of a dramatic reduction in the number of brewers since 1870, but the main feature of brewing in 1890 remained the overwhelming numerical dominance of the small brewer, ac-

counting for some 83% of all firms. Thus, in the North East, for example, the Quarryburn Brewery and the Felton Brewery continued to operate in 1890, even though they were only a fraction of the size of the large-scale regional undertakings such as the Lion Brewery, West Hartlepool and the Tyne Brewery, Newcastle.

By 1890 breweries were heavily concentrated in the larger centres of population. Most brewing took place in the industrial towns with some breweries continuing to operate in a few market towns and villages. Table 13 shows the leading brewing towns of the region, whilst Table 14 shows those brewing centres of Gateshead, North Tyneside, Teesside, East and West Durham which were based around a cluster of nearby towns. Together, locations in Table 13 and 14 contain approximately three-quarters of all brewing facilities. If we add the brewery at Howdon to the Newcastle and Gateshead area figures we find seventeen breweries (nearly one quarter of the regions total) operating within a Five mile radius of the centre of Newcastle.

In Northumberland, three free-standing towns, Berwick, Morpeth and Alnwick each had two breweries and no other breweries within five miles. In the Tyne Valley the breweries at Ovington and Ovingham were situated within two miles of one another but some eight miles from the nearest brewery within the Gateshead area. Table 15 shows the location of twelve breweries in the region which operated in areas where no other brewery existed within at least five miles.

The simple geographical distribution of the eighty surviving breweries understates the degree of concentration since many of the bigger breweries tended to be grouped together in the large urban areas, thus the concentration in output terms was much more marked.

The size and arrangements of breweries

Size

Table 8 shows the overall pattern of change, in terms of size, in the brewing industry as a whole between 1870 and 1890. A 62% fall in the number of smaller brewers (those producing less than 7,000 barrels per annum), compared with only a 7% decline amongst all others, demonstrates the growing concentration of output in the hands of the larger firms and the accelerating decline of the long tail of small brewers.

By 1870 it had become the convention to express a brewery's size in terms of quarters, which referred to the number of quarters of malt that could be used at one brewing. From contemporary press reports and directory entries, Table 16

Brewery	Year	Quarters	Capacity	
			Barrels per week	Barrels per brewing
Lion Brewery, West Hartlepool	1890	70		
Tyne Brewery, Newcastle	1890	60		
Chester Brewery, Chester-le-Street	1877	30		
Border Brewery, Berwick	1890	25		
Burton Brewery, Newcastle	1890	25		
Robinsons, Houghton--le-Spring	1884	16		
City Brewery, Durham	c.1890	14		
Alnwick Brewery	1890	12		
Felton Brewery	1890	12		
Ferry Brewery, South Shields	1880	10		
Tower Brewery, Tudhoe	1877	5		
Westgate Brewery, Newcastle	1881		150	
Mill Darn Brewery, South Shields	1875		50	
Monkseaton Brewery	1879			32
Wooler Brewery	1878			17

Table 16. Brewing capacities of some North East breweries 1875-1890. Source. *Descriptive Account of the Hartlepoons* (1894) p.31; *Descriptive Account of Berwick* (1894) p.3; *Descriptive Account of Durham and District* (1894) pp.30-32, 46-48; *Descriptive Account of Newcastle and District* (1894) p.126; *Newcastle Breweries Ltd. Prospectus*, (1890), Tyne & Wear Archives Service 2319/5; *Newcastle Daily Journal* 1.5.1875, 25.4.1877, 31.11.1878, 16.4.1879, 18.9.1880, 23.5.1881, 30.5.1891; *Alnwick Gazette* 24.5.1890.

has been constructed showing this standard measure for some North East breweries which brewed throughout the period 1870 to 1890, and also includes information on size available in the alternative form of barrels. A similar table for breweries which failed to survive the period under review is given in Appendix 5.

Whilst Table 16 and Appendix 5 indicate the range of brewing capacities and the size rankings for a number of different breweries, they do not provide anything approaching a complete or accurate picture of the size distribution of North East breweries for a number of reasons. Firstly, there is little information on what we know to be some important brewers of the time which is itself a reflection of the sources available. Secondly, where information is available, it may confuse capacity and output. Thirdly, different measures of size

used in Table 16 and Appendix 5 are not strictly comparable. In the first case they cover a period of around 20 years during which the industry was changing rapidly. In addition, information provided in terms of brewings is incomplete without data about the number of brewings per week. Finally, any attempt at comparison between size in quarters and barrels fails for the lack of an acceptable conversion factor.⁴⁸ Nevertheless, despite the sparsity and inadequacy of the information, Table 16 and Appendix 5 confirm a general picture that emerges across the industry i.e. the largest factory-based brewers were in centres of population; breweries in isolated, rural areas were of a more limited capacity; and breweries attached to public houses were small scale. The vulnerability of the smaller brewer is also confirmed. What limited information is available, therefore, does seem to confirm the national experience.

Design and Layout

The period 1870-90 saw an increasing emphasis placed on the design and layout of breweries. With changing techniques and technology, the progressive brewers were required to rebuild, redesign or alter layouts. A new group of professionals emerged to advise on this process and by the end of the period the *Brewers' Guardian* remarked that we are indebted to architects and engineers for many great improvements in the arrangement and construction of our breweries.⁴⁹

The nature of brewing as a process industry involving the movement of large quantities of materials, particularly liquids, made it desirable in financial and engineering terms to lay out plant in a way which would minimise pumping. The underlying consideration, therefore, became the exploitation of gravity. Strict adherence to the gravitation principle led to an idealised design whereby the water supply was to be pumped to tanks situated above all other equipment and working areas. Below the water tanks would be situated the hot liquor back and then, in strict descending order at different levels in the building, would be the mash tun, copper, hopback, coolers, refrigerators and fermenting areas. Such a pure tower arrangement was modified in practice for a number of reasons.⁵⁰ This had to be so, of course, where brewers were using inherited buildings constructed before the gravitation principle was regarded as so important or which had not previously been used for brewing. In the 1880s Scamell, a consulting brewery architect and engineer, described the usual plan as one where the original water descends through the plant until the hop back but the resulting wort is then pumped to coolers and continues through refrigerators for fermentation; thus significantly lowering the overall building height required.⁵¹

By 1889 the *Brewers' Guardian* was reporting that 'the gravitation principle has been largely adopted in ... (breweries) of medium and small size',⁵² and in the North East between 1870 and 1890 some breweries were built and many underwent extensive alterations and re-equipping along such modern lines. Some of this activity took place early in the period. For example, the Tower Brewery was built at Tudhoe in 1871 and the three-storeyed Victoria Brewery was erected at Darlington in 1874 at a cost of £12,000. Also in 1874, Camerons completely replaced their Lion Brewery with new buildings and plant, requiring brewing to be suspended for ten weeks. Other refittings took place at the Mill Dam Brewery, South Shields, over an eight year period up to 1875, and Fenwicks brewery at Chester-le-Street was rebuilt in 1877.⁵³

Nevertheless, it was in the decade beginning 1880 that a number of major local breweries underwent remodelling and

re-equipping in line with the gravitation principle. In 1881 the Alnwick Brewery was extensively altered to a pattern similar to Scamells usual model, having installed a three-throw wort pump which could return 300 gallons of wort per hour onto coolers at the top of the building. Likewise, Newcastle's Victoria Brewery was enlarged and redesigned around 1884 on the basis of three floors. On the top storey malt passed through the malt mill alongside the hot water tank, mashing and hopping took place on the malt floor below and the wort was then pumped back up to the top floor to the coolers before returning to the fermenting tuns on the first floor. The ground floor accommodated the engine room and storage areas. The Hanover Square Brewery was said to operate on the tower principle and a description of the time bears this out. Water cisterns at the top of the building supplied the liquor copper below and the water passed to the mash tun with the brewing copper beneath it. The wort then ran on to coolers and through refrigerators to the fermenting tuns. An internal rearrangement of the Swalwell Brewery was carried out in 1889 by Wilson & Co. of Stockton and a 50 foot tower was also erected on the site of an old malt kiln. At the top of this tower was a 8,000 gallon cistern to which well water was pumped. Accounts of the structure and layout of other North East breweries indicate that some form of tower principle was applied by leading brewers.⁵⁴

Other local brewers underwent important structural alterations during the 1880s. For instance, at the Houghton-le-Spring Brewery of Robinson Bros., leading brewing engineers, Stewardson & Hodgson of Edinburgh laid down entirely new plant in 1884, and at the Blyth & Tyne Brewery brewing operations ceased for some time whilst a large amount was spent on refitment and enlargement.⁵⁵ In both these examples it seems likely that improvements took place along the lines being followed at other North East breweries and in the industry generally.

The gravitation principle implies compact sites for breweries but many other complimentary activities in addition to the actual process of brewing had to be accommodated and as a consequence the sites covered by breweries could extend over large areas. This was especially so when breweries did their own malting, requiring substantial buildings to accommodate barley stores, steeping cisterns, malting floor and kilns. By 1890 Many prominent brewers had maltings within their main premises and these of necessity were quite spacious. In Darlington, the Victoria Brewery had two malting floors of 114 feet by 52 feet and the Hanover Square Brewery, Newcastle had a large three-storeyed building. The maltings of Robinson Bros. at Houghton-le-Spring was a four-storey building embracing some 8,000 square feet. Other maltings were sited alongside the breweries of Fenwicks, Joseph Johnson, W.H. Allison, Sandersons, and the West

Auckland Brewery (rebuilt in 1879). At Camerons, a second malt kiln was built in 1884. Some other brewers (for example, Barras, St. John and the Border Brewery) produced their own malt but at premises away from their main brewing site.⁵⁶

Another space-consuming feature of brewing was storage, which for the larger breweries meant considerable room to allow ale and beers to mature. Around 1890 Robt. Deuchar needed seven extensive basement vaults, the City Brewery at Durham had four large cellars, and Robinson Bros. stored their products in five cellars and an area underneath the maltings which could accommodate 1,000 barrels. In Darlington, the Eastbourne Brewery, a relatively small undertaking, had a beer store measuring 78 feet by 24 feet, and new stores were added to the Victoria Brewery of Darlington in 1888.⁵⁷

Amongst a range of outbuildings brewers built or extended during the period were stabling and associated buildings such as coachhouses and cartsheds. Of the larger breweries, the Tyne Brewery, Newcastle had stabling for 35 horses, although a number of smaller undertakings had stabling for only a handful of animals. Horses were, of course, very important in brewing, with Isaac Tucker of Gateshead, for instance, having 40 horses for cartage around 1890.⁵⁸ Other buildings attached to breweries included bottling plants, mineral water manufacturers, coopers shops, managers houses and wine and spirit stores. In addition, premises often included large yards and spare ground earmarked for possible future expansion. Taking all this into account it was inevitable that some firms occupied considerable sites. One of the biggest, and best documented, was the 1.7 acre site of the Tyne Brewery which in 1881 consisted of:

