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BRISTOL'S SUGAR TRADE AND REFINING INDUSTRY



THE BRISTOL BRANCH OF THE HISTORICAL ASSOCIATION
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Hon. General Editor: PETER HARRIS

Assistant General Editor: NORMA KNIGHT

Editorial Advisor: JOSEPH BETTEY

Bristol's Sugar Trade and Refining Industry is the eighty-ninth pamphlet in the Local History series published by the Bristol Branch of the Historical Association.

The author, Donald Jones, carried out his research in the Society of Merchant Venturers' Archives and in the Public Record Office. Including some of this material has produced a larger pamphlet than usual and the extra cost has been met by a generous donation from the Society of Merchant Venturers.

Donald Jones is the author of the seventy-ninth pamphlet in this series, *Captain Woodes Rogers' Voyage Round the World, 1708-11*. He has recently completed a *History of Clifton* and *Bristol: A Pictorial History*.

The author would like to record his debt to the published and unpublished life-time's work on sugar refineries of I.V. Hall who died in 1985, the editorial help of David Large and to Brigadier Hugh Pye, Treasurer of the Society of Merchant Venturers, who facilitated his work there in so many ways.

The publication of a pamphlet by the Bristol Branch of the Historical Association does not necessarily imply the Branch's approval of the opinions expressed in it.

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Cover Illustration: The Sugar Cane and the Art of Sugar Making. Engraving for the *Universal Magazine*, for S. Hinton, St Paul's Churchyard, London. B.R.O. AC/WO 16(58)

BRISTOL'S SUGAR TRADE AND
REFINING INDUSTRY

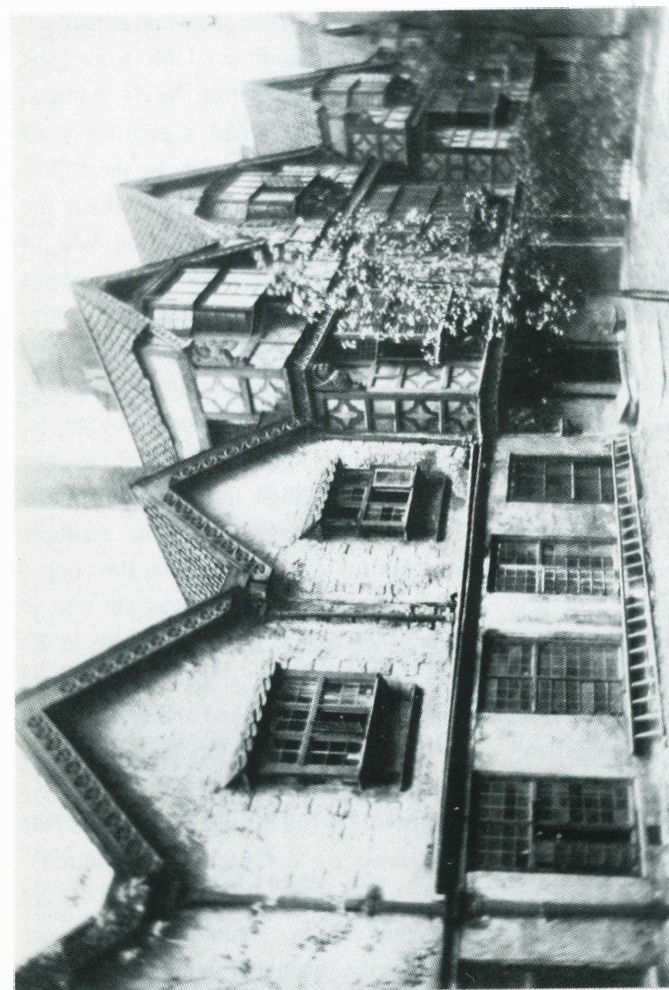
For 450 years Bristol was deeply concerned with importing raw or semi-refined sugar and refining it in sugar houses in the city. It was the most important ingredient of the city's prosperity in the eighteenth century. Indeed in the century and a half down to 1820 cane sugar from the Caribbean was the most valuable British import.¹ There were distinct stages in the city's concern with sugar. From 1466 to 1612 refined sugars were imported from the Portuguese Madeiras and the Spanish Azores; from 1612 until 1653 mainly Spanish and Portuguese raw sugars were shipped for refining at St Peter's Sugar House in Castle Precincts; then between 1653 and 1783 semi-refined sugar from the West Indies was imported on an increasing scale and at one time there were twenty sugar refining houses in the city; from 1783 to 1812 was a period of intense competition with London and Liverpool resulting in some Bristol sugar firms going bankrupt; 1812-1880 saw a reduction in the number of businesses but increased investment in steam processes and vacuum driers; 1880-1912 witnessed decline and the closure of the last firm in 1912.

From the mid-fifteenth century Portuguese Madeira sugar, in refined form, regularly reached Bristol, usually via Lisbon.² The next phase was inaugurated by Robert Aldworth who was without question Bristol's wealthiest merchant at the end of the sixteenth century. Master of the Merchant Venturers in 1609, 1612 and 1625 as well as Mayor in 1609, he founded the city's first sugar house. In his earlier days from 1577-1584 he had been a factor in the Iberian peninsula buying and selling for a number of Bristol merchants which had enabled him to build up contacts and eventually to develop his own trading with Spain, Portugal,

the Madeiras, Canaries and Azores, particularly after 1604, when the lengthy Anglo-Spanish war, which had begun with the 1588 Armada, had been brought to an end. Sugar refining was an offshoot of this trading activity. In 1607 Robert Aldworth bought an old house, then known as Norton's House, for £200. It abutted the churchyard of St Peter's and had gardens sloping down to the river Avon. He pulled it down and rebuilt two thirds of the house and in 1612 acquired the eastern part of the building from the Corporation, for £3 per annum, which he converted into a one pan sugar refinery. This St Peter's sugar house remained the only sugar house in the city until 1654.³ It depended entirely on Portuguese and Spanish supplies of raw sugar.⁴ Robert Aldworth engaged a works manager and with Giles Elbridge, his nephew-in-law and heir, found the capital to buy the necessary machinery and provide the shipping to bring the unrefined muscovado to Bristol. Apprentices⁵ were taken to be trained in the skill of sugar refining and when Robert Aldworth died in 1637 Giles Elbridge took over the business. This gradually expanded with 21 ships involved in the trade in 1620 rising to 34 in 1637⁶ and the amount of imported muscovado also rose, though very erratically, as trade was adversely affected in the 1620s by war first with Spain and then with France. The amounts were still small by comparison with later trading as the Table below, based upon the Bristol Port Books, shows:

Table 1: Annual Imports of Sugar into Bristol 1609-1636⁷

<i>Year</i>	<i>Hogsheads</i>	<i>Aldworth's imports</i>
1609	203	135
1611	2	0
1612	187	162
1613	441	285
1614	18	0
1615	16	0
1621	24	20
1623	539	258
1624	3	0
1625	450	177
1636	247	0



Bristol's earliest sugar house, Norton's House, St Peter's Churchyard, Castle Precincts, showing the old east wing used for the refinery. Photograph from Trans. of the B. and G. Arch. Soc., Vol. XLVIII, 1926, p224-5

The Elbridge family fortunes suffered greatly in the Civil War years so that eventually Giles's surviving son Thomas sold the sugar house in 1647 to Robert and Thomas Challoner for £1,120 to pay off the debts and legacies of his deceased father and elder brother John and then migrated to the Pemaquid fishing colony in Maine.⁸

By the mid-seventeenth century, with English conquest and expansion in the West Indies, new sources of sugar became available from cane plantations in the small islands of St Kitts, Montserrat, Nevis, Antigua and particularly Barbados, which by the 1660s had a population of 40,000 and was the largest producer in the trade, although, by the 1720s, it was outstripped by the much larger island of Jamaica which the English had captured from the Spaniards in 1655. By the war of American Independence Jamaica had over a hundred sugar estates averaging more than 700 acres each. The average estate had 500 slaves.

The five dry months from January to May in the West Indies were the crucial period for sugar production, cane cutting, grinding, boiling, and beginning the refining process. Each estate had a mill worked by mules, oxen or water-wheels for crushing the cane. Unless the juice of the cane was boiled within twenty minutes of being crushed, fermentation started, turning the juice into molasses which would never crystallise. As there was no means of cooling the boiler house, temperatures near the copper vats could reach over 120°F. The crystallising product was allowed to drain into vats and then sealed in hogsheads, puncheons or barrels in the crude state known as 'muscovado' or 'paneel' sugar and then shipped abroad. Muscovado was contaminated with gluten, lime and caramel and it was the task of Bristol sugar refiners to expel the impurities and produce various grades of pure white crystalline sugar.