Brewery with surrounding ground	2,830 square yards
Joiners shops, stabling, coach houses, coopers shops, saddle room, cartshed, and vacant land 1800 square yards	1,800 square yards
Offices, bottling rooms, stores and cellars	1,445 square yards
15 room dwelling house	230 square yards
Building and vacant land	1,930 square yards ⁵⁹

The Tyne Brewery site was extensive despite having no malting facilities: when brewing in Gateshead, Barras operated maltings away from their brewery and they continued to use these same maltings after their move to Newcastle in 1884 and up until 1918. Sites of a similar magnitude to the Tyne Brewery were occupied by Vaux, Camerons and Ridley, Cutter and Firth.⁶⁰ Some North East brewers covered considerably less ground, and all sites within the region fell well-short of those of the major London, Burton and Scottish brewers.⁶¹

The need to be alongside reasonable transport facilities for the receipt of raw materials and distribution of beers meant that breweries often occupied not only relatively large but also prominent sites within the neighbourhood. Wm. Bradford, the brewing architect and surveyor who rebuilt the Tyne Brewery for Barras, observed that in passing through a town attention was usually attracted to two or three buildings - generally the church, municipal buildings, and a brewery.⁶² A number of breweries were centrally-situated in Newcastle, whilst others at the mouth of the Tyne - like the Ferry Brewery, South Shields and the Northumberland Brewery, North Shields - had important riverside positions. Breweries in other towns were local landmarks, including Yearsons Northumberland Brewery with its imposing 50-yard frontage on Hexhams main thoroughfare and the Monkseaton Brewery, said to be the most prominent building in the village.⁶³

Buildings in rural areas, although not large in terms of buildings, often had considerable areas of land adjoining as a legacy of the brewery's origins as an adjunct to farming. In this way the Wylam Brewery had two fields and five cottages attached, the Allendale Brewery had twelve acres of land and the Morpeth Old Brewery boasted a nine acre grass field which hosted band concerts and monster picnic parties. The West Auckland Brewery Company ran a well-stocked farm although at times this proved a drain on resources. On a much smaller commercial scale both the Ovingham and Blyth Breweries regularly sold hay and the Ovington Brewery sold eatage of six acres of turnips. Many breweries sold their dried spent grains for animal food.⁶⁴

Water, machinery and power

Water supplies had been a prime consideration in the original siting of breweries with the proprietor of the Hexham Old Brewery, for example, declaring in 1869 that it was the water that brought us here.⁶⁵ The quality of Sunderland's water in particular was regarded as ideal for brewing purposes. In 1890 three Sunderland brewers continued to use well-water for brewing and at least one had experimented with the town supply before returning to his own wells. In other parts of the region, throughout the period 1870-1890, good or excellent water supplies were reported to be found on brewing premises.⁶⁶

The extent to which breweries could use their own water depended upon the reliability and quality of its supply, and maintaining a constant supply of sufficient quality could prove difficult. When the new owners took over the West Auckland Brewery in 1878 their dissatisfaction with the existing well prompted them to sink a temporary well and

test for water from another two boreholes, on the basis of which they sank a new well in the brewery garden. Within a few years, however, the brewer was reporting that the well-water was contaminated and the brewery was never able to rely entirely upon its own wells, having always obtained some supplies from the Weardale and Shildon Water Company.⁶⁷ But even if unsuitable for brewing, well-water could still be used for other purposes such as washing and refrigeration. The continued use of well-water made economic sense and most large North East brewers operated on a combination of well-water and the local town supplies.⁶⁸ At Ovingham, Wm. Bedlington relied on the good quality well-water available in the village even though it meant piping it a quarter of a mile to the brewery.⁶⁹

As well as monitoring the quality of their water supplies brewers were required to pay equal attention to quantity and on occasions it became necessary to drill extra wells. In 1881, for instance, the Alnwick Brewery sank a borehole of 90 feet from which water was pumped at the rate of 3,000 gallons per hour. Fenwick & Co. of Sunderland drilled a new, deeper well to replace a defective shaft and Nixey & Coleclough sank a 170 foot well on their premises around 1890. Also in 1890, the London firm of specialists, le Grand & Sutcliffe, drilled an artesian well for the Crown Brewery, Bishop Auckland, and one of 202 feet 6 inches for the Victoria Brewery, South Shields.⁷⁰

When it came to new machinery, it would seem that the leading North East brewers adopted it just as quickly as their counterparts elsewhere in the provinces. There was, for example, ample evidence to suggest that mashing machines were in widespread use in the region and what detailed information is available indicates a preference for Steeles design.⁷¹ The national pattern was also followed when it came to the installation of refrigerators, with North East brewers showing a distinct preference for those produced by Morton. By the early 1890s both the City Brewery, Durham and the Barras Bridge Brewery, Newcastle were using a Morton machine to cool their hot liquor at the rate of 25 barrels per hour,⁷² but there were other manufacturers in the market. Shortly after formation, the chairman of the West Auckland Brewery Co. travelled to Manchester to inspect a Gregory & Haynes refrigerator. A partner of that firm subsequently visited West Auckland to look at the brewery and provided an estimate of £169 for a first-class 60 barrel refrigerator. The suppliers suggested that the equipment would cool an entire brew in 1 hour or possibly even forty minutes. It was installed in 1878 at a cost of £187 and was fixed in such a way that waste water could be carried to the barrel-washing vat.⁷³

As regards power, when the North East brewing industry entered the 1870s steam was being used widely in firms of

all sizes. Earlier alternatives had been wind, water or horses; although there is no evidence that in the North East, or even Britain, wind power was used to assist brewing.⁷⁴ There is, however, some evidence that horsepower and water were being used locally in the mid-1870s. A horse mill existed at the Angel Brewery, Alnwick in 1874 and four years later the Wooler Brewery had 'horse gear for driving malt mill and pump'.⁷⁵ In 1877, Robinsons of Houghton-le-Spring was disposing of a 16 feet 8 inches diameter, 4 feet 7 inches wide, iron water wheel complete with 10 feet shaft and carriages.⁷⁶ These are, nevertheless, isolated examples.

When it came to steam power, North East brewers were using engines of various sizes, as illustrated by Table 17. The most popular size of engine was around 6 or 7 horsepower. On this albeit limited evidence the region appears to be in step with the industry at large. For example, it was felt by some brewing engineers in 1871 that a 5 horse-power engine was sufficient, although this was only for bottling purposes and would have to be increased if extra power was required for pumping, particularly in deep wells.⁷⁷ As to the type of machine adopted, the picture that emerges suggests compliance with a trend within the industry of a change in fashion towards the horizontal acting machine. Vertical engines were known to be in use at Burnopfield, at Easington, at the Stella Brewery and at the Grey Horse Brewery, Newcastle. A beam engine was operating at the Northumberland Brewery, North Shields up to 1883 and at the Barras Bridge brewery in 1890; but the engine at Sandersons, described as a 'substantial lever engine' was regarded as inadequate by 1874.⁷⁸

Horizontal engines began to find favour amongst brewers since they were less complicated in terms of moving parts, cheaper to install and took up less space than beam engines. In 1882 the Tyne Brewery Co. had a horizontal engine made locally by Hawthorn & Co. with 12 inch cylinder, 24 inch stroke and two single-tube boilers. Similarly, up to 1884 Barras Gateshead brewery had operated a horizontal engine, 12 inches by 24 inches; a Westminster double-action steam pump, a 7 inch and 4 inch ram; two sets of steam pumps with 20 strokes; and a Cornish boiler 18 feet by 4 feet. Elsewhere, the Alnwick Brewery installed its 8 horse-power Tangye engine in 1881 and in 1884 Robinson Bros. began using a 10 horse-power Tangye engine for milling and two smaller engines for pumping. This use of separate engines for milling and pumping and other tasks such as cask-lifting was in line with the engineering advice of the day.⁷⁹

The steam engine had also moved from being solely a source of motive power to a means of transmitting heat and supplying hot water. By 1890 Robt. Emmersons brewery was using steam to drive machinery within the

Brewery	Year	Horse Power
Lion Brewery, West Hartlepool	1890	30
Tyne Brewery, Newcastle	1889	20
Robinsons, Houghton-le-Spring	1890	10
Chester Brewery, Chester-le-Street	1877	8
City Brewery, Durham	c1890	7½
Morpeth Old Brewery	1884	7
Kings Head, Easington	1878	6
Grey Horse Brewery, Newcastle	1877	6
Haymarket Brewery, Newcastle	1874	6
Union Street Brewery, Sunderland	1876	5
Felton Brewery	1890	3
Queens Arms, Gateshead	1874	3
Stella Brewery, Blaydon	1890	2½;
Smarts Brewery, Alnwick	1890	1½

Table 17. Steam Engines in Some North East Breweries 1874-1890. Source. John Barras & Co., Prospectus, 1899, Tyne & Wear Archives Service 1463/2; *Descriptive Account of the Hartlepoons* (1894) p.31; *Descriptive Account of Durham and District* (1894) pp. 30-32, 46-48; *Newcastle Daily Journal* 11.3.1874, 15.7.1874, 30.1.1877, 16.8.1884, 18.9.1890, 8.4.1893; *Sunderland Times* 16.6.1876; *Sunderland Daily Echo* 4.5.1878; *Alnwick Gazette* 3.6.1890.

brewery and service its aerated water factory, cooperage, cask-washing and other departments. At the same time, however, the Swalwell Brewery was demonstrating the continual search amongst brewers for the most efficient forms of power and heat. In this brewery, steam power was introduced in 1845 but by 1889 was regarded as obsolete and had been replaced by gas in the form of two Otto gas engines.⁸⁰ This complete conversion was unique amongst North East brewers of the time, although the Manor Brewery of Ridley, Cutter and Firth had also introduced gas but in their case 'a powerful steam engine' worked alongside 'a gas engine of considerable power'.⁸¹ Similarly, at Camerons, power from a vertical steam engine was supplemented by a 8 horse-power gas engine.⁸²

An illustration of the improvements and extensions carried out at one North East brewery during the period is provided

by a valuation statement of fixtures at Nimmos Castle Eden Brewery in 1871 and 1888.⁸³

Summary

Structurally, the period 1870-90 had been one of concentration: the number of brewers in the North East was halved, almost all the closures were small concerns and many of them publican brewers. Nevertheless, small firms still predominated in 1890. There were also changes amongst those firms that survived the period, with almost one-third of the survivors experiencing at least one change in ownership. The vast majority of survivors were well-established when the period began and although there remained a wide geographical distribution of such firms in 1890, there was an increasing concentration of brewing in urban areas.

	1871	1888
	£	£
1 Engine, boiler and pumps	50	500
4 Tunning troughs, 4-15 barrels each	23	500
1 15 barrel cooler	2	80
1 Malt mill (replaced in 1871)	3	75
1 Wort pump	10	30
1 Mash tun	10	150
2 Water cisterns, 1,000 gallons (replaced with one containing 3,000 gallons in 1871)	7	140
1 15 barrel copper replaced with new 75 barre 1	25	185
1 16 barrel iron water tank (replaced with new 3,000 gallons)	5	30
1 Wood malt cistern	<u>3</u>	<u>75</u>
	138	1,765

The period had also witnessed a good deal of activity devoted to redesign, restructure and new building of production facilities, particularly after 1880, and also the enhancement of water supplies, the installation of more powerful engines and the adoption of new methods for a variety of tasks. The end of the period, therefore, saw fewer breweries, but amongst those that had improved and extended their breweries were the firms geared up to meet the more competitive environment of the future.

References

Introduction

1. Mathias, P. (1959) *The Brewing Industry in England, 1700-1830*. Cambridge: Cambridge University Press.
2. Hawkins, K.H. & Pass, C.L. (1979) *The Brewing Industry: A Study in Industrial Organisation and Public Policy*. London: Heinemann; and Vaizey, J.E. (1960) *The Brewing Industry, 1886-1952*. London: Pitman.
3. Lynch, P. & Vaizey, J. (1960) *Guinness's Brewery in the Irish Economy*. (Cambridge: Cambridge University Press; Donnachie, I. (1979) *A History of the Brewing Industry in Scotland*. Edinburgh:

John Donald; McMaster, C. (1985) *Alloa Ale: History of the Brewing Industry in Alloa*. Edinburgh: Alloa Brewery Co Ltd.

4. Wilson, G.B. (1940) *Alcohol and the Nation*. London: Nicholson And Watson.

5 Baxter, J. (1945) *The Organisation of the Brewery Industry*. Unpub. Ph.D Thesis, London University.

6. The principal trade journals covering all or part of the period are the *Brewers' Journal* (1869-1939), the *Brewery Trade Review* (1886-1939) and the *Brewers' Guardian* (1871-1906).

7. Bennison, B. & Merrington, J.P. (1991) *The Centenary History of the Newcastle Breweries Ltd., 1890-1990*. Newcastle: Newcastle Breweries Ltd; Elkins, T. (1970) *So They Brewed Their Own Beer: The History of the Northern Clubs and Federation Brewery Ltd*. Newcastle: Northern Clubs Federation Brewery; Wood, R. (1963) *The Lion Brewery. A Short History*. West Hartlepool: J.W. Cameron.

8. For a full list of manuscript sources see below.

9. For a full list of newspapers see below.

Chapter 1

1. Corran, H.S. (1975) *A History of Brewing*. London: David & Charles, p.11.
2. Lloyd-Hind, H. (1940) *Brewing: Science and Practice Vol. II*.

London: Chapman & Hall, p.507.

3. Griffiths, C.H. & Martin, G. (1917) 'Beer' in Martin, G. (ed.) *Industrial and Manufacturing Chemistry Part 1*, 3rd Edition. London: Crosby Lockwood & Son, p.253.

4. Corran, H.S. (1975) op. cit., p.109 cites *London and County Brewer* (1735) as confirming the 'virtual disappearance of all grains except barley for malting'.

5. Scamell, G. (1880) *Breweries and Maltings: Their Arrangement, Construction, Machinery and Plant*, 2nd Edition, Revised by F. Colyer. London: E. & F.N. Spon, pp.137-78. There are obvious difficulties in designating many abridged patent specifications to particular trades or industries. Dutton, H.I. (1984) *The Patent System and Innovative Activity during the Industrial Revolution*. Manchester University Press: Manchester, Appendix A, gives 'the direction of patent activity ranked by process' between 1750 and 1851. A figure of 273 is given for 'Brewing' but this certainly underestimates the number of inventions applicable to the brewing industry since other processes in Dutton's classification include steam, grinding corn, metal pipes, ventilation, bottling liquids, casks, barrels and ice-making.

6. Whilst Scamell's is perhaps the most comprehensive analysis, other more recent historians have carried out their own analyses which conflict to some extent numerically but indicate the general emphasis of inventive activity in different periods [see, for example, Corran, H.S. (1975) op. cit., p.80.

7. Steele's masher was an 'external' machine powered by steam. Some other external machines, developed from 1863, were self-acting, being propelled by the force of the liquid itself. But it was Steele's machine that became widely adopted and Corran, H.S. (1975) op. cit., p.188 comments that the machine is 'still used, largely unchanged'. There were also 'internal' mashing machines of which Matterface's rakes, invented in 1807, still survive in much the same form (see Corran, H.S. (1975) op. cit., p.188). What this discussion of mechanical aids to mashing illustrates is that with reference to but one small part of the brewing process we can see the pattern of innovation that applied across the whole of brewing: the invention of machinery or instruments followed by alterations and modifications, but where the essential elements of the basic design could remain for a considerable time.

8. Amsinck, G.S. (1868) *Practical Brewings: A Series of Fifty Brewings in Extensio*. London, p.4.

The method that was to become widespread amongst brewers was the Jukes furnace, patents for which were filled between 1838 and 1848.

9. Baxter, J. (1945) op. cit., p.161 states that by the middle of the 19th century 'all year round brewing had been substantially achieved'. This is confirmed by Black, W.A. (1849) *Practical Treatise on Brewing, based on Chemical and Economical Principles; with formulae for public brewers and instructions for private families*, 4th Edition. London: Longmans, Green, and Company, p.75 who says that 'in former times there was always a cessation from brewing in the heat of summer. Now, however, little or no alteration is made on that account, and the various mechanical

means have been adopted to counteract the heat of the weather during the summer'.

10. Baxter, J. (1945) op. cit., p.113.

11. Corran, H.S. (1975) op. cit., p.197.

12. Amsinck, G.S. (1868) op. cit., p.6. As early as 1847, Levesque, J. (1847) *The Art of Brewing and Fermenting and Making Malt*, 4th Edition. London: J. Leath, p.4 argued that 'in these days of invention and improvement, the refrigerator is of indispensable importance' and "wherever competition prevails, they must be adopted".

13. The new cleansing method was the 'Burton union' system developed by the leading Midland brewers. This triggered off much debate in the trade press, although it was unlikely to have been a practical issue in the North East. Amsinck, G.S. (1868) op. cit., p.5 thought that the advocacy of unions had become 'the fashion of the day' and Scamell, G. (1880) op. cit., p.42 said the question of unions was only a consideration for the large brewers.

14. Certain conclusions do however emerge. It is clear that it was not until the last fifteen years of the eighteenth century that the steam engine was adopted for brewing operations. It is also clear that brewers, when they did adopt steam engines, were great customers of Boulton and Watt. Mathias, P. (1959) op. cit., p.84 states that 'before 1795 only two other industries (cotton and coal) had a greater number of Watt engines than breweries'. It is pointed out that this is in terms of the number of machines: if horse-power was the criterion then canals would beat brewing into third place. Kanefsky, J.W. (1979) *Diffusion of Power Technology in British Industry, 1770-1870* (Unpub. Ph.D Thesis, University of Loughborough, attempts to trace all steam engines known to have been in use between 1700 and 1800, and shows that they were not used in brewing until 1781 and thereafter 26 were installed before the end of the century (Table 6.3 p.273). Mathias, P. (1959) op. cit., p.85 lists Watt engines supplied to breweries between 1754 and 1841. This is based upon an analysis of the Soho MSS Engine Book and the author accepts that this list is not exhaustive nor would it include certain conversions of existing engines. In any case, the emphasis on Watt in much of the literature of the steam engine may obscure the fact that breweries, in common with other businesses, had many other potential suppliers of engines. Musson, A.E. (1976) 'Industrial Motive Power in the UK, 1500-1870', *Economic History Review*, 2nd Series. Vol. XXIX, pp.415-1139 argues that the use of steam power was more extensive than had earlier been thought since 'many of the old Savory and Newcomen engines continued to be built and the Newcomen "atmospheric" could, like Watt's, be connected to rotative motion, whilst Watt's engines were extensively 'pirated' and many other engine builders were active in various parts of the country in the last two decades of the century before Boulton and Watt's patent monopoly ran out in 1800'. Given the above complications it is impossible to get an accurate picture of the rate of adoption of steam power by breweries.

15. Mathias, P. (1959) op. cit., p.81.

16. The output figures for Durham are taken from Mackenzie, E. & Ross, M. (1834) *Historical, Topographical and Descriptive View of*

the *County Palatine of Durham*. Newcastle: Mackenzie and Dent, Vol. 1, p.cii. Indeed, in England and Wales there were only 154 brewers whose output exceeded 20,000 barrels (see Table 3 p.18).

17. Baillie, J. (1801) *An impartial History of the Town and County of Newcastle upon Tyne and its Vicinity*. Newcastle: Vint & Anderson, p.530.

18. The engine at Wood's brewery was valued at £50 (Valuation of the Property Connected with Brewery of late Christopher Wood, 1835, TWAS 573/79). For Taylor's see *DA Newcastle* (1894) p.122. The consideration of motive power in breweries in Chapter 2 suggests that by the early 1870s most North East brewers of any significance had steam engines and it is probable that many of these were acquired before the late 1860s.

19. Mathias, P. (1959) op. cit., p.65.

20. Brown, H.T. (1916) 'Reminiscences of Fifty Years' Experience of Application of Scientific Method to Brewing', *Journal of the Institute of Brewing*, Vol. XXII, No. 5, May-June, pp.267-354.

21. *ibid.*

22. Clow, A. & N. (1952) *The Chemical Revolution*. London: Batchworth, p.538 express the view that it was unnecessary to refer to the antecedents of the chemical understanding of fermentation 'beyond the recording of the microscopic observation, which Lecumenhock made in 1680, that the yeast which brings about the fermentation process is a mass of small cells - it was not until 1838 that Cagnard later showed that it was a living organism which was reproduced by budding'. Pasteur's work *Etudes sur la Biere* was not published in translation until 1879, although extracts appeared in the *Brewer's Guardian* from 16 February 1877.

23. Brown, H.T. (1916) op. cit. There is some evidence of the slow adoption of scientific method. In 1871, for example, there was no microscope in use at Whitbread's brewery. Sigsworth, E.M. 'Science and the Brewing Industry, 1850-1900', *Economic History Review*, 2nd Series, Vol. XVII, 1964-65, pp.536-50, concludes that 'not only the processes of the brewery, but the skills of maltster, hop and barley grower all in some measure experienced the impact of scientific progress. In some cases that impact was long delayed because the discoveries themselves were long in coming to fruition. In some cases the discoveries were of a highly controversial nature and long continued to be so. In others, sheer inertia on the part of the industry seems to have delayed the adoption of new techniques devised in the laboratory. In no case can scientific discovery be said to have had revolutionary effects upon the brewing industry'.

24. *Hexham Courant*, 11 December 1869.

25. Vaizey, J.E. (1958) 'The Brewing Industry' in Cook, P.L. & Cohen, R. (eds.) *Effects of Mergers*. London: Routledge, pp.397-422.

26. Figures for brewing publicans' share of output and their incidence in the North East are taken from Baxter, J. (1945) op. cit., Table 8, p.49, Table 9, p.52 and Table 14, p.63.

27. *ibid.*, p.44.

28. Clapham, J.H. (1964) *An Economic History of Modern Britain: The Early Railway Age 1820-1850*. Cambridge: Cambridge University Press, p.171. Clapham cites as evidence the

official Excise Returns which show numerous prosecutions for illicit trade in Scottish spirits in the region.