The best index of the growth of Bristol's sugar trade in the latter half of the seventeenth century is provided by the Merchant Venturers' Wharfage Accounts of which there is an unbroken series from 4 May 1654 until 29 September 1694 in twenty volumes containing 4,000 pages of entries. These Accounts demonstrate the gradual growth in the number of hogsheads of muscovado sugar imported into Bristol, the increase in the shipping which this necessitated, and the amounts brought in by each merchant or grocer, as the following tables show. In addition the Wharfage Accounts demonstrate the beginnings of the import of rum and molasses in the seventeenth century.

Table 2: SMV Wharfage Accounts showing Seventeenth Century Importation of Muscovado and White Sugars into Bristol

<i>Year</i>	<i>Hogsheads</i>	<i>Number of Ships</i>	<i>Importers</i>
1654	3,381	17	174
1655	3,365	24	171
1656	4,827	26	120
1657	3,855	21	150
1658	3,980	22	138
1659	4,275	20	142
1660	3,510	20	132
1661	2,723	22	145
1662	4,988	29	211
1663	5,443	28	193
1664	5,534	26	186
1665	6,779	29	270
1666	7,917	49	301
1667	4,071	30	181
1668	7,339	49	444
1669	5,493	48	383
1670	4,739	38	325
1671	6,561	46	344
1672	4,994	39	286
1673	6,554	46	356
1674	6,852	60	334
1675	6,312	68	320
1676	6,242	58	299
1677	6,740	57	330
1678	7,281	70	371
1679	9,359	78	403
1680	5,672	57	284
1681	9,646	65	377
1682	7,097	65	339
1683	8,321	57	341
1684	8,393	55	382
1685	7,279	53	413
1686	7,126	54	368
1687	7,381	55	420
1688	5,411	58	342
1689	7,764	54	348
1690	3,805	33	275
1691	5,632	45	283
1692	7,983	57	365
1693	2,562	26	157
1694	6,289	48	312

Table 3: SMV Wharfage Accounts 1654-1694 showing the leading Importers of Muscovado and White Sugars into Bristol (over 1,000 Hogsheads)

John Pope, 1654-69, Michael Pope and Co., 1667-94	6,550
Sir William Merrick, 1654-94	6,184
Shershaw Cary, 1657-72, John Cary, 1673-79	5,692
Sir William Hayman and Co., 1654-94	5,388
Sir John Knight and Co., 1654-93	4,544
William Cole, 1654-9, Thomas Cole, 1662-94	3,747
William Swymmer and Co., 1666-1694	3,612
Thomas Biss, 1661-75, Phillip Biss, 1676-90	3,203
John Minor, 1660-69, William Minor, 1669-91	2,908
Sir John Lloyd, 1673-79, Henry Lloyd & Co., 1680-94	2,503
Gabriel Deane, 1654-77	2,480
William Yeamans & Co., 1654-73, Robert, 74-79, John, 80-94	2,469
Charles Williams, 1660-79, Roger Williams, 1680-84	2,431
Robert Yate and Co., 1655-1694	2,390
Samuel Cleark, 1654-79, William Cleark, 1683-94	2,362
Sir Abraham Elton and Co., 1683-94	2,249
Edward Feilding, 1658-1690	2,237
William Rogers, 1661-79	2,031
Thomas Eston, 1654-76	1,988
Sir John Duddleston, 1670-94	1,781
Samuel Hale, 1666-85	1,770
John Speed, 1654-74, Thomas Speed, 1675-81	1,646
Richard North, 1654-66, Thomas North, 1667-79	1,490
John Donning & Co., 1680-94	1,435
John Richardson, 1672-92	1,425
Richard Marsh, 1665-81	1,388
Robert Vickris, 1654-79	1,369
Thomas Saunders, 1669-94	1,360
Thomas Symonds, 1663-85	1,342
William Colston, 1661-79, Thomas Colston, 1680-82	1,328
Edmund Ditty, 1665-83	1,319
Arthur Plomer and Co., 1679-94	1,312
Robert Kirk and Co., 1680-94	1,306
Phillip Tyler, 1679-86	1,170
Thomas Scroop and Co., 1667-94	1,146
John Coombs, 1676-79, Henry Coombs, 1682-94	1,086
William Shepherd and Co., 1674-94	1,062
John Jackson, 1659-81	1,042

Table 4: SMV Wharfage Accounts showing Importation of Molasses into the port of Bristol

<i>Year</i>	<i>Hogsheads of Molasses</i>	<i>Nos. of Ships</i>	<i>Importers Involved</i>	<i>Newcomers Entering</i>
1679	93	8	8	8
1680	219	12	16	13
1681	282	20	26	23
1682	234	12	15	11
1683	207	15	21	14
1684	213	10	12	8
1685	763	20	26	18
1686	648	26	37	28
1687	623	20	34	23
1688	612	26	40	20
1689	590	18	22	10
1690	799	18	32	15
1691	218	5	9	2
1692	205	6	10	4
1693	63	4	6	5
1694	247	10	17	11

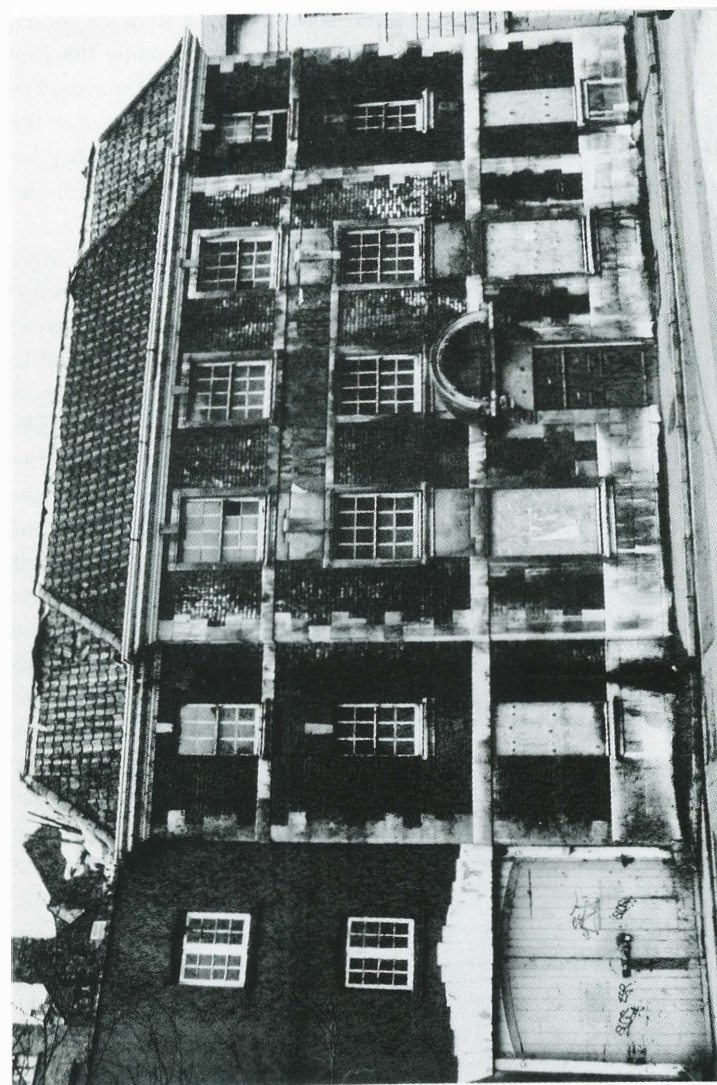
Table 5: Principal Importers of Molasses in the Seventeenth Century

<i>Name</i>	<i>Hogsheads</i>	<i>Years Involved</i>
John Cary	743	1680, 82, 83, 85, 88, 89, 90
Michael Pope	360	1684, 85, 86, 88
William Cleark	241	1685, 88, 90, 91, 92, 94
James Hollidge	206	1687, 88, 90
Henry Coombs	194	1687, 88, 89, 90
Abraham Elton	174	1688, 89, 90, 92, 94
John Richardson	144	1680, 81, 86, 89, 90, 91
Nathaniel King	135	1682, 84, 86, 87, 88, 89, 90
William Minor	108	1680, 87, 88, 90
John Alway	103	1681, 84, 85, 88
Walter Monke	93	1692
Joseph Taylor	82	1689
William Hayman	76	1679, 81, 82, 83, 87

Table 6: SMV Wharfage Accounts showing Importation of Rum in the Seventeenth Century

<i>Year</i>	<i>Hogsheads per annum</i>	<i>Ships</i>	<i>Importers</i>
1677	9	1	2
1679	¾	2	2
1680	4¼	2	2
1681	14¾	9	9
1682	10¼	8	9
1683	8½	7	7
1684	7½	8	11
1685	9	5	7
1686	12½	6	6
1687	13¾	4	7
1689	8¼	6	7

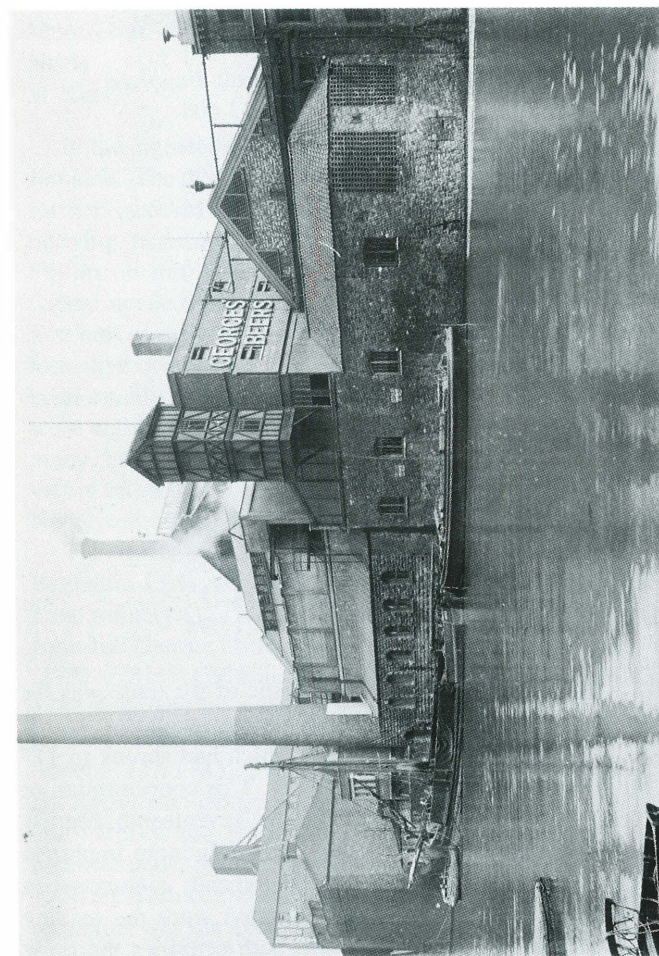
Not surprisingly the abundant new sources of semi-refined sugar led to the establishment of new sugar refining houses in Bristol. After St Peter's, the second was set up in 1653 at the Great House, St Augustine's Back, whose grounds covered two thirds of the site occupied by the present Colston Hall.⁹ John Knight, member of a wealthy Bristol mercantile family, in partnership with his cousin Sir John Knight, a wealthy grocer, and Shershaw Cary, a merchant, took the lead in founding the new sugar house which cost about £3,000 to fit out but was soon making considerable profits.¹⁰ It was a twenty room establishment with spacious cellars. It had three pans and its water supply came from Brandon Hill. Thirteen new cottages were erected in the grounds for workmen in the sugar house, although the 1691 Poll Book shows that only five men were employed in the house itself, so presumably the cottages must also have housed the men and their families who worked outside the house unloading hogsheads, filling barrels with refined sugars of various grades, mixing clay and shovelling lime. The St Augustine's house eventually ceased to be a refinery in 1708 as a result of a dispute with the City Council over the Brandon Hill source of spring water, which was crucial, as the continuous use of water was necessary in almost every process of refining. The current owner of the house wished to extend it to include a rum distillery, as rival local sugar houses had done, but this required access to more water which the dispute with the Council precluded. Hence the business and equipment was transferred to Lewins Mead and later to Duck Lane.



Lewin's Mead Sugar House, now on sale as offices

In addition to St Augustine's and St Peter's, between 1660 and 1695 the number of sugar houses in the city grew from two to ten. These comprised Temple Street, 1662¹¹; Whitson Court, 1665¹²; the Counterslip, 1681¹³; Old Market, 1684¹⁴; the first Lewins Mead refinery, 1684¹⁵; Tucker Street, 1685¹⁶; 97 Redcliff Street, 1689¹⁷; and 18 Redcliff Street, 1695.¹⁸ Five of these new sites fronted on to the Avon, while the first Lewins Mead refinery and Whitson Court used the Frome. Proximity to water transport was essential if costs were to be minimised for the unloading of raw sugars, coal, lime and clay. It was also necessary for each site to have a supply of lime-bearing water by means of a well and pump or one of the streams from Brandon Hill.

As the Wharfage Accounts show (see Table 3) the leading sugar importer in the seventeenth century was the Pope family, John (1654-69) and Michael (1667-94). As might be expected they eventually moved into refining as well as importing, buying the Whitson Court house in 1691 and building a second house in Lewins Mead on the same plan as Whitson Court. Whitson Court itself had been started by Thomas Ellis in 1665 in the grounds of the Old Priory, St James. He was probably inspired by his cousin John Gunning, the driving force at St Peter's sugar house. The Ellis family had been merchants for several generations importing sugars from the Portuguese Madeiras¹⁹ and later sailing their own ships to the West Indies just as the sugar trade was opening up. The Whitson Court establishment was extensive; there was a warehouse, a mill house with a loft, a cooperage for making casks, working premises for storing raw sugar, storehouses for coal, drying rooms and workshops for carrying out the refining processes with copper pans and coolers, as well as a master boiler's house, a counting house and stables. Evidently in the 1680s all did not go well with the business. A young apprentice, James Cave, who had run away but been caught and brought before the City authorities, complained that he had not received adequate instruction and that he was only employed half the year because of slackness of work. He was heard with sympathy and granted his release from apprenticeship in November 1684. Also at this time one of Ellis's most valuable associates, Edward Terrill, died and it may be that the Pope family acquired Whitson Court relatively cheaply. Thereafter the family owned it until 1808 when Andrew Pope turned to banking, becoming a partner in the Bristol Tolsey Bank; the family had progressed from being grocers in the seventeenth century, merchants and sugar refiners in the eighteenth century and bankers in the nineteenth century. The Whitson Court house did not last long after the Popes gave it up; it was closed in 1824.



George's Brewery, 20 September 1920. The site by Bristol Bridge covers part of Conrad Finzel's Sugar Refinery on the Counterslip. Some of the original façade of the boiler house still stands facing out across the Floating Harbour. In the 1860s the refinery was one of the largest in the country

In the eighteenth century the world's sugar trade multiplied at a compound rate of 7% per year and Bristol played a major part in shipping raw sugar to Britain. The following table based on the Wharfage Accounts, the Bright MSS, and Bristol Presentments substantiates this:

Bristol Sugar Imports 1728-1800 (annual averages)²⁰

<i>Years</i>	<i>Hogsheads Imported</i>
1728-32	13,604
1733-37	10,818
1738-42	12,096
1743-47	10,816
1748-49	12,062
1754-57	13,259
1758-62	13,930
1763-67	13,729
1768	15,803
1773-77	21,815
1778-80	18,252
1785	22,811
1788	20,903
1789-90	20,906
1791-92	18,098
1793-97	16,515
1798-1800	21,094

As Kenneth Morgan has shown, a characteristic of the trade was the emergence of fewer merchants handling ever larger quantities. In the 1720s there were over 500 importers of sugar which had shrunk to 117 by the 1770s and to 85 by the end of the century. This concentration of the trade in fewer hands did not occur in the seventeenth century although at its end the prominence of a few especially large importers was discernible as would be the case in the eighteenth century when Michael Atkins, William Miles and Robert Gordon were the leading importers for over a quarter of a century.²¹ In both centuries the same names recur as importers over several generations suggesting the importance of accumulating expertise in the trade and the rewards it brought. In the seventeenth century few Bristol merchants acquired shares in Caribbean estates, the Elbridges in Jamaica and the Protheroes in Trinidad being the exceptions, but this became more common in the eighteenth century. Likewise it was only at the end the seventeenth

century that the importance of Jamaica as a sugar supplier is observable as the table from the Wharfage Accounts shows:

	1658-59	1659-60	1683-84	1684-85	1685-86
Antigua	-	-	2	4	5
Barbados	11	10	14	12	11
Jamaica	-	-	13	9	15
Montserrat	-	-	3	2	2
Nevis	6	5	7	14	11
St Kitts	-	-	4	-	-

In the eighteenth century half the sugar arriving in Bristol came from Jamaica. The veritable flood of raw sugars from that island led to a further increase in refining houses which began to spring up in the outlying parishes of Temple, St Thomas, St Mary Redcliffe and St Phillip on the Avon and St John's and St James on the Frome. The capital needed to set up a refinery - between £7,500 and £8,000 in the first half of the eighteenth century - necessitated forming partnerships of four, five or even six to raise such sums. By 1760, twenty refineries had been established. From the closing of St Augustine's in 1708 when there were eight sugar houses until 1760 a dozen more had been established, many, but not all, having a life of a hundred years or so before falling victim either to the difficult trading conditions in the Revolutionary and Napoleonic wars or to that scourge of the refining business, fire.