29. *Report from the Select Committee on Sale of Beer*, House of Commons, 6.4. 1830 p.99.

30. For some areas directories were not published every year. Where directories did appear annually there was often a time lapse which made the precise time at which a brewery left the industry uncertain.

31. There is some doubt as to whether around 20 of these 152 breweries were actually operating in 1869. They appear in some directories, for example, in 1868 but not 1870. They have nevertheless been included.

32. *Newcastle Daily Chronicle*, 23 May 1882.

33. For the Hanover Square and Manor Breweries see *Tyneside Industries* (1889) pp.108 & 147 and *Rivers of the North* (1894) p.176; for the description of Arnison's brewery see Baillie, J. (1801) op. cit., p. 530; and for W.B. Reid see Prospectus of W.B. Reid & Co. (*Newcastle Daily Chronicle*, 12 May 1891 & *Newcastle Daily Journal*, 17 December 1889).

34. For Sanderson, Newton and Sutter respectively see *Newcastle Daily Chronicle*, 9 June 1896, *Tyneside Industries* (1889) p.117 & *Newcastle Daily Journal*, 2 February 1889; and for Emmerson see *Tyneside Industries* (1889) p.83.

35. Prospectus for R. Fenwick & Co. Ltd (*Newcastle Daily Chronicle*, 17 November 1896) states 'established upwards of a century'. Potts, T. (1892) *Sunderland: A History of the Town, Port, Trade and Commerce*. Sunderland: B. Williams, p.12 states that 'Fenwick's brewery has been in the occupation of the family for at least three generations, if not four'. Milburn, G.E. & Miller, S.T. (eds.) (1988) *Sunderland River, Town and People*, Sunderland: Sunderland Borough Council, p.30 state that Fenwick's 'were already in the brewing business and operating a tied house system by 1807'. References to the ownership of the Chester-le-Street brewery can be found in Milburn, G.E. & Miller, S.T. (eds.) (1988) op. cit., p.32 and Ross, C. (1982) *The Development of the Glass Industry on the Rivers Tyne and Wear, 1700-1900*. Unpub. PhD. Thesis, University of Newcastle, pp.189-90. Details of the Fenwick glass-making interests are given in Potts, T. (1892) op. cit., pp.160-1; Ross, C. (1982) op. cit., pp.258-9, 534-5 and *Sunderland Echo*, 21 January 1965. Reference to the West Boldon brewery appears in Wilson, M. (1935) *A Short History of Boldon*. Boldon, p.54.

36. With regard to the history of Vaux, there is no doubt about the occupation of the Union Street brewery and its closure (*Vint & Carr's Directory of the Borough of Sunderland* 1844 and *Sunderland Times*, 16 October 1876). There is considerable doubt about the earliest years of Vaux. Some references to the origins of Vaux as brewers (for example, Webb, J.M. (1975) 'Vaux Breweries 100 Years at Castle Street', *Things that Affect Us*, Issue No. 90, June and Milburn, G.E. & Miller, S.T. (eds.) (1988) op. cit., p.31) suggest that the family were involved as early as 1805 or 1807. However, Cuthbert Vaux, who the same publications acknowledge as the founder of the Vaux brewing dynasty, was not born until 1813.

37. For Bramwell & Scurfield see Potts, T. (1892) op. cit., p.12;

for Smurthwaite see *Newcastle Daily Journal*, 23 November 1909; and for St. John see *Newcastle Daily Chronicle*, 11 September 1893.

38. *Newcastle Courant*, 28 September 1799.

39. Bennison, B. & Merrington, J.P. (1991) op. cit., pp.4-5 and Papers on Reed v Boyd in Chancery, in case involving the Trustees of John Barras, 1884 R No 191, 1885-87, TWAS 1463/270.

40. The obituary of Thomas Tucker (*Newcastle Daily Journal*, 8 July 1891) says that the business of Issac Tucker was established 46 years ago. Later references produce widely differing 'dates of birth'. For example, the *Official Handbook of Gateshead Corporation* (1951) p.37 says the brewery was 'founded some eighty years ago'. When the brewery closed in 1968 a local newspaper described it as 'thought to be the North's oldest brewery' which 'had been in Gateshead since the 18th century' (*Newcastle Journal*, 4 May 1968). For Rowell see *Tyneside Industries* (1889) p.203 and for Taylor see *DA Newcastle* (1894) p.123.

41. For Loades see *Newcastle Daily Journal*, 13 May 1908 and *DA Morpeth* (1894) p.20; for Fairley see Tweddle, H.A. (1986) *Town Trail for Morpethians*, No. 5. Morpeth: Friends of Carlisle Park Morpeth, p.23; and for Addison Potter see *Chrislie's* 1870 and *Rivers of the North* (1894) p.16.

42. For Wood see Hodgson, G.B. (1903) *The Borough of South Shields: From the Earliest Period to the Close of the Nineteenth Century*. Newcastle: A. Reid, p.359, *Newcastle Daily Chronicle*, 14 December 1901 and *Ward's* 1867. Prospectus for W.A. Falconar & Co. (*Newcastle Daily Chronicle*, 7 March 1893) states that the business had been 'carried on at Howdon for upwards of a century'. For Carr see *Newcastle Daily Journal*, 26 November 1863; *Ward's* 1867; Bell, R.C. & Gill, M.A.V. (1973) *The Potteries of Tyneside*. Newcastle: Graham, p.28 and Bell, R.C. (1971) *Tyneside Pottery*. London: Studio Vista, p.49.

43. *Ward's* 1867 and 1869.

44. *Tyneside Industries* (1889) p.137.

45. For Cameron's see *Newcastle Daily Chronicle*, 24 October 1895 and 21 January 1897 and Wood, R. (1963) op. cit., pp.6-9; for Kirk Bros. see *Industries of Yorkshire* (1890) p.252; for Hinde see *Newcastle Daily Chronicle*, 30 December 1891; and for Hodgson-Forster see Haile, N. (1956) *Bishop Middleham Parish Council, 1896-1946*.

46. For Fenwick & Story see *D.A. Durham* (1894) p.40; for Johnson see Walker's 1885 p.46 and *D.A. Durham* (1894) pp.30-32; for West Auckland Brewery see 'West Auckland Brewery Co.' in Richmond, L. & Stockford, B. (1986) *Company Archives: The Survey of the Records of 1000 of the First Registered Companies in England & Wales*. Aldershot: Gower, p.207; for Nimmo's see *Whitbread's Magazine*, September 1964, p.16; for Chilton see *Newcastle Daily Chronicle*, 25 February 1904; for Robinson Bros. see *D.A. Durham* (1894) pp. 46-117; and for Thos. Lamb see 'Thomas Lamb & Sons Hetton-le-Hole Ltd' in Richmond, L. & Turton, A. (1990) *The Brewing Industry: A Guide to Historical Records*. Manchester: Manchester University Press, p.205.

47. Prospectus of Border Brewery Co. (*Berwick Journal*, 31 May 1900) says that the Border Brewery was 'established at present

Tweedmouth premises for 100 years'. For Johnson & Co. see *Brewers' Guardian*, 6 December 1892 and *Berwick Journal*, 13 February 1896; for Alnwick Brewery see *Alnwick Journal*, July 1890; for Smart see *Newcastle Daily Journal*, 24 January 1895; and for Lamb see *Newcastle Daily Journal*, 30 May 1905.

48. Webb, S. & B. (1903) *The History of Liquor Licensing in England - Principally from 1700 to 1830*. London: Longmans, Green and Co., p.5.

49. *ibid.*, p.87.

50. Support for freer trade was augmented by some brewers and growers of hops and barley who welcomed the opportunity for greater beer consumption. Another cause for concern may have been the proven corruption of some JPs.

51. To open a beerhouse it was necessary (but only a formality) to buy a licence for two guineas which allowed the retail sale of beer, ale, porter, cider and perry. It was also necessary to put up a bond with sureties for any fines resulting from breach of provisions of police regulations with respect to such things as drunkenness on the premises, adulteration of beer, short measures and riotous behaviour. An estimated 24,342 beerhouses were added to existing premises within the first six months of the Act (Webb, S. & B. (1903) op. cit., p.116).

52. By 1834 it was felt necessary to amend the 1830 Act and to introduce added safeguards. 'On' and 'off' licences were created, with beerhouses selling for consumption off the premises having their licences reduced to 1 guinea. For 'on' licences, however, more stringent measures were introduced. The licence fee went up to 3 guineas but a certificate of good character signed by six ratepayers of the parish was now required. (Separate arrangements for rating qualifications in lieu of the certificate for good character were made for the metropolis and certain other cities). This measure effectively created the beershop as distinct from the beerhouse. A third Act of 1840 introduced a requirement that only the resident occupier of a beerhouse could hold the licence, and extended the rating qualification.

53. The licensed victualler's licence fee was based on the rateable value and whether or not a spirits licence was included. Under the terms of a beerhouse licence a 'retail quantity' was less than four and a half gallons or two dozen reputed quart bottles at any one time.

54. The magistrates were not, of course, exclusively magistrates. Some had anti-drink sympathies and others were also employers.

55. *Newcastle Daily Chronicle*, 29 August 1870.

56. In the 1830s the anti-spirit campaign, with its tolerance of moderate beer consumption, had come under a strong challenge from the total abstainers. Visits to the North East by celebrated temperance lecturers, Joseph Livesey and Thomas Whittaker in 1835 and 1836 resulted in the formation of teetotal societies in many towns [see 'The North of England Temperance League: Historical Sketch', *The Temperance Witness*, Vol. XI, No. 2, June 1900, p.24-5 and Winskill, P.T. (1881) *The Comprehensive History of the Rise and Progress of the Temperance Reformation*. London, p.88]. In Newcastle the teetotallers split from the anti-spirits society to form their own group, claiming a membership of 1719 by 1836 (First Annual Report of the Newcastle Teetotal Society 1836,

quoted in Taylder, T.W.P. (1886) *History of the Rise and Progress of Teetotalism in Newcastle upon Tyne*. Newcastle: J. Dowling, p.11.

57. See 'The North of England Temperance League: Historical Sketch' as in 56.

58. H.A. Bruce's Intoxicating Liquors (Licensing) Bill.

59. Harrison, B. (1971) *Drink and the Victorians. The Temperance Question in England 1815-1872*. London: Faber and Faber, p.37.

60. *Newcastle Daily Chronicle*, 29 August 1870. Amongst the alternative drinks to beer, water was not always pure enough to drink in many urban areas. In Newcastle it was necessary to supplement reservoir water with that from the river. During 1870 the Laboratory and Assay Office reported that samples were variously described as 'turbid', 'not fit for table' and 'quite unfit for most domestic purposes' (*Newcastle Corporation Minutes*, 1870 pp.339, 353 and 385).