The dozen houses included Duck Lane (1715-1763), first under Benjamin Lane and then under Barnes, Smith, Brice and Co.²²; Halliers Lane refinery (1712-1817), sometimes also called Bridewell Lane, under John and George Daubeney and later Biggs and Savery²³; 70 Temple Gate (1722-1781)²⁴; Old King Street (1724-1812) under Hook and Houlton until 1741 followed by a succession of owners²⁵; the second Lewins Mead refinery (1728-1826), begun under Dampier and Coombe²⁶; 66 St Thomas Street (1722-1783), eventually sold by Cordis Weeks and Co.²⁷; Traitors Bridge, Great George Street (1750-1813) under the Battersby, Sweeting, Hull, Reilly and Rogers families²⁸; Nelson Street (1760-1828) which operated under Samuel Henderson until 1807, Cartwright and Beddoe until 1820 and Daniel Stanton until 1828²⁹. But probably the best known of the refineries was the Quay Head (Stone Bridge), (1760-1859) under Ames, Ireland and Co. It became one of the largest undertakings in Bristol equipped with all the latest steam driven processes.³⁰ Finally there were two more bringing up the dozen: St John's Bridge (1728-1834), begun by Edward Reed & Son, followed by Henderson and Peach and then Joseph Rigg³¹; Wilder Street (1754-1849), begun by John Collett, taken over by William Pember in 1775, Heinekin and Ormiston in 1801 and by John and Francis Savage in 1811, who introduced steam processes.³²

1751

LOCATION OF BRISTOL'S SUGAR REFINERIES

Whitson Court
Sugar House
Lower Maudlin Street

Two Lewins Mead
Sugar Houses

Halliers Lane
Sugar House
(Nelson Street)

Duck Lane
Sugar House

St John's Bridge
Sugar House

Host Street Refinery

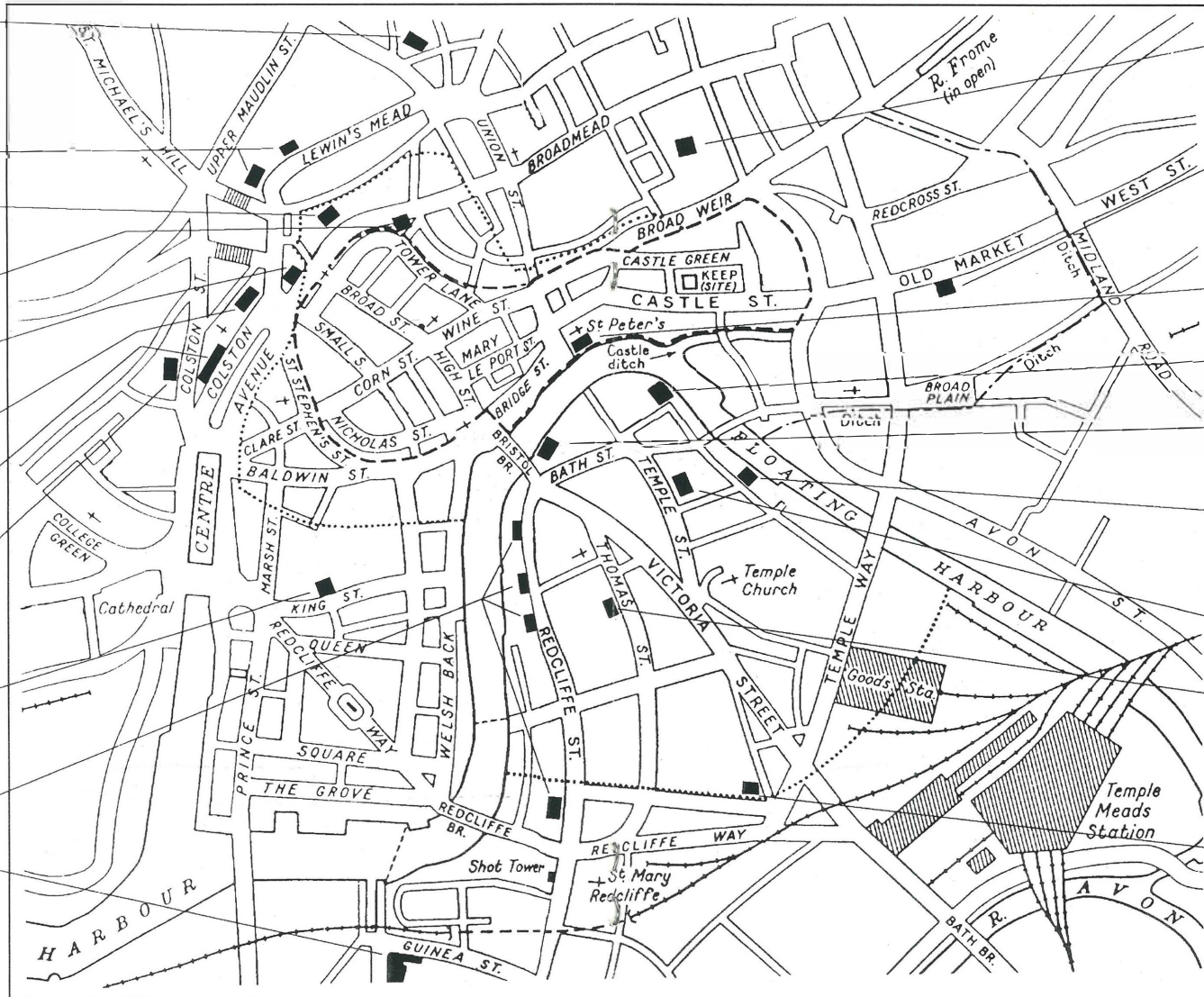
The Quayhead
Refinery

St Augustine's
Sugar House
on site of
Colston Hall

Old King Street
Sugar House

18, 61, 62 and 97
Redcliffe Street

Guinea Street
Sugar House



Quakers Friars
Sugar House
Rosemary Street

Old Market
Sugar House
on site of
Territorial Hall

St Peter's
Sugar House

Counterslip
Sugar House

East Tucker Street
Sugar House
Bristol Bridge

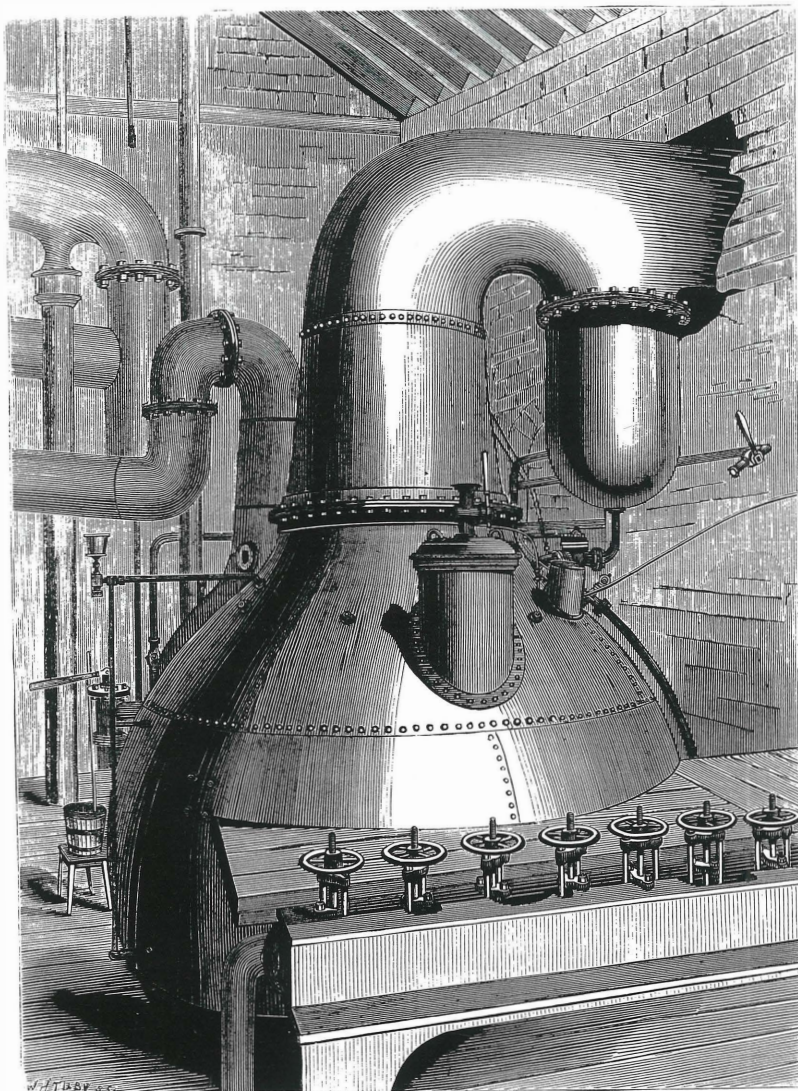
Temple Back
Sugar House

Temple Street
Sugar House

66 St Thomas Street
Sugar House

70 Temple Gate
Sugar House

Bath St.
Back & Old Market
Castle Sugar Refinery, Queen's
Finken Bros. St. Philips Mark



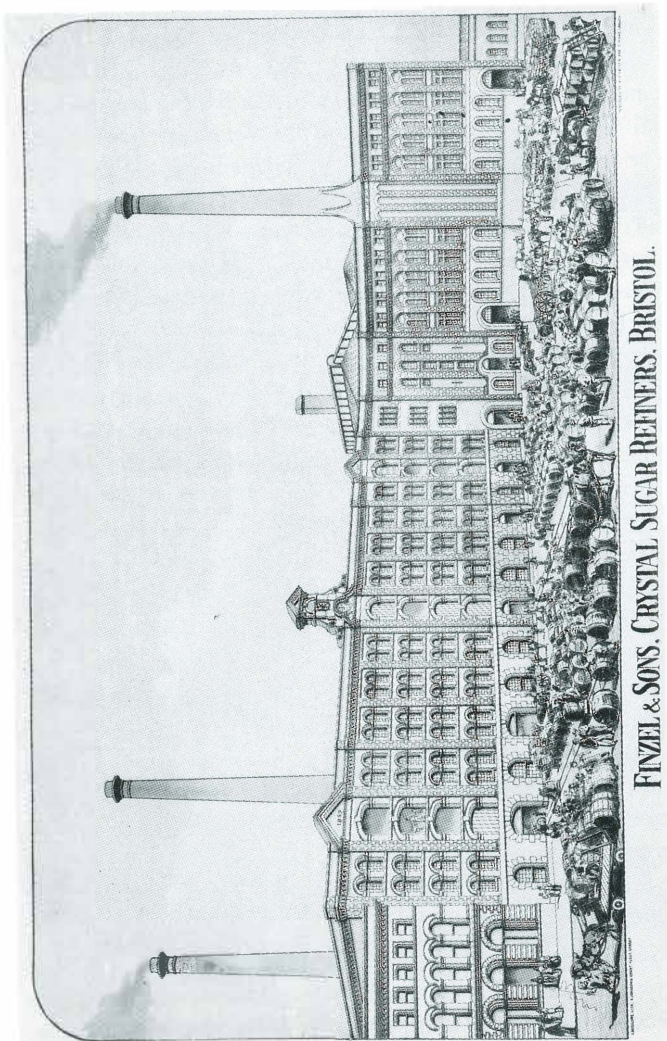
VACUUM-PAN AT MESSRS. FINZEL'S WORKS.
(Will boil about 400 Tons a week.)

*Interior of Conrad Finzel's Refinery from 'The Practical Magazine'
1873, pp163-166, Central Ref. Lib. No. B15146*

Sugar refiners certainly made their mark in the life of the city. Between 1663 and 1832, sixteen of them became Mayors and twenty-nine were Sheriffs.³³ Eight of them became partners in Bristol banks; Morgan Smith was a founding partner in Miles' Bank, Jeremiah Ames and Henry Bright were founding partners in Harford Bank, George Daubeney was an initial partner in Ames, Cave and Co. and James Ireland similarly in Bristol City Bank, while Edward Brice was an initial partner in Birch, Pitt and Co. and Andrew Pope likewise in Bristol Tolzey Bank. Finally Daniel Wait was a partner in the Castle Bank. Their social standing can be gauged by their substantial residences and ownership of land. To cite but a few examples: George Daubeney lived at Cote House, Westbury-on-Trym and had an estate at Over; Nehemiah Champion lived at Clifton Court (now The Chesterfield); Samuel Henderson lived in Royal Fort House, Isaac Elton at Stapleton Court and Conrad Finzel had a magnificent house at Clevedon. Both Samuel Brice and Edward Garlick had estates at Frenchay.³⁴ Refiners were a close knit group often intermarrying and a significant number worshipped together in Quaker or Dissenting meeting houses such as Lewins Mead Unitarian Church where William Barnes (Snr. and Jnr.) James Hillhouse (Jnr.), John Merlot and Edward Reed were members.³⁵

The era of the Revolutionary and Napoleonic wars proved to be a difficult time for Bristol's sugar trade. Wars always damaged it but in addition the ever-growing larger ports of Liverpool and London offered increasingly sharp competition while the introduction of steam processes in 1811 meant that refineries demanded greater capital investment and the weaker concerns were driven to the wall. Between 1794 and 1824 seven sugar houses closed, including 97 Redcliff Street in 1794; 10 Temple Back (1809); Traitor's Bridge (1815); 18 Redcliff Street (1816); 2 Halliers Lane (1817); Whitson Court (1824) and Guinea Street, a house which had started in 1797. On the other hand it was possible to survive the war years as was shown by two houses, Quakers Friars (Rosemary Street)³⁶ and Host Street (Quay Head),³⁷ opened in 1777 and 1787 respectively. Both survived until 1840.

Under the enlightened ownership of the Guppy brothers, Quakers Friars refinery was considerably enlarged and its manufacturing processes were brought up to date. To compete with Liverpool and London, Bristol's refiners needed to reduce their costs by installing vacuum pans for rapid evaporation at low temperatures, a method patented by Edward Howard in 1812 and 1813. They also needed the new steam engines and air pumps and the animal charcoal cisterns to decolour the sugar by removing the caramel. Another vital innovation was the centrifugal



Conrad Finzel's Sugar Refinery on the Counterslip. Finzel died on 21 October 1859.
German by birth, he invented and patented improvements to sugar refining.
The refinery closed in April 1881

machine, which at 500 revolutions a minute, produced a white crystal sugar far superior in dryness and quality to anything before.

To keep up to date with modern machinery required additional capital resources and larger premises which clearly were not forthcoming on a substantial scale in the nineteenth century. The upshot was the gradual dwindling of the sugar refining houses. Mathews *Directory* records 10 in 1824, 7 in 1835, 5 in 1867, 4 by 1873 and by 1899 just 2, the Bristol Sugar Refinery Co. Ltd., Old Market Street and Jacob Street, and Wills, Samuel of, Castle Street. No doubt the decline was accelerated by the repeal of the protective sugar duties in 1846. This opened the way for increased competition from the French and the Dutch whose sugar from their plantations in their West Indian possessions now became highly competitive with sugar from British West Indian islands. Another blow was the development of the continental sugar beet industry. By the 1860s the Bristol Docks Committee was noting the continual increase in the import of refined sugar from France and Holland³⁸ and in 1873 the *Clevedon Mercury* reported that '80,000 loaves of French sugar came into Bristol this week: the drawback which the foreign refiner gets enabling him to undersell the English manufacturer in his own market'.³⁹ The import of already refined sugar into Bristol rose from nil in 1848 to over thirty thousand hogsheads per year in the 1870s and early 1880s.⁴⁰

Foreign competition was not the only challenge facing Bristol's sugar refiners. The dock facilities were far from ideal for enterprises needing to move large quantities of coal and raw sugar each week. A major problem was that until 1877, when the first Severnside dock was opened at Avonmouth, the city's docks had to be reached by negotiating seven miles of the narrow, winding river Avon with its exceptionally high and rapid tidal rise and fall. When the Floating Harbour was reached, for long there was no easy access from quay to the refineries by rail so that the Counterslip refinery which used many hundreds of tons of coal per week had to rely on barges for transporting it while the Old Market refinery had to use carts to transport raw sugar and coal for its operations. All this was expensive and old fashioned. Moreover it was not until 1881 that the Docks Committee tried to help the trade by reducing duties on imported raw sugar from 25p to 10p per ton.⁴¹ It might be thought that refinery owners might have tried to counter the lower costs in the highly developed Liverpool and London dock systems by moving their operations to Avonmouth but it has to be remembered that in its early years Avonmouth had very few facilities to offer a prospective manufacturer or merchant. Also their wage costs would almost certainly have risen as Bristol-based employees were usually able to insist on better pay if forced to travel miles to work.