61. Harrison, B. (1971) op. cit., p.41.

62. Report of Chief Constable of Newcastle 1901.

63. For example, Wilson, G.B. (1912) 'A Statistical Review of the Variations during the Last Twenty Years in the Consumption of Intoxicating Drinks in the United Kingdom, and in Convictions for Offences Connected with Intoxication, with a Discussion of the Causes to which these variations may be Ascribed', *Journal of the Royal Statistical Society*. January, pp. 183-247, argued that 'for many years ... the fluctuations in consumption of alcoholic liquors have followed very closely the rise and fall in the general trade in the country'. Similarly, the *Brewery Manual* of 1897 stated that 'the brewing industry is one of the first to participate in the benefits attending a trade revival, just as it is the first to feel the brunt of trade depression'.

64. Dingle, A.E. (1972) 'Drink and Working Class Living Standards in Britain, 1870-1914', *Economic History Review*, 2nd Series. Vol. XXV, pp.608-622.

65. The degree of excessive overcrowding was confirmed by the 1866 *Report of the Public Health for Newcastle* which pointed out that: '43% of the entire population live in small tenements ... There are, or were, very recently in the town, 9,639 families occupying single rooms, and 6,191 families occupying two rooms, or a total of 15,830 families who have to live, eat, toil, sleep and perform all the offices of life under these conditions'.

66. In 1875, for example the proceedings for drunkenness per 100,000 of the population averaged 854 for England and Wales. In Durham, however, the figure was 2,321 and for Northumberland 1973 (Wilson, G.B. (1940) op. cit.) Table 37, p.440.

67. The origin of porter is contained in a well-repeated account of a London brewer who produced an ale that replicated the mixture of ales that was a popular drink amongst the porters of the city [see for example, Dowell, S. (1888) *History of Taxation and Taxes in England*, 2nd Edition. London: Longmans & Co., Vol. IV, p.74. This in turn became a very popular product and explained the expanding output of what were to become some of the biggest firms in the industry. The word porter, however, began to be applied to any dark coloured beer.

68. The water at Burton, for example, was ideally suited to the

brewing of lighter ales, whilst the water supplies of London and Dublin were best suited to the production of types of porter.

69. Black, W.A. (1849) op. cit., p.121.

70. Muspratt, S. (ed.) (1853) *Chemistry as applied to the Arts and Manufactures*. London, p.248.

71. Amsinck, G.S. (1868) op. cit., p.10.

72. Lovibond, T.W. (1889) 'The Brewing Trade of the Tyne' in British Association, *Handbook to the Industries of Newcastle and District*. Newcastle, pp.229-232.

73. *ibid*.

74. *ibid*.

75. Bruce, Rev. J.C. (1863) *Handbook to Newcastle-on-Tyne*. London: Longman Roberts & Green, p.277.

76. For Laing see *Newcastle Weekly Chronicle*, 11 August 1917; for Bass see *Newcastle Daily Chronicle*, 29 December 1894; for Bentley see *Newcastle Daily Chronicle*, 29 November 1870; and for Bradley see *Newcastle Daily Chronicle*, 4 August 1870.

77. *Newcastle Daily Chronicle*, 7 January 1869.

78. *Newcastle Daily Chronicle*, 3 January 1870 and 15 September 1870. The advantage for 'outside' brewers of appointing indigenous brewers as agents were that the 'importer' did not need storage facilities or to carry out the bottling. Their agents also supplied some private customers, or what they called 'families', providing they bought in quantity e.g. from half-barrel casks upwards.

79. See Bartleman & Crighton's advertisement in *Ward's* 1869 and Wilkinson & Co.'s in *Newcastle Courant*, 18 March 1870.

80. See Elliott's advertisement in *Ward's* 1867 and Bell's entry in *Tyneside Industries* (1889) p.158.

81. *Newcastle Daily Chronicle*, 20 June 1870.

82. For example, the Barras Bridge brewery advertised 'strong ale', the Leazes Brewery was producing 'Special Brews of Strong Ale', and a Newcastle licensee advertised the 'best strong ale in Newcastle - brewed by Messrs Ayton & Co., Hexham (*Newcastle Daily Chronicle*, 3 January 1870 and 1 March 1870).

83. *Christie's* 1870.

Chapter 2

1. The implicit distinction made between the main brewing centres in Britain is illustrated by the way in which the industry organised into trade groups. Although the London-based Brewers' Company had existed since 1437, an attempt at national organisation did not occur until 1822 with the establishment of the Country Brewers' Society. This could never claim to be entirely national, however, since there was also a Burton Brewers' Association and a London Brewers' Association acting independently. It was not until 1904 that the three groups amalgamated. In Scotland, an Edinburgh Brewers' Association had been established, becoming the Brewers' Association of Scotland in 1906. As regards the assumption that all brewers shared some common experience, Gourvish, T.R. & Wilson, R.G. (1985) 'Profitability in the Brewing Industry, 1885-1914', *Business History*. Vol XXVII, No. 2, July, pp.146-65, point

out that 'In spite of (the) lack of an extended survey, generalisations about the industry in (the) 1885-1914 period abound. The accepted view is usually etched in these terms. The undercurrents of the tide of change, that ran so strongly after 1885, had three origins. First, licences to sell beer were restricted after the early 1870s. Second, beer consumption, because of shifting consumer preferences and a well-publicised temperance movement, declined after 1880. Third, rapid growth in the 1840-80 period and an important scientific breakthrough induced brewers to build larger modern breweries. In periods of recession they suffered from over capacity. These three factors sparked off a race by brewers, in the face of declining demand and a restricted number of outlets, to tie the public houses by wholesale purchase from the 1880s. To raise capital on an unprecedented scale some 200 companies went public by 1890 ...'

2. *Brewers' Guardian*, 8 March 1887.

3. *Brewers' Guardian*, 31 January 1880.

4. *Brewers' Guardian*, 19 February 1889.

5. There is a clear difference in the quality and reliability of national and local information. Table 8 is an accurate record of the issue of brewers licences whilst Table 9 is put together from sources which may well have overlooked a number of smaller brewers, particularly the publican brewer. It is probable, therefore, that Table 9 under-represents just that class of brewer most likely to leave the industry during the period. Thus, if our reconstruction of the regional brewing industry is flawed it is most likely to have underestimated the number of persons leaving the trade during the period.

6. *Brewers' Guardian*, 19 October 1875 and 4 September 1877.

7. Potts, T. (1892) op. cit., p.3. It was reported that the assets of the firm were 19000 and the liabilities £13,000. At this point an attempt to sell the premises failed (*Sunderland Daily Echo*, 21 October 1880 and 6 November 1880). Subsequent attempts illustrate the declining interest in brewing amongst potential entrepreneurs. When put up for auction at a starting price of £1,500 in 1884 it failed to attract a bid, although five of the seven licensed houses were sold; a year later it was put up for sale at £1,000 and again there were no bids; another year on, it was put up for £500 with no bid. By now it was advertised as 'standing in a large area, well adapted for any business requiring a good space, such as foundry, sawmill etc. and could be easily altered'. In 1893 it was still on the market, this time described as "may be converted into dwelling houses", but it was withdrawn at the auction when the highest bid reached only £400 (*Sunderland Daily Echo*, 13 February 1884, 15 September 1885, 28 October 1886 and 14 June 1893).

8. *Brewers' Guardian*, 20 January 1880. Attempts were made to let the brewery (*Newcastle Daily Journal*, 4 April 1880) but there is no record of brewing being carried on.

9. At Morpeth the Old Brewery's lease was offered for sale by private contract in 1873 and the decision to wind up the Morpeth Old Brewery Co. was made at an extraordinary general meeting in 1878. An immediate attempt to sell by tender failed and the brewery then went to auction, unsuccessfully, a few weeks later. Further attempts were made to sell the brewery in the years that followed and in 1884 the brewery plant was finally dismantled and sold

(*Newcastle Daily Journal*, 29 November 1873, 17 April 1879 and 16 August 1884 and *Morpeth Herald*, 16 February 1878, 23 February 1878, 1 March 1879, 1 March 1879 and 9 September 1882). For Fowler's financial trouble see *Walker's* 1894, p.59.

10. *Brewers' Guardian*, 19 April 1874 and *Newcastle Daily Journal*, 27 March 1883 and 2 April 1891.

11. *Newcastle Daily Journal*, 7 November 1874 and 18 February 1875. Liquidation also explained the closure of the Borough Brewery at Gateshead in 1871, the Warkworth Brewery in 1881 and the business of John Dent of Middleton St George in 1883 (*Newcastle Daily Journal*, 31 January 1871 and 14 March 1881 and *Brewers' Guardian*, 25 September 1883).

12. *Newcastle Daily Journal*, 6 April 1879, 3 March 1883, 28 April 1883 and 10 February 1887. The Crightons also operated in North Shields as Crighton Bros., rope and sail manufacturers. Amongst other family business interests, C.E. Crighton operated from Newcastle and Bodmin as a china clay merchant as the Glynn Valley Kaolin Co. (*Newcastle Daily Journal*, 6 April 1879).

13. *Newcastle Daily Journal*, 12 June 1876, 12 July 1884 and 25 July 1885. On a smaller scale, another Newcastle undertaking, the Walkergate Brewery, closed on the owner's death in 1888 (*Newcastle Daily Journal*, 24 October 1888) and afterwards disappeared from the directories.

14. The brewery was offered for sale in 1875 as the property of 'Win Elliott deceased'. This sale was postponed in 'consequence of the arrangement by which Mr Elliott and his brother will continue to carry on the business conducted by their late father' (*Newcastle Daily Journal*, 14 January 1875). By 1877, however, the brewery, its horses and stock were being offered for sale, but the premises did not change hands and repeated attempts were made to sell after John Elliott went into liquidation in 1879. In 1890 the property was being offered for sale as the City Livery Stables but was described as being formerly known as the Grey Horse Brewery and which could be readily converted into a brewery with fixed plant and machinery included in the sale (*Newcastle Daily Journal*, 30 January 1877, 18 August 1877, 31 May 1879, 11 June 1879, 20 October 1880, 30 July 1881 and 22 November 1890).

15. For Ayton see *Newcastle Daily Journal*, 13 April 1873 and 6 January 1875 and *Brewers' Guardian*, 13 January 1874 and 12 January 1875. At the Northumberland Brewery, after Pearson died in 1881, a legal dispute meant that the brewery did not go onto the market until 1883, when no offers were forthcoming (*Newcastle Daily Journal*, 17 April 1883).

16. The first attempt to sell the Wear Valley Brewery by auction was in 1884 (*Newcastle Daily Journal*, 23 June 1884). Directories show no brewing taking place thereafter. At the Wolsingham Brewery, successive attempts to sell it as a going concern, both privately and at auction, failed (*Newcastle Daily Journal*, 14 February 1883, 24 March 1883 and 23 June 1883).

17. *Newcastle Daily Journal*, 28 September 1883 and 10 August 1887.

18. Retirement was the reason for the closure of Newcastle's Spicer Lane Brewery in 1871, the Saddlers' Wells Brewery in 1878, and the Crystal Palace Brewery in 1880 (*Newcastle Daily Journal*,

10 November 1871, 6 November 1878 and 21 July 1880). B. Lockwood and J.D. Heally of Hartlepool was dissolved in 1876 (*Brewers' Guardian*, 27 June 1876). G. Taylor and J. Weatherell of Hartlepool was dissolved in 1873, although Weatherell carried on brewing briefly (*Newcastle Daily Journal*, 3 June 1873). In Durham, the business of J.R. Thurlow was dissolved in 1886 (*Brewers' Guardian*, 14 November 1886).