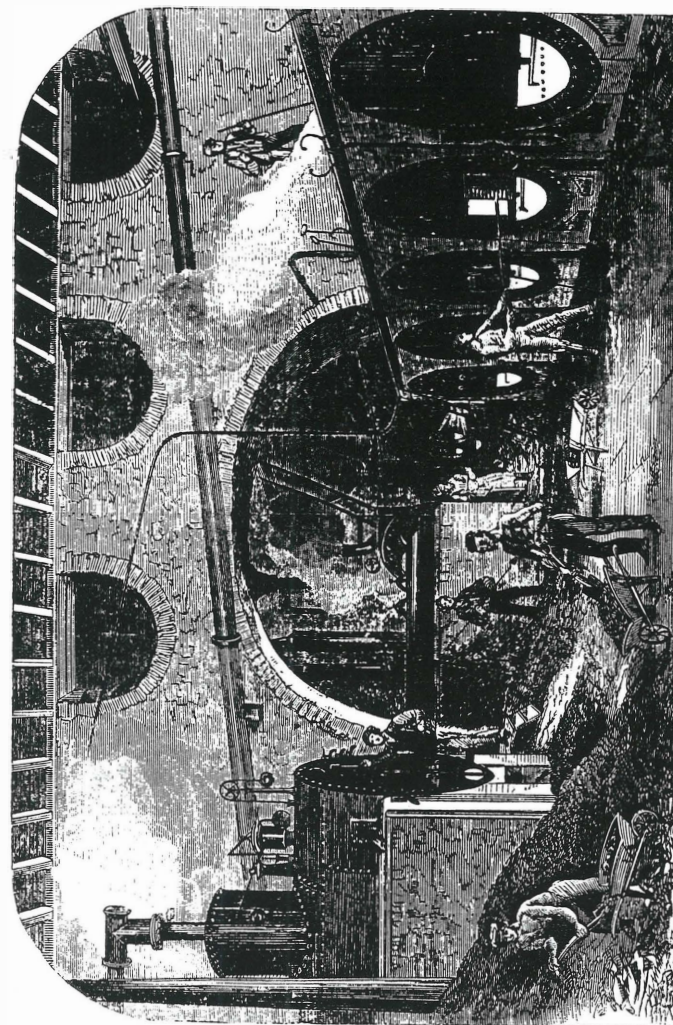
Then, in the story of the decline of the sugar trade, the ravages of fire should not be overlooked. Insurance companies regarded refineries as hazardous and few were prepared to insure them. Sugar bakers were faced with premiums of 25s per cent, in one case, and 18s in another, so they decided to form their own company. The first Bristol Crown Fire Office had been set up in 1718 with Corsley Rogers, Henry Combe and Caleb Lloyd as partners. It was refounded in 1769, still with sugar refiners on the Board, and continued until its business was transferred to the Sun Fire Office in 1837. Most sugar refiners were unable to obtain protection for more than £5000 outside their circle, so inter-insurance among themselves was their only way out. The fire offices had to provide a pump and apparatus for dowsing fires. This was the city's only fire-fighting service until the Police Fire Brigade was formed in July 1877. Given the nature of the business it is not surprising that between 1670 and 1859 no less than eleven sugar houses were destroyed by fire, six of them in the nineteenth century era of steam driven processes. The most spectacular fire was that which ruined Fuidge, Fripp and Co. in 1859 whose loss was assessed at £80,000.⁴²

Nevertheless, in spite of competition from abroad and the giant ports of London and Liverpool, Bristol continued to import raw sugar on a considerable scale in the nineteenth century as the table below shows:

Unrefined sugar imports (Hogsheads) in selected years⁴³

<i>Year</i>	<i>Imports</i>
1848	82,103
1855	105,059
1860	143,091
1865	190,221
1870	229,476
1875	273,434
1880	141,841
1883	156,958

Also the remaining refineries battled on against the odds seeking to survive by trying to keep up to date with new machinery and enlarging the scale of their operations. The most noteworthy were the efforts of Conrad Finzel I (1793-1859) and Conrad Finzel II (1818-1903). The father had learnt the sugar business in London before becoming principal refiner at John and Francis Savage's Wilder Street house. With a grocer, George Davis, he opened a sugar house in 1838 in Lewins Mead, and the following year acquired the old Counterslip refinery only to witness it

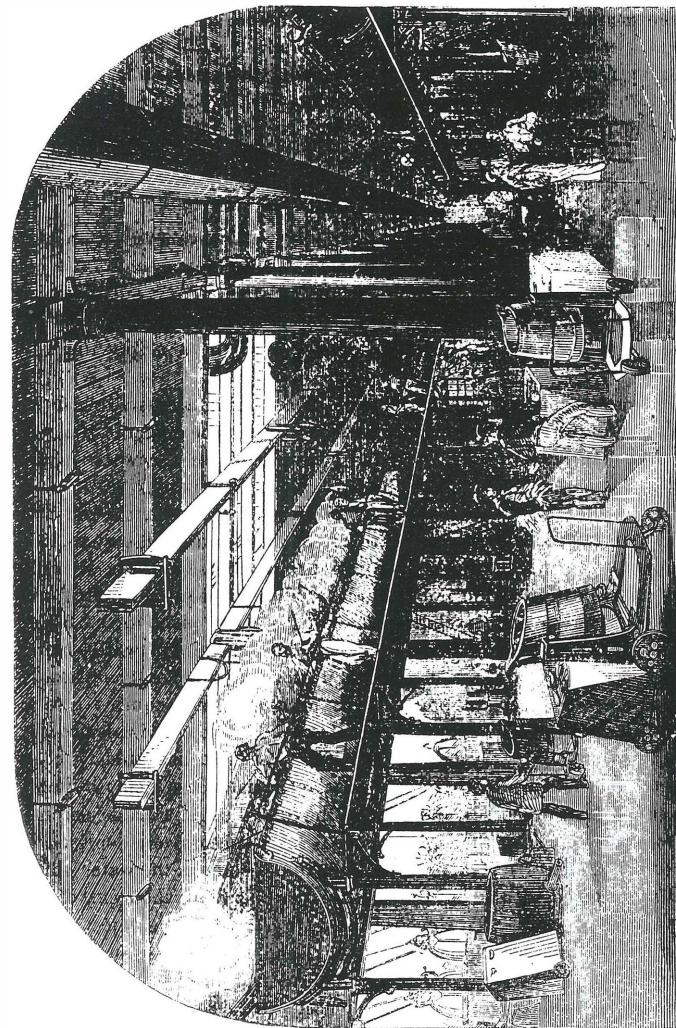


Interior view of Finzel's Refinery from G. Meason, 'Illustrated Guide to the Great Western Railway', 1859, p828. Central Ref. Lib. No. 385.0942

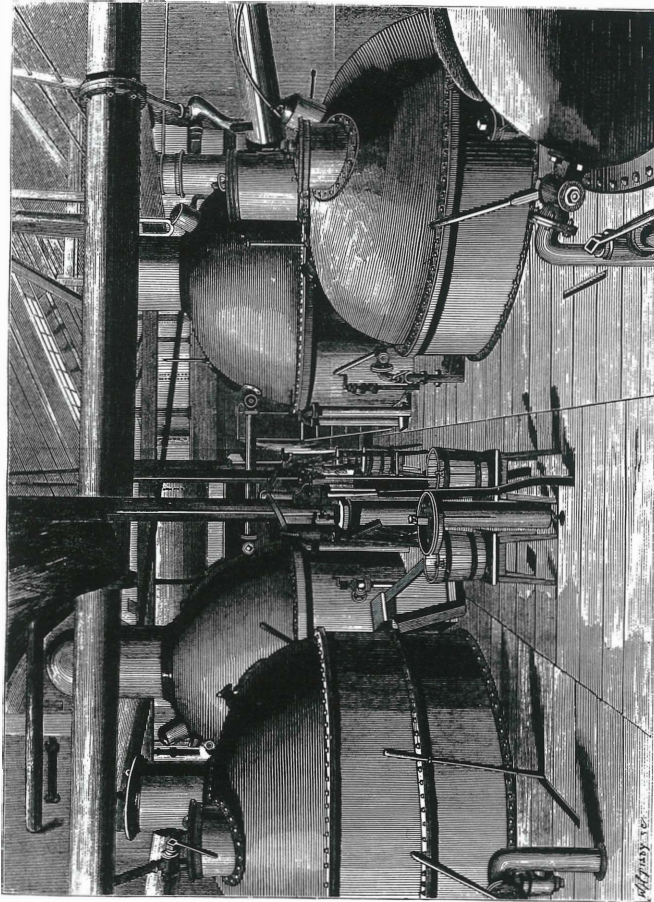
being totally destroyed by fire in 1846. Finzel rebuilt it on a large scale. Indeed at the time it was claimed to be the largest sugar refinery in the country. It was equipped with the most up-to-date machinery including the revolutionary centrifugal vat and vacuum pan which Conrad Finzel had patented. The centrifugal machine took only two minutes to produce white crystal sugar while the two largest pans turned out respectively 400 and 500 tons of sugar in a week. The massive new refinery cost £250,000, consumed 500 tons of coal a week, employed over 700 workers and produced about 1,200 tons of sugar each week. Like other remaining refiners it sought out the cheapest raw sugar from around the world, the days of the British West Indies as the sole supplier being long over.⁴⁴

The Old Market refinery was completely gutted by fire on 11 May 1854 but was rebuilt and equipped with new machinery. This was an expensive operation which bankrupted one of its partners, William Stock, in 1863 and the other partner, Henry Mirehouse, sold it to a specially formed public company, Bristol Sugar Refining Co. Ltd. The Company sought to use up-to-date machinery and in 1902 the refinery was described as having 'Four copper vacuum pans with condensers, vacuum pumps, etc. blow-up cisterns, charcoal reburning plant, bag filters, syrup and liquor tanks and pumps, a range of five turbine driven hydro extractors with Worthington pump, steam hoist engines, 10 Lancashire boilers, economisers, etc., the whole being equal to an output of about 400 tons per week'.⁴⁵

Ultimately the Bristol refineries were unable to survive. Finzel's Counterslip concern collapsed in 1877, the archives at Courages in present day Counterslip showing that it had borrowed heavily from R. Vaughan, the banker, and Fuidge and Beloe, sugar brokers, in an unavailing effort to keep going. A consortium of Bristol businessmen including Vaughan and Beloe, Harford, another banker, and Alderman Ford, a leading figure in the City Council and an extensive property owner, formed a company with a capital of £150,000 to take over the refinery. The consortium made heavy losses and was forced to close the refinery in 1881. At this time, as well as the Old Market concern, there was still a refinery at Queen Street, St Phillips, known from 1867-1879 as the Castle Sugar Refinery Co. It then became Wills, Young and Co. and from 1888 Wills, Samuel of Queen Street and Castle Street but closed its doors in 1905 as Bodey, Richards and Co Ltd.⁴⁶ Finally the Bristol Sugar Company with its Old Market refinery came to grief. In 1911 it negotiated with the Docks Committee for erecting a refinery at the Royal Edward Dock, Avonmouth, to cost £130,000 and take a minimum of 1000 tons of raw sugar per week, brought by sea. The finance was not forthcoming and the last Bristol refinery came to an end in 1912.⁴⁷



Interior view of Finzel's Refinery from G. Meason, 'Illustrated Guide to the Great Western Railway', 1859, p828. Central Ref. Lib. No. 385.0942



PANS WHICH WILL BOIL DAILY ABOUT 400 TONS

Interior of Conrad Finzel's Refinery from 'The Practical Magazine' 1873,
pp163-166, Central Ref. Lib. No. B15146

References

The main sources for this pamphlet have been the published and unpublished papers of the late I.V.Hall, the author's researches in the Bristol Port Books and the Wharfage Accounts of the Merchant Venturers and Kenneth Morgan's recent *Bristol and the Atlantic Trade in the Eighteenth Century*, Cambridge, 1993.

Abbreviations:

P.R.O. Public Record Office

B.R.O. Bristol Record Office, 'B' Bond Warehouse, Smeaton Road, Bristol

S.M.V. Society of Merchant Venturers' Archives, The Promenade, Bristol

S.P.D. State Papers, Domestic, at the P.R.O.

Notes

1. W. Minchinton, *The Port of Bristol in the Eighteenth Century*, Bristol Branch of the Historical Association, Bristol, 1962, p2 and R. Davis, *The Industrial Revolution and British Overseas Trade*, Leicester, 1979, p43.
2. P.R.O. Bristol Port Books, E.122/19, 14 Ledger 19-20 Edw.IV, 1480, and E.122/20, 5 Ledger 1-2 Henry VII (1486). The bark called the Mare Petat in which Lucianus is master came from Madeira the xixth of September and has in it (sugar and bowstaves for various Portuguese merchants).
3. J.J. Simpson, 'St Peter's Hospital, Bristol' in *Transactions of the Bristol and Gloucestershire Arch. Society*, vol. 48, 1926, p212; B.R.O. 36772 I.V. Hall bequest, Box 11 and B.R.O. 09864(6) c St Peter's Deeds.
4. S.P.D. SP.16/138 no.4 List of Bristol Ships 1 Mar. 1629
5. For the Apprentices see B.R.O. Apprentice Book 1609-25, fol. 123 v 1616 George Payne from St Arghe, Cornwall and 1619 John Townsend from Warwick and *ibid* 1626-36 fol. 142, 1629 John White from St Colomb, Cornwall and 1630 Richard Sands from Lancaster and fol. 208, 1632 Oliver Benson from Westmoreland.
6. P.R.O. Bristol Port Books E 190/1134 No. 10 and 1136 No. 10.
7. *ibid* E 190/1133 Nos. 8, 10 & 11 and 1134 No. 3, 1135 No. 5 and 1136 No. 8. These amounts, expressed in tons and hundredweights, have been converted into hogsheads at 1 Ton (or 252 gallons) to 4 hogsheads or 2 Butts.
8. Donald Jones, *The Elbridge, Woolnough and Smyth families of Bristol in the eighteenth century, with special reference to the Spring Plantation, Jamaica, Bristol*, M. Litt. Thesis, 1971; for the Elbridge family pedigree see B.R.O. 36772 Box 3.
9. B.R.O. 36772 Box 2 for typescript article, 'The Sugar House at St Augustine's Back, 1654-1708'; Box 3, for B.M. Add. MSS. Shershaw Cary's letters and a schedule of pots and utensils left in the sugar house in 1668.
10. P.R.O. Chancery, C.5. 459/97, 1682, John Cary versus Joseph Knight. After three years of trading John Cary asserted that the firm's papers showed credit £10,995:18:11, and against this were 'desperate debts' of £1,534:19:7. These figures were not disputed in court. S.M.V. Property Deeds of Colston Hall, Bundle 1, 1568-1769, 30 parchments.
11. I.V. Hall, Temple Street Sugar House under the first Partnership of Richard Lane and John Hine (1662-78) in *Trans. of the B. and G. Soc.* vol. 76 (1957) pp118-140.
12. Whitson Court Sugar House, Bristol, 1665-1824 in *ibid* vol. 65 (1944) pp1-97.