19. Dodd, J.J. (1897) *The History of the Urban District of Spennymoor*. Spennymoor: the author, p.157, *Newcastle Daily Journal*, 24 April 1877 and 4 September 1886 and *Durham Chronicle*, 1 April 1904.

20. *Brewers' Guardian*, 3 November 1874 and *Sunderland Daily Echo*, 22 October 1883.

21. At the Angel Brewery, Alnwick, Cockburn announced that he was retiring from brewing and put the brewery up for auction, but bidding was described as 'exceedingly languid' and the property was withdrawn, the highest bid being £210. The brewery was then made available for rent or purchase, with the plant selling separately (*Alnwick Journal*, March 1874 and *Newcastle Daily Journal*, 25 February 1874, 15.4.1874, 22.4.1874 and 2.9.1874). For Forsters' see *Walker's* 1887 p.52 and *DA Durham* (1894) p.30-2. For Laing & Co., no brewery is listed in directories for 1890 but there is evidence that they continued to brew for some time after taking over the premises. For example, in 1883 they advertised themselves as brewers of India pale ale, mild ale and stouts (*Wards* 1883). At the Allendale Brewery in 1870 the proprietors were Wilson, Lee & Co. The brewery and its licensed houses were put on the market in 1884 but the only acceptable bids were for two public houses. In 1887 the properties were offered for sale by private treaty. From that point the directories show James Walton & Co., wine and spirit merchants, as occupying the brewery. Walton had been listed as the manager of Wilson, Lee & Co. since the early 1870s (*Newcastle Daily Journal*, 29 October 1884 and 11 April 1887 and *Kelly's* 1873 and 1890). At the Wallsend Brewery, Mordue was advertising for a brewer in 1887 but by the next year the brewery was available for rent. Directory entries point to the cessation of brewing. (*Newcastle Daily Journal*, 7 March 1877 and 2 November 1878 and *Kelly's* 1879). For Addison Potter see *Rivers of the North* (1894) p.16.

22. At the Ducrow Inn, Newcastle, John Emmerson sold off the brewing plant and moved to take over the Victoria Hotel (*Newcastle Daily Journal*, 5 June 1875, 6 June 1875 and 7 June 1875); at the Queen's Arms, no bids above the upset price were forthcoming at auction (*Newcastle Daily Journal*, 25 March 1874); Henry Budd, brewer and maltster of Tow Law, and R. Davidson, innkeeper and brewer of Conside-cum-Knitsley, last appeared in *Kelly's* 1873; and L. Mackay of the Bird in the Bush Yard, Newcastle last appeared in *Ward's* 1871. The closures at Easington and Merrington are indicated by advertisements in *Sunderland Daily Echo*, 4 April 1878 and *Newcastle Daily Journal*, 13 February 1878. Directory entries suggest that Elizabeth Moat brewed at the Oak Leaf Inn and Brewery until 1880, the last entry being in *Ward's* 1879. J. Aitken, brewer of the Brandling Arms, went into liquidation in 1882 (*Brewers' Guardian*, 19 December 1882). For Colpitts see obituary

in *Walker's* 1892, p.66 and directory entries (e.g. *Walker's* 1887 and *Kelly's* 1890) which suggest that Colpitts reverted to being a licensed victualler. By the time of his death he had six other licensed houses in Durham in addition to the Puncheon Inn and brewhouse.

23. The Clock Vault, North Shields had a small brewery being used as a stable in 1873 (*Newcastle Daily Journal*, 1 September 1873) and three floors of the Coach and Horses Brewery in Newcastle were being used for candlemaking in 1874 (*Newcastle Daily Journal*, 13 June 1874). Unused breweries at this time included those at the Grey Bull, Newcastle and the Lord Seaham, Seaham (*Newcastle Daily Journal*, 17 November 1873 and 14 June 1876). Sale notices for the Goat Inn, Gateshead; Brink's White Lion Hotel, Houghton-le-Spring; and the Eagle, Bishop Auckland (*Newcastle Daily Journal*, 19 July 1871 and 22 June 1878 and *Newcastle Daily Chronicle*, 28 July 1871) include references to breweries in good working order. The Shaftoe Arms, Spennymoor; the White Swan, Greenside; the Turks Head Hotel, Darlington; and the King's Arms Inn, Durham were all offered for sale with brewhouses (*Newcastle Daily Journal*, 15 March 1873, 29 November 1873, 20 September 1876 and 23 September 1876). The Green Tree, with adjoining land, brewery and other buildings went onto the market in 1873. The purchaser, however, was required to pull down the inn and the brewery, and erect a new inn in accordance with the plans of the Town Improvement Committee (*Newcastle Daily Journal*, 11 January 1873).

24. For example, the Black Bull's Head in Newcastle had a brewery but was purchased by J. Mitcheson who had brewing facilities elsewhere (*Newcastle Daily Journal*, 8.11.1879 and Newcastle Lie Reg TWAS MG/Nc/9/1-4 and 10/1-3).

25. *Newcastle Daily Journal*, 12 April 1877, 24 April 1877 and 24 April 1881. Breweries were also known to be operating at the Wellington Hotel, Middlesbrough in 1875; the Albion Inn, Newcastle in 1878; the Fountain Inn, Gateshead in 1882; and at the Battery, Newcastle until 1885 (*Newcastle Daily Journal*, 17 March 1875, 1 April 1878, 20 December 1882 and 30 April 1885).

26. J. Gallon of Wolsingham, A. Watkins of Haltwhistle, H. Brewis of Morpeth, R. Craft of Easington and R. Cater of Trimdon were all brewing in the late 1860s (see *Mercer & Crocker's* 1868) but had ceased by 1873 (*Kelly's* 1873). In Newcastle, James Smith stopped brewing in 1873 and Sutherland and Co. in 1874 (*Newcastle Daily Journal*, 11 October 1873 and 31.12.1874). Mitcheson's Brunel Street Brewery appears to have closed by 1878 when in *Ward's* 1877 Mitcheson was no longer listed as a 'brewer' but as a 'gentleman'. J.H. Bainbridge of Bishop Auckland and J. Harvey of the Wellhouse Brewery, Ferryhill are both listed for the last time in *Kelly's* 1877. T. Allen of Anfield Plain and G. Davison of Wingate were listed for the last time in *Kelly's* 1879. Mrs MacDonald of Belford diversified into brewing around 1869 but within ten years was again listed in directories simply as a chemist and grocer (*Kelly's* 1879). The Shieldfield Brewery went on the market in 1878 (*Newcastle Daily Journal*, 1 April 1878) but the last directory listing of a brewery was in *Ward's* 1881. Wm. Young's

Tees Brewery, Wm. Armstrong of Wark and W & J Dixon of Cockfield were listed in *Kelly's* 1879 but were no longer brewing by Slater's 1884. The last entry for Morris of Usworth is in this latter directory. Wm. Ramshaw of Durham is listed as a brewer in *Walker's* 1883, as a brewer's agent in *Slater's* 1884 and no longer listed by *Walker's* 1887. Milburn ceased brewing c1887 (*Slater's* 1884 and *Kelly's* 1890).

27. *Brewers' Guardian*, 7 February 1888 and 11 March 1884.

28. This process, by which the closure of small breweries left one or more dominant large brewer remaining in a particular town, appears to have occurred in Durham, Morpeth, Alnwick, Sunderland, Hartlepool, Bishop Auckland and Barnard Castle (Appendices 1, 2 & 3).

29. *Brewers' Guardian*, 19 February 1889.

30. The Wear Valley brewery had a ten quarter brewing plant (Appendix 5) but the Wolsingham Brewery's capacity was described as capable of brewing 25 barrels at each brewing (*Newcastle Daily Journal*, 24 March 1883). However, data available for the Alnwick Brewery (*Alnwick Gazette*, 24 April 1890) expressed as 12 quarters and 30 barrels per brewing suggests that the Wolsingham Brewery's capacity was around 10 quarters.

31. For the Victoria Brewery see *Tyneside Industries* (1889) p.117 and *Newcastle Daily Journal*, 15 December 1882; for Rowell's see *Newcastle Daily Chronicle*, 30 July 1896; for Smart's see *Alnwick Journal*, December 1873 and *Newcastle Daily Journal*, 24 January 1895; for Kirk Bros. see *Industries of Yorkshire* (1890) p.252; and for Loades see *Newcastle Daily Journal*, 13 April 1908 and *DA of Morpeth* (1894) p.20.

32. For Bramwell and Scurfield's dissolution see *Brewers' Guardian*, 20 October 1885. The Wood brewery appears under Wood and Maxwell in Ward's 1875 but as Matthew Wood in *Kelly's* 1877. For the Border Brewery see *DA Berwick* (1894) p.4 and *Newcastle Daily Journal*, 9 November 1896 and for the Bishop Middleham Brewery see *Walker's* 1879, p.51. The Chester Brewery appears under Fenwick & Storey in *Kelly's* 1879 but as Fenwick & Co in Slater's of the same year.

33. For Emmerson see *Brewers' Guardian*, 15 January 1884 and *DA Newcastle* (1894) p.126. The Flying Horse Brewery was let for a while but closed when the inn was rebuilt in 1884 (*Newcastle Daily Journal*, 20 March 1880 & 5 March 1884). For Ridley, Cutter and Firth see *Rivers of the North* (1894) p.176 and *Brewers' Guardian*, 10 January 1888. In 1873 the partnership between J. Smurthwaite and Wm. Hunter was dissolved and two years later Smurthwaite's next partnership with A.F. Girdwood was dissolved. A partnership between Smurthwaite and F.A. Alston went into liquidation in 1883 and a partnership which followed with Phillips was dissolved in 1886 (*Newcastle Daily Journal*, 26 August 1873 and *Brewers' Guardian*, 1 June 1875, 3 July 1883 and 14 December 1886).

34. The company was registered in 1890 based upon an agreement made in October 1889 (*Brewers Guardian*, 8 March 1889).

35. Papers on Reed v Boyd in Chancery, in case involving the Trustees of John Barras/1885 R no 191, 1886-87, TWAS 1463/270;

Newcastle Journal, 13 August 1883 and 14 April 1884 and Barras Min TWAS 1463/1.

36. For example, Ramsey, Gilchrist & Ramsey of Seaton Carew became Ramsey & Gilchrist in 1882 (*Brewers' Guardian*, 14 February 1882), and at the Stella Brewery, Blaydon, directory entries show a change of proprietorship from J.P. Dalton to his executors (*Kelly's* 1877) and then to J. & It. Dalton (*Ward's* 1881). Similarly, Thos. Fox & Sons of the Norton Brewery became J.H. Fox c1873 (*Mercer & Crocker's* 1868 and *Kelly's* 1873).

37. *Darlington and Stockton Times*, 16 August 1884 and 1 November 1930.