13. B.R.O. 557 Counterslip Deeds B.R.O. 36772 Box 1 for the Blackwells, Garlicks; Elton Saunders and Bright; Harwood, Holden and Blackwell; Daniel Stanton; Davis and Finzell, Finzell and Sons ownerships.
14. Robin Stiles, 'The Old Market Sugar Refinery, 1684-1908' in *Journal of the Bristol Industrial Arch. Soc.* vol. 2 (1969) pp10-17; B.R.O. 9685 Old Market Deeds; B.R.O. 36772 Box 1 Typescript article on Old Market refinery; Box 2 Old Market Refinery Deeds 1704, 1710, 1711 and 1715; Box 3 Typed essay on Christopher Shuter and the Old Market refinery; Box 8 All the material for I.V. Hall's article in *Trans. of the B. and G. Soc.* 'The Garlicks, Two Generations of a Bristol Family, 1692-1781' vol. 80 (1961) pp132-159; Box 12 Old Market refinery and Francis Rogers and Co. 1691-1704 and Wm. Willcox and Co. 1705-1715.
15. B.R.O. 36772 Box 7, File E.L.2, Transcript draft for two articles on 'The first Lewins Mead Sugar House, 1684-1720'; Box 3, Essay on the Wood Family and Lewins Mead sugar refinery. Also unpublished, typed essay 'Lewins Mead Sugar House'; Box 5 Typed article and plans; typed leases relating to Lewins Mead and time chart of the owners.
16. B.R.O. 36772 Box 1 Notes on the Bright family and the sugar house in East Tucker Street up to 1795; Box 4 The Tyte family of Tucker Street; Box 6 Deeds and abstracts re: sugar house at East Tucker Street. Notes on the Garlicks and Whitchurch families. Maps of the Counterslip property, Finzel's property and East Tucker Street.
17. B.R.O. 36772 Box 4 Freke family and the west end of the Great House, Redcliff Street. Court matters in Freke v Freke, C 11, 951/16, Chancery Masters Exhibits. Also notes on Macie, Weston, Haynes, Hendy and Longman.
18. B.R.O. 36772 Box 4 Unpublished typescript article, 'The Sugar House at 18 Redcliff Street' also 'Henry Bright at the Counterslip 1786-95 and then at 18 Redcliff Street, 1795-1808'. Box 7 Notes on the Rigges, 1729-65 at 18 Redcliff Street; Box 1 Notes on George Tyte, grocer and partner with John Newport and Co., 1696-1728 18 Redcliff Street; Box 2 voluminous notes on John Newport's career, first as sugar baker at 18 Redcliff Street 1695-1709 and then at St John's Steps 1710-1726.
19. P.R.O. Exchequer, K.R. No. 1131, 1 Feb. 1594; No. 1132, (3) 14 Jan. 1599; No. 1133 (3) 1 Feb. 1601; No. 1135 (1) 25 June 1625; during the first seventeen years of the refinery's existence (1665-82) Thomas Ellis drew into close association to provide capital. Thomas Harris, John Wathen, Edward Terrill and Anthony Wood who had served his apprenticeship as a sugar baker for which see B.R.O. Apprentice Book, 20 Aug. 1688 'Joseph Wood, son of Anthony Wood, late of Bristol, sugar baker deceased'.
20. For the table see Kenneth Morgan, *Bristol and the Atlantic Trade in the Eighteenth Century*, Cambridge, 1993 p191.
21. *ibid* p189 and Tables 7.3 and 7.5.
22. B.R.O. 00690 Benjamin Lane and Co. setting up Duck Lane refinery; B.R.O. 36772 Box 12, typescript essay 'The Bound family and the Duck Lane Sugar House, 1714-1762'; plan of the sugar house 3 Oct. 1763; Garlick's Duck Lane venture 1728-35; Box 4 Two typed articles on 'The Duck Lane Sugar House 1715-62 under Benjamin Lane and Co. 1714-26 and William Barnes and Co. 1729-1762'; Box 7 Typescript article and two plans. 'The Garlicks; Two generations of a Bristol Family, 1692-1781 at Duck Lane and Counterslip' in *Trans. of the B. and G. Soc.* vol. 80 (1961) pp132-159.
23. B.R.O. 06065, Halliers Lane deeds; I.V. Hall 'The Daubenys, Parts 1 & 2' in *Trans. of the B. and G. Soc.* vol. 84 (1965) pp113-40 and vol. 85 (1966) pp175-201. B.R.O. 36772 Box 7 Typescript notes for an article 'The Sugar House at Bridewell Lane, 1712-1817'.

24. *ibid* Box 5 70 Temple Gate, 1722-1781.
25. *ibid* Box 7 Typescript article, 'The Sugar House at Old King Street, 1724-1812'.
26. *ibid* Box 5 Typed article with plans and typed leases relating to the second Lewins Mead sugar house.
27. *ibid* Box 5 Typescript notes re. Nicholas and Gustavus Bloome, 1722-39; Thomas Tandy, 1739-60; John Tandy and Co., 1760-80. Sources of information listed; diagrammatic chart; Box 12 two bundles of papers relating to 66 St Thomas Street.
28. *ibid* Box 7 Typescript article 'The Sugar House at Traitors Bridge, Great George Street and River Street, Bristol, 1750-1813'; Box 3 Notes on Great George Street house.
29. *ibid* Box 1 Notes on Daniel Stanton and Nelson Street.
30. *ibid* Box 4 Typescript article, 'The Quay Head Refinery 1760-1859; another century-old enterprise' plan and drawings from *Western Daily Press*; Box 8 Map showing sites 106, 101, 16 and 38 on the City Valuer's Terrier, sheet no. 18.
31. *ibid* Box 12 The Reed family 1728-58 and St John's Bridge sugar house. Photocopy of the plans drawn up by Wm. Paty, March 1799, showing location of the sugar house. Typescript essays on each company and typescript article 'The Century Old Sugar House at St John's Bridge, Bristol, 1728-1834'; Box 5 Plans and elevations used by Bamford and Matthews 1800-16; Box 7 Notes on the Rigge family.
32. *ibid* Box 12 Typescript article 'The old refinery, Wilder Street, Bristol, 1759-1849'; Box 1 Notes on the Pember family and Wilder Street sugar house; Box 8 Notes on the Savage family at the Wilder Street works.
33. See J. Latimer, *Annals of Bristol*, i 497-499, ii 534-536 and iii 536-7.
34. Further examples include John Elbridge who had 'Cote' built on the Downs and owned the manor of Buckshaw, Thomas Hort who lived at 'Home Ground', Coombe Dingle, Thomas Daniel of Stockland Manor, William Miles and Morgan Smith both of Abbots Leigh, Samuel Peach of Tockington and Richard Henderson who had an estate at Hanham.
35. Conrad Finzel belonged to the Open Brethren. Baptists included Edward Terrill (1658), Sister van Iterne (1666), Thomas Ellis (1666) and Thomas Whinnell (1682) while George Burge of Back Street sugar house, 1808-57, Nehemiah Champion, John Tuckett and William Battersby of Traitor's Bridge sugar house were Quakers.
36. B.R.O. 36772 Box 12 Typescript article 'The Sugar House at Quakers Friars, 1777-1840', together with listed sources. Photographs of the old house before demolition in 1932. Also articles on the Guppys and their connections with the commercial life of Bristol. Sale Notice in *Bristol Mirror* 7 May 1842 describing it as a 4 pan house, 120 Hogsheads per week may be worked.
37. *ibid* Box 4, Host Street 1787-1840 Rankin, Ingram and Goolden. See also Box 9.
38. D. Large ed. *The Port of Bristol*, 1848-1884, Bristol Record Society Pubs. vol. xxxvi (1984) p74 29 July 1867.
39. *Clevedon Mercury* Feb. 1873 quoted by Jean Burrows 'The Finzels of Counterslip and Clevedon' in *The Bristol Templar* p7.
40. D. Large *ibid* p xviii Table vi with cwts converted into Hogsheads: 1 Hogshead = 600lbs. 1 cwt = 100lbs using the short hundredweight common in the West Indies at that time.
41. D. Large *ibid* p190 18 Aug. 1881.

42. I.V. Hall 'Old Bristol Fire Offices. Sugar Baker Financiers' in *Bristol Times and Mirror* 30 Sept. 1926; the following sugar houses were destroyed by fire: 1670 97 Redcliff Street; 1720 first Lewins Mead sugar house; 1762 Duck Lane; 1771 Old King Street; 1774 Tucker Street; 1813 Lewins Mead; 1826 Host Street; 1829 Blackfriars; 1846 Counterslip; 1854 Old Market; 1859 Quay Head.
43. D. Large *ibid* p xviii Table vi.
44. Jean Burrows 'The Finzels of Counterslip and Clevedon' in *The Bristol Templar*; G. Meason, *Illustrated Guide to the Great Western Railway* (1859) pp819-831.
45. R. Stiles, 'The Old Market Sugar Refinery, 1684-1908' in *Journal of the Bristol Industrial Archaeological Society* vol. 2 p15-16.
46. B.R.O. 36772 Box 12 Castle Street Refinery; see also *Work in Bristol* published by *Bristol Times and Mirror* (1883) for an account of its workings.
47. B.R.O. 36772 Box 6, a chronological outline by G.F. Stone, (Editor of the *Western Daily Press*) concerning the proposed refinery.

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