38. For the West Auckland Brewery see 'West Auckland Brewery Co.' in Richmond, L. & Stockford, B. (1986) op. cit., p.297 and WAB Min 1 DCRO D/WAB/2. The premises - including house, gardens, offices, tun house, maltings, engine house, cellars, cottages and stables - were taken on a 21 year lease at £150 per annum from Sir Wm. Eden. The company was responsible for all repairs and had to undertake to spend £2,500 on the premises. The company was also required to obtain and maintain, at their own expense, water for their business, although Eden undertook to grant them land outside the premises for sinking wells. For Cameron's see Wood, R, (1963) op. cit., pp.9-10. At the Alnwick Brewery in 1870, the firm of Thompson & Davison took into partnership their traveller and some younger members of their family to form Thompson, Davison and Co. When this went into liquidation in 1877, Davison, Powell & Davison was formed to purchase the plant, stock and debts. Changes within this partnership followed in 1878 and then Mason Bros. purchased the Alnwick Brewery in 1880 and launched a thorough renewal of all the plant. By 1890 a company was being formed to purchase Mason Bros. (*Alnwick Journal*, July 1870 and January 1878, *Newcastle Daily Journal*, 2 November 1877 and 25 May 1878 and *Brewers' Guardian*, 4 January 1881 and 30 September 1890). In South Shields, Robert Bell retired from the Ferry Brewery in 1880 and the building was rented by Wm. Turnbull (*Newcastle Daily Journal*, 18 September 1880 and *Ward's* 1885). In Newcastle, following the death of the Hanover Square Brewery proprietor, Robert Fletcher, the licensed houses were sold and the brewery let. Brewing was then conducted by John Buchanan, who had started out at the South Street Brewery in 1879. (*Newcastle Daily Journal*, 7 May 1883, 8 August 1883 and 5 January 1884 and *Tyneside Industries* (1889) p.147).

39. For Jas. Deuchar see *Newcastle Daily Journal*, 30 November 1887; Rowe, D.J. (1984) 'James Deuchar' in Jeremy, D.J. and Shaw, C. (eds.) *Dictionary of Business Biography*. Vol 2. London: Butterworths, pp.83-5 and Newcastle Lie Reg TWAS MG/Nc/9/1-4 and 10/1-3. For Robt. Deuchar see *Newcastle Daily Journal*, 20 October 1884 and 23 November 1889. In 1888 Robt. Deuchar owned 8 licensed premises in Newcastle (Newcastle Lie Reg TVVAS MG/Nc/9/1-4 and 10/1-3).

40. The Wooler Brewery was advertised in *Newcastle Daily Journal*, 23 November 1878 and 30 November 1878. For changes at the Monkseaton Brewery see *Brewers' Guardian*, 10 December 1875 and 29 November 1887 and *Newcastle Daily Journal*, 26

March 1879, 29 March 1879, 16 April 1879, 27 January 1886 and 28 December 1887.

41. T.G. Renwick & J. Montgomery was dissolved on 31 October 1874 (*Brewers' Guardian*, 16.4.1875). On their takeover by Cameron's in 1897, Chapman and Co. were described as being established over 100 years (*Newcastle Daily Chronicle*, 6 December 1897). For Nixey & Coleclough see *South Durham Herald*, 20 August 1881.

42. Nimmo began with £1,000 capital but the purchase of the brewery and its 20 public houses meant he acquired mortgages totalling £10,253. He estimated his annual profit at £600. The first attempt to dispose of the brewery was made immediately after the bankruptcy but was not sold until a new partnership, Craig & Cordner, was formed to revive brewing there in 1897 (*Brewers' Guardian*, 19 May 1885 and *Sunderland Daily Echo*, 13 August 1885 and 7 April 1897).

43. *Darlington and Stockton Times*, 9 August 1884 and 13 October 1894 and *Brewers' Guardian*, 7 April 1885, 11 August 1885, 15 December 1895 and 10 August 1886. The company was registered on 5 December 1882 with capital of £10,000. Hutchinson was one of the founders but did not become a director (*Brewers' Guardian*, 19 December 1882).

44. Two unsuccessful attempts were made to sell the Elswick Brewery in 1875 and 1876, and when an auction in 1877 failed to find a buyer it was offered for sale by private contract. Directory entries show Wilkinson operating there from 1880 (*Newcastle Daily Journal*, 13 November 1875, 7 September 1876, 16 June 1877 and 28 July 1877 and *Jackson's* 1880). In another case it is not known why Wm. Laws stopped brewing at the Blandford Brewery in Newcastle, which he had been renting in 1870. The announcement of the formation of Ourbride and Archibald and their takeover of the brewery was made in 1879. (*Newcastle Daily Chronicle*, 18 March 1870 and *Newcastle Daily Journal*, 20 June 1879). Another change of ownership in Newcastle was at the brewery attached to the White Lion Inn. It went on sale a number of times in the early 1870s and was brewing until 1890 when it went to auction but failed to attract a bid. (*Newcastle Daily Journal*, 7 December 1872, 17 November 1873, 28 February 1874, 18 January 1890 and 30 January 1890). For McLean see Partnership Agreement between M.H. Mawson and J. McLean, 1889, DCRO D/HH/2/10/798.

45. For the Victoria Brewery, Darlington see *Brewers' Guardian*, 17 February 1889 and *Northern Echo*, 5 September 1889; for the Tynemouth Brewery see *Tyneside Industries* (1889) p.198; and for the first appearances of the three rural breweries see *Kelly's* 1877 and 1879. An unattributed quotation in Tweddle, H.A. (1986) op. cit., p.13 refers to the Hope & Anchor Brewery as a building with 'steam working apparatus' and also extensive cellarage and stabling for ten horses. Rickinson acquired the Union Brewery around the mid-1870s (*Kelly's* 1873 and 1877). T.R.M. Plews had controlled the wine and spirit business, Plews & Sons since 1867. This firm also became ale and porter merchants with branches in Darlington, Middlesbrough and Durham, and T.R.M. Plews also had interests in malting. In the late 1860s a brother, J.M. Plews, had succeeded to

his uncle's brewing business at the Vale of Mowbray Brewery, Leeming Lane. On the death of T.R.M. Plews in 1884, J.M. Plews took charge of Plews & Sons, effectively amalgamating the two firms (*Newcastle Daily Journal*, 11 January 1867 and 23 November 1874 and *Brewers' Guardian*, 21.1.1890). North Riding Brewery of Knights, Stocks & Co. was said to be capable of 50,000 barrels per annum (*Brewers' Guardian*, 30 April 1889), which would give an annual output of 833 barrels per quarter.

46. *Newcastle Daily Journal*, 24 September 1895 and *Newcastle Daily Chronicle*, 1 October 1925.

47. For Knights, Stocks & Co.'s financial troubles see *Brewers' Guardian*, 29 January 1884 and 30 April 1889. The company was registered on 8 December 1881 with a nominal capital of £60,000 to acquire the business of J. Knights. The constitution and history of the acquired firm are not clear, although it seems that an earlier partnership had been dissolved in 1875 (*Brewers' Guardian*, 16 November 1875 and 20 December 1881). The first directory entry for the Bleachfield Brewery was in *Kelly's* 1877 and letting notices appeared shortly afterwards (*Newcastle Daily Journal*, 17 April 1878 and 16 April 1879).

48. The most detailed information on capacities is found in press announcements by auctioneers, so if a brewery remained in the same ownership, or changed hands by private treaty rather than at public auction, then no such account would appear in public print. With regard to illustrated directories, a brewery may have chosen not to be included or, if included, may have used its entry to describe its management or products rather than its production facilities. Where information is available in terms of quarters, this is a measure of capacity and may be more than market conditions at any time require in terms of output. Nor is it unreasonable to suppose that breweries going through extensive alterations and re-equipping may well have built in extra capacity for future expansion from current levels. Similarly, where information is given in terms of barrelage there may also be a discrepancy between that and current output, since the sales of some breweries were prompted by bankruptcy or at least doubts about financial viability, and the seller may wish to emphasise potential rather than current levels of activity. The inadequacy of information about the size of each brewing without complementary information on the number of brewings per period is illustrated in those cases where the number of brewings is provided. These confirm that some breweries brewed four times and some brewed five times per week. For example, in 1874 the Ducrow Inn Brewery, Newcastle was described as capable of 'brewing 15 half barrels' and also 'turning out 60 half barrels weekly' (*Newcastle Daily Journal*, 25 March 1874 and 6 June 1874). This indicates four brewings a week, whilst the Church Street Brewery, Middlesbrough is described in 1875 as an 8 quarter brewery with a weekly output of 40 quarters (*Newcastle Daily Journal*, 7 April 1875). With regard to the convertability of barrels and quarters, Levi, L. (1871) *The Liquor Trades. A Report for M.T. Bass Esq MP on the Capital Invested and the Number of Persons Employed Therein*. London: William Ridgway, assumes an average brewery 'fitted up to mash ten quarters a day, and working six days

a week in the six winter months, brewing in all about 2300 quarters a year and producing 9200 barrel'. The basis of Levi's calculation is therefore a ratio of 4 barrels of beer to each quarter of malt used, or 910 barrels per annum per quarter capacity. The precise relationship between capacity and actual output depended on the strength and type of the product brewed, and the efficiency of the brewing process. Nevertheless, the order of magnitude does not vary dramatically when we consider other pieces of evidence available that convert quarters to barrelage. For example, when discussing brewery sizes the *Brewers' Guardian*, 11 March 1884 and 19 February 1889) appears to regard 1000 barrels as the annual output from each quarter of capacity. In 1889, the 60 quarter

49. *Brewers' Guardian*, 5 March 1889.

50. For example, in large capacity breweries strict adherence to the ultimate gravitation model would involve very tall buildings where the necessary foundations and the strengthening of the building's structure could prove financially prohibitive. It was also felt advisable to introduce an element of flexibility into design which would permit future extensions in capacity and changes in equipment without too much disturbance of overall arrangements. For particular pieces of equipment, other considerations came into play. With coppers, for instance, their siting had to recognise the future need to replace them whole rather than constructing and riveting replacements in situ. In addition, the siting of a copper in its most effective position according to the gravitation sequence may have created extra problems and expense with the hoisting of coal to the necessary height. There was also a general feeling that boilers, coppers and hop backs should be isolated to ensure the actual brewing remained free from the steam. The above considerations, plus others such as the disposal of waste at certain stages, meant that breweries were arranged on modified gravitation principles. (Scamell, G. (1880) op. cit., pp.5-6).

51. *ibid.*, p.5.

52. *Brewers' Guardian*, 5 March 1889.

53. For the Tower Brewery see Surtees, H.C. (1925) *The History of the Parishes of Tudhoe and Sunnybrow in the County Palatine of Durham*. Newcastle: Patrick & Page, p.16; for the Victoria Brewery see *Northern Echo*, 5 September 1889; for Cameron's see *Brewers' Guardian*, 29 December 1874; for the Mill Dam Brewery see *Newcastle Daily Journal*, 1 April 1875; and for Fenwick's see *DA of Durham* (1894) p.48.

54. For Alnwick Brewery see unidentified newspaper cutting, dated 14 October 1881, in Alnwick Newspaper Cuttings, Vol. 1, p.238, Newcastle Central Library; for the Victoria Brewery see *Tyneside Industries* (1889) p.117 and City of Newcastle Planning Application TWAS 186/9790; for the Hanover Square Brewery see *Tyneside Industries* (1889) p.148; and for the Swalwell Brewery see Bourn, W. (1893) *Whickham Parish. Its History, Antiquities and Industries*. Carlisle: Wordsworth Press, p.115. Amongst other North East breweries, the Blandford Brewery of Ourbridge and Archibald was a four-storeyed building. The top floor accommodated operations up to and including the boiling of wort, the floor below was where cooling took place and below that, fermentation. The

ground floor was used for storage (*Tyneside Industries* [1889] p.153). Brewing was carried on over two floors at the Arthur's Hill Brewery which was re-fitted in 1890, thirty years after it was originally built. The top floor contained malt stores and grist mill. The floor below was effectively divided into two rooms; one containing mash tun and brewing copper, the other housing coolers, refrigerators and fermenting vessels. Following the advice of the time, the wort copper fire, the boiler and the engine were situated in a separate shed which meant no fires in the brewery (*DA of Newcastle* [1894] p.77). Other breweries known to be operating along similar lines were the Leazes Brewery, described as 'entirely worked on the gravitation principle' (*Tyneside Industries* [1889] p.113); Emmerson's brewery described as a 'lofty tower brewery' (*DA Newcastle* [1894] p.126); and at the Castle Brewery in Stockton, the main five-storey building was said to be 'an immense one raised to this height in order that the gravitation system be brought into action' (*Industries of Yorkshire* [1890] p.252). Another North East brewery, the Flying Horse Brewery in Newcastle was described as being 'on the tower principle' (*Newcastle Daily Journal*, 20 March 1880). A number of breweries about which little is known about their actual layout do nevertheless suggest, by virtue of the size of their buildings, that gravitation was an important element. For example, both the Manor Brewery and the main buildings of the Tyne Brewery ran to six storeys, the latter having undergone an entire refit (*Brewers' Guardian*, 19 June 1883, *Rivers of North* [1894] p.176 and *Tyneside Industries* [1889] p.108).

55. *DA of Durham* (1894) pp 46-7 and *Blyth Weekly News*, 12 September 1891.

56. For the Victoria Brewery see *Northern Echo*, 5 September 1889; for the Hanover Square Brewery see *Tyneside Industries* (1889) p.147; for Robinson Bros., Fenwick's and Johnson's see *DA Durham* (1894) pp.46-7, 30-2 and 48; for Allison see *Newcastle Daily Journal*, 30 November 1887; for Sanderson see City of Newcastle Planning Application TWAS T186/13263; for West Auckland Brewery see WAB Min 1 DCRO D/WAB 2; for Cameron's see *Brewers' Guardian*, 23 September 1884; for Barras see Barras Prospectus TWAS 1463/2; for St. John see *IG Sunderland* (1898) p.109; and for Border Brewery see *DA Berwick* (1894) p.4.

57. For Deuchar see *DA Newcastle* (1894) p.107; for the City Brewery and Robinson Bros. see *DA Durham* (1894) pp.30-2, 46-7; for the Eastbourne Brewery see *Darlington & Stockton Times*, 16 August 1884; and for the Victoria Brewery see *Northern Echo*, 5 September 1889.

58. For the Tyne Brewery see Barras Prospectus TWAS 1463/2 and for Tucker's *Newcastle Daily Journal*, 8 July 1891. In the mid-70s a number of smaller undertakings had stabling for only two or three horses e.g. the Newcastle brewery of James Smith had a two-stalled stable in 1873 and Messrs. Sutherland & Co. had stabling for two horses in 1874 (*Newcastle Daily Journal*, 11 October 1873 and 3 December 1874). Meanwhile, the Grey Horse Brewery and the Northumberland Brewery, both Newcastle, had buildings to accommodate 6 and 8 horses respectively (*Newcastle Daily Journal*, 12 June 1876 and 30 January 1877). At the end of

the 1880s Joseph Johnson had stabling for a dozen horses (*DA Durham* [1894] pp. 30-2).

59. *Newcastle Daily Journal*, 10 April 1881.

60. These three breweries all occupied sites of 2 acres (*IG Sunderland* [1898] p.80, *Rivers of the North* [1894] p.176 and *DA Hartlepool* [1894] p.31).

61. The Castle Brewery at Stockton, for example, covered less than a third of an acre (*Industries of Yorkshire* [1890] p.252). Meanwhile, Bass, the extreme case, had three establishments covering a total of 145 acres. Allsopp's new brewery occupied 50 acres, Aitken's Falkirk brewery five acres, Whitbread's four acres and Wm. Younger's Hollyrood Brewery was spread over three acres and the adjoining Abbey Brewery also covered several acres (Barnard, A. (1889) *The Noted Breweries of Great Britain and Ireland*. London: Joseph Causton, Vol I, p.49 and Vol. II, pp8, 23, 192, 201).

62. Bradford, Wm. 'Brewery Construction' (Paper presented at Brewers' Congress 27 October 1885), reprinted in *Brewers' Guardian*, 17 November 1885.

63. *Newcastle Daily Journal*, 27 July 1881 and Tomlinson, W.W. (1893) *Historical Notes on Cullercoats, Wlitley and Monkseaton*. London: Walter Scott, p.59.

64. For the Wylam, Allendale and Morpeth Old breweries see *Newcastle Daily Journal*, 11 August 1880, 29 October 1884 and 29 November 1873. At West Auckland in 1886, for example, the farm showed a loss of :C224 and the directors resolved that a little more attention be paid to the farm (WAB Min 1 DCRO D/WAB/2). Advertisements for hay etc. placed by the Ovingham, Blyth and Ovington breweries appear, for example, in *Newcastle Daily Journal*, 15 April 1876 and 22 November 1876 and *Newcastle Daily Chronicle*, 24 December 1875. Amongst those selling spent grains was Ayton & Co. at £7 per ton (*Newcastle Daily Chronicle*, 13 October 1871).

65. *Hexham Courant*, 11 December 1869.

66. For statements on the quality of Sunderland's water see, for example, Lovibond, T.W. (1889) op. cit., pp.229-32 and also 'Sunderland and the Brewing Industry' in *Newcastle & Gateshead Chamber of Commerce Journal*, Exhibition Year Supplement, 1929. For those Sunderland brewers using well-water see Potts, T. (1892) op. cit., p.13. Supplies of well or spring water were said, for example, to be found on the premises of the Angel Brewery, Alnwick; King's Head Brewery, Easington; Monkseaton Brewery; Eastbourne Brewery, Darlington; and the Victoria Brewery, Darlington (*Newcastle Daily Journal*, 2 September 1874 and 29 March 1879, *Sunderland Daily Echo*, 4 May 1878, *Darlington & Stockton Times*, 16 August 1884 and *Northern Echo*, 5 September 1889).

67. WAB Min 1 DCRO D/WAB/2.

68. For example, the Northumberland Brewery, Hexham and Morpeth Brewery (*Newcastle Daily Journal*, 18 August 1880 and 16 August 1884).

69. *Newcastle Daily Journal*, 1 July 1933.

70. For Alnwick Brewery see Alnwick Newspaper Cutting (as 54 above); for Fenwick see Potts, T. (1892) op. cit., p.13; for Nixey & Coleclough see *DA Hartlepool* (1894) p.25; and for the Crown

Brewery and Victoria Brewery see *Brewers' Guardian*, 21 January 1890. Also around 1890, the Swalwell Brewery was obtaining water from a 200 ft well (Bourn, W. [1893] op. cit., p.115) and Kirk Bros. from a 300 ft well (*Industries of Yorkshire* [1890] p.252).

71. Of the eight breweries for which the type of machine is known, five relied on Steele's patent machine, one adopted a Ryder machine, another had a Maitland self-acting machine, and one brewery had three different machines by Steele, Gregory and Wilson (*Sunderland Times*, 16 June 1876, *DA Durham* (1894) p.30-2, *Tyne-side Industries* (1889), p.147 and *Newcastle Daily Journal*, 6 January 1875, 18 February 1883, 5 January 1884, 3 March 1884 and 8 March 1884. Wilkins, T. (1871) 'The Machinery and Utensils of a Brewery', *Transactions of the Society of Engineers*, pp.10-28 states that Steele's machine is 'one of the most used'. Scamell, G. (1880) op. cit., p.63 describes Steele's machine as having the greatest success.

72. Morton's machines were known to be installed in at least nine local breweries (see *Newcastle Daily Journal*, 7 April 1875, 20 March 1880, 3 March 1883, 18 February 1883, 5 January 1884, 23 June 1884 and 31 May 1890 and *Darlington & Stockton Times*, 16 August 1884). For the City and Barras Bridge breweries see *DA Durham* (1894) pp.30-2 and *Newcastle Daily Journal*, 31 May 1890.

73. WAB Min 1 DCRO D/WAB/2.

74. see Wilkins, T. (1871) op. cit. After improvements were made to windmills in the 1880s there were those who continued to advocate their adoption by brewers as a cheap form of energy (see *Brewing Trade Review*, 1 April 1900). There is, however, no evidence of wind power being taken up by breweries.

75. *Newcastle Daily Journal*, 22 April 1874 and 30 November 1878.

76. *Newcastle Daily Journal*, 23 May 1877.

77. See Wilkins, T. (1871) op. cit. Although the exact sizes are not known, the Old Brewery Hexham; Bink's White Lion Hotel Brewery, Houghton-le-Spring; and the South Durham Brewery, Darlington were using engines described as 'small' (*Newcastle Daily Journal*, 6 January 1875, *Newcastle Daily Chronicle*, 28 July 1871 and *Darlington & Stockton Times*, 9 August 1884).

78. For the trend towards horizontal machines see Crowley, T. (1893) 'Beer and Steam', *Brewing Review*. Autumn, pp.18-20. For the vertical engines known to be in use see *Newcastle Daily Chronicle*, 13 October 1868, *Sunderland Daily Echo*, 4 May 1878 and *Newcastle Daily Journal*, 30 January 1877, 2 October 1880 and 8 April 1893. For the Northumberland, Barras Bridge and Sanderson breweries see *Newcastle Daily Journal*, 3 March 1883, 31 April 1890 and 15 July 1874.

79. For the Tyne Brewery Co's and Barras's engines see *Newcastle Daily Chronicle*, 24 March 1882 and *Newcastle Daily Journal*, 8 March 1884; for Alnwick Brewery see Alnwick Newspaper Cutting (as 54 above); and for Robinson Bros. see *DA Durham* pp.46-47. The earliest documented horizontal engine is in 1873 at James Smith's brewery (*Newcastle Daily Journal*, 11 October 1873).

80. For Emmerson see *DA Newcastle* (1894) p.126 and for the

Swalwell Brewery see *DA Newcastle* (1894) p.123 and Bourn, W.
(1893) op. cit., p.115.

81. *Rivers of the North* (1894) p.176.

82. *DA of Hartlepool* (1894) p.31.

83. Schedule of Fixtures at Castle Eden Brewery DCRO D/
CG5/1324.